# FY 2017
# Land Use Fiscal Analysis

**Prepared by:**
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**October 2017**

# Table of Contents

## Revenue Summary



## Expenditure Factors



## Expenditure Summary



## Appendices

# Introduction/Purpose

The 2017 Village of Pinehurst Land Use Fiscal Analysis was prepared by Village staff to determine the approximate net revenues or net expenditures of various land uses within the Village of Pinehurst corporate limits. Properties included in the Village's extra-territorial jurisdiction (ETJ) were not included in this analysis. This land use fiscal analysis was prepared using FY 2017 data and represents an estimate of current revenues and expenditures by land use for that period of time.

***This analysis provides revenue and expenditure allocation principals that can be applied to any proposed future development to estimate the financial impact.*** It is not a perfect predictor of the financial impacts of future development because the impacts of future land uses will vary on a case by case basis. The actual revenues and expenditures generated by one acre of land can vary within the same land use type due to many variables. Therefore, the information contained in this analysis should be used to provide an approximation of the estimated net revenue or cost of development, recognizing the actual revenue and costs associated with any one particular development will likely not be the exact amounts shown in this report.

As with any analysis of this type, changing the assumptions and estimates used in the analysis has the potential to change the results accordingly. Staff believes the general conclusions drawn in this analysis are valid for a wide range of reasonable assumptions.

This 2017 Village of Pinehurst Land Use Fiscal Analysis seeks to answer the question, "***What type of development pays for itself?***" This analysis can help Village officials understand the types of land uses that are more fiscally advantageous to the Village especially as it plans for future land uses. While we expect these results to be important for current and future Village leaders to consider as they contemplate questions of 'best use,' financial impacts are only one component that should be considered when deciding how a particular land parcel should be used in the Village. For example, while a non-residential use may generate a larger revenue deficit than a residential use, it is easy to make the case that having places to work, shop, and dine in and around the Village is important to maintaining our high quality of life. In addition, parks and recreational space are also important to ensuring an active, healthy community, but may not generate as much revenue as a residential use. It is important for Village leaders to recognize that the results of this analysis are simply to inform decision makers of the estimated financial impact of alternative land uses.

It is also important to recognize that a fiscal impact analysis is different from an economic impact analysis. This fiscal impact analysis indicates net surplus and deficits to the public sector (e.g. government), while an economic impact analysis indicates the impact of development on the private sector, which is typically measured in income, jobs, etc.

The FY 2017 Land Use Fiscal Analysis is based on a variety of sources, including US Census Data, Moore County Geographical Information Systems (GIS) data, Moore County Tax Department Data, FY 2017 audited revenues and expenditures, and FY 2017 Police and Fire calls for service data to name a few sources.

This land use fiscal analysis was completed entirely in-house by Village staff. Those significantly involved in preparing the 2017 Village of Pinehurst Land Use Fiscal Analysis included:

Natalie Hawkins, Assistant Village Manager
Daniel Frye, IT Business Analyst
Bruce Gould, Senior Planner
John Frye, Financial Services Director

# Overview of the Approach and Methodology

For this analysis, the net fiscal impacts for residential and non-residential land uses have been determined by subtracting the costs necessary to serve these land uses from the revenues generated by those areas. The revenue and expenditure factors have been determined based on the FY 2017 Village of Pinehurst General Fund audited revenues and expenditures and FY 2017 levels of service. This analysis is only for the corporate limits of the Village of Pinehurst and excludes the Village's extra-territorial jurisdiction (ETJ).

To derive the costs, revenues, and service levels associated with each land use type, Village staff reviewed and analyzed the FY 2017 General Fund audited financial statements, service level data, other financial data, and Census Bureau demographic data using various allocation methodologies. Applicable revenues and expenditures were then allocated to each land use type on a per acre basis. ***Certain revenues and expenditures are fixed and therefore not allocated*** in this analysis. These primarily include revenues and expenditures associated with the Harness Track and Fair Barn operations and other miscellaneous revenues and expenses noted throughout (e.g. Library contribution, interest income, etc.) that are not dependent on or related to any one land use type. The result of this analysis and the methodologies used to determine revenues and expenditures for each land use are described throughout this report.

Village staff identified four residential and eight nonresidential land use types to evaluate for this analysis. To complete the 2017 Land Use Fiscal Analysis staff performed the following key steps:

- Obtained Moore County Geographical Information Systems (GIS) data and Tax Department Data for all parcels located in the Village corporate limits
- Identified the land use type for each parcel located in the Village's corporate limits, based on its use in FY 2017
- Determined the characteristics of the various land use types for FY 2017 (e.g. # of units, # of acres, tax value, square footage of buildings, etc.)
- Performed an analysis of US Census data to determine estimated population by residential land uses
- Performed a custom analysis to estimate the average daily vehicle trips for residential and non-residential land uses
- Calculated a proportionate factor to allocate general administration costs between residential and non-residential land uses based on population and estimated jobs
- Determined the most appropriate revenue and cost allocation methodologies and which revenues and expenditures should be included or excluded from the analysis based on their relationship to development
- Performed an analysis to allocate FY 2017 Police Department calls for service, Fire Department calls for service, Village-owned roads, and Planning/Inspections permits to each land use type
- Allocated revenues and expenditures to each land use and calculated a Per Acre Revenue and Per Acre Expenditure of each land use type
- Compared the Per Acre Revenue to the Per Acre Expenditure to determine the Net Surplus (Deficit) Per Acre for each land use type

As stated previously, several assumptions were made in this analysis, with those assumptions noted throughout. While modifying the assumptions used would impact the results, the general conclusions formed as a result of this analysis are believed to be valid. Significant assumptions of this analysis include:

- ***Revenue and expenditure allocation methodologies*** are the most appropriate way to allocate revenues and expenditures to alternative land uses. These are identified later in this report.

- Because capital expenses fluctuate year to year, ***the estimated capital cost included in this analysis is the annual average of the FY 2018-2022 Capital Improvement Plan*** projected capital expenditures for the various department expenditures allocated.
- ***Vacancy rates were assumed to be the most recent published data*** from the US Census (2011-2015 Community Survey Estimates) of 16% and 68% for single family and multifamily land uses respectfully.
- ***Population estimates by land use*** based on estimated persons per household.
- ***Custom trip generation rates*** that are impacted by population estimates by land use.

In general, the most recent US Census Data as presented in the 2011-2015 American Community Survey was used to determine land use characteristics that were then applied to FY 2017 data. Should these characteristics differ significantly from existing conditions in FY 2017, the results of this analysis would be different.

# Land Use Characteristics

***Residential land uses*** and ***Non-Residential land uses*** that exist in the Village in FY 2017 and included in this analysis, along with a description, are shown below.

| Residential Land Uses | |
|---|---|
| **Land Use** | **Description** |
| Single Family - Low Density | R210: 5 acre lot/2,000 min heated sf |
| Single Family - Medium Density | R-30: 30,000 sf lot/2,000 min heated sf<br>R-20: 20,000 sf lot/2,000 min heated sf<br>R-15: 15,000 sf lot/1,800 min heated sf |
| Single Family - High Density | R-10: 10,000 sf lot/1,800 min heated sf<br>R-8: 8,000 sf lot/1,500 min heated sf |
| Multi-family Development | Allowable density varies by zoning jurisdiction |

| Non-Residential Land Uses | |
|---|---|
| **Land Use** | **Description** |
| Office | General office, medical/dental office, government office, post office |
| Retail | Retail, car dealership, drugstore |
| Lodging | Hotel |
| Recreational | Park, marina, golf course, harness track, tennis facility, fitness center |
| Institutional | School, church, library |
| Medical | Hospital, nursing home, clinics |
| Industrial | Utilities, manufacturing, warehousing |
| Services | Bank, real estate office, restaurant, gas station |

Throughout this report, footnotes to the figures indicate the source of the information presented and methods for calculating amounts used in this analysis. Also, the Appendices provide further detailed information about assumptions and methods used to determine key land use characteristics such as population by residential land use, estimated number of vehicle trips, estimated number of occupied units, estimated number of jobs within the Village, etc.

The ***residential land use types*** and their associated characteristics in FY 2017 such as average assessed values, average size of each unit, household size (persons per unit), densities, and number of vehicles per unit are shown in ***Figure 1*** below.

***Figure 1. Residential Land Use Characteristics***

| Land Use Type - Residential | # of Units [1] | Assessed Value [1] | Tax Exempt Property Value [1] | Building Square Feet [1] | # of Acres [1] | # of Road Miles [1] | Population [10] | Estimated # of Occupied Units [11] |
|---|---|---|---|---|---|---|---|---|
| Single Family - Low Density | 72 | $66,202,560 | $0 | 357,705 | 396 | 0.02 | 156 | 60 |
| Single Family - Medium Density | 2,180 | $1,101,725,310 | $343,200 | 7,196,970 | 2,145 | 18.82 | 4,734 | 1,831 |
| Single Family - High Density | 5,029 | $1,282,943,630 | $1,012,010 | 10,871,062 | 1,683 | 75.08 | 10,922 | 4,224 |
| Multi-Family | 1,473 | $223,664,915 | $306,250 | 2,072,611 | 254 | 3.45 | 516 | 471 |
| **TOTAL** | **8,754** | **$2,674,536,415** | **$1,661,460** | **20,498,348** | **4,477** | **97.38** | **16,328** | **6,587** |

| Land Use Type - Residential | Average Assessed Value per Unit [2] | Average Square Feet per Unit [3] | Persons per Acre [4] | Density: # of Housing Units per Acre [5] | # of Vehicles [6] | Number of Vehicles per SF [7] | Total Daily Vehicle Trips [8] | Average Daily Vehicle Trips per Occupied Unit [9] |
|---|---|---|---|---|---|---|---|---|
| Single Family - Low Density | $919,480 | 4,968 | 0.39 | 0.18 | 109 | 0.0003 | 245 | 4.0 |
| Single Family - Medium Density | $505,379 | 3,301 | 2.21 | 1.02 | 3,296 | 0.0005 | 7,412 | 4.0 |
| Single Family - High Density | $255,109 | 2,162 | 6.49 | 2.99 | 7,604 | 0.0007 | 17,099 | 4.0 |
| Multi-Family | $151,843 | 1,407 | 2.03 | 5.79 | 848 | 0.0004 | 550 | 1.2 |
| **TOTAL** | **$305,522** | **2,342** | **3.65** | **1.96** | **11,857** | **0.0006** | **25,306** | **3.8** |

*[1] Moore County Tax Assessor and GIS Data, 2017*
*[2] Calculated as Total Assessed Value/# of Units*
*[3] Calculated as Total Square Feet/# of Units*
*[4] Calculated as Population/# of Acres*
*[5] Calculated as # of Units/# of Acres*
*[6] Calculated as 1.8 Vehicles Per Housing Unit (Based on 2011-2015 American Community Survey 5 Yr Estimates - Aggregate Number of Vehicles Available by Tenure (B25046)) times Estimated # of Occupied Units*
*[7] Calculated as # of Vehicles/Building Square Feet*
*[8] Calculated as Estimated # of Occupied Units times ITE Trip Rates times Trip Adjustment Factors (See Appendix B)*
*[9] Calculated as Total Daily Vehicle Trips/Estimated # of Occupied Units*
*[10] Population is per NC State Demographer and is allocated based on Persons Per Household analysis (See Appendix E)*
*[11] Calculated as # of Units times vacancy rates of 16% for Single Family and 68% for Multifamily, based on 2011-2015 American Community Survey 5 Yr Estimates (See Appendix E)*

The ***non-residential land use types*** described below in ***Figure 2*** represent existing types of nonresidential development in the Village and the relevant characteristics of nonresidential land uses in FY 2017.

***Figure 2. Non-Residential Land Use Characteristics***

| Land Use Type – Non-Residential | # of Units [1] | Assessed Value [1] | Tax Exempt Property Value [1] | Building Square Feet [1] | # of Acres [1] | # of Road Miles [1] | # of Jobs [2] |
|---|---|---|---|---|---|---|---|
| Office | 114 | $81,395,761 | $15,505,950 | 547,181 | 73 | 1.90 | 1,578 |
| Retail | 22 | $11,518,440 | $843,900 | 155,094 | 11 | 0.33 | 285 |
| Lodging | 8 | $62,598,500 | $0 | 502,817 | 30 | 0.15 | 1,575 |
| Recreational | 88 | $134,607,820 | $15,209,030 | 398,705 | 2,906 | 4.38 | 323 |
| Institutional | 12 | $23,141,860 | $22,841,320 | 212,246 | 49 | 0.11 | 189 |
| Medical | 10 | $424,538,210 | $344,661,360 | 1,782,388 | 138 | 1.02 | 4,752 |
| Industrial | 78 | $5,276,420 | $4,985,320 | 45,898 | 200 | 0.58 | 179 |
| Services | 47 | $22,720,360 | $711,240 | 216,294 | 47 | 0.51 | 1,077 |
| **TOTAL** | **379** | **$765,797,371** | **$404,758,120** | **3,860,623** | **3,455** | **8.97** | **9,957** |

| Land Use Type – Non-Residential | Average Assessed Value per Unit [3] | Average Square Feet per Unit [4] | Average # of Employees Per 1,000 SF [5] | Daily Vehicle Trips [6] | Average Daily Vehicle Trips per Unit [7] | Floor Area Ratio (FAR) [8] |
|---|---|---|---|---|---|---|
| Office | $713,998 | 4,800 | 2.88 | 5,020 | 44 | 0.17 |
| Retail | $523,565 | 7,050 | 1.83 | 4,791 | 218 | 0.32 |
| Lodging | $7,824,813 | 62,852 | 3.13 | 3,376 | 422 | 0.38 |
| Recreational | $1,529,634 | 4,531 | 0.81 | 7,324 | 83 | 0.00 |
| Institutional | $1,928,488 | 17,687 | 0.89 | 1,645 | 137 | 0.10 |
| Medical | $42,453,821 | 178,239 | 2.67 | 11,782 | 1,178 | 0.30 |
| Industrial | $67,646 | 588 | 3.90 | 160 | 2 | 0.01 |
| Services | $483,412 | 4,602 | 4.98 | 1,193 | 25 | 0.11 |
| **TOTAL** | **$2,020,574** | **10,186** | **2.58** | **35,291** | | |

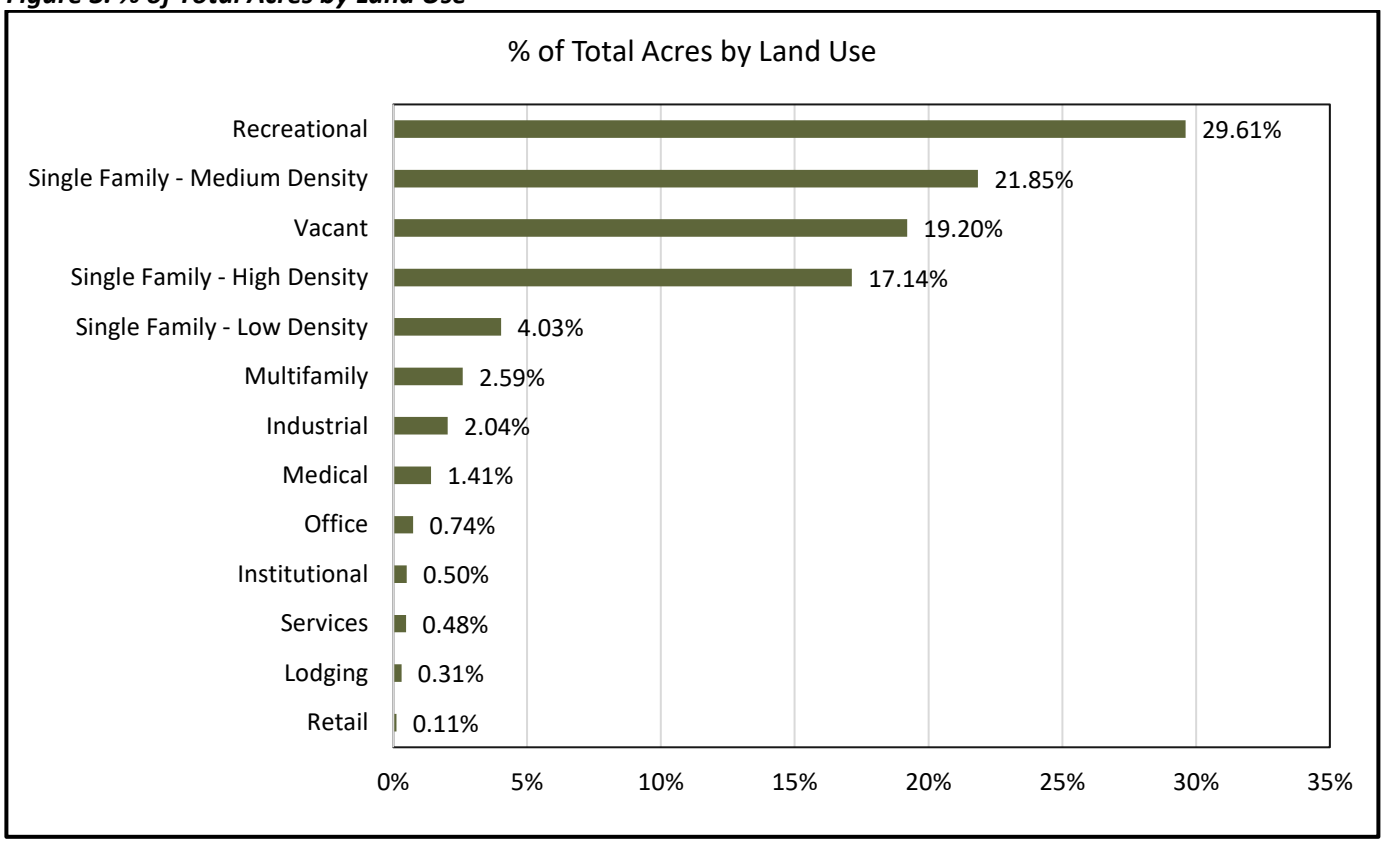
*[1] Moore County Tax Assessor and GIS Data, 2017*
*[2] Determined using US Census on the Map Application based on land use*
*[3] Calculated as Assessed Value/# of Units*
*[4] Calculated as Building Square Feet/# of Units*
*[5] Calculated as the # of Jobs/SF/1,000*
*[6] Calculated using ITE Trip Generation Rates and Demand Units (See Appendix B)*
*[7] Calculated as Daily Vehicle Trips/# of Units*
*[8] Calculated as Building Square Feet/Square Feet of Land (Note: 43,560 SF/Acre)*

***Figure 3*** indicates the percentage of total acres in the Village allocated to land uses existing in FY 2017. Overall, the largest use of land in the Village corporate limits, or almost 30%, is for recreational purposes and includes primarily golf courses owned by the Pinehurst Resort, the Country Club of North Carolina, Pinewild Country Club, and Midland Golf Course. Other recreational land includes parks owned by the Village including the Harness Track, Rassie Wicker Park, Cannon Park, and West Pinehurst Park. The second largest land use in the Village is Single Family – Medium Density at nearly 22% of acreage and Single Family – High Density represents about 17% of developed acreage.

Non-Residential land uses only account for 13% of the total acreage in the Village limits.

Based on land uses by acreage, Pinehurst truly is a residential community with 75% of developed land allocated to residential and recreational uses.

***Figure 3. % of Total Acres by Land Use***




In total, FY 2017 GIS data indicates there are approximately 1,885 acres of vacant land, or 19% of the total 9,817 acres in the Village limits. ***Figure 4*** indicates the number of acres of vacant land by current Village zoning classifications, which shows that roughly 87% of vacant land in the Village is zoned residential and 13% of vacant land is zoned non-residential.

***Figure 4. Vacant Land in the Village Limits***

| Land Use | # of Acres Vacant | % of Acres Vacant |
|---|---|---|
| Single Family - Low Density | 149 | 8% |
| Single Family - Medium Density | 874 | 46% |
| Single Family - High Density | 486 | 26% |
| Multifamily | 125 | 7% |
| Neighborhood Commercial | 15 | 1% |
| Office Professional | 142 | 8% |
| Public Conservation | 54 | 3% |
| Recreational Development | 27 | 1% |
| Village Mixed Use | 9 | 0% |
| Village Residential | 4 | 0% |
| **TOTAL** | **1,885** | **100%** |

# SUMMARY OF FISCAL IMPACT FINDINGS

## *Residential Land Uses*

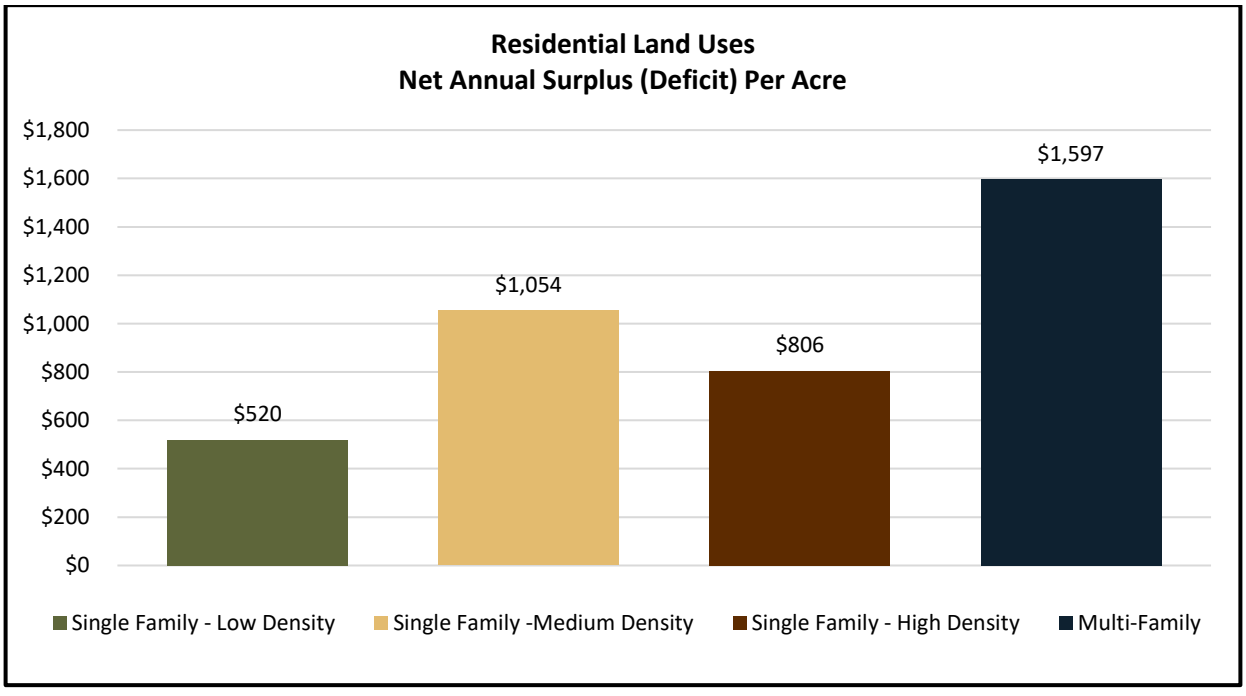
The following figures reflect the results of the 2017 Village of Pinehurst Land Use Fiscal Impact Analysis. Fiscal impact results per acre are shown first for each residential use in ***Figure 5***. All residential land uses generate a net annual surplus per acre, with Multi-Family and Single Family – Medium Density generating the largest surplus per acre.

***Figure 5. Residential Net Surplus (Deficit) per Acre***

| | Single Family - Low Density | Single Family - Medium Density | Single Family - High Density | Multi-Family |
|---|---|---|---|---|
| Estimated Revenues Per Acre | $701 | $2,485 | $4,893 | $4,557 |
| Estimated Expenditures Per Acre | $181 | $1,431 | $4,087 | $2,960 |
| **Net Surplus (Deficit) Per Acre** | **$520** | **$1,054** | **$806** | **$1,597** |

***Figure 6*** shows the net surplus or net deficit per acre for each residential land use graphically. A net surplus indicates that revenues per acre exceed expenditures per acre. A net deficit, or data below the $0 line, indicates expenditures exceed revenues generated on a per acre basis.

***Figure 6. Residential Net Surplus (Deficit) per Acre Graph***



## *Non-Residential Land Uses*

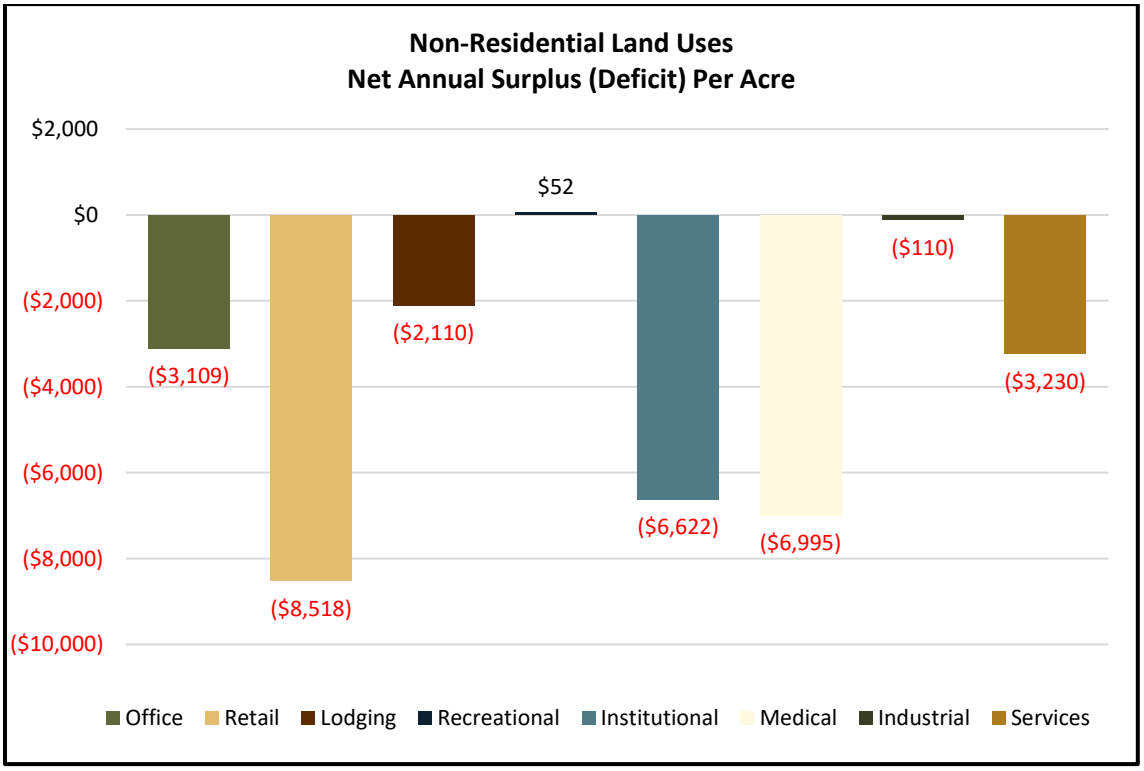
Fiscal impact results per acre for each non-residential use are shown in ***Figure 7***. All non-residential land uses generate a net annual deficit per acre, with the exception of recreational land uses. Retail, medical, and institutional uses generate the largest deficit per acre.

***Figure 7. Non- Residential Net Surplus (Deficit) per Acre***

| | Office | Retail | Lodging | Recreational | Institutional | Medical | Industrial | Services |
|---|---|---|---|---|---|---|---|---|
| Estimated Revenues Per Acre | $3,778 | $4,205 | $8,271 | $158 | $280 | $2,818 | $22 | $1,955 |
| Estimated Expenses Per Acre | $6,887 | $12,723 | $10,381 | $106 | $6,902 | $9,813 | $132 | $5,185 |
| **Net Surplus (Deficit) Per Acre** | **($3,109)** | **($8,518)** | **($2,110)** | **$52** | **($6,622)** | **($6,995)** | **($110)** | **($3,230)** |

***Figure 8*** shows the net surplus or net deficit per acre for each non-residential land use graphically. A net surplus indicates that revenues per acre exceed expenditures per acre. A net deficit, or data below the $0 line, indicates expenditures exceed revenues generated on a per acre basis.

***Figure 8. Non-Residential Net Surplus (Deficit) per Acre Graph***



# MAJOR FINDINGS

Overall, ***this analysis indicates that the population associated with residential land uses generates more net revenue for the Village than non-residential uses***.

Based on FY 2017 data, all four residential land uses generate positive net revenue per acre or a surplus. ***Multi-Family and Single Family - Medium Density development generate the most net revenue per acre in Pinehurst.*** This is due in a large part to the Village's revenue structure with property taxes generating the majority of the revenue and sales tax distributions occurring on a per capita basis. A significant amount of the Single Family - Medium Density development in the Village is contained within gated communities which has a significant impact on Village expenditures including:

- Added security afforded by a gated community results in fewer police calls for service and less cost allocated to this land use.
- Roads in gated communities such as the Country Club of North Carolina, Pinewild Country Club, and Fairwoods on 7 are private and the Village does not expend financial resources to maintain private roads (e.g. resurface and maintain right of ways) and also does not receive Powell Bill revenue for these roads.

Also, there are some Multi-Family developments in the Village that do not use the Village's solid waste services and instead contract with a private hauler. This "mix" of service levels is included in this analysis and the fiscal impact of any future Multi-Family development would be impacted by whether or not the Village collects solid waste for the development.

When contemplating future development, Village leaders would need to consider variables such as private security, private roads, and solid waste collection to determine the true cost of any future residential development. Also, vacancy rates of single family and multi-family developments significantly impact this analysis and any major changes to 2015 vacancy rates would impact the results of this analysis.

***All non-residential land uses, with the exception of recreational, generate a net deficit per acre. Retail, medical, and institutional uses generate the greatest deficit per acre.*** The largest deficit per acre in the non-residential land use is retail because the amount of revenue generated does not cover the primary expenses associated with retail development such as road resurfacing expenditures generated by vehicle trips and public safety costs. Medical and institutional uses also generate a significant deficit per acre due to the large percentage of tax exempt property and high demand for police services. Overall, ***the greatest fiscal return per acre for non-residential land uses is recreational*** due to the relatively low cost to service this type of land use which is primarily privately owned golf courses.

Combining the community's desires for future land use with information about existing land uses, vacant land, and the estimated fiscal impacts of alternative land uses, Village officials can use this analysis as one component to consider when contemplating alternative future development scenarios in the upcoming Long-Range Comprehensive Plan process. While residential development may generate the most positive financial impact, there are a number of unmeasurable and non-financial reasons to have non-residential land uses within the Village to meet the needs of citizens such as providing places to work, shop, and dine in and around the Village.

# REVENUE FACTORS

## *Revenue Allocation Methodologies*

The following section and series of figures details the revenue allocation methodologies used in the analysis. Custom allocation analyses are described where appropriate in this section with supporting documentation included in the Appendices. ***Figure 9*** provides a snapshot of the allocation methodologies used for revenue sources. Revenues indicated as "Fixed" were not allocated to a land use due to no reasonable basis for allocation.

***Figure 9. Revenue Allocation Methodology***

| | FY 2017 Actual | Allocated/ Fixed [1] | % of Actual | Population | Building Square Feet | Inspection Fees | Vehicles | Lane Miles | Property Values |
|---|---|---|---|---|---|---|---|---|---|
| **Ad Valorem Taxes** | | | | | | | | | |
| Real & Personal Property Taxes | $9,383,995 | Allocated | 52% | | | | | | X |
| MV Taxes | $612,417 | Allocated | 3% | | | | X | | |
| **Other Taxes and Licenses** | $2,180 | Fixed | 0% | | | | | | |
| **Unrestricted Revenues** | | | | | | | | | |
| Sales Taxes | $4,066,513 | Allocated | 23% | X | | | | | |
| Utilities Franchise Taxes | $1,339,438 | Allocated | 7% | | X | | | | |
| Other Unrestricted Revenues | $72,975 | Fixed | 0% | | | | | | |
| **Restricted Revenues** | | | | | | | | | |
| Powell Bill | $495,621 | Allocated | 3% | X | | | | X | |
| Other Restricted Revenues | $107,816 | Fixed | 1% | | | | | | |
| **Permits & Fees** | $801,574 | Allocated | 4% | | | X | | | |
| **Sales and Services Revenues** | $719,515 | Allocated | 4% | X | | | | | |
| **Other Revenues** | $275,645 | Allocated | 2% | X | | | | | |
| **Assessments** | $39,102 | Fixed | 0% | | | | | | |
| **Interest Income** | $63,189 | Fixed | 0% | | | | | | |
| **TOTAL** | **$17,979,980** | | **100%** | | | | | | |

*[1] Only revenues that had a reasonable basis for allocation were allocated; revenues indicated as Fixed were not allocated and excluded from the Fiscal Impact Analysis (Note: Harness Track, Fair Barn, Assessment, and Interest Revenues were considered Fixed and not allocated)*

## *Real and Personal Property Taxes*

In FY 2017, property taxes were levied at $0.295 per $100 valuation and accounted for 52% of total revenues.

### *Residential Land Uses*

To determine property taxes for residential land uses, Village staff used Moore County Tax Assessor and GIS data to first determine the aggregate real property taxable values by land use category. Real property tax revenue was then allocated based on residential taxable property tax values in each land use, net of tax exempt property.

### *Non-Residential Land Uses*

To determine property taxes for non-residential land uses, Village staff used Moore County Tax Assessor and GIS data to first determine the aggregate real property taxable values by land use category. Non-residential land uses also pay personal property taxes on business property. Village staff calculated a personal property factor of 17% based on the total amount of personal property taxes paid in FY 2017 as a percentage of total non-residential

property values, per the Moore County Tax Department. This factor was applied to the taxable real property values for each non-residential land use to allocate personal property taxes by land use. Real and personal property tax revenue was then allocated based on total taxable real and personal property tax values in each land use.

Real and personal property tax revenues by residential and non-residential land uses are shown in ***Figure 10***.

***Figure 10. Real & Personal Property Tax Revenues by Land Use***

| **Real and Personal Property Tax Revenue** | |
|---|---|
| Real and Personal Tax Revenue - 2017 [1] | $9,383,995 |
| Tax Rate, Per $100 Valuation- 2017 [1] | $0.295 |
| Personal Property % Factor [5] | 17% |
| **Calculation of Personal Property Factor [5]** | |
| Total Personal Property - FY 2017 [2] | $60,294,423 |
| Aggregate Non-Residential Real Property Taxable Value | $361,039,251 |
| **Personal Property Factor** | **17%** |

| **Residential Property Tax Revenues by Land Use** | **Aggregate Property Value [2]** | **Tax Exempt Property Value [3]** | **Aggregate Real Property Taxable Value [4]** | | **Aggregate Property Taxes [7]** | **# of Acres [2]** | **Real & Personal Property Tax Per Acre [8]** |
|---|---|---|---|---|---|---|---|
| Single Family - Low Density | $66,202,560 | $0 | $66,202,560 | | $200,777 | 396 | $507 |
| Single Family - Medium Density | $1,101,725,310 | $343,200 | $1,101,382,110 | | $3,340,229 | 2,145 | $1,558 |
| Single Family - High Density | $1,282,943,630 | $1,012,010 | $1,281,931,620 | | $3,887,792 | 1,683 | $2,311 |
| Multi-Family | $223,664,915 | $306,250 | $223,358,665 | | $677,393 | 254 | $2,664 |
| **SUB TOTAL** | **$2,674,536,415** | **$1,661,460** | **$2,672,874,955** | | **$8,106,191** | **4,477** | **$1,810** |
| **Non-Residential Property Tax Revenues by Land Use** | **Aggregate Real Property Assessed Value [2]** | **Tax Exempt Property Value [3]** | **Aggregate Real Property Taxable Value [4]** | **Aggregate Real & Personal Property Taxable Value [6]** | **Aggregate Property Taxes [7]** | **# of Acres [2]** | **Real & Personal Property Tax Per Acre [8]** |
| Office | $81,395,761 | $15,505,950 | $65,889,811 | $76,893,568 | $233,200 | 73 | $3,204 |
| Retail | $11,518,440 | $843,900 | $10,674,540 | $12,457,214 | $37,780 | 11 | $3,361 |
| Lodging | $62,598,500 | $0 | $62,598,500 | $73,052,600 | $221,551 | 30 | $7,347 |
| Recreational | $134,607,820 | $15,209,030 | $119,398,790 | $139,338,675 | $422,581 | 2,906 | $145 |
| Institutional | $23,141,860 | $22,841,320 | $300,540 | $350,731 | $1,064 | 49 | $22 |
| Medical | $424,538,210 | $344,661,360 | $79,876,850 | $93,216,476 | $282,703 | 138 | $2,045 |
| Industrial | $5,276,420 | $4,985,320 | $291,100 | $339,714 | $1,030 | 200 | $5 |
| Services | $22,720,360 | $711,240 | $22,009,120 | $25,684,696 | $77,896 | 47 | $1,659 |
| **SUB TOTAL** | **$765,797,371** | **$404,758,120** | **$361,039,251** | **$421,333,674** | **$1,277,804** | **3,455** | **$370** |
| **TOTAL** | **$3,440,333,786** | **$406,419,580** | **$3,033,914,206** | **$3,094,208,629** | **$9,383,995** | **7,932** | **$1,183** |

*[1] June 30, 2017 Audited Financial Statements*

*[2] Moore County Tax Assessor & GIS Data, 2017*

*[3] Moore County Tax Assessor data (Includes tax exempt property, senior citizen exemptions, and deferred exemptions)*

*[4] Calculated as Aggregate Real Property Value less Tax Exempt Property Value*

*[5] Personal property taxes vary by business; Calculated as a % of real and personal taxable value of non-residential property*

*[6] Calculated as Aggregate Real Property Taxable Value plus an additional 17% of taxable value for personal property*

*[7] June 30, 2017 total R&P tax revenue allocated based on proportion of real and personal taxable value of property*

*[8] Calculated as Aggregate Property Tax Revenue/# of Acres*

## *Motor Vehicle Taxes*

Motor vehicle taxes were allocated using a custom methodology based on the number of vehicles in each residential land use category. An analysis of the 2011-2015 US Census Bureau American Community Survey data indicated an average of 1.8 vehicles per residential occupied unit in the Village. This rate was applied to the estimated number of occupied units to determine the number of vehicles in each residential land use category. Motor vehicle tax values and revenue were then allocated to each residential land use category in proportion to the aggregate motor vehicle value that were determined based on the number of vehicles in each residential land use as shown in ***Figure 11*** below.

***Figure 11. Motor Vehicle Tax Revenues by Land Use***

| Motor Vehicle Tax Revenue | |
|---|---|
| Motor Vehicle Tax Revenue - 2017 [1] | $612,417 |
| Tax Rate, Per $100 Valuation- 2017 [1] | $0.295 |

| Residential Motor Vehicle Tax Revenues by Land Use | Estimated # of Occupied Units [3] | # of Vehicles Per Unit [4] | Total # of Vehicles [5] | Aggregate Motor Vehicle Value [6] | Aggregate Motor Vehicle Tax Revenue [7] | # of Acres [2] | Motor Vehicle Taxes Per Acre [8] |
|---|---|---|---|---|---|---|---|
| Single Family - Low Density | 60 | 1.80 | 109 | $1,904,634 | $5,623 | 396 | $14 |
| Single Family - Medium Density | 1,831 | 1.80 | 3,296 | $57,668,076 | $170,243 | 2,145 | $79 |
| Single Family - High Density | 4,224 | 1.80 | 7,604 | $133,033,373 | $392,730 | 1,683 | $233 |
| Multi-Family | 471 | 1.80 | 848 | $14,844,050 | $43,821 | 254 | $172 |
| **TOTAL** | **6,587** | | **11,857** | **$207,450,132** | **$612,417** | **4,477** | **$137** |

*[1] June 30, 2017 Audited Financial Statements*

*[2] Calculated as Aggregate Motor Vehicle Value/Total # of Vehicles*

*[3] Calculated as # of Units times vacancy rates of 16% for Single Family and 68% for Multifamily, based on 2011-2015 American Community Survey 5 Yr Estimates (See Appendix E)*

*[4] Calculated as Aggregate # of Vehicles Available/# of Housing Units; Source: 2011-2015 American Community Survey 5 Yr Estimates*

*[5] Calculated as Estimated # of Occupied Units times # of Vehicles Per Unit*

*[6] Aggregate Motor Vehicle Value provided by More County Tax Department for FY 2017 and allocated in proportion to the # of Vehicles*

*[7] Aggregate MV Tax Revenue from June 30, 2017 financial statements allocated in proportion to the Aggregate Motor Vehicle Value*

*[8] Calculated as Aggregate Motor Vehicle Tax Revenue/# of Acres*

## *Sales Taxes*

Sales tax revenue includes Local Option Sales Taxes that are levied by the Moore County Board of Commissions and collected by the State of North Carolina on behalf of the County. Sales taxes in Moore County are distributed on a per capita basis and are allocated to residential land uses based on population as shown in ***Figure 12***.

***Figure 12. Sales Tax Revenues by Land Use***

| Sales Tax Revenue | |
|---|---|
| Local Option Sales Tax Revenue - 2017 [1] | $4,066,513 |
| Pinehurst Population - 2017 [2] | 16,328 |
| Sales Tax Revenue per Capita | $249 |

| Residential Sales Tax Revenues by Land Use | Population [2] | Aggregate Sales Tax Revenue [3] | # of Acres [4] | Sales Tax Revenue Per Acre [5] |
|---|---|---|---|---|
| Single Family - Low Density | 156 | $38,943 | 396 | $98 |
| Single Family - Medium Density | 4,734 | $1,179,109 | 2,145 | $550 |
| Single Family - High Density | 10,922 | $2,720,063 | 1,683 | $1,617 |
| Multi-Family | 516 | $128,399 | 254 | $505 |
| **TOTAL** | **16,328** | **$4,066,513** | **4,477** | **$908** |

*[1] June 30, 2017 Audited Financial Statements (Includes Hold Harmless Reimbursements)*
*[2] Calculated as Persons/Household Unit times Total # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[3] Total Sales Tax Revenue from June 30, 2017 financial statements allocated in proportion to Population*
*[4] Moore County Tax Assessor & GIS Data, 2017*
*[5] Calculated as Aggregate Sales Tax Revenue/# of Acres*

## *Utilities Franchise Taxes*

Utilities franchise taxes include electricity, video programming, and telecommunications taxes. Village staff allocated utilities franchise taxes based on the building square footage in each land use category. ***Figure 13*** indicates utilities franchise tax for residential and non-residential land uses.

***Figure 13. Utilities Franchise Tax Revenues by Land Use***

| Utility Franchise Tax Revenue | |
|---|---|
| Electricity Franchise Tax Revenue - 2017 [1] | $1,339,438 |
| Total Building Square Feet [2] | 24,358,971 |
| Utilities Franchise Tax Revenue Per Square Foot | $0.05 |

| Residential Utility Franchise Tax Revenues by Land Use | Building Square Feet [2] | Aggregate Utilities Franchise Tax Revenue 3 | # of Acres [2] | Utilities Franchise Tax Revenue Per Acre [4] |
|---|---|---|---|---|
| Single Family - Low Density | 357,705 | $19,669 | 396 | $50 |
| Single Family - Medium Density | 7,196,970 | $395,743 | 2,145 | $185 |
| Single Family - High Density | 10,871,062 | $597,772 | 1,683 | $355 |
| Multi-Family | 2,072,611 | $113,968 | 254 | $448 |
| **SUB TOTAL** | **20,498,348** | **$1,127,152** | **4,477** | **$252** |
| **Non-Residential Utilities Franchise Tax Revenues by Land Use** | **Building Square Feet [2]** | **Aggregate Utilities Franchise Tax Revenue 3** | **# of Acres [2]** | **Utilities Franchise Tax Revenue Per Acre [4]** |
| Office | 547,181 | $30,088 | 73 | $413 |
| Retail | 155,094 | $8,528 | 11 | $759 |
| Lodging | 502,817 | $27,649 | 30 | $917 |
| Recreational | 398,705 | $21,924 | 2,906 | $8 |
| Institutional | 212,246 | $11,671 | 49 | $237 |
| Medical | 1,782,388 | $98,009 | 138 | $709 |
| Industrial | 45,898 | $2,524 | 200 | $13 |
| Services | 216,294 | $11,893 | 47 | $253 |
| **SUB TOTAL** | **3,860,623** | **$212,286** | **3,455** | **$61** |
| | | | | |
| **TOTAL** | **24,358,971** | **$1,339,438** | **7,932** | **$313** |

*[1] June 30, 2017 Audited Financial Statements (Includes Electricity, Video Programming and Telecommunications Taxes)*

*[2] Moore County Tax Assessor & GIS Data, 2017*

*[3] Calculated as Utilities Franchise Tax Revenue Per Square Foot times Building Square Feet*

*[4] Calculated as Aggregate Utilities Franchise Tax Revenue/# of Acres*

## *Powell Bill Revenue*

Powell Bill revenue is an annual appropriation from the NC State Highway Fund that is based on a formula that allocates 75% of the revenue based on population and 25% on the number of miles of Village streets maintained in the Village's corporate limits. The distribution excludes state and privately owned roads within the Village limits, including those roads in private gated communities.

Village staff obtained a GIS file with street miles and allocated the linear mileage to residential and non-residential land uses based on zoning jurisdiction and the proportion of land uses contained within that jurisdiction (See **Appendix D**). ***Figure 14*** indicates the Powell Bill revenue allocation for residential and non-residential land uses.

***Figure 14. Powell Bill Revenue by Land Use***

| **Powell Bill Revenue** | |
|---|---|
| Powell Bill Revenue - 2017 [1] | $495,621 |
| Distribution Rate/Lane Mile [2] | $1,622.49 |
| Powell Bill Distribution Rate/Capita [2] | $20.04 |

| **Residential Powell Bill Revenue by Land Use** | **# of Lane Miles [3]** | **Revenue Based on Lane Miles [4]** | **Population [5]** | **Revenue Based on Population [6]** | **# of Acres [2]** | **Revenue Per Acre [7]** |
|---|---|---|---|---|---|---|
| Single Family - Low Density | 0.02 | $39 | 156 | $3,094 | 396 | $8 |
| Single Family - Medium Density | 18.82 | $30,537 | 4,734 | $93,675 | 2,145 | $44 |
| Single Family - High Density | 75.08 | $121,813 | 10,922 | $216,098 | 1,683 | $128 |
| Multi-Family | 3.45 | $5,604 | 516 | $10,201 | 254 | $40 |
| **SUB TOTAL** | **97.38** | **$157,992** | **16,328** | **$323,068** | **4,477** | **$72** |
| **Non-Residential Powell Bill Revenue by Land Use** | **# of Lane Miles [3]** | **Revenue Based on Lane Miles [4]** | | | **# of Acres [2]** | **Revenue Per Acre [7]** |
| Office | 1.90 | $3,081 | | | 73 | $42 |
| Retail | 0.33 | $535 | | | 11 | $48 |
| Lodging | 0.15 | $240 | | | 30 | $8 |
| Recreational | 4.38 | $7,103 | | | 2,906 | $2 |
| Institutional | 0.11 | $175 | | | 49 | $4 |
| Medical | 1.02 | $1,655 | | | 138 | $12 |
| Industrial | 0.58 | $941 | | | 200 | $5 |
| Services | 0.51 | $831 | | | 47 | $18 |
| **SUB TOTAL** | **8.97** | **$14,561** | | | **3,455** | **$4** |
| | | | | | | |
| **GRAND TOTAL** | **106.35** | **$172,553** | **16,328** | **$323,068** | **7,932** | **$76** |

*[1] June 30, 2017 Audited Financial Statements*
*[2] FY 2017 Powell Bill Distribution Report from NC Department of Revenue*
*[3] Moore County Tax Assessor and GIS Data, 2017*
*[4] Calculated as # of Lane Miles times Distribution Rate/Lane Mile*
*[5] Calculated as Persons/Household Unit times # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[6] Calculated as (Total Powell Bill Revenue - Revenue Based on Lane Miles) times proportion of population to Total Population*
*[7] Calculated as Aggregate Motor Vehicle Tax Revenue/# of Acres*

## *Permits & Fee Revenue*

Permits and fees include planning and inspection fees for residential and non-residential building permits within the Village limits. It excludes fire district revenues for services performed outside of the Village limits to other fire districts under contract. ***Figure 15*** indicates permit and fee revenue allocated by land use type.

***Figure 15. Permit & Fee Revenue by Land Use***

| Permits & Fee Revenue | |
|---|---|
| Permits & Fee Revenue - 2017 [1] | $526,919 |

| Residential Permits & Fee Revenues by Land Use | % of Inspection Fees | Total Permits & Fees Revenue [4] | # of Acres [3] | Permits & Fees Revenue Per Acre [5] |
|---|---|---|---|---|
| Single Family - Low Density | 1% | $7,008 | 396 | $18 |
| Single Family - Medium Density | 14% | $73,613 | 2,145 | $34 |
| Single Family - High Density | 46% | $244,282 | 1,683 | $145 |
| Multi-Family | 34% | $176,802 | 254 | $695 |
| **SUB TOTAL** | **66%** | **$501,705** | **4,477** | **$112** |
| **Non-Residential Permits & Fees by Land Use** | **% of Inspection Fees** | **Total Permits & Fees Revenue [4]** | **# of Acres [3]** | **Permits & Fees Revenue Per Acre [5]** |
| Office | 2% | $8,642 | 73 | $119 |
| Retail | 0% | $433 | 11 | $39 |
| Lodging | 0% | $0 | 30 | $0 |
| Recreational | 1% | $7,036 | 2,906 | $2 |
| Institutional | 0% | $867 | 49 | $18 |
| Medical | 1% | $7,080 | 138 | $51 |
| Industrial | 0% | $0 | 200 | $0 |
| Services | 0% | $1,156 | 47 | $25 |
| **SUB TOTAL** | **34%** | **$25,214** | **3,455** | **$7** |
| | | | | |
| **GRAND TOTAL** | **100%** | **$526,919** | **7,932** | **$66** |

*[1] June 30, 2017 Audited Financial Statements; Excludes Fixed Fire District Revenue of $274,655*

*[2] % Allocated to Residential and Non-Residential is based on SF permitted in FY 2017, per Permit Log*

*[3] Moore County Tax Assessor and GIS Data, 2017*

*[4] Total revenue allocated in proportion to Inspection Fees per Zoning Jurisdiction*

*[5] Calculated as Total Permits & Fees Revenue/# of Acres*

## *Sales & Services Revenue*

Sales and services revenue includes fees for services for athletic programs, recreation programs, and facility rental fees. These fees are allocated to residential land uses based on population. ***Figure 16*** indicates sales and services revenue by land use.

***Figure 16. Sales & Services Revenue by Land Use***

| Sales & Services Revenue | |
|---|---|
| Sales and Services Revenue - 2017 [1] | $129,687 |

| Residential Sales & Services Revenue by Land Use | Total Population [2] | Total Sales & Services Revenue [3] | Total # of Acres [4] | Sales & Services Revenue Per Acre [5] |
|---|---|---|---|---|
| Single Family - Low Density | 156 | $1,242 | 396 | $3 |
| Single Family - Medium Density | 4,734 | $37,603 | 2,145 | $18 |
| Single Family - High Density | 10,922 | $86,747 | 1,683 | $52 |
| Multi-Family | 516 | $4,095 | 254 | $16 |
| **TOTAL** | **16,328** | **$129,687** | **4,477** | **$29** |

*[1] June 30, 2017 Audited Financial Statements; Includes only Athletic Program Fees, Recreation Fees, & Facility Rental Fees*
*[2] Calculated as Persons/Household Unit times Total # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[3] Total revenue allocated in proportion to total population*
*[4] Moore County Tax Assessor and GIS Data, 2017*
*[5] Calculated as Total Permits & Fees Revenue/# of Acres*

## *Other Revenues*

Other revenues include ABC Revenue 50% Mixed Beverage and 25% Counter Sales. These revenues are allocated to residential land uses based on population. ***Figure 17*** indicates other revenues allocated by land use type.

***Figure 17. Other Revenues by Land Use***

| Other Revenues - 2017 | |
|---|---|
| Other Revenues - 2017 [1] | $130,965 |

| Residential Other Revenues by Land Use | Population [2] | Total Other Revenues [3] | # of Acres [4] | Other Revenues Per Acre [5] |
|---|---|---|---|---|
| Single Family - Low Density | 156 | $1,254 | 396 | $3 |
| Single Family - Medium Density | 4,734 | $37,974 | 2,145 | $18 |
| Single Family - High Density | 10,922 | $87,602 | 1,683 | $52 |
| Multi-Family | 516 | $4,135 | 254 | $16 |
| **TOTAL** | **16,328** | **$130,965** | **4,477** | **$29** |

*[1] June 30, 2017 Audited Financial Statements; Includes only ABC Revenue 50% Mixed Beverage and 25% Counter Sales*
*[2] Calculated as Persons/Household Unit times Total # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[3] Total revenue allocated in proportion to Population*
*[4] Moore County Tax Assessor and GIS Data, 2017*
*[5] Calculated as Total Other Revenues/# of Acres*

# Revenue Summary

Total revenues allocated on a per acre basis to residential land uses are shown in ***Figure 18***. Overall, ***Single Family – High Density and Multi-Family residential development generate the most revenue on a per acre basis.*** This is due in a large part to the higher density of housing that impacts primarily tax revenues. In addition, the majority of sales tax revenue is allocated to Single-Family High Density uses due to the concentration of population in this land use. It is also important to note that the large permits & fee revenue allocated to multi-family reflects the fees associated with a major apartment complex permitted in FY 2017. If occupancy rates for Multi-Family increase, the amount of revenue allocated to Multi-Family would be higher than what is shown in this analysis

***Figure 18. Residential Revenue Generation per Acre by Land Use***

| Revenue Category | Single Family - Low Density | Single Family - Medium Density | Single Family - High Density | Multi-Family |
|---|---|---|---|---|
| Real &Personal Property Taxes | $507 | $1,558 | $2,311 | $2,664 |
| Motor Vehicle Taxes | $14 | $79 | $233 | $172 |
| Sales Taxes | $98 | $550 | $1,617 | $505 |
| Utilities Franchise Taxes | $50 | $185 | $355 | $448 |
| Powell Bill | $8 | $44 | $128 | $40 |
| Permits & Fees | $18 | $34 | $145 | $695 |
| Sales and Services Revenues | $3 | $18 | $52 | $16 |
| Other Revenues | $3 | $18 | $52 | $16 |
| **TOTAL** | **$701** | **$2,485** | **$4,893** | **$4,557** |

Total revenues allocated on a per acre basis to non-residential land uses are shown in ***Figure 19.*** With property taxes as the largest source of revenue, ***lodging, retail, and office generate the most revenue per acre of the non-residential land uses.*** Given the amount of tax exempt property in the medical land use, it does not generate as much revenue per acre as other non-residential land uses.

***Figure 19. Non-Residential Revenue Generation per Acre by Land Use***

| Revenue Category | Office | Retail | Lodging | Recreational | Institutional | Medical | Industrial | Services |
|---|---|---|---|---|---|---|---|---|
| Real &Personal Property Taxes | $3,204 | $3,361 | $7,347 | $145 | $22 | $2,045 | $5 | $1,659 |
| Utilities Franchise Taxes | $413 | $759 | $917 | $8 | $237 | $709 | $13 | $253 |
| Powell Bill | $42 | $48 | $8 | $2 | $4 | $12 | $5 | $18 |
| Permits & Fees | $119 | $39 | $0 | $2 | $18 | $51 | $0 | $25 |
| **TOTAL** | **$3,778** | **$4,205** | **$8,271** | **$158** | **$280** | **$2,818** | **$22** | **$1,955** |

# Expenditures Factors

## *Expenditure Allocation Methodologies*

***Figure 20*** indicates the methodologies used to allocate different types of expenditures to various land uses. Due to annual fluctuations in capital expenses, Village staff allocated a 5-year average of capital expenditures projected in the FY 2018-2022 to determine an average annual capital expenditure for each expenditure type allocated. These estimated amounts are included in the expenditure detail contained in this analysis as the Amortized Annual Cost for Capital. In addition, internal service department costs including Information Technology, Buildings & Grounds, and Fleet Maintenance were allocated to the various departments listed below as is customary for Village financial reporting purposes. Expenditures indicated as "Fixed" were not allocated to a land use due to no reasonable basis for allocation.

***Figure 20. Expenditure Allocation Methodologies***

| Department | FY 2017 Actual | Allocated/ Fixed [1] | % of Actual | Population | Population & Jobs | Vehicle Trips or Miles | Custom Analysis |
|---|---|---|---|---|---|---|---|
| Governing Body | $120,835 | Allocated | 1% | | X | | |
| Administration | $1,103,735 | Allocated | 7% | | X | | |
| Financial Services | $581,532 | Allocated | 3% | | X | | |
| Human Resources | $358,360 | Allocated | 2% | | X | | |
| Police | $2,796,366 | Allocated | 17% | | | | X |
| Fire | $2,562,744 | Allocated | 15% | | | | X |
| Planning | $560,143 | Allocated | 3% | | | | X |
| Inspections | $205,873 | Allocated | 1% | | X | | |
| Public Services Administration | $784,979 | Allocated | 5% | | | X | |
| Streets & Grounds | $1,677,752 | Allocated | 10% | | | X | |
| Powell Bill | $813,982 | Allocated | 5% | | | X | |
| Solid Waste | $1,312,901 | Allocated | 8% | X | | | |
| Parks & Recreation | $1,956,703 | Allocated | 12% | X | | | |
| Library | $200,000 | Fixed | 1% | | | | |
| Harness Track | $676,859 | Fixed | 4% | | | | |
| Fair Barn | $342,767 | Fixed | 2% | | | | |
| Community Development | $204,453 | Fixed | 1% | | | | |
| Debt Service | $412,248 | Allocated | 2% | | | | X |
| **TOTAL EXPENDITURES** | **$16,672,232** | | **100%** | | | | |

*[1] Only expenditures that had a reasonable basis for allocation were allocated; expenditures indicated as Fixed were not allocated and excluded from the Analysis*

## *Administration*

Administration Expenditures allocated include Governing Body, Administration, Financial Services, and Human Resources. These costs were allocated to residential and non-residential land uses using a custom calculation of a Proportionate Share based on US Census data on population and jobs (See ***Appendix A***). ***Figure 21*** indicates Administration expenditures allocated to residential and non-residential land uses.

***Figure 21. Administration Expenditures by Land Use***

| Other General Fund - Administration Cost Factor | |
|---|---|
| Administration FY 2017 Operating Expenditures [1] | $2,139,195 |
| Amortized Annual Cost for Capital [2] | $118,400 |
| **Total Administration Expenditures Allocated** | **$2,257,595** |
| Proportionate Share - Residential [3] | 67% |
| Proportionate Share - Non-Residential [3] | 33% |

| Residential Administration Expenditures by Land Use | Population [4] | Total Administration Expenditures Per Area [5] | # of Acres [6] | Administration Expenditures Per Acre [7] |
|---|---|---|---|---|
| Single Family - Low Density | 156 | $14,545 | 396 | $37 |
| Single Family - Medium Density | 4,734 | $440,375 | 2,145 | $205 |
| Single Family - High Density | 10,922 | $1,015,893 | 1,683 | $604 |
| Multi-Family | 516 | $47,954 | 254 | $189 |
| **SUBTOTAL** | **16,328** | **$1,518,767** | **4,477** | **$339** |
| **Non-Residential Administration Expenditures by Land Use** | **# of Jobs [8]** | **Total Administration Expenditures Per Area [5]** | **# of Acres [6]** | **Administration Expenditures Per Acre [7]** |
| Office | 1,578 | $117,090 | 73 | $1,609 |
| Retail | 285 | $21,112 | 11 | $1,878 |
| Lodging | 1,575 | $116,882 | 30 | $3,876 |
| Recreational | 323 | $23,991 | 2,906 | $8 |
| Institutional | 189 | $13,994 | 49 | $285 |
| Medical | 4,752 | $352,565 | 138 | $2,551 |
| Industrial | 179 | $13,275 | 200 | $66 |
| Services | 1,077 | $79,920 | 47 | $1,702 |
| **SUBTOTAL** | **9,957** | **$738,828** | **3,455** | **$214** |
| | | | | |
| **TOTAL** | | **$2,257,595** | **7,933** | **$285** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures for Governing Body, Administration, Finance, and Human Resources*

*[2] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*

*[3] Calculated based on population and jobs using 2014 US Census On the Map Application Data and 2011-2015 American Community Survey 5 Yr Estimates (See Appendix A)*

*[4] Calculated as Persons/Household Unit times # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*

*[5] Calculated as Population (Residential)/Building Square Feet (Non-Residential) times (Proportionate Share times Total Administration Expenditures Allocated)*

*[6] Moore County Tax Assessor and GIS Data, 2017*

*[7] Calculated as Total Administration Expenditures Per Area/# of Acres*

*[8] Calculated based on 2014 US Census on the Map Application Data (See Appendix C)*

## *Police*

Police Expenditures are allocated to residential and non-residential land uses based on the proportion of citizen initiated calls for service to the various land uses. To obtain this information, Village staff assigned the applicable land use to citizen initiated calls for service in FY 2017 using Computer Aided Dispatch (CAD) software and allocated total Police Expenditures based on the number of minutes citizen initiated calls for service consumed. ***Figure 22*** indicates Police Expenditures by land use type.

***Figure 22. Police Expenditures by Land Use***

| Police Cost Factor | |
|---|---|
| Police FY 2017 Actual Expenditures [1] | $2,724,664 |
| Amortized Annual Cost for Capital [2] | $110,000 |
| **Total Police Expenditures Allocated** | **$2,834,664** |
| Police Time of Service (Minutes) for Citizen Initiated Calls [3] | 174,689 |
| Police Cost ($) Per Minute | $16.23 |

| Residential Police Expenditures by Land Use | # of Citizen Initiated Calls [3] | Time of Service (Minutes) [3] | Total Police Expenditures Per Area [4] | # of Acres [5] | Police Expenditures Per Acre [6] |
|---|---|---|---|---|---|
| Single Family - Low Density | 17 | 283 | $4,588 | 396 | $12 |
| Single Family - Medium Density | 1,037 | 29,287 | $475,238 | 2,145 | $222 |
| Single Family - High Density | 2,490 | 64,376 | $1,044,627 | 1,683 | $621 |
| Multi-Family | 251 | 8,276 | $134,294 | 254 | $528 |
| **SUB TOTAL** | **3,795** | **102,222** | **$1,658,746** | **4,477** | **$370** |
| **Non-Residential Police Expenditures by Land Use** | **# of Citizen Initiated Calls [3]** | **Time of Service (Minutes) [3]** | **Total Police Expenditures Per Area [4]** | **# of Acres [5]** | **Police Expenditures Per Acre [6]** |
| Office | 361 | 7,117 | $115,482 | 73 | $1,587 |
| Retail | 103 | 1,958 | $31,776 | 11 | $2,827 |
| Lodging | 88 | 4,535 | $73,586 | 30 | $2,440 |
| Recreational | 233 | 3,592 | $58,282 | 2,906 | $20 |
| Institutional | 342 | 12,612 | $204,662 | 49 | $4,161 |
| Medical | 1,065 | 37,085 | $601,770 | 138 | $4,354 |
| Industrial | 3 | 31 | $495 | 200 | $2 |
| Services | 288 | 5,538 | $89,866 | 47 | $1,914 |
| **SUB TOTAL** | **2,483** | **72,467** | **$1,175,918** | **3,455** | **$340** |
| | | | | | |
| **TOTAL** | **6,278** | **174,689** | **$2,834,664** | **7,932** | **$357** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures*
*[2] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*
*[2] VOP CAD Database from Police Department, FY 2017 Calls*
*[3] Calculated as # of Calls/Time of Service (Minutes)*
*[4] Calculated as Time of Service (Minutes) times Police Cost ($) Per Minute*
*[5] Moore County Tax Assessor & GIS Data, 2017*
*[6] Calculated as Total Police Expenditures Per Area/# of Acres*

## *Fire*

Fire Expenditures are allocated to residential and non-residential land uses based on the proportion of fire calls for service to the various land uses within the Village limits. Fire calls to areas outside of the Village limits that fall under a separate contract for service were excluded from the analysis. To obtain the cost of fire calls for service, Village staff assigned the applicable land use to each of the 1,101 fire calls for service within the Village limits using Firehouse software and allocated total Fire Expenditures based on the number of minutes of fire calls for service consumed. ***Figure 23*** indicates Fire Expenditures by land use type.

***Figure 23. Fire Expenditures by Land Use***

| Fire Cost Factor | |
|---|---|
| Fire FY 2017 Actual Expenditures [1] | $2,288,089 |
| Amortized Annual Cost for Capital [2] | $153,700 |
| **Total Fire Expenditures Allocated** | **$2,441,789** |
| Fire Time of Service (Minutes) for Calls in VOP Limits [3] | 24,149 |
| Fire Cost ($) Per Minute | $101.12 |

| Residential Fire Expenditures by Land Use | # of Fire Calls in VOP Limits [3] | Time of Service (Minutes) [3] | Total Fire Expenditures Per Area [4] | Total # of Acres [5] | Fire Expenditures Per Acre [6] |
|---|---|---|---|---|---|
| Single Family - Low Density | 6 | 76 | $7,683 | 396 | $19 |
| Single Family - Medium Density | 306 | 6,803 | $687,856 | 2,145 | $321 |
| Single Family - High Density | 460 | 9,816 | $992,545 | 1,683 | $590 |
| Multi-Family | 67 | 1,482 | $149,802 | 254 | $589 |
| **SUB TOTAL** | **839** | **18,176** | **$1,837,886** | **4,477** | **$410** |
| **Non-Residential Fire Expenditures by Land Use** | **# of Fire Calls in VOP Limits [3]** | **Time of Service (Minutes) [3]** | **Total Fire Expenditures Per Area [4]** | **Total # of Acres [5]** | **Fire Expenditures Per Acre [6]** |
| Office | 67 | 1,451 | $146,684 | 73 | $2,015 |
| Retail | 7 | 180 | $18,187 | 11 | $1,618 |
| Lodging | 29 | 659 | $66,655 | 30 | $2,210 |
| Recreational | 26 | 516 | $52,167 | 2,906 | $18 |
| Institutional | 33 | 846 | $85,592 | 49 | $1,740 |
| Medical | 80 | 1,881 | $190,246 | 138 | $1,376 |
| Industrial | 0 | 0 | $0 | 200 | $0 |
| Services | 20 | 439 | $44,371 | 47 | $945 |
| **SUB TOTAL** | **262** | **5,972** | **$603,903** | **3,455** | **$175** |
| | | | | | |
| **TOTAL** | **1,101** | **24,149** | **$2,441,789** | **7,933** | **$308** |

*[1] June 30, 2017 Audited Financial Statements less Fire District Revenue (Moore Co. and Taylortown) of $274,655 for fire services outside Village limits; Includes Personnel and Operating Expenditures*

*[2] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*

*[3] VOP FireHouse Database, Village of Pinehurst; Excludes time spent on calls outside Village limits*

*[4] Calculated as Time of Service (Minutes) times Fire Cost ($) Per Minute*

*[5] Moore County Tax Assessor & GIS Data, 2017*

*[6] Calculated as Total Fire Expenditures Per Area/Total # of Acres*

## *Streets & Grounds*

Streets & Grounds Expenditures include not only the direct department expenditures, but also includes an allocation of 67% of the Public Services Administration costs based on a custom solid waste analysis prepared annually by the Financial Services Department. Total Streets & Grounds Expenditures are then allocated based on the number of lane miles of Village maintained roads assigned to each land use type in the Village's Geographical Information System (GIS). Privately owned roads and state roads are not included in the total lane miles. ***Figure 24*** indicates Streets and Grounds Expenditures by land use type.

***Figure 24. Streets and Grounds Expenditures by Land Use***

| **Streets & Grounds Cost Factor** | |
|---|---|
| Streets & Grounds FY 2017 Actual Expenditures [1] | $1,220,142 |
| 67% of FY 2017 Public Services Admin Operating Cost [2] | $242,207 |
| Amortized Annual Cost for Capital [3] | $674,603 |
| **Total Streets & Grounds Expenditures Allocated** | **$1,462,349** |
| Total # of Lane Miles [4] | 106.35 |
| Streets & Grounds Cost ($) Per Lane Mile | $13,750.23 |

| **Residential Streets & Grounds Expenditures by Land Use** | **# of Lane Miles [4]** | **Streets & Grounds Expenditures Per Area [5]** | **Total # of Acres [4]** | **Streets & Grounds Expenditures Per Acre [6]** |
|---|---|---|---|---|
| Single Family - Low Density | 0.02 | $332 | 396 | $1 |
| Single Family - Medium Density | 18.82 | $258,791 | 2,145 | $121 |
| Single Family - High Density | 75.08 | $1,032,334 | 1,683 | $614 |
| Multi-Family | 3.45 | $47,488 | 254 | $187 |
| **SUBTOTAL** | **97.38** | **$1,338,946** | **4,477** | **$299** |
| **Non-Residential Streets & Grounds Expenditures by Land Use** | **# of Lane Miles [4]** | **Streets & Grounds Expenditures Per Area [5]** | **Total # of Acres [4]** | **Streets & Grounds Expenditures Per Acre [6]** |
| Office | 1.90 | $26,112 | 73 | $359 |
| Retail | 0.33 | $4,534 | 11 | $403 |
| Lodging | 0.15 | $2,035 | 30 | $67 |
| Recreational | 4.38 | $60,196 | 2,906 | $21 |
| Institutional | 0.11 | $1,486 | 49 | $30 |
| Medical | 1.02 | $14,023 | 138 | $101 |
| Industrial | 0.58 | $7,971 | 200 | $40 |
| Services | 0.51 | $7,046 | 47 | $150 |
| **SUBTOTAL** | **8.97** | **$123,403** | **3,455** | **$36** |
| | | | | |
| **TOTAL** | **106.35** | **$1,462,349** | **7,932** | **$184** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures*
*[2] FY 2017 Solid Waste Cost Analysis, Financial Services Department*
*[3] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*
*[4] Moore Co. Tax Assessor & GIS Data, 2017 (See Appendix D)*
*[5] Calculated as # of Lane Miles times Streets & Grounds Cost ($) Per Lane Mile*
*[6] Calculated as Total Streets & Grounds Expenditures Per Area/Total # of Acres*

## *Powell Bill*

Powell Bill Expenditures represent the cost to resurface and stripe Village maintained roads within the Village limits and are allocated based on the proportion of estimated daily vehicle trips for various residential and non-residential uses. See **Appendix B** for the custom analysis performed to determine estimated daily vehicle trips. ***Figure 25*** indicates Powell Bill Expenditures by land use type.

***Figure 25. Powell Bill Expenditures by Land Use***

| Powell Bill Cost Factor | |
|---|---|
| **Powell Bill FY 2017 Actual Expenditures [1]** | **$813,982** |
| Total Daily Vehicle Trips [2] | 60,597 |
| Powell Bill Cost ($) Per Daily Vehicle Trip Per Year | $13.43 |

| Residential Powell Bill Expenditures by Land Use | Total Daily Vehicle Trips [2] | Total Powell Bill Expenditures Per Area [3] | # of Acres [2] | Powell Bill Expenditures Per Acre [4] |
|---|---|---|---|---|
| Single Family - Low Density | 245 | $3,288 | 396 | $8 |
| Single Family - Medium Density | 7,412 | $99,566 | 2,145 | $46 |
| Single Family - High Density | 17,099 | $229,686 | 1,683 | $137 |
| Multi-Family | 550 | $7,384 | 254 | $29 |
| **SUBTOTAL** | **25,306** | **$339,925** | **4,477** | **$76** |
| **Non-Residential Powell Bill Expenditures by Land Use** | **Total Daily Vehicle Trips [2]** | **Total Powell Bill Expenditures Per Area [3]** | **# of Acres [2]** | **Powell Bill Expenditures Per Acre [4]** |
| Office | 5,020 | $67,438 | 73 | $927 |
| Retail | 4,791 | $64,353 | 11 | $5,724 |
| Lodging | 3,376 | $45,355 | 30 | $1,504 |
| Recreational | 7,324 | $98,385 | 2,906 | $34 |
| Institutional | 1,645 | $22,096 | 49 | $449 |
| Medical | 11,782 | $158,259 | 138 | $1,145 |
| Industrial | 160 | $2,149 | 200 | $11 |
| Services | 1,193 | $16,023 | 47 | $341 |
| **SUBTOTAL** | **35,291** | **$474,057** | **3,455** | **$137** |
| | | | | |
| **TOTAL** | **60,597** | **$813,982** | **7,932** | **$103** |

*[1] June 30, 2017 Audited Financial Statements*
*[2] Calculated as # of Demand Units times Trip Rates times Trip Adjustment Factor (See Appendix B)*
*[3] Calculated as Total Daily Vehicle Trips times Powell Bill Cost ($) Per Daily Vehicle Trip*
*[4] Calculated as Total Powell Bill Expenditures Per Area/# of Acres*

It is important to note that there are three large gated communities in Pinehurst that maintain their privately owned streets, which include the Country Club of North Carolina, Pinewild Country Club, and Fairwoods on 7. Also, streets in Midland Country Club (a Multi-Family development) and Pinehurst No. 8 are privately maintained. Therefore, any road resurfacing expenditures in these neighborhoods (and on other private roads in the Village) are not a financial obligation of the Village.

## *Solid Waste*

Solid Waste Expenditures include not only the direct department expenditures, but also includes an allocation of 33% of the Public Services Administration costs based on a custom solid waste analysis prepared annually by the Financial Services Department. Solid Waste Expenditures are allocated solely to residential land uses based on the number of households in each land use type. Because the Village does not provide solid waste services to non-residential properties, no expenditures are allocated to this land use. ***Figure 26*** indicates Solid Waste Expenditures by land use type.

***Figure 26. Solid Waste Expenditures by Land Use***

| Solid Waste Cost Factor | |
|---|---|
| Solid Waste FY 2017 Actual Operating Expenditures [1] | $1,309,559 |
| Amortized Annual Cost for Capital [2] | $196,617 |
| 33% of FY 2017 Public Services Admin Operating Cost [3] | $119,296 |
| **Total Solid Waste Expenditures Allocated** | **$1,625,472** |
| Estimated # of Occupied Units [4] | 6,587 |
| Solid Waste Cost ($) Per Occupied Unit | $246.75 |

| Residential Solid Waste Expenditures by Land Use | Estimated # of Occupied Units [4] | Total Solid Waste Expenditures Per Area [5] | Total # of Acres [4] | Solid Waste Expenditures Per Acre [6] |
|---|---|---|---|---|
| Single Family - Low Density | 60 | $14,924 | 396 | $38 |
| Single Family - Medium Density | 1,831 | $451,857 | 2,145 | $211 |
| Single Family - High Density | 4,224 | $1,042,380 | 1,683 | $620 |
| Multi-Family | 471 | $116,310 | 254 | $457 |
| **TOTAL** | **6,587** | **$1,625,472** | **4,477** | **$363** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures*
*[2] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*
*[3] FY 2017 Solid Waste Cost Analysis, Financial Services Department*
*[4] Calculated as # of Units times vacancy rates of 16% for SF and 68% for multifamily, based on 2011-2015 American Community Survey 5 Yr Estimates (See Appendix E)*
*[5] Calculated as Estimated # of Occupied Units times Solid Waste Cost ($) Per Occupied Unit*
*[6] Calculated as Total Solid Waste Expenditures Per Area/Total # of Acres*

It is important to recognize that the cost of solid waste services includes a "mix" of service levels within the Multi-Family developments, with some developments being served by the Village and others being served by a private hauler.

## *Planning & Inspections*

Planning & Inspections Expenditures are allocated to various land uses based on the proportion of square feet permitted within the Village limits in FY 2017. ***Figure 27*** indicates Planning & Inspections Expenditures by land use type.

***Figure 27. Planning & Inspections Expenditures by Land Use***

| Planning & Inspections Cost Factor | |
|---|---|
| **Planning & Inspections FY 2017 Actual Expenditures [1]** | **$762,739** |
| Total Square Feet of Permits Issued [2] | 843,755 |
| Planning & Inspections Cost ($) Per SF of Permits Issued | $0.90 |

| Residential Planning and Inspections Expenditures by Land Use | # of Square Feet Permitted [2] | Total P&I Expenditures Per Area [3] | # of Acres [4] | P&I Expenditures Per Acre [5] |
|---|---|---|---|---|
| Single Family - Low Density | 12,449 | $11,254 | 396 | $28 |
| Single Family - Medium Density | 149,320 | $134,983 | 2,145 | $63 |
| Single Family - High Density | 438,151 | $396,080 | 1,683 | $235 |
| Multi-Family | 202,657 | $183,198 | 254 | $720 |
| **SUB TOTAL** | **802,577** | **$725,515** | **4,477** | **$162** |
| **Non-Residential Planning & Inspections Expenditures by Land Use** | **# of Square Feet Permitted [2]** | **Total P&I Expenditures Per Area [3]** | **# of Acres [4]** | **P&I Expenditures Per Acre [5]** |
| Office | 10,670 | $9,645 | 73 | $133 |
| Retail | 820 | $741 | 11 | $66 |
| Lodging | 0 | $0 | 30 | $0 |
| Recreational | 8,959 | $8,099 | 2,906 | $3 |
| Institutional | 760 | $687 | 49 | $14 |
| Medical | 16,619 | $15,023 | 138 | $109 |
| Industrial | 2,800 | $2,531 | 200 | $13 |
| Services | 550 | $497 | 47 | $11 |
| **SUB TOTAL** | **41,178** | **$37,224** | **3,455** | **$11** |
| | | | | |
| **TOTAL** | **843,755** | **$762,739** | **7,932** | **$96** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures*
*[2] FY 2017 Permit Log, Planning & Inspections Department (Excluding permits issued in the ETJ)*
*[3] Calculated as # of Square Feet Permitted times Planning & Inspections Cost ($) Per SF of Permits Issued*
*[4] Moore County Tax Assessor and GIS Data, 2017*
*[5] Calculated as Total P&I Expenditures Per Area/# of Acres*

## *Parks & Recreation*

Parks & Recreation Expenditures are allocated to residential land uses based on population. ***Figure 28*** indicates Parks & Recreation Expenditures by land use type.

***Figure 28. Parks & Recreation Expenditures by Land Use***

| Parks & Recreation Cost Factor | |
|---|---|
| Parks & Recreation FY 2017 Actual Expenditures [1] | $1,367,213 |
| Amortized Annual Cost for Capital [2] | $85,800 |
| **Total P&R Expenditures Allocated** | **$1,453,013** |
| Population [3] | 16,328 |
| Parks & Recreation Cost ($) Per Capita | $88.99 |

| Residential - Parks & Recreation Allocation by Land Use | Population [3] | Total Parks & Recreation Expenditures Per Area [4] | Total # of Acres [5] | Parks & Recreation Expenditures Per Acre [6] |
|---|---|---|---|---|
| Single Family - Low Density | 156 | $13,915 | 396 | $35 |
| Single Family - Medium Density | 4,734 | $421,309 | 2,145 | $196 |
| Single Family - High Density | 10,922 | $971,911 | 1,683 | $578 |
| Multi-Family | 516 | $45,878 | 254 | $180 |
| **TOTAL** | **16,328** | **$1,453,013** | **4,477** | **$325** |

*[1] June 30, 2017 Audited Financial Statements; Includes Personnel and Operating Expenditures*
*[2] Calculated as Five Year Average Capital Expenditures in FY 2018-2022 Capital Improvement Plan*
*[3] Calculated as Persons/Household Unit times Total # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[4] Calculated as Population times Parks & Recreation Cost ($) Per Capita*
*[5] Moore Co. Tax Assessor & GIS Data, 2017*
*[6] Calculated as Total P&R Expenditures Per Area/# of Acres*

## *Debt Service*

Debt Service Expenditures allocated in this analysis include debt service for Fire Department and Parks & Recreation assets. The basis for the allocation is the same basis used for allocating other Fire Department and Parks & Recreation Expenditures. Debt service for the Fair Barn is not included in this analysis as its revenues and expenditures are excluded because they are not generated in proportion to any residential or non-residential land use. ***Figure 29*** indicates Debt Service Expenditures by land use type.

***Figure 29. Debt Service Expenditures by Land Use***

| **Fire Debt Service Cost Factor** | |
|---|---|
| Fire Debt Service FY 2017 Actual Expenditures [1] | $313,367 |
| Fire Time of Service (Minutes) for Calls in VOP Limits [2] | 24,149 |
| Fire Debt Service Cost ($) Per Minute | $12.98 |
| **Parks & Recreation Debt Service Cost Factor** | |
| P&R Debt Service FY 2017 Actual Expenditures [1] | $35,655 |
| Total Population [3] | 16,328 |
| P&R Debt Service Cost ($) Per Capita | $2.18 |

| | **Fire** | | **Parks and Recreation** | | | |
|---|---|---|---|---|---|---|
| **Residential Debt Service Expenditures by Land Use** | **Fire Time of Service (Minutes) [2]** | **Total Fire Debt Service Expenditures Per Area [4]** | **Population [3]** | **Total P&R Debt Service Expenditures Per Area [7]** | **Total # of Acres [5]** | **Total Debt Service Expenditures Per Acre [6]** |
| Single Family - Low Density | 76 | $986 | 156 | $341 | 396 | $3 |
| Single Family - Medium Density | 6,803 | $88,276 | 4,734 | $10,338 | 2,145 | $46 |
| Single Family - High Density | 9,816 | $127,378 | 10,922 | $23,849 | 1,683 | $90 |
| Multi-Family | 1,482 | $19,225 | 516 | $1,126 | 254 | $80 |
| **SUB TOTAL** | **18,176** | **$235,865** | **16,328** | **$35,655** | **4,477** | **$61** |
| **Non-Residential Debt Service Expenditures by Land Use** | **Fire Time of Service (Minutes) [2]** | **Total Fire Debt Service Expenditures Per Area [4]** | | | **Total # of Acres [5]** | **Fire Debt Service Expenditures Per Acre [6]** |
| Office | 1,451 | $18,825 | | | 73 | $259 |
| Retail | 180 | $2,334 | | | 11 | $208 |
| Lodging | 659 | $8,554 | | | 30 | $284 |
| Recreational | 516 | $6,695 | | | 2,906 | $2 |
| Institutional | 846 | $10,984 | | | 49 | $223 |
| Medical | 1,881 | $24,415 | | | 138 | $177 |
| Industrial | 0 | $0 | | | 200 | $0 |
| Services | 439 | $5,694 | | | 47 | $121 |
| **SUB TOTAL** | **5,972** | **$77,502** | | | **3,455** | **$22** |
| | | | | | | |
| **TOTAL** | **24,149** | **$313,367** | | **$35,655** | **7,932** | **$44** |

*[1] June 30, 2017 Audited Financial Statements; Includes debt service for Fire Station and Firetrucks and excludes debt service for Fair Barn*
*[2] VOP FireHouse Database, Village of Pinehurst; Excludes time spent on calls outside Village limits*
*[3] Calculated as Persons/Household Unit times Total # of Units, using 2011-2015 American Community Survey 5 Yr Estimates*
*[4] Calculated as Time of Service (Minutes) times Fire Debt Service Cost ($) Per Minute*
*[5] Moore County Tax Assessor & GIS Data, 2017*
*[6] Calculated as Total Fire and Parks & Recreation Debt Service Expenditures Per Area/Total # of Acres*
*[7] Calculated as Population times P&R Debt Service Cost ($) Per Capita*
*[8] Calculated as Total P&R Debt Service Expenditures Per Area/Total # of Acres*

# Expenditure Summary

Expenditures allocated on a per acre basis to residential land uses are shown in ***Figure 30***. ***Overall, Single Family – High Density and Multi-Family development cost the most to service on a per acre basis.*** This is due in a large part to the higher density of population and housing units. The higher density of population impacts nearly all expenditure categories for Single-Family High Density and Multi-Family was allocated a significant portion of Planning & Inspections expenditures due to a large apartment complex permitted in FY 2017. Given the assumed vacancy rates of 68% in Multi-Family, this residential land use would likely generate greater expenditures per acre as occupancy increases.

***Figure 30. Residential Expenditures per Acre by Land Use***

| Expenditures Category | Single Family - Low Density | Single Family - Medium Density | Single Family - High Density | Multi-Family |
|---|---|---|---|---|
| Administration | $37 | $205 | $604 | $189 |
| Police | $12 | $222 | $621 | $528 |
| Fire | $19 | $321 | $590 | $589 |
| Streets & Grounds | $1 | $121 | $614 | $187 |
| Powell Bill | $8 | $46 | $137 | $29 |
| Solid Waste | $38 | $211 | $620 | $457 |
| Planning & Inspections | $28 | $63 | $235 | $720 |
| Parks & Recreation | $35 | $196 | $578 | $180 |
| Debt Service | $3 | $46 | $90 | $80 |
| **TOTAL EXPENDITURES** | **$181** | **$1,431** | **$4,087** | **$2,960** |

Expenditures allocated on a per acre basis to non-residential land uses are shown in ***Figure 31***. ***Overall, retail, lodging, and medical uses cost the most to serve per acre for non-residential land uses.*** This is in part due to the larger number of daily vehicle trips associated with retail use that contribute to road resurfacing, or Powell Bill, expenditures. In addition, Police Expenditures allocated to medical and institutional uses due to the amount of time spent on calls for service drive the cost per acre up significantly. Finally, lodging and medical land uses also receive a greater allocation of Administration expenses due to the higher number of jobs in these two land uses.

***Figure 31. Non-Residential Expenditures per Acre by Land Use***

| Expenditures Category | Office | Retail | Lodging | Recreational | Institutional | Medical | Industrial | Services |
|---|---|---|---|---|---|---|---|---|
| Administration | $1,609 | $1,878 | $3,876 | $8 | $285 | $2,551 | $66 | $1,702 |
| Police | $1,587 | $2,827 | $2,440 | $20 | $4,161 | $4,354 | $2 | $1,914 |
| Fire | $2,015 | $1,618 | $2,210 | $18 | $1,740 | $1,376 | $0 | $945 |
| Streets & Grounds | $359 | $403 | $67 | $21 | $30 | $101 | $40 | $150 |
| Powell Bill | $927 | $5,724 | $1,504 | $34 | $449 | $1,145 | $11 | $341 |
| Planning & Inspections | $133 | $66 | $0 | $3 | $14 | $109 | $13 | $11 |
| Debt Service | $259 | $208 | $284 | $2 | $223 | $177 | $0 | $121 |
| **TOTAL EXPENDITURES** | **$6,887** | **$12,723** | **$10,381** | **$106** | **$6,902** | **$9,813** | **$132** | **$5,185** |

# Appendices

# Appendix A. Proportionate Share Factors

Proportionate Share Factors are used to determine the allocation of Administration expenditures to residential and non-residential uses based on population and jobs. Based on the analysis shown in ***Figure 32***, 67% of demand is derived from residential uses and 33% is derived from non-residential uses. See **Appendix C** for further information about jobs located in the Village.

***Figure 32. Residential and Non-Residential Proportionate Share Factors***

| Residential | 2014 | Demand Hours/Day | Person Hours | Proportionate Share |
|---|---|---|---|---|
| Estimated Residents [1] | 15,150 | | | |
| Workers Living in the Village [2] | 5,171 | | | |
| Residents Not Working | 9,979 | 20 | 199,580 | |
| | | | | |
| Residents Working in the Village [2] | 1,139 | 14 | 15,946 | |
| Residents Working Outside of the Village | 4,032 | 14 | 56,448 | |
| **TOTAL RESIDENTIAL** | | | **271,974** | **67%** |
| **Non-Residential** | **2014** | **Demand Hours/Day** | **Person Hours** | **Proportionate Share** |
| Non-Working Residents in the Village | 9,979 | 4 | 39,916 | |
| Jobs Located in the Village [2] | 9,239 | | | |
| | | | | |
| Residents Working in the Village | 1,139 | 10 | 11,390 | |
| Non-Resident Workers | 8,100 | 10 | 81,000 | |
| **TOTAL NONRESIDENTIAL** | | | **132,306** | **33%** |
| | | | | |
| | | **GRAND TOTAL** | **404,280** | **100%** |

*[1] NC State Demographer*

*[2] US Census On the Map Application, 2014 Data*

# Appendix B. Custom Analysis of Vehicle Trips

Vehicle trip rates by type of housing unit are used in the analysis. National average rates can be obtained from the Institute for Transportation Engineers (ITE). However, an alternative to simply using the national average trip generation rate for residential development is to utilize the Institute of Transportation Engineers (ITE) published regression curve formulas to derive custom trip generation rates using local demographic data. Key variables needed for the analysis (i.e. vehicles available, housing units, households and persons) were obtained from the 2011-2015 American Community Survey 5 Yr Estimates to derive custom average weekday trip generation rates by type of housing. An average of the two published methodologies, which is below the national average, was used as shown in ***Figure 33*** below. A vehicle trip end represents a vehicle either entering or exiting a development, as if a traffic counter were placed across a driveway.

***Figure 33. Residential Average Daily Vehicle Trip Ends Per Housing Unit Type***

| Occupancy | Vehicles Available [1] | Single Family # of Units [2] | Multifamily # of Units [2] | Total # of Occupied Units [2] | Vehicles per Household Unit [3] |
|---|---|---|---|---|---|
| Owner Occupied | 11,620 | 6,132 | 107 | 6,239 | 1.9 |
| Renter Occupied | 1,348 | 849 | 199 | 1,048 | 1.3 |
| **TOTAL** | **12,968** | **6,981** | **306** | **7,287** | **1.8** |

| Residential Land Use | Estimated Trip Ends Based on Population | | Estimated Trip Ends Based on Vehicles | | Trip Ends Based on Average of Two Methods | VOP Custom Trip Ends per Housing Unit | ITE National Average |
|---|---|---|---|---|---|---|---|
| | Persons [4] | Trip Ends Based on Persons [5] | # of Vehicles by Type of Housing [6] | Trip Ends Based on # of Vehicles [7] | | | |
| Single Family | 14,984 | 36,796 | 12,423 | 71,252 | 54,024 | **6.52** | 9.52 |
| Multifamily | 329 | 1,077 | 545 | 2,439 | 1,758 | **1.88** | 6.65 |
| **TOTAL** | **15,313** | **37,873** | **12,968** | **74,343** | **56,108** | **6.08** | |

[1] *2011-2015 American Community Survey 5 Yr Estimates - Aggregate Number of Vehicles Available by Tenure (B25046)*

[2] *2011-2015 American Community Survey 5 Yr Estimates - Tenure by Units in Structure (B25032)*

[3] *Calculated as Vehicles Available/Total # of Units*

[4] *2011-2015 American Community Survey 5 Yr Estimates - Tenure by Household Size by Units in Structure (B25124)*

[5] *Vehicle trip ends based on persons using formulas from Trip Generation (ITE 2008). For single unit housing (ITE210), the fitted curve equation is = (EXP(0.91*LN((persons/15))+1.52)*15. For 2+ unit housing (ITE 220), the fitted curve equation is =(3.47*persons)-64.48.*

[6] *Calculated as Average 1.8 Vehicles Per Household Unit times # of Units*

[7] *Vehicle trip ends based on vehicles by housing type using formulas from Trip Generation (ITE 2008). For single unit housing (ITE210), the fitted curve equation is = (EXP(0.99*LN((vehicles/22))+1.81)*22. For 2+ unit housing (ITE 220), the fitted curve equation is =(3.94*vehicles)+293.58.*

Trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Each trip is made of two "trip ends," one at the production end of the trip and one at the attraction end of the trip. In the trip generation procedure, one assumes that the land activity (e.g., jobs and households) results in the "production" and "attraction" of trips (or trip ends). A trip end that is produced in a zone is called a "production" trip. A trip end that is attracted to a zone is called an "attraction" trip.

According to the National Household Travel Survey, home-based work trips (or trips from home to work for the purpose of working) are typically 31% of “production” trips, or out-bound trips (which are 50% of all trip ends). Residential development in the Village has a larger trip adjustment factor of 62% to account for commuters leaving Pinehurst for work. Data from the US Census Bureau indicates that 78% of Pinehurst workers travel outside the Village for work. In combination, these factors (0.31 x 0.50 x 0.78 = 0.12) account for 12% of additional production trips attributable to residential development. ***Figure 34*** indicates the total residential

trip adjustment factor includes "attraction" trips (50% of trip ends) plus the journey-to-work commuting adjustment (12% of production trips) for a total of 62%. In other words, because 78% of Pinehurst residents travel outside of the Village for work, the residential trip adjustment factor is larger than it would be if more residents worked inside the Village limits.

***Figure 34. Adjustment for Journey-to-Work Commuting***

| Adjustment for Journey-to Work Commuting | |
|---|---|
| Home based work trips [1] | 31% |
| Percent of all trip ends [1] | 50% |
| % of residents workers who travel out of VOP [2] | 78% |
| **Journey to Work Commuting Adjustment** | **12%** |
| Attraction Trip Ends [3] | **50%** |
| **Residential Trip Adjustment Factor [3]** | **62%** |

*[1] According to the National Household Travel Survey (e.g. trips from home to work for the purpose of working)*
*[2] Census Bureau "On the Map" application, 2014 Data (onthemap.ces.census.gov)*
*[3] Journey to work factor + 50% of trip ends for "attraction" trips*

***Figure 35* indicates estimated residential vehicle trip ends by residential land use type.** Non-residential vehicle trip ends utilized in the analysis were obtained from published sources based on applicable demand units that included primarily square footage of non-residential buildings. Vehicle trip rates for recreational development is based on the number of acres of recreational land since the vast majority of acreage in the Village is golf courses.

***Figure 35. Residential and Non-Residential Average Vehicle Trip Ends by Land Use***

| Residential Vehicle Trips | Estimated # of Occupied Units [1] | Trip Rates [2] | Demand Unit [2] | Trip Adjustment Factor [3] | Residential Vehicle Trips on an Average Weekday [4] |
|---|---|---|---|---|---|
| Single Family - Low Density | 60 | 6.52 | # of Units | 62% | 245 |
| Single Family - Medium Density | 1,831 | 6.52 | # of Units | 62% | 7,412 |
| Single Family - High Density | 4,224 | 6.52 | # of Units | 62% | 17,099 |
| Multifamily | 471 | 1.88 | # of Units | 62% | 550 |
| **TOTAL** | **6,587** | | | | **25,306** |

| Nonresidential Vehicle Trips | # [1] | Trip Rates [2] | Demand Unit [2] | Trip Adjustment Factor [4] | Non-Residential Vehicle Trips on an Average Weekday [5] | ITE Classification Source |
|---|---|---|---|---|---|---|
| Office | 547,181 | 18.35 | 1,000 SF | 50% | 5,020 | Davidson Fiscal Analysis |
| Retail | 155,094 | 110.32 | 1,000 SF | 28% | 4,791 | Davidson Fiscal Analysis |
| Lodging | 502,817 | 13.43 | 1,000 SF | 50% | 3,376 | Resort Hotel (330) |
| Recreational | 2,906 | 5.04 | Acre | 50% | 7,324 | Golf Courses (430) |
| Institutional | 212,246 | 15.50 | 1,000 SF | 50% | 1,645 | Davidson Fiscal Analysis |
| Medical | 1,782,388 | 13.22 | 1,000 SF | 50% | 11,782 | Hospital (610) |
| Industrial | 45,898 | 6.97 | 1,000 SF | 50% | 160 | Davidson Fiscal Analysis |
| Services | 216,294 | 11.03 | 1,000 SF | 50% | 1,193 | General Office (710) |
| **TOTAL** | | | | | **35,291** | |

*[1] Moore County Tax Assessor and GIS Data, 2017*
*[2] Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition*
*[3] Custom calculation for journey to work commuting*
*[4] Institute of Transportation Engineers (ITE) standard multipliers for non-residential trips*
*[5] Calculated as # of Demand Units times Trip Rates times Trip Adjustment Factor*

# Appendix C. Jobs Analysis

To determine the number of jobs in each non-residential land use, Village staff obtained data from the US Census on the Map Application and cross referenced that data with Village parcel data to determine the indicated jobs by sector. As noted below in ***Figure 36***, some jobs were reallocated due to apparent inaccuracies in the number of jobs listed by the US Census Bureau.

***Figure 36. US Census on the Map Application, Jobs by Sector***

| Jobs by NAICS Industry Sector | # of Jobs - 2014 [1] | % | Land Use |
|---|---|---|---|
| Agriculture, Forestry, Fishing and Hunting | 1 | 0.0% | Industrial |
| Mining, Quarrying, and Oil and Gas Extraction | 0 | 0.0% | Industrial |
| Utilities | 0 | 0.0% | Industrial |
| Construction | 58 | 0.6% | Industrial |
| Manufacturing | 48 | 0.5% | Industrial |
| Wholesale Trade | 53 | 0.6% | Industrial |
| Retail Trade | 264 | 2.9% | Retail |
| Transportation and Warehousing | 6 | 0.1% | Industrial |
| Information | 39 | 0.4% | Services |
| Finance and Insurance | 146 | 1.6% | Services |
| Real Estate and Rental and Leasing | 80 | 0.9% | Services |
| Professional, Scientific, and Technical Services | 224 | 2.4% | Services |
| Management of Companies and Enterprises | 8 | 0.1% | Office |
| Administration & Support, Waste Management and Remediation | 164 | 1.8% | Office |
| Educational Services | 175 | 1.9% | Institutional |
| Health Care and Social Assistance [2] | 4,409 | 47.7% | Medical |
| Health Care and Social Assistance [2] | 1,102 | 11.9% | Office |
| Arts, Entertainment, and Recreation | 300 | 3.2% | Recreational |
| Accommodation and Food Services [3] | 365 | 4.0% | Services |
| Accommodation and Food Services [3] | 1,462 | 15.8% | Lodging |
| Other Services (excluding Public Administration) | 145 | 1.6% | Services |
| Public Administration | 190 | 2.1% | Office |
| **TOTAL** | **9,239** | **100%** | |

*[1] US Census On the Map Application, 2014 Data*

*[2] Allocated total of 5,511 Medical jobs as 80% Medical (e.g. hospital, medical clinics, nursing homes) and 20% Office (e.g. medical/dental office)*

*[3] Allocated total of 1,827 Accommodation and Food Services jobs as 80% Lodging (e.g. hotel) and 20% Services (e.g. restaurant)*

To determine the estimated number of jobs located in the Village in FY 2017, Village staff applied the % of jobs to population in 2014, or 61% to the FY 2017 population amount to estimate a total of 9,957 jobs, as shown in ***Figure 37***.

***Figure 37. Estimated Number of Jobs Located in the Village in FY 2017***

| Estimated # of Jobs 2017 | |
|---|---|
| Population - 2014 | 15,150 |
| Jobs Located in the Village - 2014 | 9,239 |
| Jobs Located in the Village as a % of Population - 2014 | 61% |
| | |
| Population - 2017 | 16,328 |
| Jobs Located in the Village as a % of Population - 2014 | 61% |
| **ESTIMATED JOBS LOCATED IN THE VILLAGE - 2017** | **9,957** |

Based on the estimated total of 9,957 jobs located in the Village in FY 2017, staff applied the 2014 ratio by non-residential land use to the FY 2017 estimated number of jobs, as shown in ***Figure 38***.

***Figure 38. Estimated FY 2017 Jobs by Non-Residential Land Use***

| Job Classifications by Land Use | 2014 | % in 2014 | Est 2017 |
|---|---|---|---|
| Office | 1,464 | 16% | 1,578 |
| Retail | 264 | 3% | 285 |
| Lodging | 1,462 | 16% | 1,575 |
| Recreational | 300 | 3% | 323 |
| Institutional | 175 | 2% | 189 |
| Medical | 4,409 | 48% | 4,752 |
| Industrial | 166 | 2% | 179 |
| Services | 999 | 11% | 1,077 |
| **TOTAL** | **9,239** | **100%** | **9,957** |

# Appendix D. Village-Owned Lane Miles by Land Use

To determine the number of Village-owned lane miles by land use, staff obtained a GIS file of lane miles by zoning jurisdiction and performed a custom analysis to assign land uses based on zoning. ***Figure 39*** indicates the number of Village-owned lane miles by zoning jurisdiction.

***Figure 39. Village-Owned Lane Miles by Zoning Jurisdiction and Land Use***

| Residential | # of Miles [1] |
|---|---|
| SF -Low Density (R-210) | 0.02 |
| SF -Medium Density (R-15; R-20; R-30) | 18.82 |
| SF -High Density (R-5; R-8; R-10, VCP) | 75.08 |
| Multi-family (R-MF;VR) | 3.45 |
| **SUBTOTAL** | **97.38** |
| **Non-Residential** | **# of Miles** |
| Village Center Commercial (VC) | 0.37 |
| Village Mixed Use (VMU) | 0.68 |
| Neighborhood Commercial (NC) | 1.11 |
| Other Office & Retail (OP) | 1.83 |
| Hotel (H) | 0.00 |
| Hospital (HD) | 0.39 |
| Recreational Development (RD) | 2.43 |
| Institutional (PC) | 2.16 |
| **SUBTOTAL** | **8.97** |
| | |
| **GRAND TOTAL** | **106.35** |

| Non-Residential Zoning Jurisdiction | # of Miles [1] | % Allocated to Land Use [2] |
|---|---|---|
| Village Center Commercial (VC) | 0.37 | 40% Lodging/20% Retail/20% Services/20% Office |
| Village Mixed Use (VMU) | 0.68 | 85% Industrial/5% Retail/5% Services/5% Office |
| Neighborhood Commercial (NC) | 1.11 | 40% Medical/20% Retail/20% Services/20% Office |
| Other Office & Retail (OP) | 1.83 | 80% Office/10% Medical/10% Services |
| Hotel (H) | 0.00 | 100% Lodging |
| Hospital (HD) | 0.39 | 100% Medical |
| Recreational Development (RD) | 2.43 | 100% Recreational |
| Institutional (PC) | 2.16 | 90% Recreational/5% Office/5% Institutional |
| **TOTAL** | **8.97** | |

| Non-Residential Land Use | # of Miles [2] |
|---|---|
| Office | 1.90 |
| Retail | 0.33 |
| Lodging | 0.15 |
| Recreational | 4.38 |
| Institutional | 0.11 |
| Medical | 1.02 |
| Industrial | 0.58 |
| Services | 0.51 |
| **TOTAL** | **8.97** |

*[1] Moore County GIS Data, 2017*

*[2] Allocated based on land uses in zoning jurisdictions using Moore County GIS Data, 2017*

# Appendix E. Household Characteristics

To determine the population per household for single family and multifamily land uses, Village staff analyzed the 2011-2015 American Community Survey 5 Yr Estimates - Tenure by Household Size by Units in Structure (B25124). Results of this analysis indicates an average of 0.35 persons per household in multi-family residential development due to the large vacancy rate of 68%. Given this, population estimates were determined by calculating population in the multifamily land use an allocating the remaining population (based on NC State Demographer figures) for FY 2017 to single family land uses based on the proportion of the # of units. In addition, vacancy rates were determined by housing type with an overall vacancy rate of 21% noted. ***Figure 40*** indicates the estimated population per household and vacancy rates.

***Figure 40. Estimated Population per Household and Land Use***

| | Renter & Owner Occupied | | | Total Housing Units (Including Vacant) | | | |
|---|---|---|---|---|---|---|---|
| Residential Land Use Type | # of Persons [1] | # of Households [1] | # of Persons Per Household [2] | # of Housing Units (Incl. Vacant) [1] | # of Persons Per Housing Unit [2] | Vacancy Rate [3] | Housing Mix |
| Single Family | 14,984 | 6,989 | 2.14 | 8,287 | 1.81 | 16% | 90% |
| Multifamily | 329 | 298 | 1.10 | 936 | 0.35 | 68% | 10% |
| **TOTAL** | **15,313** | **7,287** | **2.10** | **9,223** | **1.66** | **21%** | **100%** |

| UNITS IN STRUCTURE | Total [1] | Renter & Owner Occupied [1] | Vacant | Vacancy Rate |
|---|---|---|---|---|
| 1, detached (SF) | 7,896 | 6,653 | 1,243 | 16% |
| 1, attached (SF) | 361 | 306 | 55 | 15% |
| 2 apartments (MF) | 46 | 7 | 39 | 85% |
| 3 or 4 apartments (MF) | 503 | 138 | 365 | 73% |
| 5 to 9 apartments (MF) | 302 | 109 | 193 | 64% |
| 10 or more apartments (MF) | 85 | 44 | 41 | 48% |
| Mobile home or other type of housing (SF) | 30 | 30 | 0 | 0% |
| **TOTAL** | **9,223** | **7,287** | **1,936** | **21%** |

| Land Use Type - Residential | # of Persons Per Housing Unit [2] | # of Units FY 2017 [6] | Calculated FY 2017 Population [7] |
|---|---|---|---|
| Single Family - Low Density | 1.81 | 72 | 156 |
| Single Family - Medium Density | 1.81 | 2,180 | 4,734 |
| Single Family - High Density | 1.81 | 5,029 | 10,922 |
| Multi-Family | 0.35 | 1,473 | 516 |
| **TOTAL** | | **8,754** | **16,328** |

*[1] 2011-2015 American Community Survey 5 Yr Estimates - Physical Housing Characteristics for Occupied Housing Units (S2504)*
*[2] Calculated as # of Persons/# of Households (or Housing Units)*
*[3] Calculated as Vacant Units as a % of total # of Units*
*[4] Single family includes 1, detached or attached unit (SF) and "Other" (e.g. mobile home, etc.)*
*[5] Multifamily includes 2 - 50 or more units*
*[6] Moore County Tax Assessor and GIS Data, 2017*
*[7] Calculated as multi-family .35 persons per housing unit times # of units and remaining population spread to SF based on ratio of the # of Single Family Units in 2017*