Staff Report

# FINANCIAL ANALYSIS OF INDUSTRIAL GROWTH

September 11, 2012

## THE ASSIGNMENT

On May 15, Council directed staff to perform a financial analysis of the potential extension of water and sewer utilities for eastern industrial growth. The analysis includes water and sewer revenues, property tax revenues (with 5-year industrial tax abatement), jobs, and sales tax estimations. The estimated costs to deliver service to this 590-acre area are $800,000 (water) and $3.5 million (sewer). The adopted FY 2012/13 budget includes increases to water and sewer rates to pay debt service for these utility extensions.

## CURRENT INDUSTRIAL VALUATIONS

There are currently 40 parcels of land in Ames totaling 496 acres that are in industrial use. From 2003-2010, Ames' industrial valuation rose an average of 6.4% annually (from $85,990,630 to $129,708,000). Industrial valuation overall in Iowa rose an average of 2.6% per year over the same period of time. The industrial valuation changes among neighboring suburban communities of a similar size and larger Iowa cities with rates of increase similar to Ames are as follows:

*Total Industrial Valuation (TIF plus Non-TIF)*

| City | 2002 | 2010 | Avg. Annual Change |
|---|---|---|---|
| **Ames** | **$85,990,630** | **$129,708,000** | **6.4%** |
| Ankeny | $65,377,160 | $68,211,200 | 0.5% |
| Clinton | $100,578,787 | $193,984,740 | 11.6% |
| Council Bluffs | $46,833,391 | $78,977,579 | 8.6% |
| Dubuque | $82,169,780 | $132,664,050 | 5.8% |
| Iowa City | $53,651,380 | $78,440,990 | 5.8% |
| Waterloo | $104,884,170 | $140,787,360 | 4.3% |
| West Des Moines | $30,063,830 | $33,656,870 | 1.5% |

The change in industrial valuation is comprised of changes in development, improvements to existing developments, inflation, and challenged assessments.

## DEVELOPMENT ASSUMPTIONS

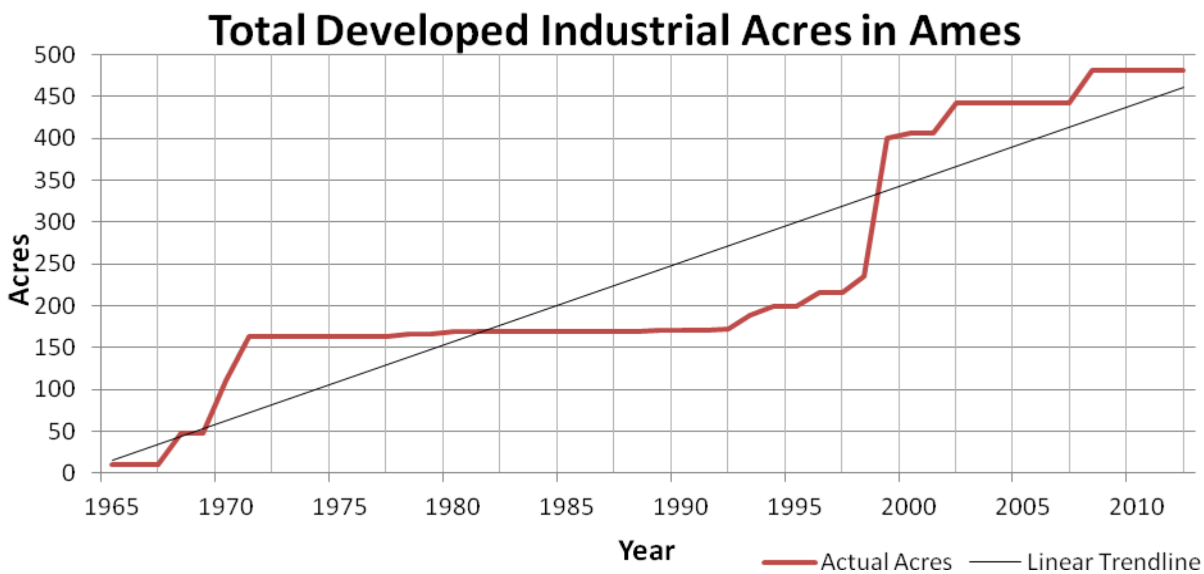
- This analysis focuses on the 40 parcels that are currently in industrial use. (An additional 258 parcels are zoned industrial, but are not in industrial use.)

- It is assumed that the industrial property tax structure will remain unchanged into the future and that the City's tax levy ($10.72/$1,000) and water and sewer use charges will remain stable.

- It is assumed that the level of water consumption, sewer use, and land area historically used by industrial properties equal their 2012 totals.

- When considering a property with several structures, the year that the largest structure was built is used as the year the property was absorbed.

## ABSORPTION SCENARIOS




**Scenario A – 10.25 Acres Per Year**

Most existing industrial development in Ames dates from the mid-1960s to present. There are 27 parcels smaller than 10 acres in area, and three larger than 25 acres. The mean parcel size is 12.03 acres, while the median is 3.32 acres. At present there remain nine industrial parcels that are either undeveloped or are vacant land, totaling 35.4 acres. **Between 1965 and 2012, an average of 10.25 acres was developed per year. Continued growth at this rate has been designated as Scenario A.**

**Scenario B – 16.03 Acres Per Year**

Staff analyzed the history of Ames' existing developments in 5-year periods. The period between 1996 and 2000 saw the most intense industrial growth, with eight parcels developed totaling 206.86 acres (41.37 acres per year). If it is the assumption that opening new area for industrial development will allow growth at a rate equivalent to Ames' best period of growth, this period of time may be a good indicator for future absorption potential. However, this period included the development of Barilla, which was a uniquely large and high value development. It can be expected that perhaps only one Barilla-size development might be possible in a new industrial area. Excluding Barilla's development during that period, but adding in a development of average size in its place, **Ames' best**

**period of growth would have added an average of 16.03 acres per year. Growth at this rate has been designated as Scenario B.**

__Scenario C – 20.04 Acres Per Year__

It can suggested that the limited availability of vacant industrial land is an inhibitor to growth, and that with more large lots available, growth rates would increase. **Scenario C considers a growth rate 25% faster than that of the best period of growth, or 20.04 acres per year.**

| Growth Scenario | Annual Absorption | Estimated Time to Develop 590 Acres |
|---|---|---|
| **A** | 10.25 Acres | 58 Years |
| **B** | 16.03 Acres | 37 Years |
| **C** | 20.04 Acres | 29 Years |

## COST TO EXTEND UTILITIES

If the City Council approves extension of water and sewer utilities, the City will issue General Obligation bonds. Repayment of the debt will be made from water and sewer revenues. The debt for proposed water and sewer lines will most likely be placed on a 20-year repayment schedule. At an annual interest rate of 3%, it is anticipated that total principal and interest payments over the life of the debt will total $1,080,000 for the water line and $4,700,000 for the sewer line. Annual estimated debt service payments are $54,000 for the water line and $235,000 for the sewer line, for a total of $289,000 per year.

## WATER AND SEWER PAYBACK ESTIMATES

The water and sewer lines identified in the proposed $4.3 million capital improvement have capacity of 2.96 million gallons (395,694 feet$^3$) per day, or 144,428,310 feet$^3$ per year. The most water that could be supplied once 100% of the land has been developed is 395,694 feet$^3$ per day. However, it is unlikely that actual usage will ever approach 100% capacity.

The existing industrial users consume a total of 14,799,146 feet$^3$ of water per year. However, they vary widely in terms of their water and sewer use. The mean existing industrial user consumes 435,269 feet$^3$ of water per year, although this is skewed because there are a handful of very heavy water users; the median industrial water user consumes 19,930 feet$^3$ per year. In terms of mean water usage per acre, this existing usage equates to approximately 29,821 feet$^3$ of water per acre per year. If it is assumed that the new industrial area will use water with the same intensity over a larger area, it can be expected that the new industrial area would use least 17,594,000 feet$^3$ of water per year.

**Calculations in this analysis provide three scenarios for water and sewer use; (1) that the new industrial area will be populated entirely by industries similar to the existing blend of industrial users, (2) a typical large water user (such as Sauer Danfoss), and (3) similar to a typical large sewer user (such as Hach Company).**

The analysis included estimated average net revenue of $3.78 per 100 feet$^3$ of water sold and $3.25 per 100 feet$^3$ of sewer discharge. These figures are generated by subtracting the total costs of production from the total revenues of sales for the water and sewer utilities and averaging over the total quantity of water sold in recent years.

It should be cautioned that characteristics of individual industries (peak flow month versus typical flow month, high strength discharge, wastewater metering, etc.) may drastically change the revenue realized from new customers.

The debt repayment period is set at 20 years, since the water and sewer lines may require additional investment after this period of time. Any break-even point longer than 20 years increases the chances that the City may need to issue new debt or invest other capital for the new water and sewer lines while the initial debt is still outstanding.

| Industry Model | Avg. Water Consumption per Acre | Absorption Rate (Acres/Year) | Net New Water Revenue Each Year (2012 Dollars) | Water Revenue Break-Even Year | Net New Sewer Revenue Each Year* (2012 Dollars) | Sewer Revenue Break-Even Year |
|---|---|---|---|---|---|---|
| Existing Blend of Ames Industries | 29,821 feet$^3$/year | A: 10.25 | $11,554 | 9 | $9,934 | 31 |
| | | B: 16.03 | $18,070 | 5 | $15,536 | 25 |
| | | C: 20.04 | $22,590 | 4 | $19,422 | 22 |
| Sauer Danfoss | 30,243 feet$^3$/year | A: 10.25 | $11,718 | 9 | | |
| | | B: 16.03 | $18,325 | 5 | | |
| | | C: 20.04 | $22,909 | 4 | | |
| Hach Company | 46,678 feet$^3$/year | A: 10.25 | | | $15,550 | 25 |
| | | B: 16.03 | | | $24,318 | 19 |
| | | C: 20.04 | | | $30,401 | 15 |

* Excludes surcharges for high-strength discharge, which are assessed on some industrial customers
***See Appendices A-D for more detail.***

This analysis indicates that the anticipated new water revenues are likely to be sufficient to pay back the capital investment for a new water line in a reasonable time period, provided that new development occurs at or above Ames' historical absorption rates. However, if elevated water storage is required for fire protection early on in the development of this area, the payback could lengthen considerably. Previous staff reports have estimated the cost for elevated storage at up to $3 million.

Due to the higher cost of sewer infrastructure, sewer revenues are less likely to be sufficient to cover the debt service in less than 20 years. Only if development includes heavier sewer users at the more rapid absorptions rates, does the break-even point occur before 20 years.

## PROPERTY TAX ANALYSIS

The most intense users of water and sewer are not necessarily larger and higher-valuation industrial properties. This analysis of property tax absorption is therefore independent of the water and sewer analysis.

**Average Value Per Acre**

The 2012 total assessed valuation of the City's 40 parcels now in industrial use is $144,221,900 (land and improvements). **This is an average value of $290,612 per acre.** Because there are few existing industrial parcels, there is a wide variation in size of parcels, size of structures, and use of water and sewer.

The *Municipal Code* provides that eligible new industrial development can receive property tax abatement based on the following schedule:

| | Year | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| % of Abatement | 75% | 60% | 45% | 30% | 15% |

Assuming that all new industrial properties are tax-abated, calculations were made to determine the new industrial area's contribution to property tax revenues. These figures were compared to the cost of providing new water and sewer service. **In practice, the cost for water and sewer lines will be repaid from revenues in the water and sewer funds, not property taxes. However, this exercise provides some insight into the overall value added to the community by the industrial growth. The following property tax revenues (in 2012 dollars) might be seen based on absorption Scenarios A, B, and C:**

| Absorption Rate (Acres/Year) | **1** Incremental Property Tax Break Even Year (Cash Basis) | **2** Incremental Property Tax Break Even Year (Present Value Basis) |
|---|---|---|
| A: 10.25 | 20 | 23 |
| B: 16.03 | 15 | 16 |
| C: 20.04 | 13 | 14 |

***See Appendices E-G for more detail.***

The chart above compares the total incremental property tax revenue generated from newly developed property at the current property tax levy rate against the debt service required to extend the utility lines. Column (1) provides a cash basis analysis of debt repayment for water and sewer lines from incremental property tax revenue. Column (2) provides the same analysis on a present value basis which takes into account the difference in timing of cash flow, with expense for debt repayment coming immediately and revenues starting low and growing over time as land develops. The tax abatement is included in the analysis and the discount rate used for the present value analysis is 3%.

## SALES TAX

While taxable sales are allowed in industrial zones, materials used in production are not taxable. Purchases of materials that are not used in production would be taxable and 1% will return to the City through the Local Option Sales Tax. Due to a lack of individual-level data on Local Option Sales Tax, it is difficult to determine how large a contribution this might be to City revenues.

## JOBS

Due to the varied industries that might be present in a 590-acre tract, the number of jobs associated with industrial expansion cannot be precisely estimated. Some industrial jobs calculators estimate jobs per gross square footage (G.S.F.) of building space.

The National Association of Industrial and Office Properties, a commercial development trade association, estimates a national average of 1.11 jobs for every 1,000 G.S.F. of industrial or warehouse use. The Urban Land Institute, a nonprofit research organization, has suggested that light industrial, warehousing, and manufacturing uses average 1.80 employees per 1,000 G.S.F. The cities of Wausau and Brillion, Wisconsin, in conducting their analyses of industrial land use, modified the Urban Land Institute's figures to be a more conservative 1.50 employees per 1,000 G.S.F.

Cedar Falls has recently developed a 1,200 acre industrial and technology park with rail access. The guidelines for locating within this park require a minimum of 1.00 job per 1,000 G.S.F., and a total of 12,000 new jobs.

The existing Ames industrial land has a 6.5:1 average lot-building coverage ratio. Using the range of job metrics above (1.00-1.80 jobs per 1,000 G.S.F.), it can be calculated that 590 acres of development with a similar lot-building coverage ratio would produce between 3,900 and 7,100 direct jobs.

| | Job Density per 1,000 G.S.F. | | | |
|---|---|---|---|---|
| | 1.00 | 1.11 | 1.50 | 1.80 |
| Total Direct Jobs Anticipated in 590 Acres | 3,941 | 4,375 | 5,912 | 7,094 |

Another alternative might be to use existing businesses as models. The following job estimates might be seen if the new industrial area was developed with similar industries:

| Industry Type | Existing Employees | Existing Jobs per 1,000 G.S.F. | No. of Industries that Could Fit in 590 Acres | Anticipated Employees in New 590 Acres |
|---|---|---|---|---|
| 3M | 350 | 1.02 | 9.4 | 3,290 |
| AMCOR | 150 | 0.18 | 36.8 | 5,520 |
| Barilla | 154 | 0.30 | 4.3 | 662 |
| Lincolnway Energy | 45 | 0.48 | 9.2 | 414 |
| Sauer Danfoss | 1,088 | 3.23 | 11.4 | 12,403 |

APPENDIX A: Water Payback Scenarios using Blend of Existing Industries

Growth Option A

| Year | Cumulative Consump. Added | Net Water Revenues $ 3.78 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 305,665 | $ 11,554 | $ 54,000 | $ (42,446) | $ (42,446) |
| 2 | 611,330 | $ 23,108 | $ 54,000 | $ (30,892) | $ (73,338) |
| 3 | 916,995 | $ 34,662 | $ 54,000 | $ (19,338) | $ (92,675) |
| 4 | 1,222,660 | $ 46,217 | $ 54,000 | $ (7,783) | $ (100,459) |
| 5 | 1,528,325 | $ 57,771 | $ 54,000 | $ 3,771 | $ (96,688) |
| 6 | 1,833,990 | $ 69,325 | $ 54,000 | $ 15,325 | $ (81,363) |
| 7 | 2,139,655 | $ 80,879 | $ 54,000 | $ 26,879 | $ (54,484) |
| 8 | 2,445,320 | $ 92,433 | $ 54,000 | $ 38,433 | $ (16,051) |
| 9 | 2,750,985 | $ 103,987 | $ 54,000 | $ 49,987 | $ 33,936 |
| 10 | 3,056,650 | $ 115,541 | $ 54,000 | $ 61,541 | $ 95,478 |
| 11 | 3,362,315 | $ 127,096 | $ 54,000 | $ 73,096 | $ 168,573 |
| 12 | 3,667,980 | $ 138,650 | $ 54,000 | $ 84,650 | $ 253,223 |
| 13 | 3,973,645 | $ 150,204 | $ 54,000 | $ 96,204 | $ 349,426 |
| 14 | 4,279,310 | $ 161,758 | $ 54,000 | $ 107,758 | $ 457,184 |
| 15 | 4,584,975 | $ 173,312 | $ 54,000 | $ 119,312 | $ 576,496 |
| 16 | 4,890,640 | $ 184,866 | $ 54,000 | $ 130,866 | $ 707,363 |
| 17 | 5,196,305 | $ 196,420 | $ 54,000 | $ 142,420 | $ 849,783 |
| 18 | 5,501,970 | $ 207,974 | $ 54,000 | $ 153,974 | $ 1,003,757 |
| 19 | 5,807,635 | $ 219,529 | $ 54,000 | $ 165,529 | $ 1,169,286 |
| 20 | 6,113,300 | $ 231,083 | $ 54,000 | $ 177,083 | $ 1,346,369 |

Growth Option B

| Year | Cumulative Consump. Added | Net Water Revenues $ 3.78 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 478,030 | $ 18,070 | $ 54,000 | $ (35,930) | $ (35,930) |
| 2 | 956,060 | $ 36,139 | $ 54,000 | $ (17,861) | $ (53,791) |
| 3 | 1,434,090 | $ 54,209 | $ 54,000 | $ 209 | $ (53,583) |
| 4 | 1,912,120 | $ 72,278 | $ 54,000 | $ 18,278 | $ (35,305) |
| 5 | 2,390,150 | $ 90,348 | $ 54,000 | $ 36,348 | $ 1,043 |
| 6 | 2,868,180 | $ 108,417 | $ 54,000 | $ 54,417 | $ 55,460 |
| 7 | 3,346,210 | $ 126,487 | $ 54,000 | $ 72,487 | $ 127,947 |
| 8 | 3,824,240 | $ 144,556 | $ 54,000 | $ 90,556 | $ 218,503 |
| 9 | 4,302,270 | $ 162,626 | $ 54,000 | $ 108,626 | $ 327,129 |
| 10 | 4,780,300 | $ 180,695 | $ 54,000 | $ 126,695 | $ 453,824 |
| 11 | 5,258,330 | $ 198,765 | $ 54,000 | $ 144,765 | $ 598,589 |
| 12 | 5,736,360 | $ 216,834 | $ 54,000 | $ 162,834 | $ 761,424 |
| 13 | 6,214,390 | $ 234,904 | $ 54,000 | $ 180,904 | $ 942,328 |
| 14 | 6,692,420 | $ 252,973 | $ 54,000 | $ 198,973 | $ 1,141,301 |
| 15 | 7,170,450 | $ 271,043 | $ 54,000 | $ 217,043 | $ 1,358,344 |
| 16 | 7,648,480 | $ 289,113 | $ 54,000 | $ 235,113 | $ 1,593,457 |
| 17 | 8,126,510 | $ 307,182 | $ 54,000 | $ 253,182 | $ 1,846,639 |
| 18 | 8,604,540 | $ 325,252 | $ 54,000 | $ 271,252 | $ 2,117,890 |
| 19 | 9,082,570 | $ 343,321 | $ 54,000 | $ 289,321 | $ 2,407,211 |
| 20 | 9,560,600 | $ 361,391 | $ 54,000 | $ 307,391 | $ 2,714,602 |

Growth Option C

| Year | Cumulative Consump. Added | Net Water Revenues $ 3.78 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 597,613 | $ 22,590 | $ 54,000 | $ (31,410) | $ (31,410) |
| 2 | 1,195,226 | $ 45,180 | $ 54,000 | $ (8,820) | $ (40,231) |
| 3 | 1,792,839 | $ 67,769 | $ 54,000 | $ 13,769 | $ (26,461) |
| 4 | 2,390,452 | $ 90,359 | $ 54,000 | $ 36,359 | $ 9,898 |
| 5 | 2,988,065 | $ 112,949 | $ 54,000 | $ 58,949 | $ 68,847 |
| 6 | 3,585,678 | $ 135,539 | $ 54,000 | $ 81,539 | $ 150,385 |
| 7 | 4,183,291 | $ 158,128 | $ 54,000 | $ 104,128 | $ 254,514 |
| 8 | 4,780,904 | $ 180,718 | $ 54,000 | $ 126,718 | $ 381,232 |
| 9 | 5,378,517 | $ 203,308 | $ 54,000 | $ 149,308 | $ 530,540 |
| 10 | 5,976,130 | $ 225,898 | $ 54,000 | $ 171,898 | $ 702,437 |
| 11 | 6,573,743 | $ 248,487 | $ 54,000 | $ 194,487 | $ 896,925 |
| 12 | 7,171,356 | $ 271,077 | $ 54,000 | $ 217,077 | $ 1,114,002 |
| 13 | 7,768,969 | $ 293,667 | $ 54,000 | $ 239,667 | $ 1,353,669 |
| 14 | 8,366,582 | $ 316,257 | $ 54,000 | $ 262,257 | $ 1,615,926 |
| 15 | 8,964,195 | $ 338,847 | $ 54,000 | $ 284,847 | $ 1,900,773 |
| 16 | 9,561,808 | $ 361,436 | $ 54,000 | $ 307,436 | $ 2,208,209 |
| 17 | 10,159,421 | $ 384,026 | $ 54,000 | $ 330,026 | $ 2,538,235 |
| 18 | 10,757,034 | $ 406,616 | $ 54,000 | $ 352,616 | $ 2,890,851 |
| 19 | 11,354,647 | $ 429,206 | $ 54,000 | $ 375,206 | $ 3,266,057 |
| 20 | 11,952,260 | $ 451,795 | $ 54,000 | $ 397,795 | $ 3,663,852 |

APPENDIX B: Water Payback Scenarios using Sauer Danfoss-type Industries

Growth Option A

| Year | Cumulative Consump. Added | Net Water Revenues $ 3.78 *per 100 ft^3* | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 309,991 | $ 11,718 | $ 54,000 | $ (42,282) | $ (42,282) |
| 2 | 619,982 | $ 23,435 | $ 54,000 | $ (30,565) | $ (72,847) |
| 3 | 929,973 | $ 35,153 | $ 54,000 | $ (18,847) | $ (91,694) |
| 4 | 1,239,964 | $ 46,871 | $ 54,000 | $ (7,129) | $ (98,823) |
| 5 | 1,549,955 | $ 58,588 | $ 54,000 | $ 4,588 | $ (94,235) |
| 6 | 1,859,946 | $ 70,306 | $ 54,000 | $ 16,306 | $ (77,929) |
| 7 | 2,169,937 | $ 82,024 | $ 54,000 | $ 28,024 | $ (49,906) |
| 8 | 2,479,928 | $ 93,741 | $ 54,000 | $ 39,741 | $ (10,164) |
| 9 | 2,789,919 | $ 105,459 | $ 54,000 | $ 51,459 | $ 41,295 |
| 10 | 3,099,910 | $ 117,177 | $ 54,000 | $ 63,177 | $ 104,471 |
| 11 | 3,409,901 | $ 128,894 | $ 54,000 | $ 74,894 | $ 179,366 |
| 12 | 3,719,892 | $ 140,612 | $ 54,000 | $ 86,612 | $ 265,977 |
| 13 | 4,029,883 | $ 152,330 | $ 54,000 | $ 98,330 | $ 364,307 |
| 14 | 4,339,874 | $ 164,047 | $ 54,000 | $ 110,047 | $ 474,354 |
| 15 | 4,649,865 | $ 175,765 | $ 54,000 | $ 121,765 | $ 596,119 |
| 16 | 4,959,856 | $ 187,483 | $ 54,000 | $ 133,483 | $ 729,602 |
| 17 | 5,269,847 | $ 199,200 | $ 54,000 | $ 145,200 | $ 874,802 |
| 18 | 5,579,838 | $ 210,918 | $ 54,000 | $ 156,918 | $ 1,031,720 |
| 19 | 5,889,829 | $ 222,636 | $ 54,000 | $ 168,636 | $ 1,200,355 |
| 20 | 6,199,820 | $ 234,353 | $ 54,000 | $ 180,353 | $ 1,380,709 |

Growth Option B

| Year | Cumulative Consump. Added | Net Water Revenues $ 3.78 *per 100 ft^3* | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 484,795 | $ 18,325 | $ 54,000 | $ (35,675) | $ (35,675) |
| 2 | 969,590 | $ 36,651 | $ 54,000 | $ (17,349) | $ (53,024) |
| 3 | 1,454,385 | $ 54,976 | $ 54,000 | $ 976 | $ (52,048) |
| 4 | 1,939,180 | $ 73,301 | $ 54,000 | $ 19,301 | $ (32,747) |
| 5 | 2,423,975 | $ 91,626 | $ 54,000 | $ 37,626 | $ 4,879 |
| 6 | 2,908,770 | $ 109,952 | $ 54,000 | $ 55,952 | $ 60,830 |
| 7 | 3,393,565 | $ 128,277 | $ 54,000 | $ 74,277 | $ 135,107 |
| 8 | 3,878,360 | $ 146,602 | $ 54,000 | $ 92,602 | $ 227,709 |
| 9 | 4,363,155 | $ 164,927 | $ 54,000 | $ 110,927 | $ 338,636 |
| 10 | 4,847,950 | $ 183,253 | $ 54,000 | $ 129,253 | $ 467,889 |
| 11 | 5,332,745 | $ 201,578 | $ 54,000 | $ 147,578 | $ 615,467 |
| 12 | 5,817,540 | $ 219,903 | $ 54,000 | $ 165,903 | $ 781,370 |
| 13 | 6,302,335 | $ 238,228 | $ 54,000 | $ 184,228 | $ 965,598 |
| 14 | 6,787,130 | $ 256,554 | $ 54,000 | $ 202,554 | $ 1,168,151 |
| 15 | 7,271,925 | $ 274,879 | $ 54,000 | $ 220,879 | $ 1,389,030 |
| 16 | 7,756,720 | $ 293,204 | $ 54,000 | $ 239,204 | $ 1,628,234 |
| 17 | 8,241,515 | $ 311,529 | $ 54,000 | $ 257,529 | $ 1,885,763 |
| 18 | 8,726,310 | $ 329,855 | $ 54,000 | $ 275,855 | $ 2,161,618 |
| 19 | 9,211,105 | $ 348,180 | $ 54,000 | $ 294,180 | $ 2,455,798 |
| 20 | 9,695,900 | $ 366,505 | $ 54,000 | $ 312,505 | $ 2,768,303 |

Growth Option C

| Year | Cumulative Consump. Added | **Net Water Revenues** $ 3.78 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 606,070 | $ 22,909 | $ 54,000 | $ (31,091) | $ (31,091) |
| 2 | 1,212,140 | $ 45,819 | $ 54,000 | $ (8,181) | $ (39,272) |
| 3 | 1,818,210 | $ 68,728 | $ 54,000 | $ 14,728 | $ (24,543) |
| 4 | 2,424,280 | $ 91,638 | $ 54,000 | $ 37,638 | $ 13,094 |
| 5 | 3,030,350 | $ 114,547 | $ 54,000 | $ 60,547 | $ 73,642 |
| 6 | 3,636,420 | $ 137,457 | $ 54,000 | $ 83,457 | $ 157,098 |
| 7 | 4,242,490 | $ 160,366 | $ 54,000 | $ 106,366 | $ 263,464 |
| 8 | 4,848,560 | $ 183,276 | $ 54,000 | $ 129,276 | $ 392,740 |
| 9 | 5,454,630 | $ 206,185 | $ 54,000 | $ 152,185 | $ 544,925 |
| 10 | 6,060,700 | $ 229,094 | $ 54,000 | $ 175,094 | $ 720,020 |
| 11 | 6,666,770 | $ 252,004 | $ 54,000 | $ 198,004 | $ 918,023 |
| 12 | 7,272,840 | $ 274,913 | $ 54,000 | $ 220,913 | $ 1,138,937 |
| 13 | 7,878,910 | $ 297,823 | $ 54,000 | $ 243,823 | $ 1,382,760 |
| 14 | 8,484,980 | $ 320,732 | $ 54,000 | $ 266,732 | $ 1,649,492 |
| 15 | 9,091,050 | $ 343,642 | $ 54,000 | $ 289,642 | $ 1,939,134 |
| 16 | 9,697,120 | $ 366,551 | $ 54,000 | $ 312,551 | $ 2,251,685 |
| 17 | 10,303,190 | $ 389,461 | $ 54,000 | $ 335,461 | $ 2,587,145 |
| 18 | 10,909,260 | $ 412,370 | $ 54,000 | $ 358,370 | $ 2,945,515 |
| 19 | 11,515,330 | $ 435,279 | $ 54,000 | $ 381,279 | $ 3,326,795 |
| 20 | 12,121,400 | $ 458,189 | $ 54,000 | $ 404,189 | $ 3,730,984 |

APPENDIX C: Sewer Payback Scenarios using Blend of Existing Industries

Growth Option A

| Year | Cumulative Consump. Added | Net Sewer Revenues $ 3.25 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 305,665 | $ 9,934 | $ 235,000 | $ (225,066) | $ (225,066) |
| 2 | 611,330 | $ 19,868 | $ 235,000 | $ (215,132) | $ (440,198) |
| 3 | 916,995 | $ 29,802 | $ 235,000 | $ (205,198) | $ (645,395) |
| 4 | 1,222,660 | $ 39,736 | $ 235,000 | $ (195,264) | $ (840,659) |
| 5 | 1,528,325 | $ 49,671 | $ 235,000 | $ (185,329) | $ (1,025,988) |
| 6 | 1,833,990 | $ 59,605 | $ 235,000 | $ (175,395) | $ (1,201,384) |
| 7 | 2,139,655 | $ 69,539 | $ 235,000 | $ (165,461) | $ (1,366,845) |
| 8 | 2,445,320 | $ 79,473 | $ 235,000 | $ (155,527) | $ (1,522,372) |
| 9 | 2,750,985 | $ 89,407 | $ 235,000 | $ (145,593) | $ (1,667,965) |
| 10 | 3,056,650 | $ 99,341 | $ 235,000 | $ (135,659) | $ (1,803,624) |
| 11 | 3,362,315 | $ 109,275 | $ 235,000 | $ (125,725) | $ (1,929,349) |
| 12 | 3,667,980 | $ 119,209 | $ 235,000 | $ (115,791) | $ (2,045,139) |
| 13 | 3,973,645 | $ 129,143 | $ 235,000 | $ (105,857) | $ (2,150,996) |
| 14 | 4,279,310 | $ 139,078 | $ 235,000 | $ (95,922) | $ (2,246,918) |
| 15 | 4,584,975 | $ 149,012 | $ 235,000 | $ (85,988) | $ (2,332,907) |
| 16 | 4,890,640 | $ 158,946 | $ 235,000 | $ (76,054) | $ (2,408,961) |
| 17 | 5,196,305 | $ 168,880 | $ 235,000 | $ (66,120) | $ (2,475,081) |
| 18 | 5,501,970 | $ 178,814 | $ 235,000 | $ (56,186) | $ (2,531,267) |
| 19 | 5,807,635 | $ 188,748 | $ 235,000 | $ (46,252) | $ (2,577,519) |
| 20 | 6,113,300 | $ 198,682 | $ 235,000 | $ (36,318) | $ (2,613,836) |
| 21 | 6,418,965 | $ 208,616 | $ - | $ 208,616 | $ (2,405,220) |
| 22 | 6,724,630 | $ 218,550 | $ - | $ 218,550 | $ (2,186,670) |
| 23 | 7,030,295 | $ 228,485 | $ - | $ 228,485 | $ (1,958,185) |
| 24 | 7,335,960 | $ 238,419 | $ - | $ 238,419 | $ (1,719,766) |
| 25 | 7,641,625 | $ 248,353 | $ - | $ 248,353 | $ (1,471,413) |
| 26 | 7,947,290 | $ 258,287 | $ - | $ 258,287 | $ (1,213,127) |
| 27 | 8,252,955 | $ 268,221 | $ - | $ 268,221 | $ (944,905) |
| 28 | 8,558,620 | $ 278,155 | $ - | $ 278,155 | $ (666,750) |
| 29 | 8,864,285 | $ 288,089 | $ - | $ 288,089 | $ (378,661) |
| 30 | 9,169,950 | $ 298,023 | $ - | $ 298,023 | $ (80,638) |
| 31 | 9,475,615 | $ 307,957 | $ - | $ 307,957 | $ 227,320 |
| 32 | 9,781,280 | $ 317,892 | $ - | $ 317,892 | $ 545,211 |

Growth Option B

| Year | Cumulative Consump. Added | Net Sewer Revenues $ 3.25 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 478,030 | $ 15,536 | $ 235,000 | $ (219,464) | $ (219,464) |
| 2 | 956,060 | $ 31,072 | $ 235,000 | $ (203,928) | $ (423,392) |
| 3 | 1,434,090 | $ 46,608 | $ 235,000 | $ (188,392) | $ (611,784) |
| 4 | 1,912,120 | $ 62,144 | $ 235,000 | $ (172,856) | $ (784,640) |
| 5 | 2,390,150 | $ 77,680 | $ 235,000 | $ (157,320) | $ (941,960) |
| 6 | 2,868,180 | $ 93,216 | $ 235,000 | $ (141,784) | $ (1,083,745) |
| 7 | 3,346,210 | $ 108,752 | $ 235,000 | $ (126,248) | $ (1,209,993) |
| 8 | 3,824,240 | $ 124,288 | $ 235,000 | $ (110,712) | $ (1,320,705) |
| 9 | 4,302,270 | $ 139,824 | $ 235,000 | $ (95,176) | $ (1,415,881) |
| 10 | 4,780,300 | $ 155,360 | $ 235,000 | $ (79,640) | $ (1,495,521) |
| 11 | 5,258,330 | $ 170,896 | $ 235,000 | $ (64,104) | $ (1,559,626) |
| 12 | 5,736,360 | $ 186,432 | $ 235,000 | $ (48,568) | $ (1,608,194) |
| 13 | 6,214,390 | $ 201,968 | $ 235,000 | $ (33,032) | $ (1,641,226) |
| 14 | 6,692,420 | $ 217,504 | $ 235,000 | $ (17,496) | $ (1,658,723) |
| 15 | 7,170,450 | $ 233,040 | $ 235,000 | $ (1,960) | $ (1,660,683) |
| 16 | 7,648,480 | $ 248,576 | $ 235,000 | $ 13,576 | $ (1,647,107) |
| 17 | 8,126,510 | $ 264,112 | $ 235,000 | $ 29,112 | $ (1,617,996) |
| 18 | 8,604,540 | $ 279,648 | $ 235,000 | $ 44,648 | $ (1,573,348) |
| 19 | 9,082,570 | $ 295,184 | $ 235,000 | $ 60,184 | $ (1,513,165) |
| 20 | 9,560,600 | $ 310,720 | $ 235,000 | $ 75,720 | $ (1,437,445) |
| 21 | 10,038,630 | $ 326,255 | $ - | $ 326,255 | $ (1,111,190) |
| 22 | 10,516,660 | $ 341,791 | $ - | $ 341,791 | $ (769,398) |
| 23 | 10,994,690 | $ 357,327 | $ - | $ 357,327 | $ (412,071) |
| 24 | 11,472,720 | $ 372,863 | $ - | $ 372,863 | $ (39,208) |
| 25 | 11,950,750 | $ 388,399 | $ - | $ 388,399 | $ 349,192 |

Growth Option C

| Year | Cumulative Consump. Added | Net Sewer Revenues $ 3.25 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 597,613 | $ 19,422 | $ 235,000 | $ (215,578) | $ (215,578) |
| 2 | 1,195,226 | $ 38,845 | $ 235,000 | $ (196,155) | $ (411,733) |
| 3 | 1,792,839 | $ 58,267 | $ 235,000 | $ (176,733) | $ (588,465) |
| 4 | 2,390,452 | $ 77,690 | $ 235,000 | $ (157,310) | $ (745,776) |
| 5 | 2,988,065 | $ 97,112 | $ 235,000 | $ (137,888) | $ (883,664) |
| 6 | 3,585,678 | $ 116,535 | $ 235,000 | $ (118,465) | $ (1,002,129) |
| 7 | 4,183,291 | $ 135,957 | $ 235,000 | $ (99,043) | $ (1,101,172) |
| 8 | 4,780,904 | $ 155,379 | $ 235,000 | $ (79,621) | $ (1,180,793) |
| 9 | 5,378,517 | $ 174,802 | $ 235,000 | $ (60,198) | $ (1,240,991) |
| 10 | 5,976,130 | $ 194,224 | $ 235,000 | $ (40,776) | $ (1,281,767) |
| 11 | 6,573,743 | $ 213,647 | $ 235,000 | $ (21,353) | $ (1,303,120) |
| 12 | 7,171,356 | $ 233,069 | $ 235,000 | $ (1,931) | $ (1,305,051) |
| 13 | 7,768,969 | $ 252,491 | $ 235,000 | $ 17,491 | $ (1,287,560) |
| 14 | 8,366,582 | $ 271,914 | $ 235,000 | $ 36,914 | $ (1,250,646) |
| 15 | 8,964,195 | $ 291,336 | $ 235,000 | $ 56,336 | $ (1,194,309) |
| 16 | 9,561,808 | $ 310,759 | $ 235,000 | $ 75,759 | $ (1,118,551) |
| 17 | 10,159,421 | $ 330,181 | $ 235,000 | $ 95,181 | $ (1,023,369) |
| 18 | 10,757,034 | $ 349,604 | $ 235,000 | $ 114,604 | $ (908,766) |
| 19 | 11,354,647 | $ 369,026 | $ 235,000 | $ 134,026 | $ (774,740) |
| 20 | 11,952,260 | $ 388,448 | $ 235,000 | $ 153,448 | $ (621,291) |
| 21 | 12,549,873 | $ 407,871 | $ - | $ 407,871 | $ (213,420) |
| 22 | 13,147,486 | $ 427,293 | $ - | $ 427,293 | $ 213,873 |

APPENDIX D: Sewer Payback Scenarios using Hach Company-type Industries

Growth Option A

| | | Net Sewer Revenues | | Annual | Cumulative |
|---|---|---|---|---|---|
| | **Cumulative** | *$ 3.25* | | Surplus | Surplus |
| **Year** | **Consump. Added** | *per 100 ft^3* | D/S | (Deficit) | (Deficit) |
| 1 | 478,450 | $ 15,550 | $ 235,000 | $ (219,450) | $ (219,450) |
| 2 | 956,900 | $ 31,099 | $ 235,000 | $ (203,901) | $ (423,351) |
| 3 | 1,435,350 | $ 46,649 | $ 235,000 | $ (188,351) | $ (611,702) |
| 4 | 1,913,800 | $ 62,199 | $ 235,000 | $ (172,802) | $ (784,504) |
| 5 | 2,392,250 | $ 77,748 | $ 235,000 | $ (157,252) | $ (941,756) |
| 6 | 2,870,700 | $ 93,298 | $ 235,000 | $ (141,702) | $ (1,083,458) |
| 7 | 3,349,150 | $ 108,847 | $ 235,000 | $ (126,153) | $ (1,209,611) |
| 8 | 3,827,600 | $ 124,397 | $ 235,000 | $ (110,603) | $ (1,320,214) |
| 9 | 4,306,050 | $ 139,947 | $ 235,000 | $ (95,053) | $ (1,415,267) |
| 10 | 4,784,500 | $ 155,496 | $ 235,000 | $ (79,504) | $ (1,494,771) |
| 11 | 5,262,950 | $ 171,046 | $ 235,000 | $ (63,954) | $ (1,558,725) |
| 12 | 5,741,400 | $ 186,596 | $ 235,000 | $ (48,405) | $ (1,607,129) |
| 13 | 6,219,850 | $ 202,145 | $ 235,000 | $ (32,855) | $ (1,639,984) |
| 14 | 6,698,300 | $ 217,695 | $ 235,000 | $ (17,305) | $ (1,657,289) |
| 15 | 7,176,750 | $ 233,244 | $ 235,000 | $ (1,756) | $ (1,659,045) |
| 16 | 7,655,200 | $ 248,794 | $ 235,000 | $ 13,794 | $ (1,645,251) |
| 17 | 8,133,650 | $ 264,344 | $ 235,000 | $ 29,344 | $ (1,615,907) |
| 18 | 8,612,100 | $ 279,893 | $ 235,000 | $ 44,893 | $ (1,571,014) |
| 19 | 9,090,550 | $ 295,443 | $ 235,000 | $ 60,443 | $ (1,510,571) |
| 20 | 9,569,000 | $ 310,993 | $ 235,000 | $ 75,993 | $ (1,434,579) |
| 21 | 10,047,450 | $ 326,542 | $ - | $ 326,542 | $ (1,108,037) |
| 22 | 10,525,900 | $ 342,092 | $ - | $ 342,092 | $ (765,945) |
| 23 | 11,004,350 | $ 357,641 | $ - | $ 357,641 | $ (408,304) |
| 24 | 11,482,800 | $ 373,191 | $ - | $ 373,191 | $ (35,113) |
| 25 | 11,961,250 | $ 388,741 | $ - | $ 388,741 | $ 353,628 |

Growth Option B

| Year | Cumulative Consump. Added | Net Sewer Revenues $ 3.25 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 748,248 | $ 24,318 | $ 235,000 | $ (210,682) | $ (210,682) |
| 2 | 1,496,496 | $ 48,636 | $ 235,000 | $ (186,364) | $ (397,046) |
| 3 | 2,244,744 | $ 72,954 | $ 235,000 | $ (162,046) | $ (559,092) |
| 4 | 2,992,992 | $ 97,272 | $ 235,000 | $ (137,728) | $ (696,819) |
| 5 | 3,741,240 | $ 121,590 | $ 235,000 | $ (113,410) | $ (810,229) |
| 6 | 4,489,488 | $ 145,908 | $ 235,000 | $ (89,092) | $ (899,321) |
| 7 | 5,237,736 | $ 170,226 | $ 235,000 | $ (64,774) | $ (964,094) |
| 8 | 5,985,984 | $ 194,544 | $ 235,000 | $ (40,456) | $ (1,004,550) |
| 9 | 6,734,232 | $ 218,863 | $ 235,000 | $ (16,137) | $ (1,020,687) |
| 10 | 7,482,480 | $ 243,181 | $ 235,000 | $ 8,181 | $ (1,012,507) |
| 11 | 8,230,728 | $ 267,499 | $ 235,000 | $ 32,499 | $ (980,008) |
| 12 | 8,978,976 | $ 291,817 | $ 235,000 | $ 56,817 | $ (923,191) |
| 13 | 9,727,224 | $ 316,135 | $ 235,000 | $ 81,135 | $ (842,057) |
| 14 | 10,475,472 | $ 340,453 | $ 235,000 | $ 105,453 | $ (736,604) |
| 15 | 11,223,720 | $ 364,771 | $ 235,000 | $ 129,771 | $ (606,833) |
| 16 | 11,971,968 | $ 389,089 | $ 235,000 | $ 154,089 | $ (452,744) |
| 17 | 12,720,216 | $ 413,407 | $ 235,000 | $ 178,407 | $ (274,337) |
| 18 | 13,468,464 | $ 437,725 | $ 235,000 | $ 202,725 | $ (71,612) |
| 19 | 14,216,712 | $ 462,043 | $ 235,000 | $ 227,043 | $ 155,431 |
| 20 | 14,964,960 | $ 486,361 | $ 235,000 | $ 251,361 | $ 406,793 |

Growth Option C

| Year | Cumulative Consump. Added | Net Sewer Revenues $ 3.25 per 100 ft^3 | D/S | Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|
| 1 | 935,427 | $ 30,401 | $ 235,000 | $ (204,599) | $ (204,599) |
| 2 | 1,870,854 | $ 60,803 | $ 235,000 | $ (174,197) | $ (378,796) |
| 3 | 2,806,281 | $ 91,204 | $ 235,000 | $ (143,796) | $ (522,592) |
| 4 | 3,741,708 | $ 121,606 | $ 235,000 | $ (113,394) | $ (635,986) |
| 5 | 4,677,135 | $ 152,007 | $ 235,000 | $ (82,993) | $ (718,979) |
| 6 | 5,612,562 | $ 182,408 | $ 235,000 | $ (52,592) | $ (771,571) |
| 7 | 6,547,989 | $ 212,810 | $ 235,000 | $ (22,190) | $ (793,761) |
| 8 | 7,483,416 | $ 243,211 | $ 235,000 | $ 8,211 | $ (785,550) |
| 9 | 8,418,843 | $ 273,612 | $ 235,000 | $ 38,612 | $ (746,938) |
| 10 | 9,354,270 | $ 304,014 | $ 235,000 | $ 69,014 | $ (677,924) |
| 11 | 10,289,697 | $ 334,415 | $ 235,000 | $ 99,415 | $ (578,509) |
| 12 | 11,225,124 | $ 364,817 | $ 235,000 | $ 129,817 | $ (448,693) |
| 13 | 12,160,551 | $ 395,218 | $ 235,000 | $ 160,218 | $ (288,475) |
| 14 | 13,095,978 | $ 425,619 | $ 235,000 | $ 190,619 | $ (97,855) |
| 15 | 14,031,405 | $ 456,021 | $ 235,000 | $ 221,021 | $ 123,165 |
| 16 | 14,966,832 | $ 486,422 | $ 235,000 | $ 251,422 | $ 374,587 |
| 17 | 15,902,259 | $ 516,823 | $ 235,000 | $ 281,823 | $ 656,411 |
| 18 | 16,837,686 | $ 547,225 | $ 235,000 | $ 312,225 | $ 968,636 |
| 19 | 17,773,113 | $ 577,626 | $ 235,000 | $ 342,626 | $ 1,311,262 |
| 20 | 18,708,540 | $ 608,028 | $ 235,000 | $ 373,028 | $ 1,684,289 |

# APPENDIX E: Property Tax Revenue with Growth Option A

| Growth Option A | | | | | | | | | Total Levy | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Cumulative** | | **Property Taxes** | | | | | | Annual | Cumulative |
| | **Valuation** | **Taxable** | *General* | *Emp Bene* | *Transit* | *Debt Svc* | *Total* | | Surplus | Surplus |
| **Year** | **Added** | **Valuation** | 5.83418 | 0.70627 | 0.65737 | 3.52343 | 10.72125 | D/S | (Deficit) | (Deficit) |
| 1 | 2,978,773 | 744,693 | 4,345 | 526 | 490 | 2,624 | 7,984 | 289,000 | (281,016) | (281,016) |
| 2 | 5,957,546 | 1,936,202 | 11,296 | 1,367 | 1,273 | 6,822 | 20,759 | 289,000 | (268,241) | (549,257) |
| 3 | 8,936,319 | 3,574,528 | 20,854 | 2,525 | 2,350 | 12,595 | 38,323 | 289,000 | (250,677) | (799,934) |
| 4 | 11,915,092 | 5,659,669 | 33,020 | 3,997 | 3,720 | 19,941 | 60,679 | 289,000 | (228,321) | (1,028,255) |
| 5 | 14,893,865 | 8,191,626 | 47,791 | 5,785 | 5,385 | 28,863 | 87,824 | 289,000 | (201,176) | (1,229,431) |
| 6 | 17,872,638 | 11,170,399 | 65,170 | 7,889 | 7,343 | 39,358 | 119,761 | 289,000 | (169,239) | (1,398,670) |
| 7 | 20,851,411 | 14,149,172 | 82,549 | 9,993 | 9,301 | 49,854 | 151,697 | 289,000 | (137,303) | (1,535,973) |
| 8 | 23,830,184 | 17,127,945 | 99,928 | 12,097 | 11,259 | 60,349 | 183,633 | 289,000 | (105,367) | (1,641,340) |
| 9 | 26,808,957 | 20,106,718 | 117,306 | 14,201 | 13,218 | 70,845 | 215,569 | 289,000 | (73,431) | (1,714,771) |
| 10 | 29,787,730 | 23,085,491 | 134,685 | 16,305 | 15,176 | 81,340 | 247,505 | 289,000 | (41,495) | (1,756,266) |
| 11 | 32,766,503 | 26,064,264 | 152,064 | 18,408 | 17,134 | 91,836 | 279,441 | 289,000 | (9,559) | (1,765,824) |
| 12 | 35,745,276 | 29,043,037 | 169,442 | 20,512 | 19,092 | 102,331 | 311,378 | 289,000 | 22,378 | (1,743,447) |
| 13 | 38,724,049 | 32,021,810 | 186,821 | 22,616 | 21,050 | 112,827 | 343,314 | 289,000 | 54,314 | (1,689,133) |
| 14 | 41,702,822 | 35,000,583 | 204,200 | 24,720 | 23,008 | 123,322 | 375,250 | 289,000 | 86,250 | (1,602,883) |
| 15 | 44,681,595 | 37,979,356 | 221,578 | 26,824 | 24,966 | 133,818 | 407,186 | 289,000 | 118,186 | (1,484,697) |
| 16 | 47,660,368 | 40,958,129 | 238,957 | 28,927 | 26,925 | 144,313 | 439,122 | 289,000 | 150,122 | (1,334,574) |
| 17 | 50,639,141 | 43,936,902 | 256,336 | 31,031 | 28,883 | 154,809 | 471,059 | 289,000 | 182,059 | (1,152,516) |
| 18 | 53,617,914 | 46,915,675 | 273,714 | 33,135 | 30,841 | 165,304 | 502,995 | 289,000 | 213,995 | (938,521) |
| 19 | 56,596,687 | 49,894,448 | 291,093 | 35,239 | 32,799 | 175,800 | 534,931 | 289,000 | 245,931 | (692,590) |
| 20 | 59,575,460 | 52,873,221 | 308,472 | 37,343 | 34,757 | 186,295 | 566,867 | 289,000 | 277,867 | (414,723) |
| 21 | 62,554,233 | 55,851,994 | 325,851 | 39,447 | 36,715 | 196,791 | 598,803 | - | 598,803 | 184,080 |
| 22 | 65,533,006 | 58,830,767 | 343,229 | 41,550 | 38,674 | 207,286 | 630,739 | - | 630,739 | 814,819 |
| 23 | 68,511,779 | 61,809,540 | 360,608 | 43,654 | 40,632 | 217,782 | 662,676 | - | 662,676 | 1,477,495 |
| 24 | 71,490,552 | 64,788,313 | 377,987 | 45,758 | 42,590 | 228,277 | 694,612 | - | 694,612 | 2,172,106 |
| 25 | 74,469,325 | 67,767,086 | 395,365 | 47,862 | 44,548 | 238,773 | 726,548 | - | 726,548 | 2,898,654 |
| 26 | 77,448,098 | 70,745,859 | 412,744 | 49,966 | 46,506 | 249,268 | 758,484 | - | 758,484 | 3,657,138 |
| 27 | 80,426,871 | 73,724,632 | 430,123 | 52,069 | 48,464 | 259,764 | 790,420 | - | 790,420 | 4,447,558 |
| 28 | 83,405,644 | 76,703,405 | 447,501 | 54,173 | 50,423 | 270,259 | 822,356 | - | 822,356 | 5,269,915 |
| 29 | 86,384,417 | 79,682,178 | 464,880 | 56,277 | 52,381 | 280,755 | 854,293 | - | 854,293 | 6,124,207 |
| 30 | 89,363,190 | 82,660,951 | 482,259 | 58,381 | 54,339 | 291,250 | 886,229 | - | 886,229 | 7,010,436 |
| 31 | 92,341,963 | 85,639,724 | 499,638 | 60,485 | 56,297 | 301,746 | 918,165 | - | 918,165 | 7,928,601 |
| 32 | 95,320,736 | 88,618,497 | 517,016 | 62,589 | 58,255 | 312,241 | 950,101 | - | 950,101 | 8,878,702 |
| 33 | 98,299,509 | 91,597,270 | 534,395 | 64,692 | 60,213 | 322,737 | 982,037 | - | 982,037 | 9,860,739 |
| 34 | 101,278,282 | 94,576,043 | 551,774 | 66,796 | 62,171 | 333,232 | 1,013,973 | - | 1,013,973 | 10,874,713 |
| 35 | 104,257,055 | 97,554,816 | 569,152 | 68,900 | 64,130 | 343,728 | 1,045,910 | - | 1,045,910 | 11,920,622 |
| 36 | 107,235,828 | 100,533,589 | 586,531 | 71,004 | 66,088 | 354,223 | 1,077,846 | - | 1,077,846 | 12,998,468 |
| 37 | 110,214,601 | 103,512,362 | 603,910 | 73,108 | 68,046 | 364,719 | 1,109,782 | - | 1,109,782 | 14,108,250 |
| 38 | 113,193,374 | 106,491,135 | 621,288 | 75,211 | 70,004 | 375,214 | 1,141,718 | - | 1,141,718 | 15,249,968 |
| 39 | 116,172,147 | 109,469,908 | 638,667 | 77,315 | 71,962 | 385,710 | 1,173,654 | - | 1,173,654 | 16,423,622 |
| 40 | 119,150,920 | 112,448,681 | 656,046 | 79,419 | 73,920 | 396,205 | 1,205,590 | - | 1,205,590 | 17,629,213 |
| 41 | 122,129,693 | 115,427,454 | 673,425 | 81,523 | 75,879 | 406,701 | 1,237,527 | - | 1,237,527 | 18,866,739 |
| 42 | 125,108,466 | 118,406,227 | 690,803 | 83,627 | 77,837 | 417,196 | 1,269,463 | - | 1,269,463 | 20,136,202 |
| 43 | 128,087,239 | 121,385,000 | 708,182 | 85,731 | 79,795 | 427,692 | 1,301,399 | - | 1,301,399 | 21,437,601 |
| 44 | 131,066,012 | 124,363,773 | 725,561 | 87,834 | 81,753 | 438,187 | 1,333,335 | - | 1,333,335 | 22,770,936 |
| 45 | 134,044,785 | 127,342,546 | 742,939 | 89,938 | 83,711 | 448,683 | 1,365,271 | - | 1,365,271 | 24,136,207 |
| 46 | 137,023,558 | 130,321,319 | 760,318 | 92,042 | 85,669 | 459,178 | 1,397,207 | - | 1,397,207 | 25,533,415 |
| 47 | 140,002,331 | 133,300,092 | 777,697 | 94,146 | 87,627 | 469,674 | 1,429,144 | - | 1,429,144 | 26,962,558 |
| 48 | 142,981,104 | 136,278,865 | 795,075 | 96,250 | 89,586 | 480,169 | 1,461,080 | - | 1,461,080 | 28,423,638 |
| 49 | 145,959,877 | 139,257,638 | 812,454 | 98,353 | 91,544 | 490,665 | 1,493,016 | - | 1,493,016 | 29,916,654 |
| 50 | 148,938,650 | 142,236,411 | 829,833 | 100,457 | 93,502 | 501,160 | 1,524,952 | - | 1,524,952 | 31,441,606 |
| 51 | 151,917,423 | 145,215,184 | 847,212 | 102,561 | 95,460 | 511,656 | 1,556,888 | - | 1,556,888 | 32,998,494 |
| 52 | 154,896,196 | 148,193,957 | 864,590 | 104,665 | 97,418 | 522,151 | 1,588,824 | - | 1,588,824 | 34,587,319 |
| 53 | 157,874,969 | 151,172,730 | 881,969 | 106,769 | 99,376 | 532,647 | 1,620,761 | - | 1,620,761 | 36,208,080 |
| 54 | 160,853,742 | 154,151,503 | 899,348 | 108,873 | 101,335 | 543,142 | 1,652,697 | - | 1,652,697 | 37,860,776 |
| 55 | 163,832,515 | 157,130,276 | 916,726 | 110,976 | 103,293 | 553,638 | 1,684,633 | - | 1,684,633 | 39,545,409 |
| 56 | 166,811,288 | 160,109,049 | 934,105 | 113,080 | 105,251 | 564,133 | 1,716,569 | - | 1,716,569 | 41,261,978 |
| 57 | 169,790,061 | 163,087,822 | 951,484 | 115,184 | 107,209 | 574,629 | 1,748,505 | - | 1,748,505 | 43,010,484 |
| 58 | 172,768,834 | 166,066,595 | 968,862 | 117,288 | 109,167 | 585,124 | 1,780,441 | - | 1,780,441 | 44,790,925 |
| 59 | 172,768,834 | 168,300,675 | 981,896 | 118,866 | 110,636 | 592,996 | 1,804,394 | - | 1,804,394 | 46,595,319 |
| 60 | 172,768,834 | 170,087,938 | 992,324 | 120,128 | 111,811 | 599,293 | 1,823,555 | - | 1,823,555 | 48,418,874 |
| 61 | 172,768,834 | 171,428,386 | 1,000,144 | 121,075 | 112,692 | 604,016 | 1,837,927 | - | 1,837,927 | 50,256,801 |
| 62 | 172,768,834 | 172,322,018 | 1,005,358 | 121,706 | 113,279 | 607,165 | 1,847,507 | - | 1,847,507 | 52,104,308 |
| 63 | 172,768,834 | 172,768,834 | 1,007,964 | 122,021 | 113,573 | 608,739 | 1,852,298 | - | 1,852,298 | 53,956,606 |

# APPENDIX F: Property Tax Revenue with Growth Option B

| Growth Option B | | | | | | | | | Total Levy | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Cumulative** | | **Property Taxes** | | | | | | Annual | Cumulative |
| | **Valuation** | **Taxable** | *General* | *Emp Bene* | *Transit* | *Debt Svc* | *Total* | | Surplus | Surplus |
| **Year** | **Added** | **Valuation** | 5.83418 | 0.70627 | 0.65737 | 3.52343 | 10.72125 | D/S | (Deficit) | (Deficit) |
| 1 | 4,658,510 | 1,164,628 | 6,795 | 823 | 766 | 4,103 | 12,486 | 289,000 | (276,514) | (276,514) |
| 2 | 9,317,020 | 3,028,032 | 17,666 | 2,139 | 1,991 | 10,669 | 32,464 | 289,000 | (256,536) | (533,049) |
| 3 | 13,975,530 | 5,590,212 | 32,614 | 3,948 | 3,675 | 19,697 | 59,934 | 289,000 | (229,066) | (762,115) |
| 4 | 18,634,040 | 8,851,169 | 51,639 | 6,251 | 5,818 | 31,186 | 94,896 | 289,000 | (194,104) | (956,220) |
| 5 | 23,292,550 | 12,810,903 | 74,741 | 9,048 | 8,422 | 45,138 | 137,349 | 289,000 | (151,651) | (1,107,871) |
| 6 | 27,951,060 | 17,469,413 | 101,920 | 12,338 | 11,484 | 61,552 | 187,294 | 289,000 | (101,706) | (1,209,577) |
| 7 | 32,609,570 | 22,127,923 | 129,098 | 15,628 | 14,546 | 77,966 | 237,239 | 289,000 | (51,761) | (1,261,338) |
| 8 | 37,268,080 | 26,786,433 | 156,277 | 18,918 | 17,609 | 94,380 | 287,184 | 289,000 | (1,816) | (1,263,154) |
| 9 | 41,926,590 | 31,444,943 | 183,455 | 22,209 | 20,671 | 110,794 | 337,129 | 289,000 | 48,129 | (1,215,025) |
| 10 | 46,585,100 | 36,103,453 | 210,634 | 25,499 | 23,733 | 127,208 | 387,074 | 289,000 | 98,074 | (1,116,951) |
| 11 | 51,243,610 | 40,761,963 | 237,813 | 28,789 | 26,796 | 143,622 | 437,019 | 289,000 | 148,019 | (968,932) |
| 12 | 55,902,120 | 45,420,473 | 264,991 | 32,079 | 29,858 | 160,036 | 486,964 | 289,000 | 197,964 | (770,967) |
| 13 | 60,560,630 | 50,078,983 | 292,170 | 35,369 | 32,920 | 176,450 | 536,909 | 289,000 | 247,909 | (523,058) |
| 14 | 65,219,140 | 54,737,493 | 319,348 | 38,659 | 35,983 | 192,864 | 586,854 | 289,000 | 297,854 | (225,204) |
| 15 | 69,877,650 | 59,396,003 | 346,527 | 41,950 | 39,045 | 209,278 | 636,799 | 289,000 | 347,799 | 122,596 |
| 16 | 74,536,160 | 64,054,513 | 373,706 | 45,240 | 42,108 | 225,692 | 686,744 | 289,000 | 397,744 | 520,340 |
| 17 | 79,194,670 | 68,713,023 | 400,884 | 48,530 | 45,170 | 242,106 | 736,689 | 289,000 | 447,689 | 968,030 |
| 18 | 83,853,180 | 73,371,533 | 428,063 | 51,820 | 48,232 | 258,519 | 786,635 | 289,000 | 497,635 | 1,465,664 |
| 19 | 88,511,690 | 78,030,043 | 455,241 | 55,110 | 51,295 | 274,933 | 836,580 | 289,000 | 547,580 | 2,013,244 |
| 20 | 93,170,200 | 82,688,553 | 482,420 | 58,400 | 54,357 | 291,347 | 886,525 | 289,000 | 597,525 | 2,610,768 |
| 21 | 97,828,710 | 87,347,063 | 509,598 | 61,691 | 57,419 | 307,761 | 936,470 | - | 936,470 | 3,547,238 |
| 22 | 102,487,220 | 92,005,573 | 536,777 | 64,981 | 60,482 | 324,175 | 986,415 | - | 986,415 | 4,533,653 |
| 23 | 107,145,730 | 96,664,083 | 563,956 | 68,271 | 63,544 | 340,589 | 1,036,360 | - | 1,036,360 | 5,570,013 |
| 24 | 111,804,240 | 101,322,593 | 591,134 | 71,561 | 66,606 | 357,003 | 1,086,305 | - | 1,086,305 | 6,656,318 |
| 25 | 116,462,750 | 105,981,103 | 618,313 | 74,851 | 69,669 | 373,417 | 1,136,250 | - | 1,136,250 | 7,792,567 |
| 26 | 121,121,260 | 110,639,613 | 645,491 | 78,141 | 72,731 | 389,831 | 1,186,195 | - | 1,186,195 | 8,978,762 |
| 27 | 125,779,770 | 115,298,123 | 672,670 | 81,432 | 75,794 | 406,245 | 1,236,140 | - | 1,236,140 | 10,214,902 |
| 28 | 130,438,280 | 119,956,633 | 699,849 | 84,722 | 78,856 | 422,659 | 1,286,085 | - | 1,286,085 | 11,500,987 |
| 29 | 135,096,790 | 124,615,143 | 727,027 | 88,012 | 81,918 | 439,073 | 1,336,030 | - | 1,336,030 | 12,837,018 |
| 30 | 139,755,300 | 129,273,653 | 754,206 | 91,302 | 84,981 | 455,487 | 1,385,975 | - | 1,385,975 | 14,222,993 |
| 31 | 144,413,810 | 133,932,163 | 781,384 | 94,592 | 88,043 | 471,901 | 1,435,920 | - | 1,435,920 | 15,658,913 |
| 32 | 149,072,320 | 138,590,673 | 808,563 | 97,882 | 91,105 | 488,315 | 1,485,865 | - | 1,485,865 | 17,144,778 |
| 33 | 153,730,830 | 143,249,183 | 835,742 | 101,173 | 94,168 | 504,728 | 1,535,810 | - | 1,535,810 | 18,680,588 |
| 34 | 158,389,340 | 147,907,693 | 862,920 | 104,463 | 97,230 | 521,142 | 1,585,755 | - | 1,585,755 | 20,266,344 |
| 35 | 163,047,850 | 152,566,203 | 890,099 | 107,753 | 100,292 | 537,556 | 1,635,700 | - | 1,635,700 | 21,902,044 |
| 36 | 167,706,360 | 157,224,713 | 917,277 | 111,043 | 103,355 | 553,970 | 1,685,645 | - | 1,685,645 | 23,587,690 |
| 37 | 172,364,870 | 161,883,223 | 944,456 | 114,333 | 106,417 | 570,384 | 1,735,590 | - | 1,735,590 | 25,323,280 |
| 38 | 172,364,870 | 165,377,105 | 964,840 | 116,801 | 108,714 | 582,695 | 1,773,049 | - | 1,773,049 | 27,096,329 |
| 39 | 172,364,870 | 168,172,211 | 981,147 | 118,775 | 110,551 | 592,543 | 1,803,016 | - | 1,803,016 | 28,899,346 |
| 40 | 172,364,870 | 170,268,541 | 993,377 | 120,256 | 111,929 | 599,929 | 1,825,492 | - | 1,825,492 | 30,724,837 |
| 41 | 172,364,870 | 171,666,094 | 1,001,531 | 121,243 | 112,848 | 604,853 | 1,840,475 | - | 1,840,475 | 32,565,312 |
| 42 | 172,364,870 | 172,364,870 | 1,005,608 | 121,736 | 113,307 | 607,316 | 1,847,967 | - | 1,847,967 | 34,413,279 |

# APPENDIX G: Property Tax Revenue with Growth Option C

Growth Option C

| Year | Cumulative Valuation Added | Taxable Valuation | Property Taxes General 5.83418 | Emp Bene 0.70627 | Transit 0.65737 | Debt Svc 3.52343 | Total 10.72125 | D/S | Total Levy Annual Surplus (Deficit) | Cumulative Surplus (Deficit) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5,823,864 | 1,455,966 | 8,494 | 1,028 | 957 | 5,130 | 15,610 | 289,000 | (273,390) | (273,390) |
| 2 | 11,647,728 | 3,785,512 | 22,085 | 2,674 | 2,488 | 13,338 | 40,585 | 289,000 | (248,415) | (521,805) |
| 3 | 17,471,592 | 6,988,637 | 40,773 | 4,936 | 4,594 | 24,624 | 74,927 | 289,000 | (214,073) | (735,878) |
| 4 | 23,295,456 | 11,065,342 | 64,557 | 7,815 | 7,274 | 38,988 | 118,634 | 289,000 | (170,366) | (906,244) |
| 5 | 29,119,320 | 16,015,626 | 93,438 | 11,311 | 10,528 | 56,430 | 171,708 | 289,000 | (117,292) | (1,023,536) |
| 6 | 34,943,184 | 21,839,490 | 127,416 | 15,425 | 14,357 | 76,950 | 234,147 | 289,000 | (54,853) | (1,078,389) |
| 7 | 40,767,048 | 27,663,354 | 161,393 | 19,538 | 18,185 | 97,470 | 296,586 | 289,000 | 7,586 | (1,070,804) |
| 8 | 46,590,912 | 33,487,218 | 195,370 | 23,651 | 22,013 | 117,990 | 359,025 | 289,000 | 70,025 | (1,000,779) |
| 9 | 52,414,776 | 39,311,082 | 229,348 | 27,764 | 25,842 | 138,510 | 421,464 | 289,000 | 132,464 | (868,315) |
| 10 | 58,238,640 | 45,134,946 | 263,325 | 31,877 | 29,670 | 159,030 | 483,903 | 289,000 | 194,903 | (673,412) |
| 11 | 64,062,504 | 50,958,810 | 297,303 | 35,991 | 33,499 | 179,550 | 546,342 | 289,000 | 257,342 | (416,070) |
| 12 | 69,886,368 | 56,782,674 | 331,280 | 40,104 | 37,327 | 200,070 | 608,781 | 289,000 | 319,781 | (96,288) |
| 13 | 75,710,232 | 62,606,538 | 365,258 | 44,217 | 41,156 | 220,590 | 671,220 | 289,000 | 382,220 | 285,932 |
| 14 | 81,534,096 | 68,430,402 | 399,235 | 48,330 | 44,984 | 241,110 | 733,659 | 289,000 | 444,659 | 730,591 |
| 15 | 87,357,960 | 74,254,266 | 433,213 | 52,444 | 48,813 | 261,630 | 796,099 | 289,000 | 507,099 | 1,237,690 |
| 16 | 93,181,824 | 80,078,130 | 467,190 | 56,557 | 52,641 | 282,150 | 858,538 | 289,000 | 569,538 | 1,807,227 |
| 17 | 99,005,688 | 85,901,994 | 501,168 | 60,670 | 56,469 | 302,670 | 920,977 | 289,000 | 631,977 | 2,439,204 |
| 18 | 104,829,552 | 91,725,858 | 535,145 | 64,783 | 60,298 | 323,190 | 983,416 | 289,000 | 694,416 | 3,133,620 |
| 19 | 110,653,416 | 97,549,722 | 569,123 | 68,896 | 64,126 | 343,710 | 1,045,855 | 289,000 | 756,855 | 3,890,475 |
| 20 | 116,477,280 | 103,373,586 | 603,100 | 73,010 | 67,955 | 364,230 | 1,108,294 | 289,000 | 819,294 | 4,709,769 |
| 21 | 122,301,144 | 109,197,450 | 637,078 | 77,123 | 71,783 | 384,750 | 1,170,733 | - | 1,170,733 | 5,880,502 |
| 22 | 128,125,008 | 115,021,314 | 671,055 | 81,236 | 75,612 | 405,270 | 1,233,172 | - | 1,233,172 | 7,113,675 |
| 23 | 133,948,872 | 120,845,178 | 705,033 | 85,349 | 79,440 | 425,790 | 1,295,611 | - | 1,295,611 | 8,409,286 |
| 24 | 139,772,736 | 126,669,042 | 739,010 | 89,463 | 83,268 | 446,310 | 1,358,050 | - | 1,358,050 | 9,767,336 |
| 25 | 145,596,600 | 132,492,906 | 772,987 | 93,576 | 87,097 | 466,829 | 1,420,490 | - | 1,420,490 | 11,187,826 |
| 26 | 151,420,464 | 138,316,770 | 806,965 | 97,689 | 90,925 | 487,349 | 1,482,929 | - | 1,482,929 | 12,670,755 |
| 27 | 157,244,328 | 144,140,634 | 840,942 | 101,802 | 94,754 | 507,869 | 1,545,368 | - | 1,545,368 | 14,216,122 |
| 28 | 163,068,192 | 149,964,498 | 874,920 | 105,915 | 98,582 | 528,389 | 1,607,807 | - | 1,607,807 | 15,823,929 |
| 29 | 168,892,056 | 155,788,362 | 908,897 | 110,029 | 102,411 | 548,909 | 1,670,246 | - | 1,670,246 | 17,494,175 |
| 30 | 168,892,056 | 160,156,260 | 934,380 | 113,114 | 105,282 | 564,299 | 1,717,075 | - | 1,717,075 | 19,211,251 |
| 31 | 168,892,056 | 163,650,578 | 954,767 | 115,581 | 107,579 | 576,611 | 1,754,539 | - | 1,754,539 | 20,965,789 |
| 32 | 168,892,056 | 166,271,317 | 970,057 | 117,432 | 109,302 | 585,845 | 1,782,636 | - | 1,782,636 | 22,748,426 |
| 33 | 168,892,056 | 168,018,476 | 980,250 | 118,666 | 110,450 | 592,001 | 1,801,368 | - | 1,801,368 | 24,549,794 |
| 34 | 168,892,056 | 168,892,056 | 985,347 | 119,283 | 111,025 | 595,079 | 1,810,734 | - | 1,810,734 | 26,360,528 |