

Pennsylvania State University Cost and Revenues of Residential Development Workbook [On-line]

Several assumptions were made when compiling build-out scenarios using the Cost & Revenues of Residential Development Workbook available on-line. The following describe the assumptions used to run the model and produce tables.

1. All units (houses) in all scenarios were assumed to be valued at the average sales price for homes in York County in 2002 according to York Adams Board of Realtors; \$130,374. Therefore, all future scenarios assume year 2002 revenues and dollar values. For example, no future scenario accounts for inflation, increased millage rates, or increased costs (for school district or Township).
2. The millage rate applied for schools was 16.51 and the millage rate for the Township was .80 for all scenarios.
3. The earned income rate applied to all scenarios was assumed to be .5% for the school district and .5% for the Township.
4. The workbook provided several statewide averages to be used in the model. The statewide average that were applied are presented in Table 1 Assumptions: Statewide Averages and included average income per household by number of bedrooms, average number of residents per unit, and average number of school aged residents per unit. These variables assist with estimating population increases and generation of earned income tax.

Table 1 Assumptions: Statewide Averages

Households by Bedroom Size	Average Income per Unit	Average Number of Residents per Unit	Average Number of School Aged Residents per Unit
1 bedroom	\$ 17,049	1.01	0.03
2 bedrooms	\$ 30,502	1.58	0.153
3 bedrooms	\$ 45,212	2.46	0.47
4 bedrooms	\$ 77,186	3.25	0.89
5 or more bedrooms	\$ 79,691	3.08	1.23

Source: Pennsylvania State University, Cost and Revenues of Residential Development Workbook
<http://cax.aers.psu.edu/residentialimpact/>

5. Program generated statewide average costs for roads, police services, government administration and other costs were applied in all scenarios. Township actual costs cannot be used in the Pennsylvania State University, Cost and Revenues of Residential Development program.
6. All scenarios are based on residential development and do not account for commercial, industrial or other types of development.
7. In any scenario, the model assumes no change in policy or taxation and assumes that land is available to accommodate projected development.

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8. The level of public services will remain unchanged, new service needs can be accommodated with existing infrastructure, each additional resident will generate the same level of costs as each existing resident currently generates.
9. Percentages applied to the total number of future units were based on 2000 percentages. Table 2 Percentages Applied to Households by Type of Household illustrates the percentages applied to the total units for 2012, 2025 and the maximum build-out under current zoning scenarios.

Table 2 Percentages Applied to Households by Type of Household

Households by Type of Household	York Township, York County, Pennsylvania	Current (2000) York Township Percentages
Total:	10,258	
No bedroom	46	0.4%
1 bedroom	1,137	11.1%
2 bedrooms	2,857	27.9%
3 bedrooms	4,377	42.7%
4 bedrooms	1,577	15.4%
5 or more bedrooms	264	2.6%

Source: United States Census Bureau 2000 SF1 data.

Refer to the “Interpreting Your Results” section provided at the end of each on-line scenario for more information about the on-line workbook’s use and limitations.

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Community Impact Analysis: Fiscal Analysis

As illustrated in Table A, the net fiscal impact of residential development on the township using the preferred future land uses yields \$5.8 million for 2012, \$5.9 for 2025 and \$16.0 million under a maximum build-out. Table A is the same as Table 28 Net Fiscal Impact on School District & Township in the main text.

Table A: Net Fiscal Impact on School District & Township

Net Impact	2003*	Preferred Future 2012	Preferred Future 2025	Maximum Build-out Current Zoning
School District				
1. Total New Revenues	\$ 3,125,927	\$18,392,248	\$18,813,866	\$ 50,760,799
2. Total New Costs	\$ 2,398,434	\$14,160,354	\$14,486,541	\$ 39,097,672
3. Net Impact on Dallastown Area School District	\$ 727,493	\$ 4,231,894	\$ 4,327,325	\$ 11,663,127
York Township				
4. Total New Revenues	\$ 892,385	\$ 5,245,820	\$ 5,367,056	\$ 14,476,558
5. Total New Costs	\$ 627,618	\$ 3,690,422	\$ 3,775,834	\$ 10,184,566
6. Net Impact on Township	\$ 264,767	\$ 1,555,398	\$ 1,591,222	\$ 4,291,992
7. Net Fiscal Impact from The Development	\$ 992,260	\$ 5,787,292	\$ 5,918,547	\$ 15,955,119

*Based on the PSU model using 2000 Census Data as the base level input.

Source: Penn State Cooperative Extension Program, Cost and Revenues of Residential Development Workbook [On-line] using York Township inputs as described in Appendix C Cost and Revenues of Residential Development. Table 28 in the Comprehensive Plan.

Some limitations of the model include using statewide averages for income, persons per unit, and average school age persons per unit. Other limitation include applying statewide average costs for roads, police services, government administration and other costs to all scenarios, all scenarios are based on residential development and do not account for commercial, industrial or other types of development. The model assumes that the current level of public services will remain unchanged, new service needs can be accommodated with existing infrastructure, each additional resident will generate the same level of costs and revenue as each existing resident currently generates.

Table B: Approximate New Road Construction Costs

New Road Feature	Linear Distance (feet)	Width (feet)	Number Per Mile	Cost	Approximate Total Cost per Mile
New Road Construction*	5,280	32	NA	\$ 4.81	\$ 812,698
New Structure (Bridge) Construction*	20	32	4	\$ 175.00	\$ 448,000
Water Service (Main Lines)	5,280	NA	NA	\$ 25.00	\$ 132,000
Sewer Service (Main Lines)	5,280	NA	NA	\$ 45.00	\$ 237,600
Sewer Service (Man-holes)**	5,280	NA	21	\$ 900.00	\$ 226,286
Total	1 Mile	Two - lanes			\$ 1,856,583

*Approximate Cost per Square Foot, includes materials plus overhead and labor cost estimates.

**One every 250 feet

Source: York Township, JMT.

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A new one mile, 32 foot wide road costs approximately \$1.9 million to build, as illustrated in Table B. One twenty-foot long by 32 foot wide bridge costs approximately \$112,000 to build. A twenty foot structure is the defining point according to AASHTO (American Association of State Highway and Transportation Officials) standards between a culvert and a bridge. The cost of bridges, presuming four twenty-foot bridges per one mile (a total of eighty feet of bridge) equates to approximately \$448,000. New road construction costs approximately \$4.81 per square foot, while a new bridge costs approximately \$175 per square foot.

One mile of water service along the new one mile of road will cost approximately \$132,000 to install. One mile of new sewer service along the new mile of road will cost approximately \$237,600 to install plus approximately \$18,900 for the manholes (presuming one man-hole per every 250 feet).

As illustrated in Table C, one mile of rehabilitation, installation of sewer or water service, or bridge reconstruction cost approximately \$1.3 million. The increased cost for water and sewer service includes added approximate excavation costs.

Table C: Approximate Existing Road Rehabilitation Costs

Existing Road Feature	Linear Distance (feet)	Width (feet)	Number Per Mile	Cost	Approximate Total Cost per Mile
Resurface Existing Road*	5,280	32	NA	\$ 1.22	\$ 206,131
Existing Structure (Bridge) Rehabilitation*	20	32	4	\$ 100.00	\$ 256,000
Water Service (Main Lines Update)	5,280	NA	NA	\$ 65.00	\$ 343,200
Sewer Service (Main Lines Update)	5,280	NA	NA	\$ 65.00	\$ 343,200
Sewer Service (Man-holes) Repair**	5,280	NA	21	\$ 500.00	\$ 125,714
Total	1 Mile	Two - lanes			\$ 1,274,245

*Approximate Cost per Square Foot, includes materials plus overhead and labor cost estimates.

**One every 250 feet

Source: York Township, JMT.

Several other costs not included in estimates that increase overall costs of construction include design costs, roadway drainage costs, property acquisition costs, environmental mitigation costs and unknowns. Design costs range from ten to twenty percent of total costs, drainage costs vary depending on topography and design, property acquisition costs depend on several factors including current land use, future land use and location. Environmental mitigation costs may include wetlands creation, monitoring wells, and impact assessments or statements. Unknown factors are those factors not anticipated that are discovered during construction or rehabilitation and can include archeological discovery, karsts or limestone geology, structures being in poorer condition than anticipated, and material availability and cost fluctuations.

Table D illustrates several estimates concerning providing services to citizens of the township. The table estimates, for 2002 the per capita expenditure to provide police and fire services based on the budgeted amount of municipal funding to provide the services divided by the total population of the township. Future expenditure for services is calculated by multiplying the calculated 2002 per capita expenditure by the total projected

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population. Based on 2002 per capita expenditure the estimated expenditure to provide police and fire services in 2012 is approximately \$3.5 million, 2025 is approximately \$3.6 million and under a maximum build-out approximately \$5.7 million. The estimates are based on 2002 dollars and assume no change in current police and fire services, or costs to provide police and fire services, or change in the Township's current commitment to receive these services.

Table D: Estimated Municipal Expenditure to Provide Police and Fire Services

Service	2002	2002	Estimated Expenditure to Provide Services for 2012 Population	Estimated Expenditure to Provide Services for 2025 Population	Estimated Expenditure to Provide Services for Maximum Build-out Population
	Budgeted Amount	Calculated Per Capita Expenditure to Provide Service			
Police	\$ 1,881,847	\$ 80	\$ 2,713,181	\$ 2,734,677	\$ 4,347,586
Fire	\$ 577,289	\$ 24	\$ 832,315	\$ 838,909	\$ 1,333,697
Total	\$ 2,459,136	\$ 104	\$ 3,545,496	\$ 3,573,586	\$ 5,681,284
Population*	23,637	NA	34,079	34,349	54,608

*2000 Census Population and projected populations based on Future Land Use Scenarios.

Source: York Township 2001 Budget Report, United States Census.

Fire service is currently provided entirely by a volunteer service. Current trends both locally and nationally reflect a decrease in volunteers to provide the service and at some future point, the township will be forced to provide a paid fire service at a much higher per capita cost. The increase in population will also play a roll in requiring the paid service.