Methodologies and Estimates of the Fiscal Impact of New Developments and Annexations on Municipal Governments

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Introduction

Many Maryland municipalities have experienced growth pressures in recent years. Between the April 2000 U.S. Census and July 2006, the population of Maryland municipalities, excluding Baltimore, grew 7.7%.[1] Ten municipalities (Centreville, Delmar, Elkton, Hebron, Keedysville, LaPlata, Laytonsville, Mount Airy, Rockville, and Smithsburg) experienced population gains of more than 20%.[2] During the same period, the population in the City of Aberdeen grew by a more modest 2%, from 13,854 to 14,130 residents.[3] The pace of growth in Aberdeen and the surrounding area is expected to increase dramatically during the next several years due to military restructuring mandated in 2005 by the Base Closure and Realignment Commission through a process known as BRAC. The restructuring will bring nearly 9,500 new jobs to the adjacent Aberdeen Proving Ground (APG).[4] Government contractors, who will relocate near the base, will bring additional jobs. These relocations to APG will create a demand for 14,159 new dwelling units in the region.[5]

Residential and commercial development of the magnitude experienced elsewhere in Maryland and expected soon in Aberdeen place heavy demands on public facilities and services. Municipalities facing accelerated growth are in need of analytical tools to assess the fiscal impact of new development on both capital infrastructure and municipal operations.

This report provides a model for conducting fiscal impact analysis that can be used by the City of Aberdeen and other municipalities to estimate the fiscal impact of development. The report also documents the application of the model to compute impact fees for the City of Aberdeen and to estimate the impacts on the operating budget of six new developments that are either underway or planned for the community.

Capital Impacts

To the extent that a municipality's infrastructure has excess capacity, the community can absorb new development without incurring additional capital costs. At some point, however, the capacity of one or more facilities is reached, and additional development creates a need for additional infrastructure. Widened roads, a new police station, a bigger city hall, and additional vehicles and equipment may be required to accommodate the new residents and businesses. The challenges for municipal officials are to determine the capacity for absorbing growth, the costs associated with increasing capacity, and the methods of paying for needed additions to infrastructure.

[1] Maryland Department of Planning, 2007.
[2] Ibid.
[3] Ibid.
[4] Maryland Department of Business and Economic Development, 2007, p. 3.
[5] Ibid., p. 6.

For some public infrastructure, standards have been established that define the facilities' capacity. For example, maximum class sizes, acceptable levels of congestion, and average and maximum water or wastewater flows can be used to define the capacities of schools, roads, and treatment facilities, respectively. If new development will generate more students than can be accommodated by existing classrooms, traffic that degrades local roads from Level of Service C to Level of Service F (as defined by the Institute of Traffic Engineers), or average daily water demands that exceed the treatment plant's design capacity, new infrastructure is needed. In most cases, the community could continue to function without investing in new infrastructure, but the reduction in level of service would be evidenced by overcrowded schools and roads and periodic breakdowns of the treatment plant.

For other public infrastructure, defining capacity is more difficult. Local governments typically have not established standards for the amount of space needed to accommodate administrative functions, the number of households that can be served by a single trash truck, or the usage level that defines a park as overcrowded. At some point, as the demand for services increases, the facilities that house or supply these services become inadequate, and the level of service declines. But the exact point at which this happens is hard to pin down.

Estimating the costs of construction projects relies on past experience, the current experiences of other government entities, and published sources, such as *Square Foot Costs*[6] can be used to estimate construction costs. Past experience, the current experiences of other government entities, and vendor-supplied data can be used to estimate the costs of vehicles and equipment. As discussed below, the more difficult task is apportioning costs between new and existing residents and businesses.

Traditionally, the most common ways for municipalities to fund capital expenditures were through taxes or borrowing. Jurisdictions with sizeable tax bases could fund capital construction or purchases from taxes collected in a given year. Jurisdictions with smaller tax bases might accrue tax revenue in a reserve fund over several years until enough funds were available to construct or purchase capital items. Using current tax revenue to fund capital projects is known as "pay as you go" or "pay-go" for short. This method places the entire burden of funding infrastructure on existing taxpayers, even though future residents and businesses are likely to benefit from the projects, as well. Borrowing, often through the issuance of bonds, provides a jurisdiction with the funds to undertake a project immediately and to use future tax revenue to repay the costs. This method spreads the burden of funding infrastructure across both current and future taxpayers.

During the first quarter of the twentieth century, infrastructure required by new development, including infrastructure within the new subdivisions, was often funded by local governments.[7] This approach had serious financial consequences, particularly during the Great Depression when a collapse of the real estate market led to tax delinquencies and defaults on municipal bonds.[8] As a result, local government development policies began to include requirements for developers to construct on-site infrastructure and/or dedicate land or make cash payments for

[6] RS Means, 2007.
[7] Rosenberg, 2006, p. 8.
[8] Ibid.

infrastructure within the subdivision.[9] Beginning in the 1960s, some local governments attempted to require developers to construct or fund infrastructure outside the new subdivision.[10] During the 1980s, state courts and legislatures began establishing the rules that govern this practice.[11] Today, many local governments impose fees to fund infrastructure outside new subdivisions that was made necessary by the new development, and these fees are commonly labeled "development impact fees."[12] These fees are one-time charges imposed at the time of development approval based upon a defined rate schedule.[13] Developers then pass along the costs when lots are sold to individual property owners.

According to an opinion of the Maryland Attorney General, municipalities in Maryland can impose development impact fees under the authority granted by the General Assembly in Article 23A, Section 2(b)(33)(ii) of the Annotated Code of Maryland.[14] According to the Maryland Municipal League (MML), 46 municipalities had imposed impact fees as of January 2006 (See Appendix A).[15] Other municipalities, including Aberdeen, that do not report imposing impact fees, impose water and sewer connection charges that serve the purpose of impact fees with respect to water and sewer facilities. Among the Maryland municipalities that report imposing impact fees, limited data collected by MML indicate that municipalities use impact fees to fund the following types of facilities: parks and recreation, police, streets and sidewalks, and water and sewer.[16]

An important principle underlying impact fees is that they are dedicated to capital expenses, not the cost of operations and maintenance, which should be supported by taxes or user fees.[17] Another legal principle is that impact fees must be reasonable. Over the years, faced with disputes between developers and local governments, state courts developed standards for determining the reasonableness of impact fees. The "rational nexus test" has evolved as the most common standard for establishing whether impact fees are reasonable.[18] The test requires that: (1) fees charged are correlated with needs attributable to the new development, (2) the level of fees relates to the benefits that will accrue to the development, (3) the funded capital improvements are established through coherent plans or impact assessment methods, and (4) collection and expenditure of impact fees must be tracked separately from other municipal revenues and expenditures.[19] Two U.S. Supreme Court decisions, Nollan v. California Coastal Commission (1987) and Dolan v. City of Tigard (1994), signaled heightened scrutiny of impact

[9] Ibid, pp. 8-9
[10] Ibid., p. 9.
[11] Ibid.
[12] Ibid., p. 10.
[13] Ibid.
[14] 71 Op. Att'y Gen. 214, 1986.
[15] Maryland Municipal League, 2006. Interestingly, of the ten municipalities for which growth exceeded 20% between 2000 and 2006, only four (Elkton, LaPlata, Laytonsville, and Mount Airy) were reported as imposing impact fees.
[16] Maryland Municipal League, 2005. Note that, in Maryland, because schools and libraries are operated at the county level, municipalities are relieved of funding these capital facilities.
[17] Rosenberg, 2006, p. 10.
[18] Ibid., p. 19.
[19] Ibid.

fees, but courts in Maryland and many other states have since ruled that imposing impact fees legislatively, rather than permitting administrative discretion, avoids the more rigorous review.[20]

To be legally acceptable, approaches to setting impact fees must conform to the rational nexus test. To be useful, an approach must also reflect the current state-of-the art in defining capacity standards and apportioning costs. Every impact fee methodology involves assumptions about the levels of demand that can be supported by existing facilities and who benefits from new infrastructure and to what degree. These assumptions are more easily supported if they are based on detailed analysis, but often such analysis is not available.

The Urban Land Institute (ULI) presents a comprehensive methodology for computing impact fees to support general government, public safety, recreation, and education infrastructure.[21] Fees are based on an assumed distribution of costs between residential and non-residential development. Fees are allocated to residential development based on the estimated number of residents and to non-residential development based on the estimated number of employees. These fees are then offset by the estimated amounts the new residents and businesses will contribute toward the same facilities through their future tax payments that are allocated to debt service or capital spending. The ULI authors also provide an offset based on any estimated surplus revealed by a fiscal impact analysis of ongoing costs, arguing that the distinction between shared infrastructure costs and ongoing fiscal impact is counterproductive.[22]

Implementing a credit based on the ongoing fiscal impact of a new development requires that a municipality perform a fiscal impact analysis of ongoing revenues and costs for each new development. Different impact fees would be applied to different developments depending on the results of the analysis. If the impact fee and ongoing analyses were linked, as suggested by ULI, the methodology used to analyze ongoing revenues and costs presumably would receive the same legal scrutiny as has been applied to impact fees. However, there is no standard method for analyzing ongoing fiscal impacts. Different methods produce different results.[23] These considerations argue against incorporating a credit for estimated future surpluses into the impact fee analysis.

In Maryland, Tischler & Associates computed impact fees for fire services, general government, parks and recreation, police, transportation, and water systems using methodologies similar to those described by the ULI.[24] Tischler refines the ULI approach by identifying three distinct bases for impact fees: (1) buy-in to existing infrastructure that has capacity to accommodate new development, (2) costs of facilities included in capital improvement plans, and (3) incremental expansion costs based on current levels of service.[25] In determining net impact fees, Tischler provides a credit for future debt service payments as suggested by ULI, but does not consider a credit based on ongoing revenues less costs.

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[20] Ibid., pp. 30-31.
[21] Burchell et al, 1994, pp. 163-178. The authors also present a methodology for assessing traffic impacts but do not provide guidance on how to translate traffic impacts into impact fees.
[22] Burchell et al., 1994, pp. 169-170.
[23] Edwards, 2001.
[24] Tischler & Associates, 2001, 2004, and 2005.
[25] Tischler & Associates, 2001. pp. 1-2.

Operating Impacts

Another concern of municipal officials is the effect of new development on the operating budget. How do the ongoing revenues expected from new development compare to the ongoing costs of providing the services required by the new residents and businesses? This question is often raised with respect to municipal annexations. The annexations move forward only if projected revenues to the municipality exceed projected costs. Analysis of operating impacts is generally not used to impose charges on new development.[26] Perhaps for that reason, it has not attracted the legal attention that has been directed at analyzing capital impacts.

For most municipalities, real property taxes are the major source of revenue. Projecting additional real property tax revenue is relatively straightforward because the amount of revenue depends directly on the assessable base added by the new development. In Maryland, personal property taxes on businesses, shared income tax revenue, and shared highway user revenue are also significant sources of municipal revenue. Projecting increases in these types of revenue is more challenging, but usually within the capacity of municipal finance officials.

The debates concerning fiscal impact analysis usually revolve around estimates of the costs associated with new development. ULI identifies three common methods for estimating operating costs: (1) per capita, (2) case study, and (3) econometric.[27] In her comparison of fiscal impact analysis methods, Edwards omits the econometric approach, but identifies a fourth approach, known as the land use multiplier or proportional valuation method.[28]

The per capita method computes average service costs per resident and per employee, based on an estimate of the percentages of service costs attributable to residences and businesses. The estimate of costs attributable to residents and businesses may be based on a simple computation of the ratio of residential to business parcels or the ratio of residential to commercial assessable base or a combination of both.[29] To the extent that existing operations have slack, the per capita method may overestimate future costs. On the other hand, if existing operations have no slack, adding operational capacity may entail costs that exceed current average costs.

Under the case study method, the costs of new development are estimated for each municipal service based on information from municipal officials on the extent to which existing operations have sufficient slack to provide additional service.[30]

The land use multiplier or proportional valuation method assumes that costs increase with the intensity of land use and that changes in land use intensity are approximated by changes in property values.[31] Current costs per acre are computed for each land use type based on the property value of that land use relative to total property values. These costs are then applied to the land uses in the proposed development.[32]

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[26] Burchell et al., 1994, pp. 169-170.
[27] Burchell et al., 1994, pp. 129-131.
[28] Edwards, 2001, p. 107.
[29] Burchell et al., 1994, pp. 129-130.
[30] Burchell et al., 1994, p. 130.
[31] Edwards, 2001, p.115.
[32] Ibid.

As described by ULI, the econometric method applies a basic equation relating public service expenditures to revenue parameters, such as tax base and tax rate, and uses historical and current data matrices to obtain projections for the end of the development period as well as at multiple interim stages.[33] This description seems to refer to a particular econometric model, rather than a general econometric approach to estimating the cost of development. In any case, the method is rather sophisticated and would probably require expertise beyond that available among planning staff in a small- to medium-sized municipality.

Proposed Model

The model presented in this report provides templates for both capital impact analysis yielding impact fees and operating impact analysis yielding an assessment of the effects of up to 10 proposed developments on a municipality's operating budget. The template for capital impacts uses the Tischler & Associates distinction of buy-in, capital improvement plan, and incremental costs based on current levels of service. In completing the template, an approach akin to the case study method for analyzing impact fees was used, as Aberdeen officials were asked to identify whether existing infrastructure had available capacity.

The template for operating impacts is based mainly on the per capita method, except that, depending on the nature of the service, costs are based on factors other than population and employees. For example, police costs are based on estimates of additional calls for service and street maintenance costs are based on additional street miles. In addition, the template for operating impacts provides results for each year of a project's development until build-out.

The model consists of two linked Excel workbooks, each consisting of multiple linked worksheets, as follows:

Workbook 1:	Capital Impacts
Worksheets (6):	Capacity
	CIP
	LOS
	Credits
	unit_costs
	Tipping_Points
Workbook 2:	Operating Impacts
Worksheets (12)	BL_data
	Project 1
	Project 2
	Project 3
	Project 4
	Project 5
	Project 6
	Project 7

[33] Burchell, 1994, pp. 130-131.

Project 8
Project 9
Project 10
Project Summary

Each worksheet and its application to the City of Aberdeen are described on the pages that follow. Appendix B presents the worksheets in the Capital Impacts workbook as applied to Aberdeen. Appendix C presents the worksheets in the Operating Impacts workbook as applied to six development projects in Aberdeen.

Note that, for Aberdeen, the analysis of capital impacts and resulting impact fees is limited to costs of general government, police, public works, and parks. The analysis did not encompass water and sewer costs because these capital impacts are addressed by the connection charges already levied by the City. The template can be used to compute impact fees for water and sewer infrastructure by municipalities seeking to impose such fees. Similarly, the analysis of operating impacts in Aberdeen focused on the General Fund budget. Enterprise funds, such as those for water and sewer operations, were not considered. Water and sewer operations are supported by user charges, which are adjusted periodically to ensure that revenues cover costs. The template can be used to determine whether current rates are adequate, using equivalent dwelling units (EDU) to measure demand. However, most cities rely on more detailed rate studies to set water and sewer user charges.

Workbook 1: Capital Impacts, Worksheet: Capacity

Purpose
This worksheet is used to compute the costs per unit of demand of existing infrastructure that has capacity available to accommodate new development. For infrastructure with available capacity, impact fees are charged to new development to "buy in" to the infrastructure. To the extent there is outstanding debt on this infrastructure, the impact fees are offset by the present value of future debt payments that will be made by the new development. (See Credits worksheet.)

Application
For Aberdeen, the following infrastructure was identified as having capacity available for buy-in by new development:

- General Government
  - City Hall
  - Other buildings
  - Land
- Police
  - City Hall
  - Video Surveillance System

Total Costs
Total costs for existing infrastructure were taken from the Aberdeen "Fixed Assets Inventory" as of June 30, 2006. Costs for the video surveillance system were obtained from documents

provided by the vendor in October 2006. Only the actual cost to Aberdeen is considered. Costs that were covered by funding obtained from other levels of government are excluded.

Maximum Demand Computations

The approach to computing the maximum demand that can be served by existing infrastructure (i.e., the facility or system capacity) varies by facility, as described below.[34]

- General Government

  The General Government function serves both residents and businesses. In many of the General Government transactions administered in the City Hall, including provision of services and collection of taxes and fees, City staff are interacting with the representative of an entity, either a household or a business.

  Demand on the General Government portion of the City Hall as well as other buildings and City land is assumed to be proportional to the numbers of dwellings and businesses. Maximum demand is assumed to be the numbers of dwellings and businesses projected for Aberdeen at build-out of the City.

  An estimate of 7,318, dwelling units at build-out cited in the 2002 *Comprehensive Plan* was used. The number of businesses at build-out was estimated at 546, as follows: The population of Aberdeen in 2006 was estimated by the Maryland Department of Planning (MDP) at 14,130. The number of dwelling units in 2006 was estimated at 5,629 by applying a ratio from the 2000 U.S. Census of 2.51 residents per household to the MDP population estimate. A list of businesses in October 2006 on the Aberdeen web site totaled 420. A ratio of 420 businesses to 5,629 dwellings was applied to the estimated 7,318 dwelling units projected for build-out. The total demand capacity of the General Government portion of the City Hall was 7,318 dwellings plus 546 businesses or 7,864 units.

- Police

  The capacity of the police portion of the City Hall is determined by the number of police officers it can house. According to Aberdeen police officials, the police portion of the City Hall can accommodate 50 officers. For purposes of establishing impact fees, it is necessary to define the relationship between the number of officers and demand. Both residents and businesses contribute to the demand for police officers. In 2006, Aberdeen police officers handled an average of 1,046 calls for service. At this rate, 50 officers can handle 52,300 calls for service, so the City Hall will have capacity to accommodate new development until calls increase to more than 52,300 per year.

  The City recently purchased a video surveillances system. Because this system benefits the entire community, the selected unit is the combined number of dwellings and

[34] For each facility or system, demand in the most recent year, as well as maximum demand, is reported. At the point that current demand equals or exceeds maximum demand (i.e., there is no remaining capacity), impact fees for the particular infrastructure would be computed based on expansion projects in the capital improvement plan (CIP) or incremental expansion to maintain the current level of service (LOS).

businesses. The analysis assumes a 10-year life for this system. The capacity computations are based on an estimate of the number of dwellings and businesses that takes into account growth expected from BRAC over the next 10 years.

Unit Cost Computations
The cost per unit of demand is computed by dividing the total cost of the facility or equipment by its capacity.

Workbook 1: Capital Impacts, Worksheet: CIP

Purpose
This worksheet is used to compute the present value of the costs per unit of demand of growth-related projects contained in the capital improvement plan (CIP). A five-year planning horizon is used. Impact fees are charged to new development to cover their share of the cost of new infrastructure necessitated by growth.

Application
The worksheet is set up to encompass General Government, Police, Public Works, Solid Waste, and Parks and Recreation projects planned for the next five years. As described below, the worksheet also provides guidance for computing the demand served by these projects.

The only planned capital improvements identified by Aberdeen officials were major Public Works equipment purchases. Because only General Fund impacts were being considered and Public Works equipment is used for water and sewer operations as well as streets and grounds, it was necessary to estimate and exclude the portion of these purchases attributable to the water and sewer enterprise funds.

Total Costs
The estimated costs of the equipment were provided by the City of Aberdeen. The expenditures over the five-year period were converted to present values using a default discount rate of 5% and the net present value (NPV) function available in Excel.

Maximum Demand Computations
Determination of the maximum demand served by growth-related projects varies by project. In general, though, maximum demand computations assume the project will serve the entire community at build-out, as defined in the 2002 *Comprehensive Plan*.

- General Government
  General Government projects are assumed to serve both residents and businesses. The default value for the maximum demand served by General Government projects is the estimated 7,864 dwellings and businesses at build-out based on information on dwelling units contained in the 2002 *Comprehensive Plan* information on businesses contained on the Aberdeen web site.

- Police
  For police projects, the default value of maximum demand is derived from 2006 data on the numbers of calls for service in residential and commercial areas. The average numbers of calls per residence and per business are applied to the estimated 7,318 dwellings and 546 businesses expected at build-out to obtain the default value of 59,838 calls.

- Public Works
  The appropriate demand units for Public Works projects depend on the nature of the project. For projects related to streets or rights-of-way, the demand unit is street miles.[35] For projects related to public grounds, the numbers of dwellings and businesses seems more appropriate

  Default values for maximum demand assume each project serves the entire community at build-out, with build-out values based on estimates contained in the 2002 *Comprehensive Plan*.

- Solid Waste

  Solid waste projects are assumed to serve residents, only. The maximum demand is derived by applying the 2006 ratio of 4,200 home stops to 5,629 dwelling units to the build-out estimate of 7,318 dwelling units.

- Parks

  Park projects are assumed to serve residents, only. Maximum demand is 19,000 residents at build-out cited in the 2002 *Comprehensive Plan*.

Unit Cost Computations
Unit costs were obtained by dividing the allocated present value of the purchases by the appropriate demand units.

Workbook 1: Capital Impacts, Worksheet: LOS

Purpose
This worksheet addresses infrastructure that is already fully engaged and, consequently, cannot accommodate new development without a reduction in the level of service (LOS) provided by the infrastructure. The worksheet is used to compute the cost associated with incrementally expanding the infrastructure to maintain the existing level of service.

[35] For some municipalities, it might be more appropriate to use traffic-related demand units (e.g., vehicle trips generated) for facilities and equipment needed to maintain streets, because increased traffic places greater demand on these capital items. However, in Aberdeen most of the traffic demand affects state-maintained roads, whereas the capital costs incurred by the City are for local roads.

Application
The worksheet is designed to compute unit costs for General Government vehicles and equipment, Police vehicles and equipment, Public Works maintenance facility, vehicles, and equipment, and Parks.

Total Costs
The costs of vehicles and equipment were based on the values contained in the "Fixed Assets Inventory" as of June 30, 2006. Infrastructure with remaining capacity and vehicles and equipment scheduled for replacement in the capital improvement plan were excluded from consideration. The cost to expand the Public Works maintenance facility was based on square foot construction costs obtained from RS Means.

Demand Computations
Level of service computations are based on demand in the most recent year completed, in this case 2006, as documented in the Capacity worksheet. The demand units for each category of infrastructure generally correspond to the demand units discussed in the CIP worksheet.

Unit Cost Computations
Unit costs are computed by dividing total costs by 2006 demand.

Workbook 1: Capital Impacts, Worksheet: Credits

Purpose
This worksheet is used to compute the offsets to unit costs required because new development will contribute to future debt payments through taxes.

Application
Credits are required for infrastructure with debt outstanding or anticipated. For the Aberdeen example, debt service for the City Hall and other General Fund projects are considered as offsets to the buy-in charges for facilities with remaining capacity. Debt service for the Public Works maintenance facility and trash trucks are considered as offsets to the charges associated with maintaining levels of service. Borrowing was not anticipated to finance the equipment purchases contained in the CIP, therefore no offsets to CIP-related charges were computed.

Demand Computations
The demand served by each project is the same value used in developing unit costs using the Capacity, CIP, and LOS worksheets.

Unit Credit Computations
For each project with outstanding or anticipated debt, the schedule of principal payments is shown, and the present value of the series of payments is computed. Only payments of principal are credited, because only the principal, not the financing costs, are included in the computation of capacity, CIP and LOS costs.

General Fund debt payments are credited to residential and commercial development in proportion to the relative contribution of residents and businesses to the General Fund revenue

from which the debt payments are made. In the case of Aberdeen, 70% of revenue is generated by residences and 30% by businesses.

The appropriate portion of the present value of future principal payments is divided by the demand to be served by the project to arrive at the present value of future principal payments per unit of demand.

Workbook 1: Impact Fees, Worksheet: Unit Costs

Purpose
This worksheet summarizes the unit costs computed in the Capacity, CIP, and LOS worksheets and the offsets computed in the Credits worksheet for residential and commercial development. Net unit costs are computed and aggregated by demand unit.

Application
For Aberdeen, the cost per unit of demand is presented for the following facilities and equipment for which impact fees are being computed:

- Capacity
  General Government: City Hall, other buildings, land
  Police: City Hall, video surveillance system

- CIP
  Public Works: Vehicles and equipment

- LOS
  General Government: Vehicles and equipment
  Police: Vehicles and equipment
  Public Works: Maintenance facility, vehicles and equipment
  Parks: Parks and recreation equipment

Credits per unit of demand are shown separately for residential and commercial development for the following facilities and equipment:

- Capacity
  General Government: City Hall, other buildings
  Police: City Hall

- LOS
  Public Works: Vehicles and equipment

Net costs per unit of residential and commercial demand are presented for all facilities and equipment for which impact fees are being computed. These net unit costs are then aggregated by the demand units to which they apply so that impact fee formulas can be computed.

Computation of Impact Fees
Impact fees are computed by applying the costs per demand unit to the number of units.

Based on the analysis conducted for Aberdeen, for residential development, the impact fee equals $63.39 per new resident plus $1,699.98 per new dwelling unit plus $17.50 times the projected number of police calls for service plus $2,794.90 per street mile. The projected number of residents per household is 2.51, and the projected number of calls for service per household is 2.1, based on 2006 data. Therefore, the impact fee for an individual dwelling unit equals $63.39 x 2.51 + $1,699.98 + $17.50 x 2.1 plus $2,794.90 x the dwelling unit's proportionate share of new street miles. This equals $1,895.84 plus $2,794.90 x the dwelling unit's proportionate share of new street miles. An individual dwelling unit might be apportioned 0.05 street miles of the total street miles contained in a typical development. In this case the portion of the impact fee associated with street miles would be $2,794.90 x 0.05 or $139.75, and the total impact fee would be $1,895.84 + $139.75 or $2,035.58.

For commercial developments, the impact fee would be $437.96 per business, plus $46.22 times the projected number of police calls for service, plus $4,447.60 times the number of new street miles attributable to each business. Based on 2006 data, each business generates an average of 81.6 calls for service. Therefore, the impact fee for an individual business would be $437.96 + $46.22 x 81.6 plus $4,447.60 times the number of new street miles attributable to the business or $4,209.51 plus $4,447.60 times the number of new street miles attributable to the business. For a business to which 0.05 new street miles were allocated, the impact fee associated with street miles would be $4,447.60 x 0.05 or $222.38, and the total impact fee would be $4,209.51 + $222.38 or $4,431.89. Most of this fee represents the cost of police facilities and equipment attributed to commercial development based on the percentage of calls for service occurring in commercial areas.

Workbook 1: Capital Impacts, Worksheet: Tipping Points

Purpose
For infrastructure with current capacity to accommodate growth, this worksheet projects the point at which demand from new development will exceed capacity. The worksheet documents maximum demand capacity and current remaining capacity from the Capacity worksheet. The worksheet draws values for new demand from the Summary worksheet of the Operating Impacts workbook and subtracts the new demand from the current remaining capacity.

Application
For Aberdeen, the following infrastructure identified as having capacity available for buy-in by new development is tracked by the Tipping Sheet:

- General Government
  - City Hall
  - Other buildings
  - Land
- Police
  - City Hall

- Video surveillance system

The tipping point analysis indicates that the capacity of these facilities will not be exceeded by the developments considered in the operating impact analysis. If additional developments did cause the capacity of any of these facilities to be reached, the analysis of impact fees associated with that facility would shift from existing capacity buy-in to CIP (if expansion of the facility were included in the capital improvement plan) or LOS (if the facility is over capacity, but no immediate expansion is planned).

Workbook 2: Operating Impacts, Worksheet: BL_data

Purpose

This worksheet documents baseline data for use in making fiscal impact projections. All baseline financial data and certain baseline non-financial data are input by the user. The worksheet automatically uses the input data to compute additional baseline data.

Application

The user is required to input the following residential baseline data:

-Baseline population
-Average number of people per household
-Estimated assessed value of vacant residential property per acre
-Real property tax rate
-Police calls in residential areas

The user is required to input the following commercial baseline data:

-Baseline number of businesses
-Estimated assessed value of vacant commercial property per acre
-Real property tax rate
-Corporate personal property tax rate
-Police calls in commercial areas
-Estimated value of real property per square foot for each type of development
-Estimated value of personal property per square foot for each type of development

The user is required to input the following general baseline data;

-Total assessed value of real property in City
-Total City street miles

Using this information, the spreadsheet computes the following baseline data:

-Baseline number of households
-Police calls per household
-Police calls per business

In addition, the user inputs itemized revenue and expenditure data for the City for the most recent fiscal year for which data are available.

The worksheet is color coded. The sections containing residential data are shaded in yellow; the sections containing commercial data are shaded in blue; and the sections containing general data are shaded in green. Cells requiring user input, including the entire financial section, are white. Computed values are shown in italics.

For the Aberdeen example, some of the baseline data entered on this sheet, such as the average assessed values for different types of development, are based on a limited survey of existing properties. Over time, these data can be refined to reflect a more comprehensive review of existing properties.

Workbook 2: Operating Impacts, Worksheets: Projects 1 – 10

Purpose

Each of these worksheets documents the characteristics of a proposed development project. (Up to 10 projects can be accommodated.) Each worksheet accommodates a residential, commercial or mixed use development. The worksheet automatically computes the fiscal impact of the project as a function of the development characteristics and the baseline data contained in the BL_data worksheet.

Application

For each proposed development, the user indicates whether the development is inside or outside the existing city boundaries and specifies the projected annual increase in assessed values and the projected annual increase in costs.

For residential developments, the following development characteristics are input by the user for each proposed development:

-Number of acres to be developed
-New units to be developed each year (single-family and townhouse)
-Average estimated assessed value of each unit
-New street miles each year

For commercial developments, the following development characteristics are input by the user for each proposed development:

-Number of acres to be developed
-Number of new businesses to be developed each year
-Square feet to be developed each year by type of business (e.g., drug store, convenience store, office, etc.)
-New street miles each year

The worksheet uses the above data and baseline data from the BL_data sheet to compute annual and, where applicable, cumulative values of the following additional characteristics of the development:

-Additional population
-Total assessed value of real property in the new development
-Estimated current assessed value of real property in the new development (for -developments within the existing City limits)

-Net additional assessed value of real property
-Additional assessed value of personal property
-Additional police calls

The worksheet automatically applies the above data to baseline financial data from the BL_data sheet to arrive at the fiscal impact for each of the financial line items.

The worksheet is color coded. The sections containing residential data are shaded in yellow; the sections containing commercial data are shaded in blue; and the sections containing general data are shaded in green. Cells requiring user input white. Computed values are shown in italics. Certain computed values may be overwritten by the user with estimates obtained from other sources (e.g., estimated assessed value or estimated vehicle trip ends). These items are shaded in pink.

For Aberdeen, worksheets were prepared for the following six projects either currently under development or proposed for development:

Winston's Choice (residential)
Land Capital Group (commercial)
Fields at Rock Glenn (residential)
Paradise Meadows (residential)
Hickory Ridge Industrial Park Lot 4 (commercial)
Corporate Office Properties Trust (commercial)

The Paradise Meadows and Corporate Office Properties Trust are potential annexations, while the other projects are within the existing City boundaries. The analysis showed that the Winston's Choice property resulted in a small deficit in the first year, but revenues in excess of expenditures after that. The other properties all resulted in more revenue than costs in each of the years up to and including build-out.

Workbook 2: Operating Impacts, Worksheet: Summary

Purpose
This worksheet summarizes the combined characteristics and fiscal impacts of the individual projects.

Application
Each cell contains the sum of the values contained in the same cell of the individual project worksheets.

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Appendices

Appendix A
Maryland Municipalities Imposing Impact Fees
Source: Maryland Municipal League, January 2006

Annapolis
Barton
Bel Air
Berlin
Brunswick
Burkittsville
Cambridge
Chesapeake Beach
Clear Spring
Crisfield
Cumberland
Delmar
East New Market
Easton
Elkton
Emmitsburg
Frederick
Frostburg
Fruitland
Greensboro
Hampstead
Indian Head
La Plata
Laurel
Laytonsville
Leonardtown
Manchester
Middletown
Mount Airy
Myersville
New Market
New Windsor
North Beach
Ocean City
Pittsville
Poolesville
Rising Sun
Salisbury
Sharptown
Sykesville
Taneytown
Walkersville
Washington Grove
Westminster
Willards
Woodsboro

Appendix B
Capital Impacts Worksheets

Appendix C
Operating Impacts Worksheets