

Technical Appendix:

Fiscal Impact Tool

Description of the Fiscal Impact Tool (FIT)

The purpose of the Fiscal Impact Tool (FIT) is to quantify the short- and long-term changes in revenue and spending associated with municipal services, environmental protection, economic development, transportation, and infrastructure. A very real challenge for regional modeling efforts is that many projects and services are paid for on the local level, and in any given scenario, some communities may see more success than others. For this reason, the fiscal impact analysis must ultimately tell a regional story that underscores the collective gains of multi-jurisdictional cooperation.

The FIT is a spreadsheet that interfaces with the Scenario Spreadsheet¹⁷ outputs. It is modeled after the Federal Reserve Board's "Fiscal Impact Tool." It includes FIPS-driven fiscal lookup tables for the entire U.S. It circumvents irregularities of local budget reporting and makes fiscal analysis efficient and standardized. The inputs include local tax rates and municipal population as well as scenario outputs relating to population, employment, and the property value of new construction. The application uses this information to calculate both projected future revenue and increases to per capita operations and maintenance costs. The ratio of total revenues and total costs allows users to compare current conditions and multiple future development scenarios.

Linkages between Envision Tomorrow and the FIT

The fiscal impact of a scenario is broadly determined by two categories: development location and Development Type. Locational factors include a differentiation in taxing structures in incorporated versus unincorporated areas, presence of existing infrastructure, and the value of existing structures in a given area. The revenues and expenditures created by development in unincorporated areas can vary dramatically from those impacts from development within municipal boundaries, thus the FIT draws a hard line between the two. Users of the tool are prompted to adjust the share of revenue attributed to the county and the share of ongoing expenditures borne by it. Moreover, a distinction is made between

¹⁷ See Envision Tomorrow Software at the beginning of the Scenario Modeling Process section of the Technical Appendix for a description of the Scenario Spreadsheet and other model components.

the costs of redevelopment versus greenfield development. Costs are assumed to be higher on undeveloped land as greater infrastructure investments would likely have to occur. In order to account for the loss of existing tax base through abandonment or redevelopment, the approximate value of existing structures is tracked when a user “paints” over them. While locational factors can tell us a lot about the costs of developing in a certain area, they only give us half the picture.

The style of development, i.e. what Development Type is painted, also plays a significant role in fiscal impact. Those engaged in local public finance know that there can be vast differences in the revenues and expenditures resulting from different styles of construction. Single-family subdivisions rarely yield as much revenue as denser multi-family housing, and expenditure considerations can differ between office, industrial, and retail uses. A range of Development Type attributes are tracked in Envision Tomorrow and are then fed into the FIT. Information related to the new population being added to a scenario, the value of all new construction, and the cost of providing new infrastructure are unique to each Development Type.

The FIT spreadsheet is linked to the Envision Tomorrow Scenario spreadsheet so that when a user paints a Development Type, the fiscal impact of that Development Type is seen immediately. The user can also track individual input variables in order to gain a better understanding of the unique fiscal conditions that are influencing model outputs.

The Fiscal Impact Tool relies on the following outputs from Envision Tomorrow:

- Population
- Development Mix (Sq. Ft.) – Based on Building Types
 - Residential
 - Retail
 - Office
 - Industrial
 - Public/Civic
 - Educational
 - Hotel/Hospitality
- Employment Mix – Based on Development Type density and employment mix
 - Retail
 - Office
 - Industrial
 - Public/Civic
 - Educational
 - Hotel/Hospitality
- Housing Units – based on Development Type density and housing mix
- Project Value - based on Building Types
 - Residential
 - Commercial
- Infrastructure Costs – based on streets assumptions for each Development Type
 - Roads
 - Water Lines
 - Sewer Lines

Tool Customizations

Functional Population

In order to assess the impact of population and activity increases in an area, it is not adequate to simply consider new residential population or even residents plus workers. Rather, it is important to take into consideration the variable demands that different resident and employment groups make on local infrastructure based on their commute and travel habits. The FIT uses a method called “functional population” to rationally attribute demand by land use and estimate aggregate demand for a community. Functional population is the equivalent number of people occupying a space within a community on a 24-hour-per-day, seven-day-per-week basis.

Scenario Ramp-up

It is not within the scope of the FIT to make assumptions as to when exactly within the scenario horizon development will take place. This is an important factor to consider as it impacts the net present valuation of development. In the absence of more nuanced assumptions, a smooth ramp-up of scenario expenditures and revenues was assumed - for example, 3.3% per year over a period of 30 years.

Variable Tax Rates

The issue of varying tax structures across jurisdictions was not approached lightly. Each scenario was modeled at the county-aggregate level. This means that the complete fiscal impact of each scenario was considered for the county as a whole – including cities, villages, townships, and special districts. Very early on, the Project Team encountered the issue of reporting the varying tax rates of many different jurisdictions as one value. Since the model only allows for a single county and municipal rate for each tax category (sales, income, and property), a weighted average method was used.

In addition to county-level data provided through the 2010 Census of Governments, the Project Team used publicly-available data from the following sources:

- State Auditor of Ohio – Summarized 2011 annual financial data for all jurisdictions
- Ohio Department of Taxation – Sales tax and property tax rates for all jurisdictions
- Assessor’s Data– Assessed land and building valuation at the parcel level as an input to property tax calculations
- Longitudinal Employer-Household Dynamics Data (census)– Counts of employment by location as an input to municipal income tax calculations

Data from these sources was used to establish a thorough database of tax rates, revenues, and expenditures for every jurisdiction in the region. These were then weighted by population to create weighted tax rates for the municipalities in each county.

Income Tax

One major difference between different jurisdictional types in Northeast Ohio is that unincorporated areas do not collect income tax. As a result, the Project Team made the assumption that any scenario development occurring outside existing city or village boundaries would not be subject to income tax collection. As a proxy for this, the Project Team used the municipal population ratio – the ratio of residents residing in incorporated areas to those residing in unincorporated areas – and assumed that this ratio would remain constant into the future. This ratio was then used to create an effective income tax rate, weighted by population.

Future income tax revenue was projected as follows:

- [annual average wage by sector] x [scenario employment by sector] x [weighted average income tax rate]
- Weighted average based on municipal population ratio – incorporated versus unincorporated population in county

Sales Tax

Sales tax revenue was calculated based on the total payroll in each scenario, an assumption about the percentage of consumer dollars spent subject to sales tax, and an assumption about the amount of sales tax leakage out of each county. This led us to calculate future sales tax revenue as follows:

- Annual sales tax revenue = [Total payroll in scenario] x [Sales Tax Rate] x [% consumer dollars spent subject to sales tax] - [Leakage out of county]
- Leakage out of county was based on workers working in the county but living elsewhere
- Payroll based on County Business Patterns (CBP) data and scenario employment by sector

Property Tax

Given the variable millage rates for commercial and residential property, the Project Team broke out future property tax revenue projections accordingly. Assessment ratios, based on local research, were set at 35% for all property types. Again, a weighted average was used to account for the variability in millage rates between different jurisdictions. Future property tax revenue was calculated as follows:

- Annual scenario property tax revenue = [market value of scenario construction] x [millage rate] x [assessment ratio]

Capital Outlays

Envision Tomorrow tracks capital outlays for new infrastructure in the following categories:

- Roads – lane miles of new roadway
- Utilities – miles of overhead electric
- Water/Sewerage – linear feet of pipe

Each Development Type has associated road lane miles per vacant acre assumptions. The utility, water, and sewerage factors listed above increase proportionally with miles of new roadway. Assumptions were made for each Development Type as to the percentage of new roads built within that Development Type that would likely be publicly financed. These assumptions were made based on the experience of local developers and the Project Team.

Road Financing by Development Type	
Development Type	% Publicly Financed
Downtown Commercial Core	100%
Business / Commerce District	100%
Transit Oriented District	100%
Medical / Institutional Center	65%
Western Reserve Town Center	100%
University / College Town District	85%
New Town Center	75%
Neighborhood Main Street	100%
Arterial Commercial District	100%
Lifestyle Center / Mall District	50%
Corporate Campus	75%
Light Industrial Business Park	95%
Heavy Industrial Development	95%
Downtown Residential Neighborhood	100%
Suburban Multi-Family Neighborhood	75%
Senior Living Community	75%
Mixed-Income Neighborhood	75%
Compact Residential Neighborhood	85%
Suburban Subdivision	75%
Rural Residential Development	90%

Capital outlays from the FIT are extremely sensitive to the per mile and lane-mile costs associated with different infrastructure types. These cost figures are also notoriously difficult to track down as they vary based on location, time of year, and terrain. The table below lists the Project Team’s assumptions:

New Infrastructure Capital Costs	Unit	Cost
New Roadway	Lane Mile	\$ 1,700,000
Streetscape	Linear Foot	\$ -
Sewerage	Linear Foot	\$ 100
Utilities - above-ground	Mile	\$ 600,000
Water Lines	Linear Foot	\$ 227

Data sources: Department of Public Works, Baltimore, MD; Arkansas DOT; Department of Public Works, Ipswich, MA; Western Massachusetts Electric Company

Operations and Maintenance

Baseline assumptions for operations and maintenance (O&M) costs come from the Census of Governments (2010) data that resides in the FIT. These baseline assumptions for total O&M costs are tracked in the following expenditure categories:

- Education
- Hospitals
- Roads
- Police
- Fire
- Parks
- Sewerage
- Solid Waste
- Utilities

For each of the above expenditure categories, the total expenditure is divided by the functional population residing within the county to produce a “per functional capita” effective expenditure rate. Future O&M is assumed unchanged unless there is an increase in the yearly capital expenditure associated with a given O&M category. This is based on the broad assumption that increases in the size and complexity of built infrastructure will inherently increase maintenance costs. For example, if average yearly capital outlay for utilities increases over the scenario horizon, then there will be a proportionate increase in O&M costs for utilities. Future O&M is calculated as follows for each expenditure category:

- $\text{Future per capita O\&M} = [\text{Baseline per capita O\&M}] \times [\% \text{ change in average annual capital outlay}]$

Select List of FIT Model Outputs

30-Year Cost-to-Revenue Ratio	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-3.14%	-24.80%	-22.29%	-0.75%	-3.86%
Cuyahoga	1.39%	-60.43%	15.09%	15.78%	24.14%
Geauga	-1.12%	-23.47%	-33.20%	-1.52%	-13.77%
Lake	-3.21%	-32.31%	-11.53%	1.70%	2.34%
Lorain	1.61%	-13.06%	-3.84%	8.93%	9.94%
Mahoning	-1.80%	-69.85%	-6.31%	9.50%	4.84%
Medina	6.10%	-22.53%	-26.85%	12.06%	6.81%
Portage	-3.59%	-13.61%	-19.54%	-4.76%	-4.17%
Stark	0.82%	-28.04%	-10.14%	10.20%	6.23%
Summit	-3.58%	-15.31%	3.43%	7.79%	9.95%
Trumbull	-6.63%	-69.98%	-6.12%	8.58%	22.11%
Wayne	-5.05%	-17.06%	-13.91%	-2.55%	0.86%
Region	-0.34%	-33.68%	-6.39%	10.40%	13.79%
Ashtabula - Trumbull - Mahoning	-3.94%	-60.08%	-11.00%	7.49%	9.12%
Wayne - Summit - Portage - Stark	-2.64%	-17.90%	-3.83%	14.48%	21.58%
Cuyahoga - Lorain - Lake - Geauga - Medina	1.25%	-38.97%	-8.06%	9.71%	12.74%
30-Year Total Revenue	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 316,299,000	\$ 324,650,804.26	\$ 346,858,911.52	\$ 320,229,634.32	\$ 341,016,122.00
Cuyahoga	\$ 8,797,812,000	\$ 8,660,084,297	\$ 8,994,185,093	\$ 8,909,568,807	\$ 9,388,208,923
Geauga	\$ 246,184,000	\$ 272,371,186	\$ 290,686,491	\$ 249,691,494	\$ 261,899,217
Lake	\$ 916,539,000	\$ 940,435,353	\$ 1,026,882,094	\$ 931,574,954	\$ 981,611,750
Lorain	\$ 1,292,333,000	\$ 1,374,183,905	\$ 1,455,091,779	\$ 1,311,081,287	\$ 1,388,102,971
Mahoning	\$ 830,147,000	\$ 817,979,246	\$ 872,003,057	\$ 847,284,382	\$ 901,072,818
Medina	\$ 674,417,000	\$ 816,036,453	\$ 881,979,520	\$ 682,356,084	\$ 718,541,836
Portage	\$ 634,379,000	\$ 682,853,972	\$ 725,383,354	\$ 641,049,511	\$ 673,401,752
Stark	\$ 1,261,698,000	\$ 1,293,581,528	\$ 1,383,411,966	\$ 1,284,606,527	\$ 1,366,125,855
Summit	\$ 2,524,238,000	\$ 2,652,985,105	\$ 2,821,605,288	\$ 2,562,741,562	\$ 2,713,884,877
Trumbull	\$ 720,774,000	\$ 708,385,922	\$ 744,694,586	\$ 734,279,807	\$ 779,364,492
Wayne	\$ 487,158,000	\$ 513,484,614	\$ 539,989,802	\$ 493,102,450	\$ 514,696,709
Region	\$ 18,701,978,000	\$ 19,057,032,383	\$ 20,082,771,941	\$ 18,967,566,500	\$ 20,027,927,322
Ashtabula - Trumbull - Mahoning	\$ 1,867,220,000	\$ 1,851,015,972	\$ 1,963,556,555	\$ 1,901,793,823	\$ 2,021,453,432
Wayne - Summit - Portage - Stark	\$ 4,907,473,000	\$ 5,142,905,218	\$ 5,470,390,410	\$ 4,981,500,050	\$ 5,268,109,193
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 11,927,285,000	\$ 12,063,111,194	\$ 12,648,824,976	\$ 12,084,272,626	\$ 12,738,364,697
30-Year Total Expenditure	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 326,548,000	\$ 340,789,015.24	\$ 368,558,567.77	\$ 330,246,458.75	\$ 352,339,420.01
Cuyahoga	\$ 8,677,047,000	\$ 8,780,888,888	\$ 8,813,234,864	\$ 8,737,643,321	\$ 9,099,642,859
Geauga	\$ 248,976,000	\$ 285,618,962	\$ 319,583,671	\$ 252,571,251	\$ 268,419,151
Lake	\$ 946,956,000	\$ 995,825,008	\$ 1,074,640,863	\$ 960,215,808	\$ 1,008,832,621
Lorain	\$ 1,271,888,000	\$ 1,373,181,726	\$ 1,443,558,533	\$ 1,286,247,404	\$ 1,355,782,553
Mahoning	\$ 845,362,000	\$ 868,609,851	\$ 891,396,631	\$ 858,105,633	\$ 911,224,873
Medina	\$ 635,622,000	\$ 826,249,236	\$ 928,920,620	\$ 641,581,476	\$ 676,791,554
Portage	\$ 658,021,000	\$ 716,679,224	\$ 775,471,953	\$ 665,293,968	\$ 698,876,075
Stark	\$ 1,251,413,000	\$ 1,312,450,913	\$ 1,391,940,401	\$ 1,268,648,791	\$ 1,347,595,956
Summit	\$ 2,617,998,000	\$ 2,782,103,712	\$ 2,899,601,121	\$ 2,644,510,795	\$ 2,779,750,098
Trumbull	\$ 771,981,000	\$ 785,009,326	\$ 797,319,698	\$ 780,813,494	\$ 813,907,876
Wayne	\$ 513,052,000	\$ 547,270,500	\$ 576,180,186	\$ 518,714,894	\$ 539,355,138
Region	\$ 18,764,864,000	\$ 19,614,676,361	\$ 20,280,407,108	\$ 18,944,593,296	\$ 19,852,518,174
Ashtabula - Trumbull - Mahoning	\$ 1,943,891,000	\$ 1,994,408,192	\$ 2,057,274,897	\$ 1,969,165,586	\$ 2,077,472,169
Wayne - Summit - Portage - Stark	\$ 5,040,484,000	\$ 5,358,504,349	\$ 5,643,193,661	\$ 5,097,168,448	\$ 5,365,577,267
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 11,780,489,000	\$ 12,261,763,820	\$ 12,579,938,550	\$ 11,878,259,262	\$ 12,409,468,738

New Road Lane Miles Constructed - Publicly Funded	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-	60.3	187.3	14.6	62.3
Cuyahoga	-	216.2	560.1	146.0	606.7
Geauga	-	196.9	349.0	19.5	66.1
Lake	-	294.7	543.9	59.1	190.0
Lorain	-	338.6	592.9	60.5	236.3
Mahoning	-	97.3	332.5	68.8	180.7
Medina	-	678.6	970.1	21.7	104.2
Portage	-	266.6	472.3	24.8	117.9
Stark	-	245.7	635.3	95.5	289.2
Summit	-	501.6	900.0	91.6	332.9
Trumbull	-	59.0	173.0	44.6	147.0
Wayne	-	138.3	255.5	35.3	89.7
Region	-	3,093.7	5,971.8	682.0	2,422.8
Ashtabula - Trumbull - Mahoning	\$ -	\$ 217	\$ 693	\$ 128	\$ 390
Wayne - Summit - Portage - Stark	\$ -	\$ 1,152	\$ 2,263	\$ 247	\$ 830
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ -	\$ 1,725	\$ 3,016	\$ 307	\$ 1,203
Average Annual Property Tax Revenue per Household	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 1,768.79	\$ 2,029.53	\$ 2,275.94	\$ 1,908.43	\$ 2,076.62
Cuyahoga	\$ 2,837.23	\$ 3,338.46	\$ 3,355.75	\$ 3,023.36	\$ 3,381.22
Geauga	\$ 3,162.28	\$ 3,706.15	\$ 3,933.72	\$ 3,743.58	\$ 3,518.72
Lake	\$ 2,643.44	\$ 3,149.55	\$ 3,301.64	\$ 2,860.40	\$ 3,050.67
Lorain	\$ 2,124.41	\$ 2,776.93	\$ 2,983.99	\$ 2,296.97	\$ 2,593.04
Mahoning	\$ 1,664.93	\$ 2,081.94	\$ 2,399.74	\$ 1,890.38	\$ 2,078.18
Medina	\$ 3,012.18	\$ 3,740.36	\$ 3,852.29	\$ 3,104.71	\$ 3,202.30
Portage	\$ 2,343.20	\$ 2,805.48	\$ 2,998.51	\$ 2,480.05	\$ 2,691.04
Stark	\$ 2,025.96	\$ 2,429.62	\$ 2,735.22	\$ 2,188.23	\$ 2,467.01
Summit	\$ 2,426.85	\$ 3,038.40	\$ 3,302.39	\$ 2,614.01	\$ 2,877.29
Trumbull	\$ 1,759.37	\$ 2,093.96	\$ 2,257.79	\$ 1,955.62	\$ 2,188.64
Wayne	\$ 1,790.01	\$ 2,247.54	\$ 2,453.41	\$ 1,922.06	\$ 2,115.16
Region	\$ 2,434.03	\$ 2,952.01	\$ 3,114.90	\$ 2,621.45	\$ 2,882.18
Ashtabula - Trumbull - Mahoning	\$ 1,723	\$ 2,076	\$ 2,317	\$ 1,920	\$ 2,122
Wayne - Summit - Portage - Stark	\$ 2,225	\$ 2,738	\$ 3,001	\$ 2,391	\$ 2,650
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 2,745	\$ 3,287	\$ 3,372	\$ 2,937	\$ 3,228
Average Per Capita Yearly Road O&M	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 69	\$ 123	\$ 236	\$ 82	\$ 127
Cuyahoga	\$ 75	\$ 91	\$ 117	\$ 84	\$ 118
Geauga	\$ 33	\$ 112	\$ 179	\$ 41	\$ 62
Lake	\$ 129	\$ 319	\$ 490	\$ 167	\$ 258
Lorain	\$ 73	\$ 181	\$ 265	\$ 91	\$ 156
Mahoning	\$ 22	\$ 32	\$ 61	\$ 29	\$ 43
Medina	\$ 50	\$ 298	\$ 406	\$ 58	\$ 88
Portage	\$ 48	\$ 146	\$ 231	\$ 62	\$ 95
Stark	\$ 38	\$ 69	\$ 119	\$ 49	\$ 74
Summit	\$ 40	\$ 85	\$ 122	\$ 48	\$ 69
Trumbull	\$ 39	\$ 55	\$ 85	\$ 52	\$ 77
Wayne	\$ 50	\$ 133	\$ 196	\$ 68	\$ 101
Region	\$ 60	\$ 127	\$ 186	\$ 72	\$ 107
Ashtabula - Trumbull - Mahoning	\$ 38	\$ 61	\$ 107	\$ 48	\$ 72
Wayne - Summit - Portage - Stark	\$ 41	\$ 93	\$ 143	\$ 52	\$ 77
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 77	\$ 157	\$ 223	\$ 91	\$ 134

Average Per Capita Yearly Utility O&M	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 133	\$ 155	\$ 200	\$ 138	\$ 159
Cuyahoga	\$ 95	\$ 97	\$ 102	\$ 96	\$ 102
Geauga	\$ 78	\$ 141	\$ 197	\$ 84	\$ 101
Lake	\$ 145	\$ 182	\$ 214	\$ 152	\$ 172
Lorain	\$ 233	\$ 274	\$ 309	\$ 240	\$ 265
Mahoning	\$ 281	\$ 296	\$ 334	\$ 292	\$ 311
Medina	\$ 351	\$ 494	\$ 557	\$ 356	\$ 375
Portage	\$ 125	\$ 174	\$ 214	\$ 133	\$ 150
Stark	\$ 131	\$ 152	\$ 184	\$ 138	\$ 156
Summit	\$ 324	\$ 358	\$ 386	\$ 330	\$ 346
Trumbull	\$ 396	\$ 408	\$ 431	\$ 405	\$ 426
Wayne	\$ 346	\$ 396	\$ 435	\$ 357	\$ 377
Region	\$ 194	\$ 235	\$ 263	\$ 199	\$ 214
Ashtabula - Trumbull - Mahoning	\$ 299	\$ 311	\$ 345	\$ 309	\$ 329
Wayne - Summit - Portage - Stark	\$ 240	\$ 274	\$ 306	\$ 246	\$ 263
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 137	\$ 183	\$ 206	\$ 141	\$ 153
Average Per Capita Yearly Sewerage O&M	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	\$ 21	\$ 27	\$ 40	\$ 22	\$ 28
Cuyahoga	\$ 163	\$ 165	\$ 168	\$ 164	\$ 168
Geauga	\$ 0	\$ 20	\$ 38	\$ 2	\$ 8
Lake	\$ 99	\$ 111	\$ 121	\$ 101	\$ 107
Lorain	\$ 111	\$ 122	\$ 135	\$ 113	\$ 122
Mahoning	\$ 181	\$ 186	\$ 198	\$ 185	\$ 190
Medina	\$ 110	\$ 154	\$ 174	\$ 111	\$ 117
Portage	\$ 116	\$ 133	\$ 147	\$ 118	\$ 124
Stark	\$ 121	\$ 129	\$ 140	\$ 124	\$ 129
Summit	\$ 146	\$ 156	\$ 165	\$ 147	\$ 152
Trumbull	\$ 118	\$ 122	\$ 130	\$ 121	\$ 126
Wayne	\$ 71	\$ 85	\$ 95	\$ 74	\$ 79
Region	\$ 132	\$ 139	\$ 149	\$ 134	\$ 139
Ashtabula - Trumbull - Mahoning	\$ 125	\$ 126	\$ 138	\$ 129	\$ 135
Wayne - Summit - Portage - Stark	\$ 127	\$ 137	\$ 148	\$ 129	\$ 135
Cuyahoga - Lorain - Lake - Geauga - Medina	\$ 139	\$ 144	\$ 151	\$ 141	\$ 145
Average Increase in Annual Tax Burden Increase per Household	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-	55%	167%	13%	54%
Cuyahoga	-	6%	17%	3%	2%
Geauga	-	214%	397%	22%	72%
Lake	-	76%	143%	15%	43%
Lorain	-	51%	94%	9%	25%
Mahoning	-	14%	49%	10%	22%
Medina	-	152%	218%	5%	19%
Portage	-	90%	165%	13%	36%
Stark	-	34%	87%	12%	30%
Summit	-	31%	57%	5%	14%
Trumbull	-	11%	31%	8%	19%
Wayne	-	52%	92%	11%	24%
Region	-	45%	84%	8%	19%
Ashtabula - Trumbull - Mahoning		21%	67%	10%	27%
Wayne - Summit - Portage - Stark		41%	84%	9%	23%
Cuyahoga - Lorain - Lake - Geauga - Medina		48%	86%	6%	14%

Total Capital Cost of New Development (30 year total)	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-	\$ 194,163,537	\$ 596,450,176	\$ 46,115,172	\$ 197,698,905
Cuyahoga	-	\$ 815,738,676	\$ 2,227,492,449	\$ 455,240,959	\$ 2,155,797,111
Geauga	-	\$ 595,886,556	\$ 1,102,220,788	\$ 60,511,632	\$ 207,621,202
Lake	-	\$ 913,226,395	\$ 1,694,988,784	\$ 211,284,257	\$ 625,345,519
Lorain	-	\$ 1,122,872,000	\$ 2,103,606,314	\$ 208,557,585	\$ 914,381,417
Mahoning	-	\$ 306,355,787	\$ 1,107,281,533	\$ 212,549,955	\$ 570,406,377
Medina	-	\$ 2,221,974,077	\$ 3,194,760,694	\$ 73,240,495	\$ 332,405,138
Portage	-	\$ 826,765,853	\$ 1,513,129,239	\$ 120,846,795	\$ 376,972,759
Stark	-	\$ 800,816,737	\$ 2,083,359,454	\$ 285,562,944	\$ 901,047,800
Summit	-	\$ 1,669,334,927	\$ 3,057,326,578	\$ 292,544,340	\$ 1,069,012,907
Trumbull	-	\$ 207,615,670	\$ 610,932,680	\$ 157,302,919	\$ 484,316,389
Wayne	-	\$ 498,844,913	\$ 877,169,206	\$ 107,932,229	\$ 297,629,905
Region	-	\$ 10,173,595,128	\$ 20,168,717,897	\$ 2,231,689,281	\$ 8,132,635,427
Ashtabula - Trumbull - Mahoning	-	\$ 708,134,993	\$ 2,314,664,389	\$ 415,968,046	\$ 1,252,421,671
Wayne - Summit - Portage - Stark	-	\$ 3,795,762,431	\$ 7,530,984,478	\$ 806,886,308	\$ 2,644,663,370
Cuyahoga - Lorain - Lake - Geauga - Medina	-	\$ 5,669,697,705	\$ 10,323,069,029	\$ 1,008,834,927	\$ 4,235,550,386
Annual O&M for New Dev in 2040 (full build-out)	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-	\$ 30,675,023	\$ 86,877,385	\$ 8,535,406	\$ 76,057,390
Cuyahoga	-	\$ 280,822,905	\$ 221,384,852	\$ 160,297,857	\$ 1,282,302,338
Geauga	-	\$ 66,299,666	\$ 132,672,713	\$ 6,312,382	\$ 50,097,883
Lake	-	\$ 142,325,011	\$ 267,477,132	\$ 23,285,587	\$ 156,672,199
Lorain	-	\$ 241,346,562	\$ 381,882,536	\$ 27,811,723	\$ 205,837,826
Mahoning	-	\$ 49,254,262	\$ 33,223,419	\$ 20,858,536	\$ 175,998,688
Medina	-	\$ 431,221,454	\$ 690,134,573	\$ 12,969,338	\$ 113,206,367
Portage	-	\$ 116,844,086	\$ 251,134,944	\$ 12,204,452	\$ 107,767,291
Stark	-	\$ 130,244,202	\$ 267,868,899	\$ 28,791,456	\$ 252,089,481
Summit	-	\$ 397,160,919	\$ 655,021,338	\$ 60,368,127	\$ 465,658,366
Trumbull	-	\$ 22,497,886	\$ 18,518,881	\$ 13,124,857	\$ 96,406,782
Wayne	-	\$ 66,542,185	\$ 127,866,679	\$ 7,762,846	\$ 63,138,300
Region	-	\$ 1,975,234,162	\$ 3,134,063,351	\$ 382,322,569	\$ 3,045,232,910
Ashtabula - Trumbull - Mahoning	-	\$ 102,427,172	\$ 138,619,684	\$ 42,518,800	\$ 348,462,859
Wayne - Summit - Portage - Stark	-	\$ 710,791,392	\$ 1,301,891,861	\$ 109,126,881	\$ 888,653,437
Cuyahoga - Lorain - Lake - Geauga - Medina	-	\$ 1,162,015,598	\$ 1,693,551,806	\$ 230,676,888	\$ 1,808,116,614
Annual Revenue for New Dev in 2040 (full build-out)	Existing	Trend	Grow the Same	Do Things Differently	Grow Differently
Ashtabula	-	\$ 35,902,234	\$ 126,060,692	\$ 16,106,360	\$ 101,353,473
Cuyahoga	-	\$ (556,332,730)	\$ 789,676,557	\$ 424,524,109	\$ 2,259,258,400
Geauga	-	\$ 156,978,507	\$ 259,690,531	\$ 21,255,961	\$ 89,305,371
Lake	-	\$ 216,255,429	\$ 459,870,565	\$ 62,994,456	\$ 267,628,601
Lorain	-	\$ 337,698,259	\$ 651,893,353	\$ 74,302,083	\$ 377,318,278
Mahoning	-	\$ (47,837,058)	\$ 170,369,549	\$ 68,784,496	\$ 279,695,396
Medina	-	\$ 577,424,249	\$ 820,075,124	\$ 31,350,253	\$ 175,001,510
Portage	-	\$ 205,063,538	\$ 369,024,460	\$ 27,086,019	\$ 158,503,938
Stark	-	\$ 140,835,062	\$ 516,521,802	\$ 97,012,111	\$ 433,841,000
Summit	-	\$ 556,268,953	\$ 1,158,776,063	\$ 152,132,140	\$ 745,473,512
Trumbull	-	\$ (49,065,181)	\$ 105,715,501	\$ 57,096,203	\$ 240,859,514
Wayne	-	\$ 115,963,491	\$ 226,838,839	\$ 26,161,174	\$ 117,564,065
Region	-	\$ 1,689,154,754	\$ 5,654,513,034	\$ 1,058,805,366	\$ 5,245,803,058
Ashtabula - Trumbull - Mahoning	-	\$ (61,000,005)	\$ 402,145,742	\$ 141,987,059	\$ 621,908,384
Wayne - Summit - Portage - Stark	-	\$ 1,018,131,044	\$ 2,271,161,163	\$ 302,391,444	\$ 1,455,382,515
Cuyahoga - Lorain - Lake - Geauga - Medina	-	\$ 732,023,715	\$ 2,981,206,130	\$ 614,426,862	\$ 3,168,512,159