

An IPA Planning Services Report

Fiscal Note Model 2 Project Overview and Documentation

September 2014

written by

Martin Wollaston
University of Delaware

and

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West Chester University



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Preface

As director of the Institute for Public Administration (IPA) at the University of Delaware, I am pleased to provide the *Fiscal Note Model 2 Project Overview and Documentation* report. The Delaware Office of Management and Budget (OMB) funded this research through an ongoing partnership with OMB's Budget Development, Planning and Administration division and the Office of State Planning Coordination. The methodology explained in this report will assist local efforts to better understand the fiscal impacts resulting from proposed development activities.

Chapter 1 describes the purpose and appropriate use of the "Fiscal Note 2 Model" and introduces key characteristics and attributes of the model. Chapter 2 addresses the selection and processing of municipal expenditure items for inclusion in the model while Chapter 3 addresses the same for municipal revenue items. Chapter 4 provides the basics for running the model, including the data inputs and information that should mostly be available from the comprehensive plan. Chapter 5 provides a short summary of the data that should be updated and incorporated into the model to ensure the model's assumptions are kept current. Chapter 6 provides a step-by-step case study example of applying the model to a municipal comprehensive plan. Finally, Chapter 7 provides conclusions learned over the couple of years it took to develop this pilot project model and recommendations for improving it.

The Institute for Public Administration (IPA), a unit within the School of Public Policy & Administration at the University of Delaware, links the research and resources of the University with the management and information needs of local, state, and regional governments in the Delaware Valley. IPA provides assistance to agencies and local governments through direct staff support and research projects as well as training programs and policy forums.

Jerome R. Lewis, Ph.D.
Director, Institute for Public Administration

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Chapter 1. Introduction

This document serves to describe the assumptions, data, methods, and procedures comprising a “Fiscal Note 2 model” aimed at estimating the fiscal impacts of development. The “Fiscal Note 2 model” is particularly concerned with the revenue and expenditure impacts accruing to a municipality as a result of development called for in local comprehensive plans. This document provides background information on the model and can serve as a user’s manual for the application of the model to comprehensive plans in Delaware. The contents describe how to update the model with new data and enhance the model by adding new features.

1-1. Purpose

The purpose of Delaware’s Fiscal Note 2 model is to estimate the more significant municipal revenue and expenditure implications of future land use proposed in local comprehensive plans. The Office of State Planning Coordination is required to report on the fiscal impact of planning activity when considering comprehensive plans for certification. The Fiscal Note 2 model is designed to fulfill this obligation.

A secondary intent of the model is to aide in planning for future service and infrastructure needs and the resulting budget impacts. The model draws from several data sources, including local plans for development, existing municipal revenue and expenditure figures, and small area projections of population, to paint a picture of the municipal expenditures that will be necessary to maintain the same level of municipal services per unit of development (i.e., population or nonresidential square footage). This information should assist analysts in preparing and reviewing budgets by offering insight into the timing of development and expenditure levels.

1-2. Model Attributes

Three key attributes characterize the Fiscal Note 2 model—simplicity and transparency, per-capita multiplier approach, and modular structure. The following paragraphs describe these attributes.

- **Simplicity and Transparency:** The model is designed to be simple and transparent. That is, even if having multiple, interrelated components complicates the model, the assumptions made about development, expenditures, and revenues should be logical and readily explainable to public officials and Delaware residents at-large. Similarly, the methods used to analyze data should tend toward clear step-by-step approaches and away from black box approaches that hide data and assumptions and rely upon complex and high-level mathematical procedures.

Two strategic decisions made regarding characteristics of the Fiscal Note 2 model are aimed at maintaining transparency. First, the primary focus of the model is the measurement of relatively direct impacts of development rather than on spinoff or multiplier effects that might be captured by a more sophisticated econometric model. Keeping the focus on the direct results of development may result in a model that does not fully capture some of the

intricacies of a development's spinoff impacts (e.g., construction jobs generated through the development of homes or commercial development induced by residential construction). However, this approach allows for the use of a relatively clean, defensible, and explainable set of methods that rely primarily on simple mathematics rather than econometrics. That said, certain elements of the model, and particularly future versions of the model, may incorporate methods aimed at capturing some of these indirect impacts. In all cases, these methods should be carefully documented to demonstrate all assumptions.

The second strategic decision made to generate a relatively transparent model was the use of a per-capita multiplier approach. Described in more detail under the next bullet, this approach enhances transparency and clarity of understanding by assuming that existing population, development, and revenue and expenditure characteristics will hold constant. The constant factors for population, development, and revenue and expenditure characteristics are used to project the impacts of future development—rather than assuming that changes will occur, such as decreases in the birth rate, higher or lower market demands for particular types of housing, decreases in municipal service levels, or increases in property tax rates.

- **Per-Capita Multiplier Techniques:** There are two basic fiscal impact analysis methodologies—average-cost approaches and marginal-cost approaches. Average-cost approaches “assume future costs are extensions of current averages,” while marginal-cost approaches provide a greater accounting for local infrastructure and service capacities—recognizing that short-run service and infrastructure discontinuities may greatly influence the cost required by a jurisdiction to service the “next-unit” of development (Burchell & Listokin, 1978, p. 4) (Mix & Hurley, 2008, p. 14). The Fiscal Note 2 model uses an average-cost approach, more specifically employing a version of the per-capita multiplier technique—the most commonly used average-cost approach (Tischler, 1988).

The per-capita multiplier technique typically “involves dividing total government costs by total population to arrive at a figure for average per-capita government costs” (Mix & Hurley, 2008, p. 15). Delaware's Fiscal Note 2 model uses the per-capita multiplier technique to arrive at average per-resident municipal expenditures and revenues resulting from new residential development. The model also uses an amended version of the per-capita multiplier technique to arrive at average per-square-foot municipal expenditures and revenues resulting from nonresidential commercial development.

The main implication of using the per-capita multiplier technique in Delaware is that impact assessments are based on the assumption that recent average characteristics of household composition (i.e., number and demographic characteristics of household members) and intensity of development (i.e., mix of housing types comprising all housing units, density of residential and nonresidential development, and the mix of nonresidential uses comprising total nonresidential space) will hold constant. Similarly, the use of this technique means that impact assessments are based on the assumption that municipal policy, as it relates to the per-capita level of revenues and expenditures, will hold constant.

- **Modular Structure:** The Fiscal Note 2 model is constructed in a modular format. The model is structured as a series of tabbed worksheets within a Microsoft Excel spreadsheet. The first

worksheet allows for input of comprehensive plan details and output of anticipated fiscal impacts. Background worksheets contain per-capita or per-square-foot cost figures for municipal expenditures considered by the model, demographic multipliers for housing types and locations throughout the state, housing mixes by jurisdiction, and other background assumptions and filters that help the model function. This modular format is designed to afford planners and analysts the flexibility to add, remove, and enhance individual model components without disturbing the overall model structure. This format also aids transparency by clearly laying out the components that compose the model.

Chapter 2. Processing Expenditure Items

This chapter reviews the municipal expenditure component of the Fiscal Note 2 model. Section 2-1 reviews the general criteria used to select expenditures for inclusion in the model and lists the expenditures selected. Section 2-2 describes the general methods used to arrive at average per-capita or average per-square-foot costs for each of the selected municipal expenditures. Finally, Section 2-3 details specific methods and considerations necessary to process each of the individual municipal expenditure items.

2-1. Select Expenditures

Two general criteria were used to select municipal expenditures for inclusion in the Fiscal Note 2 model. The first is that the expenditure must be determined to have a logical and reasonably direct positive relationship to development. The second is that sufficient data be available to process the expenditure for inclusion in the model.

The first criterion requires that (1) there must be a fairly direct relationship between the increases in population and nonresidential square footage resulting from development, and (2) there is a need for increased municipal expenditures on the item being considered. A prime example of an item passing this test is municipal expenditures on public safety—development activity can increase population, which, in turn, can trigger municipal expenditures to support the capital and operating demands of a rising population on public safety.

The second criterion requires that budget data be available in order to process the expenditure being considered for inclusion in the model.

An empirical investigation of a medium size municipality in Delaware revealed certain patterns of public expenditures. Some items appear rather closely linked to growth, others less so. Capital items are difficult to model without extensive information. For example, capital investment can be related to a number of factors including obsolescence and capacity.

- **Obsolescence:** A capital investment (large or small) may occur because the age of the existing facilities renders them obsolete. This obsolescence triggers an expense in the budget data that is not directly tied to growth. Note: Growth may hasten the depreciation of capital.
- **Capacity:** A capital investment (large or small) may occur because the existing facility may already be at or near capacity. Therefore attributing the capital investment to growth may overstate the consequence of growth.

For this iteration, capital is modeled on a per capita basis.

The municipal General Fund expenditures selected for analysis in the Fiscal Note 2 model are:

- Administration
- Police
- Streets
- Parks and Recreation
- Engineering

2-2. Common Denominators for Analysis

To be considered by the Fiscal Note 2 model, expenditures must be translated into dollars per-capita or dollars per-square-foot of nonresidential space. This section lists and briefly describes the general steps necessary to translate municipal expenditure data from budget format to appropriate model inputs (i.e., dollars per-capita or dollars per-square-foot). Section 2-3 details the special methods necessary to address individual expenditure items considered by the model.

1. **Acquire budget data for a chosen expenditure item.** The data should reflect actual municipal expenditures (versus budgeted data) and should be gathered for a period comprising at least the last three to five years. For many items in this iteration of the model, the period of five years has been chosen as a suitable timeframe to smooth out year-to-year fluctuations in municipal expenditures.

Collected budget data should be copied and pasted into the appropriate input cells in the template Microsoft Excel spreadsheet for the expenditure item being considered.

2. **Adjust budget figures for inflation to account for the changing value of money over the timeframe of the analysis.** The following methods should be used to adjust budget data to current year dollars:
 - a. For each budget year under consideration, record the value of one dollar from each budget year in current year dollars (e.g., the value of \$100 from 2000 was \$133 in 2010 dollars) by using the Bureau of Labor Statistics' Consumer Price Index¹ inflation calculator.
 - b. The sheet 'Inflation' contains the data necessary to inflate the budget data to current dollars. As new expenditure data are added to the sheets 'Per Capita' and 'Per Capita Capital' the data should be inflated.
 - c. This process of inflating expenditures is necessary for the following expenditure data sheets:
 - i. Per Capita
 - ii. PerCapita-Capital
 - iii. PerSqFt
 - iv. PerSqFt-Capital
 - d. Revenue data also must be inflated. For example, the real estate transfer tax is based on the median property value. To better account for fluctuations in the

¹ A national figure representing changes in the prices paid by urban consumers for a representative basket of goods and services. The calculator is available at <http://data.bls.gov/cgi-bin/cpicalc.pl>.

housing market, the inflation-adjusted property values are averaged over 10 years (2000-2009). See sheet “Res Realty Transfer Tax.” Property tax is also based on the inflation-adjusted property values average over the years 2000 to 2009.

3. **Assign a share of expenditures to nonresidential development, if a portion of the expenditures in question can reasonably be attributed to nonresidential development.** This is the case for all the expenditures considered by the Fiscal Note 2 model. Based on the approach suggested by the “proportional valuation” fiscal impact analysis technique, assessed valuation is used as a proxy for intensity of land use and, therefore, service and infrastructure demand (Mix & Hurley, 2008, pp. 18-20). Expenditures are assigned to residential and nonresidential support categories based on the percentage of total assessed valuation that these uses represent.

The following methods should be used to assign expenditures to nonresidential and residential support categories:

- a. Acquire data on the ratio of total assessed valuation by property class and municipality (e.g., the proportion of a municipality’s total assessed valuation comprised of commercial, farm, improved residential, and residential lots, respectively).²
 - b. For each county, calculate the total residential share of assessed valuation to equal the “Improved Residential” ratio plus the “Residential Lots” ratio.
 - c. Multiply each inflation adjusted budget figure (from step 2 above) by the total residential share of assessed valuation figure (from step b above) appropriate to the municipality in question. This yields the total expenditures to support residential development.
 - d. Multiply each inflation adjusted budget figure (from step 2 above) by the total commercial share of assessed valuation figure (from step a above) appropriate to the municipality in question. This yields the total expenditures to support nonresidential development.
4. **Calculate per-unit expenditures for both the residential and nonresidential support expenditure figures calculated in step 3 above.** This step yields dollar per-capita figures for the residential support figures and dollar per-square-foot figures for the nonresidential support figures. Per-unit expenditures should be calculated according to the following methods:
 - a. Per-capita methods
 - i. Acquire population estimate data for the municipality for each year that budget items are considered.³

² For this iteration of the fiscal note model, these ratios (from 2006–2007) were requested and obtained from the University of Delaware, Center for Applied Demography and Survey Research (CADSR). These data were further supplemented by 2008–2009 data from Table 3 Assessed and Full Valuation of Real Estate 2008–09, within Appendix A of “Assessment-To-Sales Ratio Study for Division III Equalization Funding: 2008 Project Summary”, prepared for OMB by Edward Ratledge. Future versions of the model could rely on other sources, such as county assessment office data, or only one source rather than two.

³ Annual estimates of resident population can be acquired from the Population Division of the U.S. Census Bureau (<http://www.census.gov/popest/estbygeo.html>)

- ii. For each expenditure item and budget year, divide the total expenditures to support residential development (from step 3 above) by the estimated population in that year for the appropriate geography. This step yields a dollar per-capita value for each expenditure item and budget year.
- b. Per-square-foot methods
 - i. Analyze Land Use and Land Cover (LULC) data for the municipality to estimate the nonresidential square footage for each year considered in the analysis.
 - ii. For each expenditure item and budget year, divide the total expenditures to support nonresidential development (from step 3 above) by the estimated nonresidential square footage in that year for the appropriate geography. This step yields a dollar per-square-foot value for each expenditure item and budget year.
5. **Calculate multi-year averages for each per-unit expenditure figure.** For each per-unit expenditure figure calculated in step 4 above, sum this value for each year considered and then divide by the total number of years considered. This step yields the average per-unit expenditure figures that will be used in subsequent steps of the Fiscal Note 2 model.

2-3. Topic Specific Considerations

The nature of particular expenditures, including the manner in which items are budgeted for and reported, and the geographical areas served by given expenditures, requires that methods for processing expenditures be altered on a case-by-case basis.

Administration

Spending Items Considered

- Administration
- Police
- Streets
- Parks and Recreation

Data Sources

- Annual budget for general fund items allocated for the purposes of each of the above are considered by the Fiscal Note 2 model.

Chapter 3. Processing Revenue Items

This chapter reviews the revenue component of the Fiscal Note 2 model. Section 3-1 reviews the general criteria used to select revenues for inclusion in the model and lists the revenues selected. Section 3-2 describes the general methods used to arrive at formats compatible with the model for each of the selected municipal revenues. Finally, Section 3-3 details specific methods and considerations necessary to process each of the individual municipal revenue items.

3-1. Select Revenues

The chief criterion used to select revenues for inclusion in the Fiscal Note 2 model is the existence of a relationship between an increase in population (or the amount of nonresidential square footage) and the amount of a particular revenue collected. Revenues fulfilling this criterion tend to be those based on house values (property tax and realty transfer tax).

The municipal revenues selected for analysis in the Fiscal Note 2 model are:

- Residential Realty Transfer Tax
 - Covering revenues from the sale of residential property
- Commercial Realty Transfer Tax
 - Covering revenues from the sale of commercial property
- Residential Property Tax
 - Covering revenues from residential property taxes
- Permit Fees
 - Covering revenues from residential and nonresidential permit activity
- Commercial Property Tax
 - Covering revenues from commercial property taxes

3-2. Common Denominators for Analysis

As is the case with expenditures, revenues must be translated to a dollar per-unit format that can be considered by the Fiscal Note 2 model. The arrival at common denominators for analysis is not as uniform a process for revenues as it is for expenditures. This is the case because while the units considered for expenditures are consistently an individual or a square foot of nonresidential space, the units considered for revenues may be housing values or sales per-square-foot of nonresidential property. This section lists and briefly describes the general steps necessary to translate municipal revenue data from budget format to appropriate model inputs (i.e., dollars per-capita or dollars per-square-foot).

3-3. Topic Specific Considerations

The nature of particular revenues, including the manner in which items are reported and the particular unit or event that is taxed (e.g., housing sales), requires that methods for processing revenues be altered on a case-by-case basis. This section reviews the particular characteristics of

residential realty transfer tax and commercial realty transfer tax—addressing the revenue items considered, sources of data, and methodological adjustments made for each item.

Residential Realty Transfer Tax Revenue

Revenue Items Considered

- The municipality's portion of the Realty Transfer Tax on the sale of residential property.

Data Sources

- The 1.5 percent municipal share of Realty Transfer Tax.
- Median Home Prices as reported by the Kent County Association of Realtors, New Castle County Board of Realtors, and the Sussex County Association of Realtors.
- For each of the three counties, decennial census information on the median year householder moved into unit.⁴

Methodological Adjustments

- Residential Realty Transfer Tax revenue is calculated using the most recent year's median home prices times the municipality's share of the tax revenue. The number of new homes is estimated at build-out and for each five-year period. The total number of new homes is multiplied by the median housing price for the appropriate county and then multiplied by .015, the percentage of a home's value paid to the municipality in Realty Transfer Tax. The model presents data for residential realty transfer tax in two separate formats, detailed below, and includes seasonal housing units.

1. The average annual revenues from Residential Realty Transfer taxes, representing revenues resulting from developed homes
 - Calculated by multiplying the factor for housing turnover (i.e., the inverse of the difference between the decennial census year and the median year householder moved into unit from that census) times the realty transfer tax rate (e.g., 1.5%), the median housing price, and the total number of units built by the year in question.
2. The projected annual initial Residential Realty Transfer taxes in any given five-year period from 2010–2030, representing revenues resulting from the initial sale of each home anticipated to be built by the year in question.
 - Calculated by determining the number of new homes anticipated to be built by a given five-year period, and then multiplying this by the

⁴ These data are used as a proxy for the average length of time a house is owned by a particular householder, thus allowing the introduction of a factor for housing turnover that can be used to estimate the extent of realty transfer taxes.

Realty Transfer tax rate and the median housing price. This result is then divided by five (to represent an equal rate of build-out), arriving at the annual realty transfer tax revenues for initial sales of residential units.

Commercial Realty Transfer Tax Revenue

Revenue Items Considered

- The municipality's portion of the Realty Transfer Tax on the sale of commercial property.

Data Sources

- The 1.5 percent municipality share of Realty Transfer Tax.
- Information on the ratio of assessed values for each property class, by county.⁵
- Information on the relationship between assessed valuation and full valuation for commercial properties, by county.⁶
- For each of the three counties, decennial Census information on the median year householder moved into unit.⁷

Methodological Adjustments

- Calculate the estimated full value of commercial property per square foot, by county. Commercial Realty Transfer Tax revenue is calculated using the most recent year's estimated full value of commercial property per square foot, by county, times the municipality's share of the tax revenue. The amount of square footage is estimated at build-out and for each five-year period. The total amount of square footage is multiplied by the estimated full value of commercial property per square foot for the appropriate county and then multiplied by .015, the percentage of a commercial property's value paid to the municipality in Realty Transfer Tax. The model presents data for Commercial Realty Transfer tax in two separate formats, detailed below.

1. The average annual revenues from Commercial Realty Transfer taxes, representing revenues resulting from developed property.
 - Calculated by multiplying the factor for housing turnover (i.e., the inverse of the difference between the decennial census year and the median year householder moved into unit from that census) times the Realty Transfer tax rate (i.e., 1.5%), the estimated full value of

⁵ For this iteration of the Fiscal Note 2 Model, these ratios were requested and obtained from the University of Delaware, Center for Applied Demography and Survey Research (CADSR). Future versions of the model could rely on other sources, such as county assessment office data.

⁶ Acquired from "Table 3 Assessed and Full Valuation of Real Estate 2008-09", within Appendix A of *Assessment-To-Sales Ratio Study for Division III Equalization Funding: 2008 Project Summary*, prepared for OMB by Edward Ratledge.

⁷ This data is used to prepare a proxy for the turnover of commercial property in the same fashion as is done for residential property. A more appropriate factor for the commercial property turnover rate should be substituted when available.

commercial property per square foot, by county, and the total amount of square footage built by the year in question.

2. The projected annual initial Commercial Realty Transfer taxes in any given five-year period from 2010–2030, representing revenues resulting from the initial sale of each square foot anticipated to be built by the year in question.
 - Calculated by determining the amount of square footage anticipated to be built by a given five-year period, subtracting the amount of square footage anticipated to be built by the previous five-year period (where applicable), and then multiplying this result by the Realty Transfer tax rate and the estimated full value of commercial property per square foot, by county. This result is then divided by five (to represent an equal rate of build-out), arriving at the annual Realty Transfer tax revenues for initial sales of commercial property.

Chapter 4. Running the Model

As previously described, the model is structured as a series of tabbed worksheets within a Microsoft Excel spreadsheet. The user should find the model fairly easy to use if they are familiar with using excel and the input information is available. Additional instructional materials were developed and are available via two videos (running the model, and updating the model). These videos can be found online.

- Running the model: www.screencast.com/t/yWPjS9aYG
- Data update: www.screencast.com/t/dJsGGLTq5sie

4-1. Data Inputs

A comprehensive plan should provide most of the following data items. Jurisdiction and county will be provided by the comprehensive plans.

- Jurisdiction
- County
- Proposed densities (optional—the model will use historical averages in the event that the user has no additional information)
- Area Population Projections
- Seasonal housing percentage (optional—the model will use historical averages in the event that the user has no additional information). Mostly relevant for resort communities.

4-2. Background Data

The comprehensive plan should also provide some of the following information needs. The U.S. Census and American Community Survey may also be used for assembling some of the data.

Total residential acres should be available in the comprehensive plan along with the housing type. If no housing densities are proposed in the comprehensive plan, the model will default to the historic housing mix. Nonresidential commercial acres proposed should be available in the comprehensive plan.

Housing mix by jurisdiction is available in the decennial census. Housing mix is converted into percentages and these percentages are applied to each additional acre of residential development, i.e., future development patterns are expected to match historical patterns. The user has the ability to override the historical patterns in the event that the future housing mix differs from historical patterns.

Demographic multipliers are applied to the projected housing units to derive total residents. The total resident figures (i.e., per capita numbers) are then applied to expenditure items.

Area population projections and seasonal housing percentage are critical inputs. The area population projections serve as the upper limit of development. Comprehensive plan population projections cannot exceed the area population projections; therefore, comprehensive plans with aggressive growth will not be realized if they exceed the area population projections.

Where the comprehensive plan pertains to the beach region, the user should consider whether the plan involves seasonal or non-seasonal housing. Additionally, seasonal housing percentage may have ramifications for both revenue and expenditures. In areas with historically high seasonal housing, such as the Delaware beach region, any proposed residential acreage will be allocated in large part to seasonal housing. This will reduce certain expenditures and revenues since seasonal housing is assumed not to generate new residents.

4-3. Interpreting Results

The sheet entitled “Summary Build-out” summarizes the “Plan Details and Results” sheet. Expenditures and revenues are presented at key times: build-out and five years out. In the case-study example presented in Chapter 6, the font is colored green for revenues and red for expenditures.

Chapter 5. Updating the Model

The model draws from the wealth of publicly available data. Each new year will bring with it updated data. These data should be incorporated into the model to ensure the model's assumptions are kept current. The following variables were based on Census 2000. Changes in these items between 2000 and 2010 are possible, but perhaps not significant. Census 2010⁸ data was not available during the initial stages of model development and the project team decided that changes that may have resulted from the 2010 Census information would likely be minimal. However, if in the future a town in Delaware decides to work with this model, the 2010 Census data should be use to update a host of variables including:

- Residential Realty Transfer Tax: Median year householder moved into unit.
- Commercial Realty Transfer Tax: Median year householder moved into unit.
- Historical Mix by Jurisdiction: Percent lower-, medium-, and high-density housing.
- Seasonal Housing: Percent of housing that is seasonal.
- Demographic multipliers: Residents by housing type.

Each new year of municipal expenditure and revenue data provides another opportunity to update the model. Specifically, a new year of data will enable the four and five year averages to be updated.

⁸ The ACS (American Community Survey) may be the future source of some of these items.

Chapter 6. Case Study Example of Applying the Model

This chapter reviews the process to consider the impacts of planned development in a hypothetical municipality in Kent County, Delaware. The steps necessary are briefly described, with references made to other sections of this report, where appropriate, and outputs are reviewed and discussed.

Input Steps

1. **Acquire and process latest certified comprehensive plan.** The results of this analysis should be the acreage available and planned for future residential and nonresidential development, respectively. If specified by the plan, the analyst should report the acres planned for low-, medium-, and high-density residential development, respectively. The available acreage was analyzed as follows:
 - Nonresidential acres available: 200
 - Residential acres available: 1,000
2. **Project the population for the jurisdiction in question.** This is an important input. Obtain projections from Wilmapco⁹ or Dover/Kent Metropolitan Planning Organization (MPO).¹⁰ These sources have the advantage of being updated annually. Select the area that encompasses the municipality and obtain the growth and growth rates for step 7 below.
3. **Open the Fiscal Note model and save it as a new file (e.g., Muni_Kent_Fiscal_Analysis).**
4. **Select the location details of the plan being reviewed.** Many variables in the model are location specific, e.g., housing mix and demographic multipliers, pertain to particular locations. Therefore, it is important to select the appropriate jurisdiction and county.

| Location Details | |
|------------------|---------------|
| Jurisdiction: | Kent County 1 |
| County: | Kent County |

5. **Input residential development details.** At a minimum, this includes the total residential acreage planned for development (from the analysis performed in step 1). Details might also include specific figures for low-, medium-, and high-density development if the plan in question specifies such details.

⁹ <http://www.wilmapco.org/demoprojections/>

¹⁰ <http://doverkentmpo.delaware.gov/maps-2/gis-data/>

The residential development details follow:

| Residential Plan Input | |
|-------------------------------|---------------------|
| Total Residential Acres: | 1000 |
| Densities proposed? | No |
| | Manual Acres |
| Low Density: | |
| Medium Density: | |
| High Density: | |

- Input nonresidential development details.** This includes the total nonresidential acreage (i.e., parcel size not building size) planned for development (from the analysis performed in step 1). The nonresidential development details follow:

| Nonresidential Commercial Plan Input | |
|---|--------------|
| | Acres |
| Total NR Area Proposed: | 200 |

- Input the results of the population projection completed in step 2.** The population increase will be entered in the spreadsheet as shown below. These inputs are the expected new population by 4 out-years (e.g., 2015, 2020, 2025, and 2030) from a current reference year (e.g., 2010). These figures represent the total net population change projected between the reference year and the out-year in question. The population projection figures are:

| Area Population Projections | |
|------------------------------------|-----|
| Population Increase by 2015 | 200 |
| Population Increase by 2020 | 400 |
| Population Increase by 2025 | 600 |
| Population Increase by 2030 | 800 |

- Calculate the Projected Number of Total Residents Units less those in Seasonal Housing.** The planner can either input a percentage of the new housing that will be seasonal, or the model can calculate it using historical numbers.

| Seasonal Housing Percentage | |
|---------------------------------------|--------------|
| Seasonal Housing Percentage Proposed? | No |
| Manual Percentage: | |
| Automatic Percentage: | 0.067 |
| Seasonal Housing Percentage: | 0.067 |

Calculations Occurring Within the Model

1. **Calculate Projected Number of Units at Build-out by Density Type.** This calculation is based on the consideration of several assumptions. First, the model references (in the “Housing Mix by Jurisdiction” tab) the density assumption (presented as dwelling units per acre) for the given density type and jurisdiction in question. The density assumptions are provided but can be altered (and in many cases should be) by the analyst. These density assumptions, in tandem with decennial census information on housing mix by jurisdiction, are used to derive the percent of residential acreage and percent of total units comprised by each class of housing where low density = single-family, detached; medium density = single-family, attached; and high density = multi-family. The calculation for this step is simply the density by class multiplied by the total acreage of planned development. The projected number of units at build-out appears under step 9.
2. **Calculate Projected Number of Residents at Build-out, by Density Type.** This calculation is the product of the demographic multiplier for total residents (based on user selection in step 4), the type of housing, and the total number of units projected for that housing type (from step 5). The projected number of residents at build-out, by density type is:

| Residential Plan Details | | | |
|---------------------------------|---------------------|------------------------|------------------------|
| | Manual Acres | Automatic Acres | Projected Units |
| Low Density: | 0 | 891 | 2,229 |
| Medium Density: | 0 | 53 | 320 |
| High Density: | 0 | 55 | 553 |
| Total: | 0 | 1,000 | 3,101 |

The demographic multipliers for each county are as follows:

| | Housing Type | Total Residents |
|--------------------------|------------------------|------------------------|
| New Castle County | Single-Family Detached | 2.732 |
| | Single-Family Attached | 2.391 |
| | Large Multi-Family | 1.744 |
| Kent County | Single-Family Detached | 2.647 |
| | Single-Family Attached | 2.590 |
| | Large Multi-Family | 1.864 |
| Sussex County | Single-Family Detached | 1.756 |
| | Single-Family Attached | 0.830 |
| | Large Multi-Family | 0.813 |

The Kent County multipliers employed in this model are 2.732 residents in a single-family detached unit, 2.391 residents in a single-family attached unit, and 1.744 residents in a large multi-family unit.

3. **Calculate the Percent Completion of Build-out Projected at Each Out-Year.** This calculation uses the total projected number of residents at build-out (from step 8) and the area population projections (from step 7) to estimate a percent completion of build-out for each out-year. The calculation is: $\text{Projected Percent Completion of Build-out for Out-Year X} = \text{Area Population Projection for Year X} / \text{Projected Number of Residents at Build-out}$ (i.e., the total of 8)

| Area Population Projections | | Percentage of Buildout | |
|-----------------------------|-----|------------------------|-------|
| Population Increase by 2015 | 200 | | 2.9% |
| Population Increase by 2020 | 400 | | 5.8% |
| Population Increase by 2025 | 600 | | 8.7% |
| Population Increase by 2030 | 800 | | 11.6% |

4. **Calculate Units, Population for each Out-Year (e.g., 2015, 2020, 2025, 2030).** For each of these items, the individual figures are calculated by multiplying the percentage build-out expected by the year in question by the total residents anticipated at build-out for the density type being considered.
5. **Calculate Projected Square Feet of Nonresidential Development for each Out-Year.** This is calculated by multiplying the percentage build-out expected by the year in question by the total square footage planned for/anticipated at build-out. The projected square footage for each out-year is:

| Nonresidential Plan Details | | | | | | |
|-----------------------------|-------|---------------------------|--------------|--------------|--------------|--------------|
| | Acres | Buildout Property Sq. Ft. | 2015 Sq. Ft. | 2020 Sq. Ft. | 2025 Sq. Ft. | 2030 Sq. Ft. |
| Total NR Area Proposed: | 200 | 8,712,000.00 | 252,927.35 | 505,854.71 | 758,782.06 | 1,011,709.42 |

6. **Calculate Projected Expenditures Supporting Residential Development by Category, at Build-out and for each Out-Year.** For each year, this figure is calculated by multiplying the projected growth in residential units (and the accompanying growth in residents) by the dollar-per-unit figure for the expenditure in question and the geography being considered. This step yields a dollar figure reflecting the estimated average annual municipality expenditures needed to support the extent of residential development occurring for that year. The particular methods underlying this step are reviewed in Chapter 2.
7. **Calculate Projected Expenditures Supporting Nonresidential Development by Category, at Build-out and for each Out-Year.** For each year, this figure is calculated by multiplying the projected new square footage considered by the dollar-per-square-footage figure for the expenditure in question and the geography being considered. This

step yields a dollar figure reflecting the estimated average annual municipal expenditures needed to support the extent of nonresidential development occurring for that year. The particular methods underlying this step are reviewed in Chapter 2.

8. **Calculate Projected Revenues Resulting from Residential Development by Category, at Build-out and for each Out-Year.** For each year, this figure is calculated by multiplying the projected new events triggering municipal revenues in the year considered by the dollar per unit figure for the revenue in question. This step yields a dollar figure reflecting the estimated average annual municipal expenditures resulting from the extent of residential development occurring for that year. In the case of the Realty Transfer tax, one-time revenues resulting from the initial sale of properties are also reported. The particular methods underlying this step are reviewed in Chapter 3.
9. **Calculate Projected Revenues Resulting from Nonresidential Development by Category, at Build-out and for each Out-Year.** For each year, this figure is calculated by multiplying the projected new events (e.g., sales of commercial property) triggering municipal revenues in the year considered by the dollar per unit figure for the revenue in question. This step yields a dollar figure reflecting the estimated average annual municipal expenditures resulting from the extent of nonresidential development occurring for that year. In the case of the Realty Transfer tax, one-time revenues resulting from the initial sale of properties are also reported. The particular methods underlying this step are reviewed in Chapter 3.

10. Sample Results

The table on the following page is an excerpt from the model. It is a hypothetical snapshot of 2020 based on the development plan details and assumed relationships between growth, expenditures and revenue. Highlights to note include:

By 2020,

- 180 additional housing units will be completed, with 400 additional residents.
- 505,855 additional nonresidential square footage will be complete, of which 58,064 are building square footage.
- Residential revenues stemming from this growth are estimated to be \$268,946 (property tax revenues, realty transfer tax revenues, and permit fees).
- Nonresidential revenues stemming from this growth are estimated to be \$28,700 (property tax revenues, realty transfer tax revenues, and permit fees).
- Residential expenses (capital and general fund) are estimated to be \$205,760 (administration, police, streets, parks and recreation).
- Nonresidential expenses (capital and general fund) are estimated to be \$42,236 (administration, police, streets, parks and recreation).

| | | At 2020 | |
|--|-------------------|--|-------------------|
| 2020 Expense Results | | 2020 Results | |
| Residential Expenses--GF & Capital | | Total Additional Residents: | 400 |
| Administration | \$ 37,219 | Total Additional Housing Units: | 180 |
| Police | \$ 116,634 | Total Additional Nonresidential Property Square Footage: | 505,855 |
| Streets | \$ 27,371 | Total Additional Nonresidential Building Square Footage: | 58,064 |
| Parks and Recreation | \$ 24,535 | | |
| | | 2020 Revenue Results | |
| | | Residential Revenues | |
| | | Property Tax Revenues | \$ 180,895 |
| | | Realty Transfer Tax Revenues | \$ 65,541 |
| | | Permit Fees | \$ 22,509 |
| Total Annual Residential Expenses | \$ 205,760 | | |
| Nonresidential Expenses | | | |
| Administration | \$ 12,864 | | |
| Police | \$ 20,155 | | |
| Streets | \$ 4,742 | | |
| Parks and Recreation | \$ 4,475 | | |
| | | | |
| | | Total Additional Annual Residential Revenues | \$ 268,946 |
| Total Additional Annual Nonresidential Expenses | \$ 42,236 | Nonresidential revenues | |
| | | Property Tax Revenues | \$ 27,068 |
| Total Additional Annual Expenses | \$ 247,995 | Realty Transfer Tax Revenues | \$ 1,126 |
| | | Permit Fees | \$ 506 |
| | | Police Fines | \$ - |
| | | Total Additional Annual Nonresidential Revenues | \$ 28,700 |
| Additional Revenues Less Expenses: | \$ 49,650 | Total Additional Annual Revenues | \$ 297,645 |

Chapter 7. Conclusions and Recommendations

While care was taken to model the relationship between growth, revenues, and expenditures as accurately as possible, certain limitations existed. These limitations typically stem from data availability and are detailed below.

Growth of the Municipality

A key input into the model is the relationship between expenditures and growth. Growth measures, therefore, are a key component. Valuable growth measures would capture items such as population, household formation, and business formation. Census population estimates are used for population. However, using new municipal residential-utility accounts could capture timely household-formation data. This would link expenditures and revenues to growth of housing. Business formation similarly could be derived by measuring new municipal nonresidential utility accounts.

For the municipal expenditures, historical growth can be driven by a number of factors. Chief among these is growth triggered by increased residential and nonresidential properties. However, other factors can drive expenditures including the level of service, growth in compensation of municipal workers, etc. A count of municipal employees (head count or full time equivalent) would enable an analysis of the growth in the municipal workforce stemming from the growth in residential and nonresidential activity (i.e. growth in population/residential housing/commercial properties stimulates an increase in municipal employees such as police, administration, and streets).

Level of Service

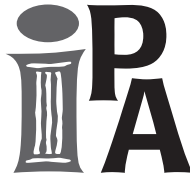
The types and levels of service provided by Delaware municipalities vary greatly. More “full service” towns may provide utilities and public safety, whereas others may not. The model may be adjusted to include additional budget items as needed. Certain municipalities may choose to include a greater level of budgetary detail. The model as presented includes common, general fund items only.

Budget Data

Wherever possible, actual data rather than budgeted data should be employed. In this manner a more accurate relationship between growth and expenditures and revenues can be derived.

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