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I. EXECUTIVE SUMMARY

A. Assignment

Tischler and Associates, Inc, (TA) is under contract with the Town of Barnstable to conduct a prototype land use fiscal impact analysis for new residential and nonresidential development. In a prototype analysis, a “snapshot” approach is used that determines the revenues and costs for various land use prototypes in order to understand the impacts each land use has independently on the Town’s budget. In other words, what type of land use generates net revenues and net deficits to the Town. The four Residential prototypes include: 1) Single Family Break Even, 2) Single Family Moderate Priced, 3) Townhouse-Hyannis, and 4) Townhouse-Osterville. The eight Nonresidential prototypes include: 1) Business Park, 2) Office, 3) Shopping Center, 4) Big Box Retail, 5) Specialty Retail, 6) Hotel, 7) Restaurant, and 8) Fast Food Restaurant. These prototypes are described in more detail in Section II of this report. Limitations to this approach are the reliance on average costing, particularly for one-time capital costs.

B. Cost and Revenue Assumptions

For this analysis, the net fiscal impacts for the residential and nonresidential land use prototypes have been determined by subtracting the costs necessary to serve these land uses from the revenues generated by each land use. This analysis included the General Fund and Capital expenses. The cost and revenue factors have been determined based on the FY2002 Town budget and *current levels of service*.

To derive the costs, revenues, and service levels, TA interviewed department staff and reviewed the current budget and other financial and demographic data. The result of this assessment and the methodologies used to project the costs and revenues are described on the Level of Service, Cost and Revenue Assumption (LOS) document. Please refer to the separate LOS document for details on methodology.

C. Summary Results

As indicated in the tables and charts below, one of the four residential prototypes generates annual net surpluses and four of the eight nonresidential prototypes generate annual net surpluses. The results of each of the funds are discussed below, followed by the reasons for the results and general conclusions.

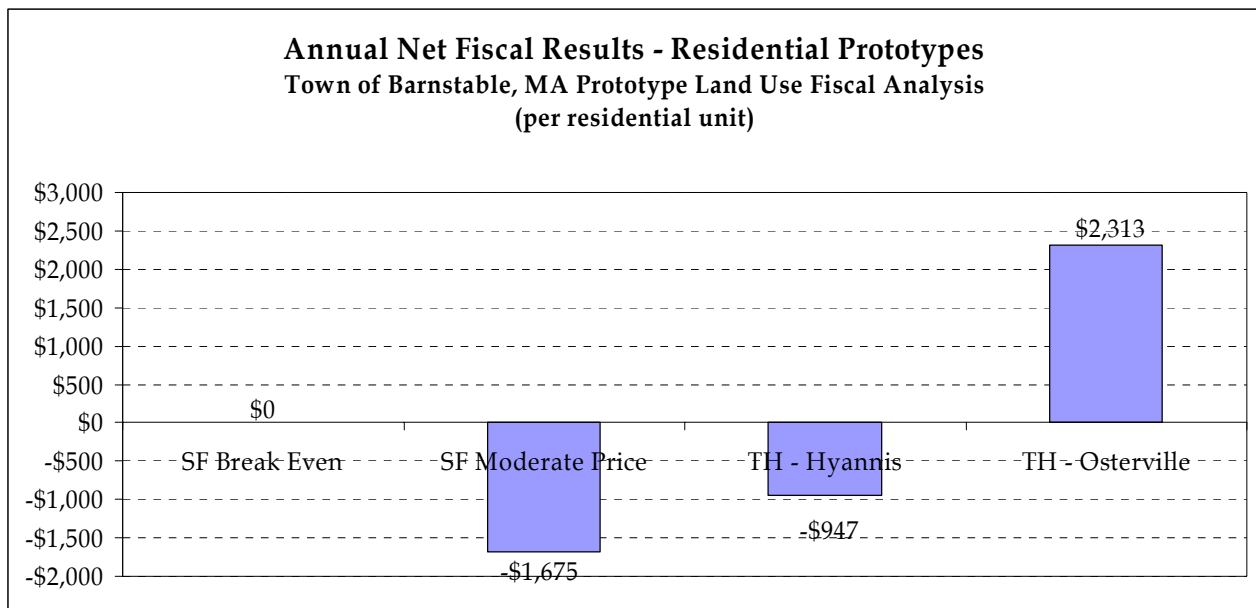
Residential Results

Townhouse-Osterville units generate the only positive residential results with annual net revenue of \$2,313. The lowest annual deficit is generated by the Townhouse-Hyannis prototype at -\$947 per unit annually. While the worst annual fiscal results are generated by the single family moderate price prototype at -\$1,675 per unit.

Annual Net Results - Residential Prototypes
 Town of Barnstable Prototype Land Use Fiscal Analysis

| | RESIDENTIAL (per unit) | | | |
|----------------------------|---------------------------|-------------------------------|-------------------|----------------------|
| | Single Family Break Even* | Single Family Moderate Priced | Townhouse Hyannis | Townhouse Osterville |
| <i>Ave. Assessed Value</i> | \$311,850 | \$131,000 | \$72,000 | \$424,000 |
| Revenue | \$3,251 | \$1,576 | \$897 | \$4,156 |
| Costs | \$3,251 | \$3,251 | \$1,844 | \$1,844 |
| Net Result | \$0 | (\$1,675) | (\$947) | \$2,313 |

* The single family break even prototype was developed to determine what average assessed value is necessary for a single family house to have \$0 fiscal impact on the Town’s finances.

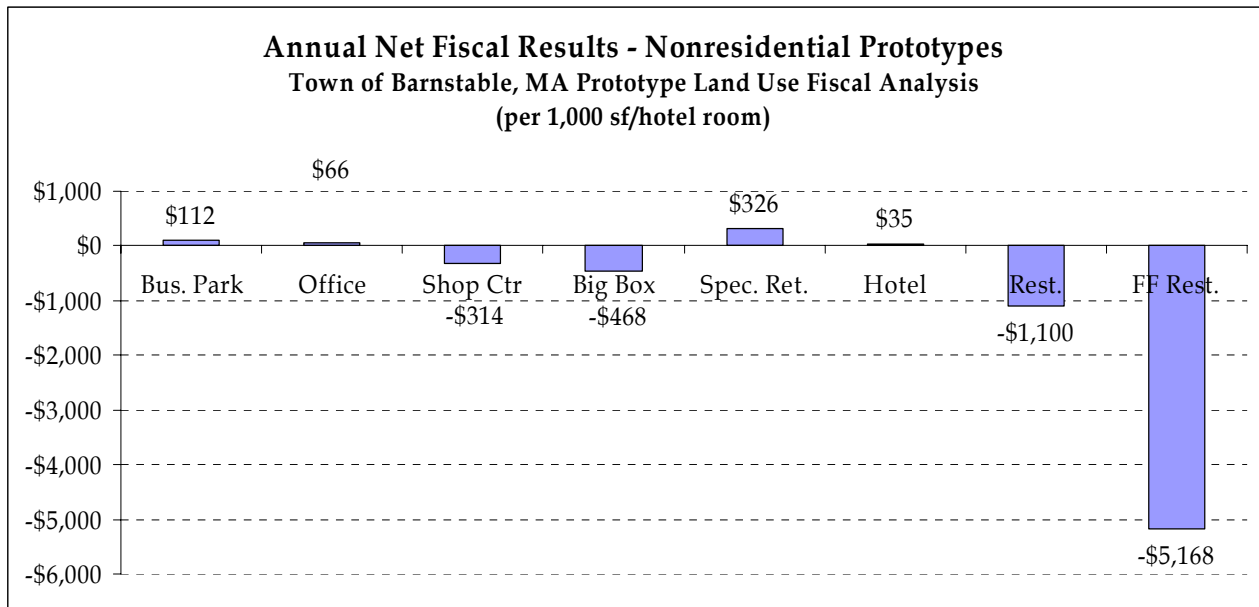


Nonresidential Results

The nonresidential results are discussed in terms of per 1,000 square feet. Therefore, a 10,000 square foot building would have ten times the result. The specialty retail prototype generates the best fiscal results among the nonresidential prototypes at \$326 per 1,000 square feet annually. The next best annual results are generated by the business park prototype at \$112 per 1,000 square feet. The office prototype generates a positive \$66 per 1,000 square feet annually. While the hotel prototype generates the smallest annual surplus at \$35 per room. The shopping center prototype generates the lowest annual deficit of -\$314 per 1,000 square feet. The big box retail prototype generates an annual deficit of -\$468 per 1,000 square feet. The worst nonresidential fiscal results are generated by the restaurant and fast food restaurant prototypes with annual net deficits of -\$1,100 and -\$5,168 per square feet, respectively.

Annual Net Results - Nonresidential Prototypes
Town of Barnstable Prototype Land Use Fiscal Analysis

| | NONRESIDENTIAL (per 1,000 sq ft/hotel room) | | | | | | | |
|----------------------------|---|-------------|-----------------|----------------|------------------|-------------|------------------|----------------------|
| | Business Park | Office | Shopping Center | Big Box Retail | Specialty Retail | Hotel | Restaurant | Fast Food Restaurant |
| <i>Ave. Assessed Value</i> | \$56,000 | \$69,000 | \$68,000 | \$39,000 | \$101,000 | \$30,000 | \$81,000 | \$189,000 |
| Revenue | \$679 | \$845 | \$934 | \$554 | \$1,112 | \$313 | \$1,022 | \$2,116 |
| Costs | \$567 | \$779 | \$1,248 | \$1,023 | \$786 | \$278 | \$2,122 | \$7,284 |
| Net Result | \$112 | \$66 | (\$314) | (\$468) | \$326 | \$35 | (\$1,100) | (\$5,168) |



D. Reasons for the Results

The two single family prototypes and two townhouse prototypes have many of the same revenue and cost factors within each prototype. The only difference within each prototype is the average assessed value and subsequent property taxes. This illustrates the Town’s reliance on property taxes to fund its operations, which will be discussed further in the section below.

Because of the average cost approach utilized in a prototype land use fiscal analysis, the majority of costs for the residential prototypes are driven by average household size, school pupil generation rates, number of Equivalent Dwelling Units (EDU’s) per household, and vehicle trip generation rates. As a result, the single family prototypes generate greater costs than the townhouse prototypes. The single family prototypes have higher costs for schools and school assessments than the townhouse prototypes due to higher school pupil generation rates.

For the nonresidential prototypes, employment densities per 1,000 square feet, number of EDU’s and vehicle trip generation rates drive the overwhelming majority of costs.

In reviewing the average assessed value of nonresidential properties, TA learned that Barnstable assesses nonresidential properties using the income method of valuation as opposed to the cost method of assessment. The Town uses the income method of assessment for nonresidential property, as it is a more legally defensible method of assessment. However, as shown in the table below, the average assessed values for five of the eight nonresidential prototypes are lower under the income method of assessment for nonresidential property as opposed to the cost method of assessment. This results in lower property tax revenue paid on five of the eight nonresidential prototypes. This should not be equated as “lost” revenue to the Town. Rather, it would mean a redistribution of the tax levy that would have these prototypes contribute a greater portion towards the overall levy reducing a corresponding amount for other prototypes.

| Prototype | Income Method Ave. Assessed Value per 1,000 SF/Room* | Property Tax Revenue (\$9.26/\$1,000)* | Cost Method Ave. Assessed Value per 1,000 SF/Room | Property Tax Revenue (\$9.26/\$1,000) | Property Tax Revenue \$ Difference |
|----------------------|--|--|---|---|--|
| Business Park | \$56,000 | \$519 | \$46,000 | \$426 | -\$93 |
| Office | \$69,000 | \$639 | \$97,000 | \$898 | \$259 |
| Shopping Center | \$68,000 | \$630 | \$97,000 | \$898 | \$269 |
| Big Box Retail | \$39,000 | \$361 | \$62,000 | \$574 | \$213 |
| Specialty Retail | \$101,000 | \$935 | \$82,000 | \$759 | -\$176 |
| Hotel | \$30,000 | \$278 | \$47,000 | \$435 | \$157 |
| Restaurant | \$81,000 | \$750 | \$121,000 | \$1,120 | \$370 |
| Fast Food Restaurant | \$189,000 | \$1,750 | \$121,000 | \$1,120 | -\$630 |

* This is the data that is used in the prototype land use fiscal analysis.

The specialty retail prototype generates the best nonresidential result of \$326 per 1,000 square feet annually. This is the result of having a higher average assessed value per 1,000 square feet and having lower costs due to the low EDU’s as well as vehicle trip rates per 1,000 square feet. The other retail prototypes (shopping center and big box retail) have significantly higher costs than the specialty retail due to greater EDU factors and vehicle trip generation rates per 1,000 square feet.

The business park prototype generates the next best nonresidential result of \$112 per 1,000 square feet as a result of having the second lowest costs of the nonresidential prototypes.

The restaurant and fast food restaurant prototypes generate the worst results of the nonresidential prototypes. Despite having high average assessed values, they have the highest vehicle trip generation rates and EDU factors per 1,000 square feet, resulting in significantly higher road maintenance and public safety costs.

E. General Conclusions

Based on the results, the following conclusions can be made:

The results illustrate the Town’s reliance on property taxes to fund its operations. Property taxes comprise approximately 64% of the FY2002 General Fund revenue. However, this analysis shows an even greater reliance on property taxes, ranging from 94% to 65%, because several of the Town’s revenues cannot be attributed as growth-related revenues and are not factors in this analysis. The most notable of these fixed revenues are intergovernmental revenues, which comprise approximately 15% of the FY2002 General Fund revenue. These revenues are considered fixed because their distribution formulas are based on a variety of factors including average incomes and property values and are not directly tied to growth in population or jobs. These revenues are also considered fixed due to their fluctuations as a result of the fiscal status of the Commonwealth.

Revenues per Prototype
Town of Barnstable Prototype Land Use Fiscal Analysis

| Revenue | RESIDENTIAL (per unit) | | | | NONRESIDENTIAL (per 1,000 sq ft/hotel room) | | | | | | | |
|---------------------------|--------------------------|-------------------------------|-------------------|----------------------|---|-------------|-----------------|----------------|------------------|-------------|-------------|----------------------|
| | Single Family Break Even | Single Family Moderate Priced | Townhouse Hyannis | Townhouse Osterville | Business Park | Office | Shopping Center | Big Box Retail | Specialty Retail | Hotel | Restaurant | Fast Food Restaurant |
| Taxes and Assessments | | | | | | | | | | | | |
| Property Taxes | 89% | 77% | 74% | 94% | 76% | 76% | 67% | 65% | 84% | 89% | 73% | 83% |
| Other Taxes & Assessments | 8% | 18% | 19% | 4% | 20% | 20% | 11% | 15% | 7% | 8% | 21% | 10% |
| Charges for Services | 1% | 2% | 3% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Fines and Forfeits | 0% | 1% | 1% | 0% | 2% | 3% | 1% | 2% | 1% | 1% | 3% | 1% |
| Fees | 1% | 2% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Licenses | 0% | 0% | 0% | 0% | 0% | 0% | 16% | 13% | 6% | 0% | 0% | 0% |
| Permits | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 2% | 1% | 0% | 0% | 0% |
| State Aid | 0% | 0% | 0% | 0% | 1% | 2% | 2% | 3% | 1% | 2% | 3% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

As the fiscal results show, the current level of service cannot be supported by the present General Fund revenue structure and may be evidence if a revenue structure problem. This could result in either the need to raise revenues or decrease the current level of service since several of the prototype land use categories cause deficits.

The single family break even prototype illustrates this reliance on property taxes as the average assessed value is the only revenue or cost variable that differs from the single family moderate priced. TA manipulated the average assessed value to determine what value produces a fiscally

neutral result. The average assessed value for the single family prototype is about \$312,000 compared to the \$131,000 moderate priced unit.

This is because several of the Town's revenues cannot be attributed as growth-related revenues and are not factored into this analysis. Because these funds cannot be attributed as growth-related revenue, they are not factored into this analysis. This has resulted in the Town being able to achieve an "artificial" level of service for many of its programs. As the fiscal results show, this level of service cannot be supported by the present General Fund revenue structure and may be evidence of a revenue structure problem.

It will be beneficial if there are sufficient housing units with higher average assessed values that generate sufficient annual surpluses to "subsidize" the negative annual fiscal results of other types of housing. This can expand the price range of housing available in the Town.

The results for the nonresidential prototypes should not be viewed entirely negatively. Employment in these sectors can provide residents with employment that affords them the ability to live within the Town.

It is important to acknowledge that fiscal issues are only one concern when evaluating land uses. Non-fiscal issues such as the environment, housing affordability, jobs/housing balance and quality of life must also be considered. The emphasis should be on achieving an appropriate mix of land uses.

II. PROTOTYPES

The Planning Department and TA developed four residential and eight nonresidential land use prototypes to examine. These land use prototypes are briefly discussed in the sections below.

A. Residential Prototypes

The residential prototypes include: 1) Single Family Break Even, 2) Single Family Moderate Priced, 3) Townhouse-Hyannis, and 4) Townhouse-Osterville. These different prototypes are meant to represent the various types of future residential development expected in the Town. The table below outlines the residential prototypes and their associated characteristics. The estimated persons per unit, EDU’s per unit, average assessed values, and average daily vehicle trips are shown in the table for each prototype. The single family prototypes will have the same persons per unit, EDU’s per unit, and vehicle trip data as will the two townhouse prototypes. These data will be used to calculate the associated cost and revenue factors described in Section IV. Persons per unit was developed using 1990 and 2000 US Census data. EDU’s are based on the household size relationship to that of the single family unit. Average assessed values are based on data provided by the Town. Average daily vehicle trip factors are from the Institute of Transportation Engineers.

Residential Prototypes
Town of Barnstable Prototype Land Use Fiscal Analysis

| Prototype | ITE Code | Persons per Unit (1) | EDUs per Unit (2) | Ave. Assessed Value per Unit (3) | Vehicle Trips (4) |
|-------------------------------|----------|----------------------|-------------------|----------------------------------|-------------------|
| Single Family Break Even | 210 | 2.50 | 1.00 | \$311,850 | 9.57 |
| Single Family Moderate Priced | 210 | 2.50 | 1.00 | \$131,000 | 9.57 |
| Townhouse-Hyannis | 230 | 1.58 | 0.63 | \$72,000 | 5.86 |
| Townhouse-Osterville | 230 | 1.58 | 0.63 | \$424,000 | 5.86 |

(1) Based on 1990 & 2000 US Census data.

(2) Based on persons per household relationship to persons per household in single family units.

(3) Based on building valuation data provided by the Town, with the exception of the single family break even prototype.

(4) Based on ITE Trip Generation 6th Edition.

B. Nonresidential Prototypes

The eight nonresidential prototypes include: 1) Business Park, 2) Office, 3) Shopping Center, 4) Big Box Retail, 5) Specialty Retail, 6) Hotel, 7) Restaurant, and 8) Fast Food Restaurant. The table below outlines the nonresidential prototypes and their associated characteristics. Assumptions for square feet per employee were developed using information from the Institute of Transportation Engineers and Urban Land Institute. EDU’s per 1,000 square feet/hotel room is based on the presence of people at a particular land use to that of a single family residential unit. Average assessed values per 1,000 square feet/hotel room are based on data provided by the Town. Vehicle trip factors are from the Institute of Transportation Engineers (ITE).

**Nonresidential Prototypes
Town of Barnstable Prototype Land Use Fiscal Analysis**

| Prototype | ITE Code | Employees per 1,000 SF/Room (1) | EDUs per 1,000 SF/Room (2) | Ave. Assessed Value per 1,000 SF/Room (3) | Vehicle Trips (4) |
|----------------------|----------|---------------------------------|----------------------------|---|-------------------|
| Business Park | 770 | 3.16 | 1.79 | \$56,000 | 12.76 |
| Office | 710 | 4.04 | 2.49 | \$69,000 | 18.31 |
| Shopping Center | 820 | 2.50 | 4.16 | \$68,000 | 68.17 |
| Big Box Retail | 815 | 1.96 | 3.40 | \$39,000 | 56.63 |
| Specialty Retail | 814 | 1.82 | 2.63 | \$101,000 | 40.67 |
| Hotel | 310 | 0.62 | 0.98 | \$30,000 | 8.23 |
| Restaurant | 831 | 5.00 | 6.25 | \$81,000 | 89.95 |
| Fast Food Restaurant | 834 | 5.00 | 24.31 | \$189,000 | 496.12 |

(1) Based on ITE trip generation and ULI data.

(2) Based on ITE trip generation, visitor hours and average vehicle occupancy.

(3) Based on building valuation data provided by the Town and discussions with Town staff.

(4) Based on ITE Trip Generation 6th Edition

III. FISCAL IMPACT RESULTS

A. Annual Revenue

The tables below summarizes the annual revenues for each prototype based on the methodology discussed in the separate LOS document. The budgeted categories of “Fines and Forfeitures”, “Other Revenues”, “Rents”, and “Transfers In” are not shown because they are considered fixed relative to new residential and nonresidential growth.

**Revenues per Residential Prototype
Town of Barnstable Prototype Land Use Fiscal Analysis**

| Revenue | RESIDENTIAL (per unit) | | | |
|--------------------------------------|-----------------------------|----------------------------------|----------------------|-------------------------|
| | Single Family Break Even | Single Family Moderate Priced | Townhouse Hyannis | Townhouse Osterville |
| Taxes and Assessments | | | | |
| <i>Property Taxes</i> | \$2,888 | \$1,213 | \$667 | \$3,926 |
| <i>Other Taxes & Assessments</i> | \$276 | \$276 | \$175 | \$175 |
| Charges for Services | \$39 | \$39 | \$25 | \$25 |
| Fines and Forfeits | \$13 | \$13 | \$8 | \$8 |
| Fees | \$27 | \$27 | \$17 | \$17 |
| Licenses | \$1 | \$1 | \$1 | \$1 |
| Other | \$0 | \$0 | \$0 | \$0 |
| Permits | \$2 | \$2 | \$2 | \$2 |
| Rents | \$0 | \$0 | \$0 | \$0 |
| State Aid | \$5 | \$5 | \$3 | \$3 |
| Transfers In | \$0 | \$0 | \$0 | \$0 |
| TOTAL | \$3,251 | \$1,576 | \$897 | \$4,156 |

| | | | | |
|--------------------------------------|-------------|-------------|-------------|-------------|
| Taxes and Assessments | | | | |
| <i>Property Taxes</i> | 89% | 77% | 74% | 94% |
| <i>Other Taxes & Assessments</i> | 8% | 18% | 19% | 4% |
| Charges for Services | 1% | 2% | 3% | 1% |
| Fines and Forfeits | 0% | 1% | 1% | 0% |
| Fees | 1% | 2% | 2% | 0% |
| Licenses | 0% | 0% | 0% | 0% |
| Permits | 0% | 0% | 0% | 0% |
| State Aid | 0% | 0% | 0% | 0% |
| TOTAL | 100% | 100% | 100% | 100% |

Revenues per Nonresidential Prototype
Town of Barnstable Prototype Land Use Fiscal Analysis

| Revenue | NONRESIDENTIAL (per 1,000 sq ft/hotel room) | | | | | | | |
|--------------------------------------|---|--------------|-----------------|----------------|------------------|--------------|----------------|----------------------|
| | Business Park | Office | Shopping Center | Big Box Retail | Specialty Retail | Hotel | Restaurant | Fast Food Restaurant |
| Taxes and Assessments | | | | | | | | |
| <i>Property Taxes</i> | \$519 | \$639 | \$630 | \$361 | \$935 | \$278 | \$750 | \$1,750 |
| <i>Other Taxes & Assessments</i> | \$135 | \$172 | \$107 | \$84 | \$78 | \$26 | \$213 | \$213 |
| Charges for Services | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Fines and Forfeits | \$17 | \$21 | \$13 | \$10 | \$10 | \$3 | \$26 | \$26 |
| Fees | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Licenses | \$0 | \$0 | \$149 | \$70 | \$65 | \$0 | \$0 | \$0 |
| Other | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Permits | \$0 | \$0 | \$15 | \$11 | \$11 | \$0 | \$0 | \$0 |
| Rents | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| State Aid | \$9 | \$13 | \$22 | \$18 | \$14 | \$5 | \$33 | \$127 |
| Transfers In | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| TOTAL | \$679 | \$845 | \$934 | \$554 | \$1,112 | \$313 | \$1,022 | \$2,116 |

| | | | | | | | | |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Taxes and Assessments | | | | | | | | |
| <i>Property Taxes</i> | 76% | 76% | 67% | 65% | 84% | 89% | 73% | 83% |
| <i>Other Taxes & Assessments</i> | 20% | 20% | 11% | 15% | 7% | 8% | 21% | 10% |
| Charges for Services | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Fines and Forfeits | 2% | 3% | 1% | 2% | 1% | 1% | 3% | 1% |
| Fees | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Licenses | 0% | 0% | 16% | 13% | 6% | 0% | 0% | 0% |
| Permits | 0% | 0% | 2% | 2% | 1% | 0% | 0% | 0% |
| State Aid | 1% | 2% | 2% | 3% | 1% | 2% | 3% | 6% |
| TOTAL | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

Taxes and assessments account for the largest source of revenues for both residential and nonresidential prototypes. Property taxes account for the largest share of these revenues and are based on market values provided by the Town. The motor vehicle excise tax also accounts for a portion of the revenue received from taxes and assessments. Please refer to the separate LOS document for more detail on the motor vehicle excise tax.

The townhouse-Osterville prototype generates the most annual revenue at \$4,156 per unit (this is compared to the townhouse-Hyannis prototype which generates the lowest amount of revenue at \$897 per unit annually). The single family break even and single family moderate priced generate the next highest amounts of revenue at \$3,251 per unit and \$1,576 per unit respectively. As discussed above, most of this revenue is generated from property taxes, which also accounts for the different results of the two single family prototypes and two townhouse prototypes. Similar persons per household and EDU factors are used for each of the single family prototypes and each of the townhouse prototypes, which accounts for the similar results of the population and EDU based revenues. Likewise, since the single family prototypes have higher persons and EDU's per household than the townhouse prototypes, they generate higher revenue results for population and EDU based revenues such as charges for service, fees, licenses, and state aid.

The fast food restaurant prototype generates the best revenue results of the nonresidential prototypes at \$2,116 per 1,000 square feet annually. It has the highest average assessed value per 1,000 square feet and employee density per 1,000 square feet, which accounts for it having

the highest property tax revenue and job based revenues. The specialty retail prototype has the next best annual revenue result at \$1,112 per 1,000 square feet. This is the result of having the second highest average assessed value. The restaurant prototype has the third highest average assessed value and thus has the third highest revenue results of \$1,022 per 1,000 square feet annually. The shopping center prototype has the next best results of \$934 per 1,000 square feet. This is due to revenues based on retail jobs and the shopping center prototype having a high employment density per 1,000 square feet. The business park and big box prototypes generate \$679 and \$554 respectively per 1,000 square feet. The hotel prototype generates the lowest amount of revenue at \$313 per room. It has the lowest assessed value and lowest employment density.

B. Annual Operating Expenditures

The tables below summarize the annual operating costs for each prototype based on the methodology discussed in the separate LOS document.

**Operating Expenditures per Residential Prototype
Town of Barnstable Prototype Land Use Fiscal Analysis**

| Expenditures | RESIDENTIAL (per unit) | | | |
|-------------------------|--------------------------|-------------------------------|-------------------|----------------------|
| | Single Family Break Even | Single Family Moderate Priced | Townhouse Hyannis | Townhouse Osterville |
| Town Council & Manager | \$9 | \$9 | \$5 | \$5 |
| Administrative Services | \$131 | \$131 | \$83 | \$83 |
| Community Services | \$83 | \$83 | \$52 | \$52 |
| Police | \$185 | \$185 | \$117 | \$117 |
| Public Works | \$169 | \$169 | \$106 | \$106 |
| Regulatory Services | \$36 | \$36 | \$23 | \$23 |
| Schools | \$2,121 | \$2,121 | \$1,156 | \$1,156 |
| Other Requirements | \$226 | \$226 | \$137 | \$137 |
| TOTAL | \$2,960 | \$2,960 | \$1,681 | \$1,681 |
| Town Council & Manager | 0% | 0% | 0% | 0% |
| Administrative Services | 4% | 4% | 5% | 5% |
| Community Services | 3% | 3% | 3% | 3% |
| Police | 6% | 6% | 7% | 7% |
| Public Works | 6% | 6% | 6% | 6% |
| Regulatory Services | 1% | 1% | 1% | 1% |
| Schools | 72% | 72% | 69% | 69% |
| Other Requirements | 8% | 8% | 8% | 8% |
| TOTAL | 100% | 100% | 100% | 100% |

**Operating Expenditures per Nonresidential Prototype
Town of Barnstable Prototype Land Use Fiscal Analysis**

| Expenditures | NONRESIDENTIAL (per 1,000 sq ft/hotel room) | | | | | | | |
|-------------------------|---|--------------|-----------------|----------------|------------------|--------------|----------------|----------------------|
| | Business Park | Office | Shopping Center | Big Box Retail | Specialty Retail | Hotel | Restaurant | Fast Food Restaurant |
| Town Council & Manager | \$7 | \$9 | \$5 | \$4 | \$4 | \$1 | \$11 | \$11 |
| Administrative Services | \$91 | \$116 | \$72 | \$56 | \$52 | \$18 | \$143 | \$143 |
| Community Services | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Police | \$331 | \$460 | \$769 | \$629 | \$486 | \$181 | \$1,156 | \$4,496 |
| Public Works | \$152 | \$206 | \$322 | \$265 | \$200 | \$64 | \$660 | \$2,031 |
| Regulatory Services | \$21 | \$27 | \$21 | \$16 | \$15 | \$4 | \$34 | \$34 |
| Schools | -\$140 | -\$179 | -\$111 | -\$87 | -\$81 | -\$28 | -\$222 | -\$222 |
| Other Requirements | \$69 | \$90 | \$80 | \$65 | \$54 | \$18 | \$163 | \$336 |
| TOTAL | \$531 | \$729 | \$1,158 | \$948 | \$730 | \$259 | \$1,945 | \$6,829 |
| Town Council & Manager | 1% | 1% | 0% | 0% | 1% | 1% | 1% | 0% |
| Administrative Services | 17% | 16% | 6% | 6% | 7% | 7% | 7% | 2% |
| Community Services | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Police | 62% | 63% | 66% | 66% | 67% | 70% | 59% | 66% |
| Public Works | 29% | 28% | 28% | 28% | 27% | 25% | 34% | 30% |
| Regulatory Services | 4% | 4% | 2% | 2% | 2% | 2% | 2% | 0% |
| Schools | -26% | -25% | -10% | -9% | -11% | -11% | -11% | -3% |
| Other Requirements | 13% | 12% | 7% | 7% | 7% | 7% | 8% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

As shown in the tables above, the greatest annual operating expenditures for the residential prototypes are for schools (driven by school pupil generation rates), other requirements (which includes the regional school district assessment and is also driven by school pupil generation rates), police (driven by EDU’s) and public works (driven by vehicle generation rates). The greatest annual operating expenditures for the nonresidential prototypes are police (driven by EDU’s) and public works (driven by vehicle generation rates).

The single family prototypes generate the greatest annual operating costs at \$2,960 per unit. This is the result of their larger school pupil generation rates, average household sizes, EDU’s per household, and vehicle trip generation rates than the townhouse prototypes. As discussed earlier, similar household sizes, EDU factors and vehicle trip generation rates are used for each of the single family prototypes and each of the townhouse prototypes. The townhouse prototypes generate \$1,681 in annual cost per unit.

The fast food restaurant prototype generates the greatest annual operating costs of \$6,829 per 1,000 square feet as a result of greater police and public works costs due to having a significantly higher number of EDU’s per 1,000 square feet and vehicle trip generation rate per 1,000 square feet. For similar reasons, the restaurant prototype generates the next highest amount of annual costs at \$1,945 per 1,000 square feet. The shopping center prototype generates \$1,158 per 1,000 square feet annually as a result of having the third highest rate of EDU’s per 1,000 square feet and vehicle trips. The big box retail prototype generates \$948 per 1,000 square feet annually. The specialty retail and office prototype generate nearly identical annual costs at \$730 and \$729 respectively per 1,000 square feet. The business park prototype has the second lowest EDU and vehicle trip generation rates and thus has the second lowest expenditures of \$531 per 1,000 square feet. While the hotel prototype has the lowest number of EDU’s and vehicle trips and thus has the lowest annual costs of \$259 per room.

C. Annualized Capital Improvements Expenditures

The tables below summarize the annualized capital improvements expenditures for each prototype based on the methodology discussed in the separate LOS document. The methodology used in this analysis calculates a one-time cost for new growth’s fair share of capital facilities based on current levels of service. Capital improvement costs were calculated based on the Town’s current inventory of capital facilities and estimated replacement costs. Since the operating cost and revenue factors in this analysis are *annual* amount, capital improvement costs are amortized over a twenty-year period to derive an annual capital cost factor. These annualized cost factors are shown in the tables below.

**Land Use Prototype Annualized Capital Improvement Amounts
Per Residential Unit & Per 1,000 SF/Hotel Room for Nonresidential**

| Expenditures | Single Family Break Even | Single Family Moderate Priced | Townhouse Hyannis | Townhouse Osterville |
|----------------------|--------------------------|-------------------------------|-------------------|----------------------|
| General Government | \$8 | \$8 | \$5 | \$5 |
| Public Works | \$5 | \$5 | \$3 | \$3 |
| Community Facilities | \$37 | \$37 | \$23 | \$23 |
| Police Department | \$3 | \$3 | \$2 | \$2 |
| Road Projects | \$11 | \$11 | \$7 | \$7 |
| Schools | \$227 | \$227 | \$123 | \$123 |
| TOTAL | \$291 | \$291 | \$163 | \$163 |

| | | | | |
|----------------------|-------------|-------------|-------------|-------------|
| General Government | 3% | 3% | 3% | 3% |
| Public Works | 2% | 2% | 2% | 2% |
| Community Facilities | 13% | 13% | 14% | 14% |
| Police Department | 1% | 1% | 1% | 1% |
| Road Projects | 4% | 4% | 4% | 4% |
| Schools | 78% | 78% | 75% | 75% |
| TOTAL | 100% | 100% | 100% | 100% |

**Land Use Prototype Annualized Capital Improvement Amounts
Per Residential Unit & Per 1,000 SF/Hotel Room for Nonresidential**

| Expenditures | Business Park | Office | Shopping Center | Big Box Retail | Specialty Retail | Hotel | Restaurant | Fast Food Restaurant |
|----------------------|---------------|-------------|-----------------|----------------|------------------|-------------|--------------|----------------------|
| General Government | \$10 | \$13 | \$8 | \$6 | \$6 | \$2 | \$16 | \$16 |
| Public Works | \$6 | \$8 | \$19 | \$16 | \$11 | \$4 | \$40 | \$2 |
| Community Facilities | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Police Department | \$6 | \$8 | \$14 | \$11 | \$9 | \$3 | \$21 | \$81 |
| Road Projects | \$14 | \$20 | \$49 | \$41 | \$29 | \$9 | \$101 | \$355 |
| Schools | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| TOTAL | \$36 | \$50 | \$90 | \$74 | \$55 | \$18 | \$177 | \$455 |

| | | | | | | | | |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| General Government | 28% | 26% | 9% | 9% | 11% | 11% | 9% | 4% |
| Public Works | 16% | 16% | 21% | 21% | 21% | 20% | 22% | 0% |
| Community Facilities | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Police Department | 17% | 17% | 15% | 15% | 16% | 18% | 12% | 18% |
| Road Projects | 39% | 41% | 54% | 55% | 53% | 51% | 57% | 78% |
| Schools | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| TOTAL | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

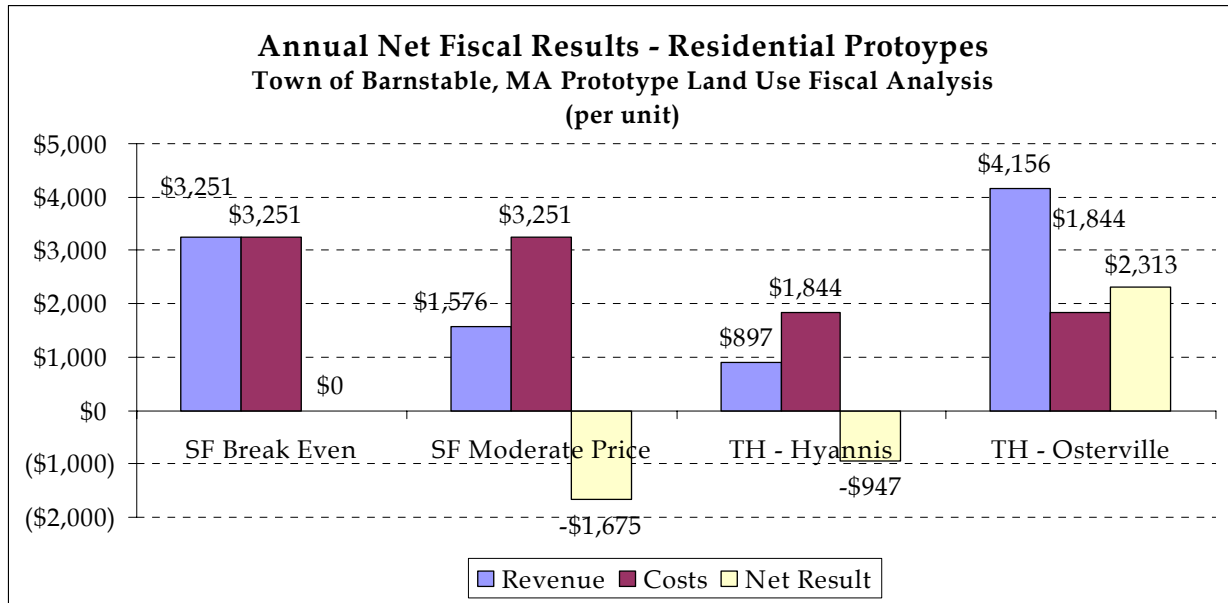
Because of the average cost approach utilized in a prototype land use fiscal analysis, average household size, school pupil generation rates, number of EDU's and vehicle trip generation rates drive the majority of costs for the both the residential prototypes. For the residential prototypes, school capital costs are the largest capital expense. The single family prototypes generate the greatest annualized capital costs at \$291 per unit while the townhouse prototypes generate an annualized capital cost of \$163 per unit.

Annualized capital costs for the nonresidential prototypes are primarily driven by vehicle trip generation rates, employees per 1,000 square feet and number of EDU's. The restaurant prototypes generate the highest annualized capital costs due to having the highest vehicle trip generation rates, employment density per 1,000 square feet and number of EDU's. The fast food restaurant prototype generates the highest annualized capital expenses at \$455 per 1,000 square feet while the restaurant prototype generates \$177 per 1,000 square feet in annualized capital costs. The shopping center, big box retail and specialty retail prototypes have the next highest demand factors and yield annualized capital expenses of \$90, \$74 and \$55, respectively per 1,000 square feet. With their lower vehicle trip generation rates, employment densities and number of EDU's, the office prototype generates an annualized capital cost of \$50 per 1,000 square feet followed by the business park prototype at \$36 per 1,000 square feet. The hotel prototype generates the lowest annualized capital costs at \$18 per room.

D. Annual Net Results

Residential

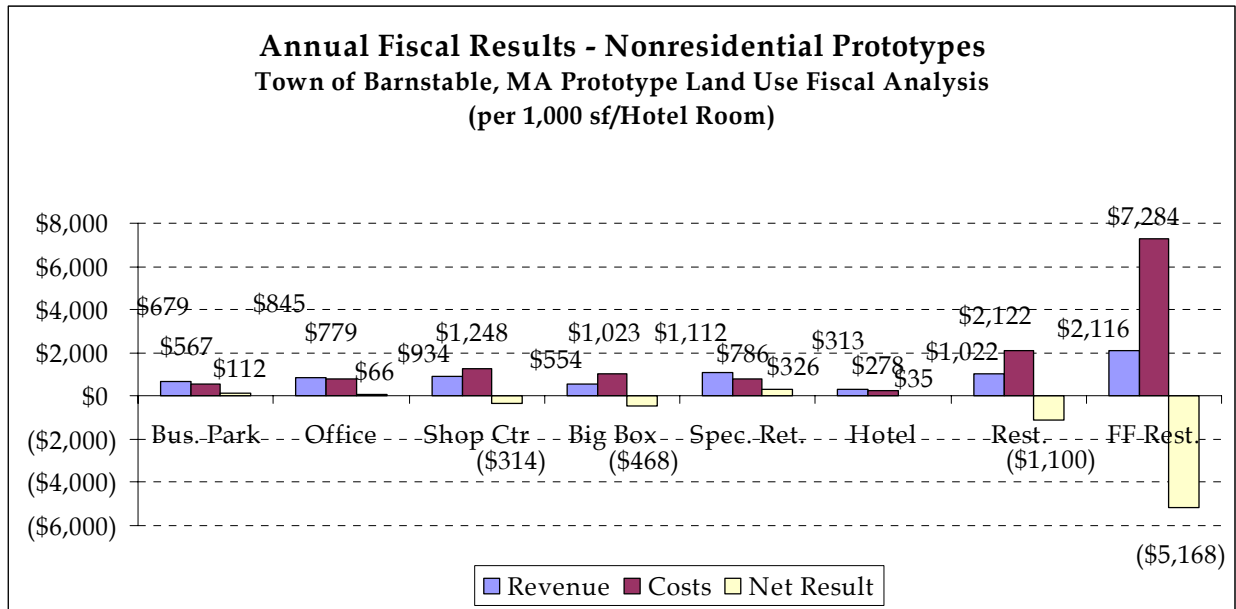
The chart below summarizes the revenue, costs, and net results for each of the residential prototypes. One of the four residential prototypes generates annual net surpluses, while two generate annual net deficits.



The townhouse-Osterville prototype is the only residential prototype to generate a positive result with annual net revenue of \$2,313 per unit. This is due to its high average assessed value and lower costs. Despite generating the lowest amount of revenue, the townhouse-Hyannis prototype generates the next best results of the residential prototypes due to having lower costs. The single family moderate price prototype generates higher costs and thus produces the worst fiscal results of the residential prototypes. Given its purpose, the single family break even prototype is fiscally neutral with an average assessed value of \$311,850 per unit.

Nonresidential

The chart below summarizes the revenue, costs, and net results for each of the nonresidential prototypes. Four of the eight nonresidential prototypes generate annual net surpluses, while four generate annual net deficits.



The specialty retail prototype generates the best fiscal results of the nonresidential prototypes at \$326 per 1,000 square feet due to its high average assessed value. The business park prototype generates the second lowest annual costs and yields a \$112 per 1,000 square feet surplus. The office prototype generates the next best results at \$66 per 1,000 square feet. Despite generating the lowest amount of revenue, the hotel room has the lowest expenses of the nonresidential prototypes and generates an annual surplus of \$35 per room. The shopping center prototype and big box retail prototype generate -\$314 and -\$468 respectively per 1,000 square feet. The restaurant prototypes have the worst annual fiscal results of -\$1,100 per 1,000 square feet for the restaurant prototype and -\$5,168 per 1,000 square feet for the fast food restaurant prototype, despite generating the highest revenues of the nonresidential prototypes. This is due to these prototypes also having the highest cost as a result of having greater vehicle trip generation rates, employment densities, and EDU's.

APPENDIX

A. Population, Housing Units and Employment

The table below summarizes the current residential and nonresidential conditions in Barnstable. These values are used to determine the cost and revenue factors summarized in the sections below.

**2001 Demographic and Employment Conditions
Town of Barnstable Prototype Land Use Fiscal Analysis**

| | |
|-----------------------------------|----------------------|
| Residential | |
| <i>Occupied Housing Units (1)</i> | |
| Single Family-Detached | 20,670 |
| Condominium | 709 |
| Apartment Units | 4,201 |
| Total | 25,580 |
| <i>Population (1)</i> | 47,821 |
| <i>Seasonal Population (2)</i> | 78,333 |
| | |
| Nonresidential | <i>Employees (3)</i> |
| | |
| <i>Employment</i> | 17,154 |
| <i>Perm. Population and Jobs</i> | 64,975 |
| <i>Peak Population and Jobs</i> | 95,487 |
| <i>Equivalent Dwelling Units</i> | 47,937 |
| <i>Road Miles</i> | 62 |

(1) Town of Barnstable.

(2) TA estimate.

(3) Massachusetts Division of Employment and Training.

The number of housing units in the Town of Barnstable is estimated at 25,580. This estimate is based on information provided by the Town of Barnstable. According to the Town, year-round population is estimated at 47,821 persons.

Because Barnstable is a seasonal destination, visitors to Barnstable have a significant fiscal impact on the Town’s revenues and expenditures. The Town estimates the seasonal population to be 126,000 (including the permanent population of 47,821). Visitors to Barnstable include those who stay overnight in hotels or seasonal housing units and day-trippers. The fiscal impacts of these different visitors vary.

To get a better understanding of the visitors to Barnstable, TA estimated the number of visitors who stay overnight in seasonal and vacant housing units and hotel rooms and day-trippers. TA estimates the population staying overnight in hotels or seasonal housing units to be 30,512. This

number together with the permanent population of 47,821 results in a seasonal population of 78,333. Subtracting this number from the peak population of 126,000 results in the number of day-trippers to be 47,667.

Estimated Population in Seasonal and Vacant Homes

| | |
|---|--------------|
| Housing Units for "Seasonal, Recreational, or Occasional Use" (2000 Census) | 4,752 |
| Other Vacant Housing Units (2000 Census) | 640 |
| TOTAL VACANT | 5,392 |

| | |
|-------------------------------------|---|
| Persons per Household (TA estimate) | 5 |
|-------------------------------------|---|

| | |
|--|---------------|
| ESTIMATED POPULATION IN SEASONAL AND VACANT HOUSING UNITS (1) | 26,960 |
|--|---------------|

Estimated Population in Hotel Rooms

| | |
|---|-------|
| Hotel Rooms (Estimated Using AAA guide) | 1,776 |
|---|-------|

| | |
|------------------------|---|
| Persons per Hotel Room | 2 |
|------------------------|---|

| | |
|---|--------------|
| ESTIMATED POPULATION IN HOTELS (2) | 3,552 |
|---|--------------|

| | |
|--|---------------|
| ESTIMATED SEASONAL POPULATION (3) | 30,512 |
|--|---------------|

| | |
|------------------------------------|--------|
| Permanent Population (2000 Census) | 47,821 |
|------------------------------------|--------|

| | |
|-----------------------------------|--------|
| Seasonal Population (TA estimate) | 30,512 |
|-----------------------------------|--------|

| | |
|--------------------------------------|---------------|
| TOTAL SEASONAL POPULATION (4) | 78,333 |
|--------------------------------------|---------------|

| | |
|--------------------------------------|--------|
| Estimated Day-Trippers to Barnstable | 47,667 |
|--------------------------------------|--------|

| | |
|---------------------------------|---------|
| PEAK POPULATION (Town Estimate) | 126,000 |
|---------------------------------|---------|

(1) Total Vacant Housing Units * Persons per Household

(2) Hotel Rooms*Persons per Hotel Room

(3) Estimated Population in Seasonal and Vacant Housing Units+Estimated Population in Hotel Rooms

(4) Permanent Population+Seasonal Population

TA recommends not including the day-tripper population as a part of the analysis. While day-trippers do have an impact on the Town’s expenditures (primarily police, roads, recreation facilities), they have less of an impact than visitors who stay overnight in seasonal and vacant housing units and hotel rooms. Also, because the prototype fiscal analysis is directly related to residential and nonresidential land uses, it is difficult to calculate the impact of day-trippers. Thus, TA uses the seasonal population figure of 78,333 (47,821 + 30,512) as the demand

indicator for those revenues and expenses impacted by these people while acknowledging their fiscal impact is somewhat overstated by not including the impact of day-trippers.

At the time of TA’s field work, employment data from the Massachusetts Division of Employment and Training estimated the number of jobs in the Town at 17,154. The overwhelming majority of these jobs (8,955) are in the retail sector, followed by the industrial (2,876) and government (2,753) sectors. Information from the Town indicates there is approximately 7 million square feet of nonresidential floor area.

To determine the proportionate share of expenditures attributable to residential and nonresidential development, TA recommends the current ratio of population to nonresidential workers. The recommended allocation is a variation of the population and jobs cost allocation method, with an adjustment to avoid double counting the estimated number of Barnstable residents that also work in Barnstable. According to 1990 Census data (this detail is not yet available from the 2000 Census), 5,619 Barnstable residents worked within the Town, or approximately 14% of the population. Applying this figure to the population estimate of 47,821 yields an estimated 6,695 people that both live and work in Barnstable. Deducting resident workers from the estimated number of jobs (17,154) leaves 10,459 nonresident workers. For seasonal population and jobs, this approach allocates 88% ($78,333/88,792=.88$) of costs to residential development and 12% ($10,459/88,792=.12$) to nonresidential development. For permanent population and jobs, this approach allocates 82% ($47,821/58,280=.82$) of costs to residential development and 18% ($10,459/58,280=.18$) to nonresidential development.

Seasonal Population and Jobs Allocation

| | | |
|---------------------|---------------|-------------|
| Seasonal Population | 78,333 | 88% |
| Nonresident Jobs | 10,459 | 12% |
| Total | 88,792 | 100% |

Permanent Population and Jobs Allocation

| | | |
|----------------------|---------------|-------------|
| Permanent Population | 47,821 | 82% |
| Nonresident Jobs | 10,459 | 18% |
| Total | 58,280 | 100% |

The seasonal population and job and permanent population and job factors used in this prototype analysis are calculated by multiplying growth related expenditures by the appropriate residential and nonresidential proportionate share factors discussed above.

B. Persons per Household

Household size is an important demographic factor that helps account for variations in service demand by type of housing. The best data available to make this differentiation is the US Census

STF1A dataset; however, at the time of this study the dataset from the 2000 Census had not been released. In 1990, Barnstable had 16,601 occupied housing units and the blended, or weighted average, household size for all housing types was 2.40 persons per household (see table below). The summary data currently available from the 2000 Census indicates 19,626 occupied households with an average household size of 2.38 persons per household.

Using the household mix from the 1990 Census, TA has estimated the number and size of housing units for the prototype residential categories for the 2000 Census. Persons per household estimates for 2000 were determined by changing the household sizes by type of unit in 1990 by the percentage change in the overall occupied housing unit size in 2000. The change in the overall number of persons per household was $-.83\%((2.38-2.40)/2.40 = -.0083)$, which was applied to the 1990 figures for persons per household for each of the three prototype residential categories. For example, the estimated number of persons per household in single family units in 2000 was 2.50 persons per household $(2.53 + (2.53 * -.0083) = 2.50)$.

**Household Characteristics
Town of Barnstable**

| Units in Structure | Owner-Occupied | | | Renter-Occupied | | | Combined | | |
|--------------------|----------------|------------|------|-----------------|------------|------|----------|------------|------|
| | Persons | Households | PPH | Persons | Households | PPH | Persons | Households | PPH |
| 1-Detached | 28,037 | 11,193 | 2.50 | 6,560 | 2,453 | 2.67 | 34,597 | 13,646 | 2.54 |
| 1-Attached | 252 | 127 | 1.98 | 221 | 109 | 2.03 | 473 | 236 | 2.00 |
| Two | 171 | 87 | 1.97 | 1,067 | 497 | 2.15 | 1,238 | 584 | 2.12 |
| 3-4 | 93 | 62 | 1.50 | 776 | 433 | 1.79 | 869 | 495 | 1.76 |
| 5-9 | 121 | 81 | 1.49 | 680 | 376 | 1.81 | 801 | 457 | 1.75 |
| 10-19 | 86 | 59 | 1.46 | 635 | 371 | 1.71 | 721 | 430 | 1.68 |
| 20-49 | 136 | 91 | 1.49 | 395 | 261 | 1.51 | 531 | 352 | 1.51 |
| 50 or more | 0 | 0 | 0.00 | 256 | 215 | 1.19 | 256 | 215 | 1.19 |
| Mobile Homes | 15 | 5 | 3.00 | 4 | 2 | 2.00 | 19 | 7 | 2.71 |
| Other | 110 | 59 | 1.86 | 204 | 120 | 1.70 | 314 | 179 | 1.75 |
| Total | 29,021 | 11,764 | 2.47 | 10,798 | 4,837 | 2.23 | 39,819 | 16,601 | 2.40 |

Source: 1990 US Census data from STF1A.

Estimated Persons Per Household by Type in 1990

| | Persons | Hsehlds | PPH | Hhld Mix |
|-------------------------|---------|---------|------|----------|
| Single Family (1) | 35,070 | 13,882 | 2.53 | 83.6% |
| Townhouse (2) | 607 | 380 | 1.60 | 2.3% |
| All Other Housing Types | 4,142 | 2,339 | 1.77 | 14.1% |
| Subtotal | 39,819 | 16,601 | 2.40 | |
| Group Quarters | 1,130 | | | |
| TOTAL | 40,949 | | | |

Estimated Persons Per Household by Type in 2000

| | Persons | Hsehlds | PPH | Hhld Mix |
|-------------------------|---------|---------|------|----------|
| Single Family (1) | 41,057 | 16,412 | 2.50 | 83.6% |
| Townhouse (2) | 711 | 449 | 1.58 | 2.3% |
| All Other Housing Types | 4,849 | 2,765 | 1.75 | 14.1% |
| Subtotal | 46,617 | 19,626 | 2.38 | |
| Group Quarters | 1,204 | | | |
| TOTAL | 47,821 | | | |

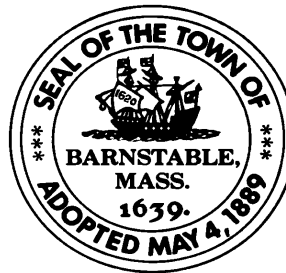
(1) Based on combined 1-Detached and 1-Attached

(2) Based on owner occupied 2, 3-4, 5-9, 10-19, 20-49 and 50 or more units

**FISCAL IMPACT ANALYSIS OF
RESIDENTIAL AND NONRESIDENTIAL
LAND USE PROTOTYPES**

Prepared for:

Town of Barnstable, Massachusetts



July 1, 2002

Prepared by



Tischler & Associates, Inc.
Fiscal, Economic, and Planning Consultants