



AGENDA

**FREDERICK COUNTY BOARD OF SUPERVISORS
WEDNESDAY, JUNE 12, 2019
7:00 P.M. - REGULAR MEETING
BOARD ROOM, COUNTY ADMINISTRATION BUILDING
107 NORTH KENT STREET, WINCHESTER, VIRGINIA**

1. **7:00 P.M. - Regular Meeting Call to Order**
2. **Invocation**
3. **Pledge of Allegiance**
4. **Adoption of Agenda**
5. **Citizen Comments – Agenda Items that are not the subject of a Public Hearing**
6. **Consent Agenda** **Attachment**
 - 6.A Minutes
 1. Service Learning Forum of May 20, 2019 ----- A
 2. Work Session of May 22, 2019 ----- B
 3. Regular Meeting of May 22, 2019 ----- C
 - 6.B Committee Reports
 1. Public Works Committee Report of 5/28/19 ----- D
 2. Information Technologies Committee Report of 5/29/19 ----- E
 3. Developmental Impact Model Oversight Committee Report of 5/9/19 ----- F

7. Board of Supervisors Comments

8. County Officials

8.A Committee Appointments ----- G

1. Shawneeland Sanitary District Advisory Committee
2-year term of Lynn Schmitt ends 7/13/19 (**Eligible for reappointment**)

8.B Frederick/Warren County Line – Property Issue ----- H

This is a request for the Board of Supervisors to consider a boundary adjustment to the Warren/Frederick County lines in the Foster Hollow Road area. By way of background, this apparent boundary dispute came up via the Virginia Department of Elections relative to voting precinct lines around the State. The Department wanted to ensure correct voting district classifications with the area in question affecting the Congressional districts because Warren County is in the 6th District and Frederick County is in the 10th.

8.C Reduction/Offset of Frederick Water Debt Obligation ----- I

Frederick Water has contracted with Perry Engineering to construct the replacement ball fields at Clearbrook Park and has worked with the County to get an approved site plan for those ballfields. The County has identified certain features that would benefit the users of said fields including the use of LED lighting technologies within the complex. Frederick Water has advised the cost of the features exceeds their budget for this project. To accommodate the County's desire for the more efficient lighting, as well as provide other additional improvements to the site, Frederick Water has asked if the County would be willing to off-set the costs for those features by forgiving Frederick Water's existing debt obligation in the amount of \$657,083.23.

9. Committee Business

9.A Public Works Committee (See Attachment D)

1. Set Public Hearing on Quitclaim Request for Shawneeland.

The Committee recommends that the Board set a public hearing on the disposition of any County interest in Shawneeland Tax Parcel Number 49A04-1-K-19 Lot 19.

9. **Committee Business**, continued

9.B **Developmental Impact Model Oversight Committee**

1. **Capital Impacts Study** ----- J

*Frederick County has been working with Tischler-Bise to develop a Capital Impacts Study and Model designed to evaluate the anticipated need for capital facilities based on growth and to determine the cost of those capital facilities to the County. Further, the model determines the cost to the County for mitigating the infrastructure impacts associated with re-zonings. This Capital Impact Study also assists in ensuring the County's Cash Proffer Policy complies with latest Virginia Cash Proffer legislation. **The Committee recommends accepting the Capital Impacts Study and implementing the use of the Capital Impacts Model, effective July 1, 2019.***

10. **Public Hearings (Non Planning Issues)**

10.A **Outdoor Festival Permit Request of Tyler Wakeman – Peak Leaf Music & Brewers Festival** ----- K

Pursuant to the Frederick County Code, Chapter 86, Festivals; Section 86-3, Permit Required; Application; Issuance or Denial; Fee, for an Outdoor Festival Permit. Festival to be Held on Saturday, October 19, 2019, from 12:00 Noon until 8:00 PM, at the Corner of Valley Pike and State Route 634, Identified as Tax Parcel Number 91-A-117, Middletown, Virginia, Back Creek Magisterial District. Property Owned by Wakeland Manor, Inc.

10.B **Cable Television Franchise Agreement with Comcast Of California/Maryland/Pennsylvania/Virginia/West Virginia, LLC.** ----- L

The Proposed Agreement Would Grant to Comcast a Nonexclusive Franchise to Provide Cable Television Service Within Frederick County for a Period of 10 Years. Comcast Has a Current Cable Television Franchise Agreement with the County Which is Due to Expire on June 30, 2019.

10.C **Proposed Amendment(s) to the Frederick County Code, Chapter 118, Noise.** ----- M

The Purpose of this Proposed Amendment(s) is to Adopt a "Plainly Audible" and Decibel Standard of 60 dB with Respect to Certain Prohibited Noise.

10.D **Proposed Amendment(s) to the Frederick County Code, Chapter 48 Animals and Fowl, Article I Dogs Running at Large; Rabies Control, Section 48-3 Dogs Running at Large Unlawful.** ----- N

The Proposed Amendment(s) Would Conform with Recent Changes Made to the Code of Virginia, Section 3.2-6538, Effective July 1, 2019.

11. **Planning Commission Business** - None

12. **Board Liaison Reports**

13. **Citizen Comments**

14. **Board of Supervisors Comments**

15. **Adjourn**

A

MINUTES
FREDERICK COUNTY BOARD OF SUPERVISORS
SERVICE LEARNING FORUM
MONDAY, MAY 20, 2019
6:00 P.M.
BOARD ROOM, COUNTY ADMINISTRATION BUILDING
107 NORTH KENT STREET, WINCHESTER, VIRGINIA

ATTENDEES

Board of Supervisors: Charles S. DeHaven, Jr., Chairman; J. Douglas McCarthy; Judy McCann-Slaughter and Robert W. Wells were present. Gary A. Lofton, Vice Chairman; Blaine P. Dunn; and Shannon G. Trout were absent.

Staff Present: Kris C. Tierney, County Administrator; Jay E. Tibbs, Deputy County Administrator; Roderick B. Williams, County Attorney; Scott Varner, Director of Information Technology; Karen Vacchio, Public Information Officer; and Ann W. Phillips, Deputy Clerk to the Board of Supervisors.

CALL TO ORDER

Chairman DeHaven called the meeting to order at 6:00 p.m.

SERVICE LEARNING STUDENT PRESENTATIONS

Deputy County Administrator Jay Tibbs explained the Service Learning Program.

Twelve student groups representing James Wood, Millbrook, and Sherando High Schools presented the projects they had completed under the supervision of various County departments and community organizations.

Chairman DeHaven and the Board members thanked the students for their efforts.

ADJOURN

The meeting was adjourned at 7:19 p.m.

B

MINUTES
FREDERICK COUNTY BOARD OF SUPERVISORS
WORK SESSION
WEDNESDAY, MAY 22, 2019
5:30 P.M.
BOARD ROOM, COUNTY ADMINISTRATION BUILDING
107 NORTH KENT STREET, WINCHESTER, VIRGINIA

ATTENDEES

Board of Supervisors: Charles S. DeHaven, Jr., Chairman; Blaine P. Dunn; J. Douglas McCarthy; Judy McCann-Slaughter and Robert W. Wells were present. Gary A. Lofton, Vice Chairman; and Shannon G. Trout were absent.

Staff Present: Kris C. Tierney, County Administrator; Jay E. Tibbs, Deputy County Administrator; Roderick B. Williams, County Attorney; Cheryl Shiffler, Director of Finance; Sharon Kibler, Assistant Director of Finance; Bill Orndoff, Treasurer; Scott Varner, Director of Information Technology; Mike Ruddy, Director of Planning & Development; and Ann W. Phillips, Deputy Clerk to the Board of Supervisors.

CALL TO ORDER

Chairman DeHaven called the meeting to order at 5:30 p.m.

ADOPTION OF AGENDA

On motion of Supervisor Dunn, seconded by Supervisor McCarthy, the agenda was adopted as presented.

PRESENTATION BY PFM ASSET MANAGEMENT LLC

Kathleen L. Bowe, Senior Managing Consultant at PFM Asset Management LLC, gave a PowerPoint presentation on funding options for Other Post-Employment Benefits (OPEB) and highlighted the advantages of the Irrevocable Trust option.

By consensus, the Board agreed to have the Finance Committee continue researching the matter and make a recommendation to the Board.

ADJOURN

The meeting was adjourned at 6:29 p.m.

C

MINUTES
REGULAR MEETING
FREDERICK COUNTY BOARD OF SUPERVISORS
WEDNESDAY, MAY 22, 2019
7:00 P.M.
BOARD ROOM, COUNTY ADMINISTRATION BUILDING
107 NORTH KENT STREET, WINCHESTER, VIRGINIA

ATTENDEES

Board of Supervisors: Charles S. DeHaven, Jr., Chairman; Gary A. Lofton, Vice Chairman; Blaine P. Dunn; J. Douglas McCarthy; Judith McCann-Slaughter; Shannon G. Trout and Robert W. Wells were present.

Staff present: Kris C. Tierney, County Administrator; Jay E. Tibbs, Deputy County Administrator; Roderick B. Williams, County Attorney; Karen Vacchio, Public Information Officer; Mike Ruddy, Director of Planning and Development; Candice Perkins, Assistant Director of Planning & Development; John Bishop, Assistant Director of Planning-Transportation; Mark Cheran, Zoning & Subdivision Administrator; Scott Varner, Director of Information Technologies; Andrew Farrar, Program Coordinator, Information Technologies; Sharon Kibler, Assistant Director of Finance; Patrick Barker, Executive Director of the Frederick County EDA; and Ann W. Phillips, Deputy Clerk to the Board of Supervisors.

CALL TO ORDER

Chairman DeHaven called the meeting to order at 7:00 p.m.

INVOCATION

The Reverend Don Den Hartog of Fellowship Bible Church delivered the invocation.

PLEDGE OF ALLEGIANCE

Vice Chairman Lofton led the Pledge of Allegiance.

ADOPTION OF AGENDA - APPROVED

Upon motion of Vice Chairman Lofton, seconded by Supervisor McCarthy, the agenda was adopted on a voice vote.

CITIZENS COMMENTS

There were no speakers.

ADOPTION OF CONSENT AGENDA – APPROVED

Upon motion of Supervisor Slaughter, seconded by Vice Chairman Lofton, the consent agenda was adopted on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

- Minutes: Joint Work Session with Parks & Recreation Commission of May 8, 2019 -
CONSENT AGENDA APPROVAL

- Minutes: Regular Meeting of May 8, 2019 - CONSENT AGENDA APPROVAL

- Code & Ordinance Committee Report of 5/9/19 - CONSENT AGENDA APPROVAL, Appendix 1

- Finance Committee Report of 5/15/19 - CONSENT AGENDA APPROVAL, Appendix 2

- Parks & Recreation Commission Report of 5/14/19 - CONSENT AGENDA APPROVAL, Appendix 3

- Request for Refunds and Corresponding Supplemental Appropriations - CONSENT AGENDA
APPROVAL

Handy Mart, LLC- \$3,089.89
Kevin Campbell Trucking Inc. – \$10,860.84
Undisclosed Taxpayer- Disabled Veteran's Relief- \$4,545.39
Undisclosed Taxpayer- Disabled Veteran's Relief- \$6,790.67

- Resolution Adding Conns Road East to Secondary Road System - CONSENT AGENDA
APPROVAL

Resolution

WHEREAS, the streets described on the attached Form AM-4.3, fully incorporated herein by reference, are shown on plats recorded in the Clerk’s Office of the Circuit Court of Frederick County; and

WHEREAS, the Resident Engineer of the Virginia Department of Transportation has advised this Board that the streets meet the requirements established by the Subdivision Street Requirements of the Virginia Department of Transportation; and

WHEREAS, the County and the Virginia Department of Transportation have entered into an agreement on June 9, 1993, for comprehensive stormwater detention which applies to this request for addition; and

NOW, THEREFORE, BE IT RESOLVED, this Board requests the Virginia Department of Transportation to add the streets described in the attached Form AM-4.3 to the secondary system of state highways, pursuant to 33.2-705, Code of Virginia, and the Department’s Subdivision Street Requirements; and

BE IT FURTHER RESOLVED, this Board guarantees a clear and unrestricted right-of-way, as described, and any necessary easements for cuts, fills and drainage; and

BE IT FURTHER RESOLVED, that a certified copy of this resolution be forwarded to the Resident Engineer for the Virginia Department of Transportation.

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BOARD OF SUPERVISORS COMMENTS - None

COUNTY OFFICIALS:

COMMITTEE APPOINTMENTS

MARK GAYLOR APPOINTED TO HANDLEY REGIONAL LIBRARY BOARD – APPROVED

Supervisor McCarthy moved to appoint Mark Gaylor to the Handley Regional Library Board to fill an unexpired four-year term ending November 30, 2019. Supervisor Trout seconded the motion which carried on a voice vote.

ROBERT MEADOWS REAPPOINTED AS STONEWALL DISTRICT REPRESENTATIVE TO THE HISTORIC RESOURCES ADVISORY BOARD – APPROVED

Upon motion of Supervisor Slaughter, seconded by Supervisor McCarthy, Robert Meadows was reappointed as Stonewall District Representative to the Historic Resources Advisory Board for a four-year term ending June 10, 2023. The motion carried on a voice vote.

COMMITTEE BUSINESS:

CODE & ORDINANCE COMMITTEE

AMENDMENTS TO CHAPTER 118 (NOISE) OF THE COUNTY CODE – FORWARDED TO PUBLIC HEARING – APPROVED

Upon motion of Supervisor Trout, seconded by Supervisor McCarthy, Amendments to Chapter 118 (Noise) of the County Code, to adopt a “plainly audible” and/or 60 decibels standard were forwarded to public hearing with a recommendation of approval. The motion carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

AMENDMENT TO SECTION 48-3 (DOGS RUNNING AT LARGE UNLAWFUL) OF ARTICLE I (DOG LICENSING; RABIES CONTROL) OF CHAPTER 48 (ANIMALS AND FOWL) OF THE COUNTY CODE, FORWARDED TO PUBLIC HEARING – APPROVED

Upon motion of Supervisor Trout, seconded by Supervisor McCarthy, Amendment to Section 48-3 (Dogs running at large unlawful) of Article I (Dog Licensing; Rabies Control) of Chapter 48 (Animals and Fowl) of the County Code, to conform with changes to Virginia Code § 3.2-6538, effective July 1, 2019, was forwarded to public hearing with a recommendation of approval. The motion carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

FINANCE COMMITTEE

Supervisor Slaughter moved for approval of the following:

1. The Sheriff requests a General Fund supplemental appropriation in the amount of \$3,693.07. This amount represents an insurance claim for a damaged vehicle.
2. The Sheriff requests a General Fund supplemental appropriation in the amount of \$862.31. This amount represents restitution for damaged cruisers.
3. The Sheriff requests a General Fund supplemental appropriation in the amount of \$100. This amount represents a DARE donation.
4. The Sheriff requests a General Fund supplemental appropriation in the amount of \$11,853.47. This amount represents reimbursements from the Secret Service.
5. The Sheriff request a General Fund supplemental appropriation in the amount of \$3,550. This amount represents proceeds from the sale of a retired cruiser.

Vice Chairman Lofton seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye

J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The Sheriff requests a General Fund supplemental appropriation in the amount of \$30,450 for Phase II of the eSummons project. This amount represents eSummons funds collected through the courts and earmarked for the implementation of an electronic summons system. Supervisor Wells seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The Sheriff requests a General Fund supplemental appropriation in the amount of \$24,750. This amount represents recovered costs for traffic control for overtime. Supervisor McCarthy seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	No	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The Sheriff requests a General Fund supplemental appropriation in the amount of \$270,870. This amount represents funds to purchase (9) nine 2019 vehicles at a cost savings of approximately \$3,000 per vehicle. Funds were budgeted in FY 2020 and will be returned. She further moved that the supplemental appropriation come from the Capital Reserve in FY 2019 to be returned from the FY 2020 funds budgeted for Sheriff vehicles. Supervisor McCarthy seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	No	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The NRADC Superintendent requests a Court Services budget transfer in the amount of \$7,000 out of a personnel line item to operations to meet projected operational shortfalls. Vice Chairman Lofton seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The Airport Director requests a General Fund supplemental appropriation in the amount of \$245,737. This amount represents the County's share of legal fees in the amount of \$326,345 incurred in prior years (identified in the Airport CAFR as "Cash overdraft"). Supervisor Dunn seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The Parks & Recreation Director requests a change order in excess of 10% for the Sherando Park Recreation Access Project. Vice Chairman Lofton seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The VJCCCA Director requests a General Fund budget transfer in the amount of \$6,400 out of a personnel line item to operations to provide client services and training. Vice Chairman Lofton seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

Supervisor Slaughter moved for approval of: The VJCCCA Director requests an FY19 General Fund supplemental appropriation for up to \$50,000 representing one-time supplemental funding from the Virginia Department of Juvenile Justice (DJJ) for the purchase of equipment and supplies as Shenandoah Valley Achievement Center is launched. Funding will be on a reimbursement basis for actual expenses, and she further moved that that the Board to authorize the County Administrator to sign the MOA Plan Addendum. Vice Chairman Lofton seconded the motion which carried on a roll call vote as follows:

Blaine P. Dunn	Aye	Shannon G. Trout	Aye
Gary A. Lofton	Aye	Robert W. Wells	Aye
J. Douglas McCarthy	Aye	Charles S. DeHaven, Jr.	Aye
Judith McCann-Slaughter	Aye		

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PUBLIC HEARING

THE BOARD OF SUPERVISORS WILL CONDUCT A PUBLIC HEARING, PURSUANT TO VIRGINIA CODE SECTION 15.2-1800, REGARDING THE CONVEYANCE, BY A DEED FOR TWO HUNDRED YEARS, OF THE COUNTY’S INTEREST IN REAL PROPERTY LOCATED AT 20 NORTH LOUDOUN STREET, IN THE CITY OF WINCHESTER, VIRGINIA, IDENTIFIED AS CITY TAX PARCEL NUMBER 193-1-N-4, TO THE SHENANDOAH VALLEY BATTLEFIELDS FOUNDATION. - APPROVED

Supervisor Slaughter recused herself from participation in this item.

Mr. Tierney provided background saying the Shenandoah Valley Battlefields Foundation has operated a museum for a number of years on the premises of the former Frederick County Court House at 20 North Loudoun Street, and has expressed interest in seeking ownership of the

property. He said the County has negotiated a deed of transfer for a period of two hundred (200) years, or so long as the conditions contained in the deed are met, whichever period is shorter. He continued noting the contingencies of the deed as follows:

The conveyance is contingent upon the Property being used for preservation of local history and the operation of a museum, such as the Shenandoah Valley Civil War Museum, which is presently operational on the site, and upon the Grantee or its assigns maintaining the layout of the historic courtroom within the structure on the site as it exists at the time of conveyance. Should the Grantee or its assigns cease to use the property for the above purpose or fail to maintain the layout of the historic courtroom, the property and all improvements thereon shall revert back to the ownership of Frederick County (the Grantor). Also, it is noted that the structure in place on the Property is designated as a historic structure and that the conveyance of the Property is contingent on the structure being maintained in such a fashion that it maintains his historic structure designation. Lastly, the Property contains a historic statue in its curtilage. The Grantee may not remove or alter said statue. Should the Grantee fail to abide by this condition, the Property shall revert to the Grantor.

Chairman DeHaven opened the public hearing.

There were no speakers.

Chairman DeHaven closed the public hearing.

Supervisor Dunn moved for continuing the public hearing until the next meeting and delaying a decision until further information can be obtained from the constituents. Supervisor McCarthy seconded the motion which failed on a roll call vote as follows:

| | | | |
|-------------------------|-----------|-------------------------|----|
| Blaine P. Dunn | Aye | Shannon G. Trout | No |
| Gary A. Lofton | Aye | Robert W. Wells | No |
| J. Douglas McCarthy | No | Charles S. DeHaven, Jr. | No |
| Judith McCann-Slaughter | (Recused) | | |

Supervisor McCarthy moved for approval of the conveyance, by a deed for two hundred years, of the County’s interest in real property located at 20 North Loudoun street, in the city of Winchester. Supervisor Trout seconded the motion which carried on a roll call vote as follows:

| | | | |
|-------------------------|-----------|-------------------------|-----|
| Blaine P. Dunn | No | Shannon G. Trout | Aye |
| Gary A. Lofton | Aye | Robert W. Wells | Aye |
| J. Douglas McCarthy | Aye | Charles S. DeHaven, Jr. | Aye |
| Judith McCann-Slaughter | (Recused) | | |

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PLANNING COMMISSION BUSINESS

PUBLIC HEARING

COMPREHENSIVE POLICY PLAN AMENDMENT (CPPA) #02-19 BRUCETOWN ROAD AREA AMENDMENT – SEWER AND WATER SERVICE AREA (SWSA) EXPANSION AND LAND USE DESIGNATION ASSOCIATED WITH COMPREHENSIVE PLAN AMENDMENT #02-18 FOR THE CARTER TRACT - DENIED

Assistant Planning Director Perkins said this is a Request to Amend the Northeast Land

Use Plan of the 2035 Comprehensive Plan and proposes to add 109 acres into the Sewer and Water Service Area (SWSA) and remove 109 acres from the SWSA. She said this amendment also seeks to designate the 109 acres for industrial uses. She said the Planning Commission recommended denial of this amendment.

Vice Chairman Lofton clarified that the subject property is not within the Brucetown Rural Community Area.

Chairman DeHaven opened the public hearing.

Kay Dawson, Red Bud District, said recently disclosed information needs to be reviewed before a decision is made.

Unknown resident of Brucetown Road discussed waivers for the kiln height at the Carmeuse quarry and said the cat litter plant will cause additional pollution. He noted other employers in the County which do not cause pollution.

Tina Bragg of Stephenson noted problems with the existing Carmeuse plant including lights, noise, and dust, and said the roads can't handle more traffic.

George Sempeles, Red Bud District, said industry pays the lion's share of the budget and failure to pass this amendment will cost the County \$500,000 per year. He added that Clorox will be a good neighbor.

Lindsey Wade, Stonewall District, said she searched for two years before purchasing her home for a little over \$200,000 in the Brucetown area. She said she was not expecting a plant down the road and that it will damage property values.

Charles Brown, a 38-year employee of Clorox, cited the environmental and sustainability record of Clorox, adding that Clorox will be a good neighbor. He noted that the Amherst, Virginia, plant has received a 0 waste to landfill rating.

Susan Herbaugh, Stonewall District, said she is a direct neighbor of the subject property and is concerned about the history of the area and does not want her home to lose value. She asked the Board to vote no on the amendment.

Tom Macomber, Stonewall District, said the proposal contravenes the Comprehensive Plan. He said there is no positive impact in the proposal to justify amending the Plan.

Tom Edens, of Brucetown, said he has been concerned for years about strip mining at Clear Brook and is concerned about traffic, noise and air pollution from the proposed Clorox plant. He noted that Clorox has offered \$1,000,000 toward road repairs but has been given \$5,000,000 by the state. He asked the Board to honor the Comprehensive Plan.

Doug Long of the Winchester & Western Railroad said the railroad is interested in reducing the carbon footprint of the Clorox project by taking trucks off the road. He said the railroad will give land to realign Brucetown Road.

Chris Jenkins, Chief of the Clear Brook Volunteer Fire Department, cited the dangers of emergency vehicle accidents for EMS personnel. He discussed the road widths in the Brucetown area compared to the vehicle widths. He invited Board members to serve a shift at the fire hall to get a better idea of the danger of large EMS vehicles on narrow roads.

Stacy Sampson, Stonewall District, asked the Board to vote no on the plan amendment.

She said the County says it wants to maintain safe roadways but amending the comprehensive plan will make it less safe. She said all residents will be at risk if more traffic is added.

Unnamed resident discussed the projected \$500,000 revenue saying that employees from out of state will pay taxes in their home states rather than in Frederick County. He noted the added infrastructure costs and asked the Board to vote no.

Rick Warner, 28-year Clorox employee in Amherst, Virginia, noted the company's partnerships saying Clorox will be a tremendous community partner.

Dave Rinehart asked the Board to vote against the comprehensive plan amendment saying a vote in favor will change Brucetown and Clear Brook forever. He said property values will go down if big industry wins, and the current comprehensive plan is the hero of the story by providing protection against industrial overreach.

Victoria Hitchcock, Stonewall District, said she is a direct neighbor of the subject property and understands change and progress. She cited current noise and light pollution from the Carmeuse quarry adding that the roads are not built for industrial traffic.

Brian Nuri, Opequon District, noted the environmental issues surrounding the proposal. He said the County needs businesses, but not the one currently proposed. He asked the Board to keep the community smartly developed.

Cathy Whittier reminded the Board they are dealing with two global corporations that have money and do not care about the residents. She said the Board must decide between the corporations and the residents and asked the Board to direct Clorox to find land already zoned for industrial use.

Michael Holly of the Clorox Company highlighted how the proposal would help achieve the broad goals of the comprehensive plan noting projected tax revenues. He said the project will not impact the community center, contains green initiatives, will not increase the sewer water service area, will not discharge water into the ground, but will provide new jobs and balance the tax base. He noted the company will minimize visibility of the complex by placing it in the interior of the property, will improve site lines by planting trees, and will minimize noise onsite. He said Clorox has a proven track record and the proposal meets the requirements of the comprehensive plan. He reminded the Board that the plan has been modified a few times in recent years.

Brenda Fristoe, Stonewall District, asked the Board to vote no because the proposal does not conform to the comprehensive plan. She said the property in question is designed to be a buffer between industrial activity and the Rural Community Center. She asked the Board to vote no and to protect the residents and maintain the 2035 Comprehensive Plan.

Elmer Simsack, Stonewall District, referenced a small Oklahoma town that had strip-mining and later became a superfund site. He said he is concerned about increased activity at the quarry to serve the Clorox facility.

Arthur Bragg, Stonewall District, said the proposal does not conform the comprehensive plan. He noted the historic area surrounding Brucetown and asked the Board to vote no on the amendment.

Eric Federman, 19-year Clorox employee, noted the company's outreach programs saying

the company hopes to bring similar outreach to Frederick County. He urged the Board to vote yes on the amendment.

Vice Chairman Lofton read a letter of support for the proposal from John Riley, Vice Chair of the Frederick County Economic Development Authority. He quoted: "The EDA is supportive of this project. The EDA Board unanimously agrees that it is very important to show businesses, like the Clorox Company, that Frederick County is a safe and easy place to do business. Frederick County and Virginia are known for their positive business climate. Welcoming Clorox would only further concrete Frederick County's position as a premier east coast location for manufacturing and other businesses."

Tim Stowe, engineer representative of the Applicant, said the comprehensive plan is a guide rather than legislation, and can be amended to seize opportunities. He said water is provided for in the proposal and what is needed is the sewer water service area location change and the land use change. He said Clorox has modified language in response to concerns and he asked the Board to accept the proposal.

Susan Howard, Stonewall District, noted noise in the community from the Carmeuse quarry and asked the Board to consider the residents who live in the area of the proposed project. She said no one would want to live next to the quarry as it is now, and that the County does not need what the Applicant is promising.

Susan Watkins said there has been much growth in the area in five years and she questioned how much planning there has been for infrastructure. She said the residents do not want the Clorox plant and that there is a difference between Amherst County and Frederick County. She asked the Board to vote no.

Tina Rinehart said she lives two miles from the quarry and there is noise all night. She noted trucks speeding and dangerous road conditions and asked the Board to vote no.

Brenda Fristoe, Stonewall District, continued her remarks saying she had met with the Economic Development Authority and does not believe the dollar figures given to the Authority by Clorox. She said the Authority should guide businesses to appropriate parcels of land.

Chairman DeHaven closed the public hearing.

Supervisor Slaughter moved for denial of CCPA #02-19. Supervisor Wells seconded the motion.

Vice Chairman Lofton said the comprehensive plan can be amended, adding that there have been two amendments for land in and around the Brucetown and Clear Brook area. He said the current vote is not to decide on a proposal by Clorox but rather a vote on the land use of a particular parcel. He said a vote to amend the plan does not imply or guarantee that a proposal brought forth by Clorox will be approved. He said the Carmeuse quarry has been in operation for over 50 years, and if the amendment is denied, Carmeuse will continue to operate with no proffers forthcoming. In reference to how industry helps the whole county, he said that industry provides tax revenue without demands on services, adding that the landowner of the parcel wishes to sell and if this amendment is denied, the next option will be residential development on the site. He concluded saying that residential growth does not increase revenue, noting that the Board recently

turned down another opportunity and he fears that real estate taxes will continue to increase to raise revenue.

Supervisor McCarthy said he is not opposed to changing the comprehensive plan but the ability to do road improvements needs to be addressed. He said he does not want the proposed \$500,000 in revenue to be canceled by the millions it will take to upgrade the roads. He continued saying he learned recently that there are numerous other parcels either owned by Carmeuse or which there is an option for purchase by Carmeuse. He said he also learned that Carmeuse has only 15 to 30 years of material necessary, instead of 50 years as previously discussed, to serve Clorox on its current location. He said Carmeuse would probably be returning to the Board for future amendments to gain access to the other properties which it owns or on which it has options to purchase, and these opportunities will increase traffic as a conveyor will not be of use with the distance to the additional parcels. He urged the Board to fully study the costs of transportation before voting on the matter.

Supervisor Slaughter said the citizens have said all that is necessary. She said the Board is looking at both Clorox and Carmeuse as they will be in partnership. She noted her concern about the failing road network saying that it will take 30 years to recoup the \$15 million necessary to upgrade the roads in the area of the proposal. She said she does not want future Boards to be strong-armed to agree to re-zonings to supply the needs of the Clorox plant.

Supervisor Dunn said the sentiment in the room supports the reasoning of Supervisor Slaughter. He said the possibility that the conveyor belt will not be a possibility means the traffic issues and road costs are much more likely.

Vice Chairman Lofton said he cannot understand the reference to using tax revenue to pay for county road improvements, noting that companies do not pay taxes to pay for roads. He said all other taxes at the state level, such as the gasoline tax, are what fund transportation costs.

Supervisor McCarthy said all taxes are paid by the citizens and therefore road improvements are paid by the citizens in one way or another.

Supervisor Dunn said Clorox has tried to minimize its impact and if the Board votes no on the amendment, Carmeuse will still be operating in 50 years.

Supervisor Dunn moved to delay the vote until the July meeting for Carmeuse to respond with information about its sources of material. There was no second to the motion.

Supervisor Slaughter's motion for denial of CPPA #02-19 carried on a roll call vote as follows:

| | | | |
|-------------------------|-----|-------------------------|-----|
| Blaine P. Dunn | Aye | Shannon G. Trout | Aye |
| Gary A. Lofton | No | Robert W. Wells | Aye |
| J. Douglas McCarthy | Aye | Charles S. DeHaven, Jr. | No |
| Judith McCann-Slaughter | Aye | | |

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COMPREHENSIVE POLICY PLAN AMENDMENT (CPPA) #01-19 BLACKBURN PROPERTY WORKFORCE HOUSING – URBAN DEVELOPMENT AREA (UDA) EXPANSION AND LAND USE DESIGNATION CHANGE ASSOCIATED WITH THE COMPREHENSIVE PLAN AMENDMENT #01-19 FOR BLACKBURN PROPERTY REQUEST - DENIED

Assistant Planning Director Perkins said this is a request to amend the Kernstown Area Plan of the 2035 Comprehensive Plan to add 71.849 Acres to the UDA and also seeks to designate the 71 acres for workforce housing. The Applicant is requesting the UDA expansion and land use designation change to allow for the development of workforce housing that is intended to provide affordable housing opportunities for residents of the community located within reasonable proximity of workplaces in the community. She said the Planning Commission sent this item forward to the Board of Supervisors with a recommendation for denial.

Avram Fechter of Equity Plus, the Applicant, explained the definition of workforce housing as that for citizens earning 60% of the median income in the County. He said in Frederick County, those with annual incomes of \$35,000 to \$50,000 would qualify for the housing. He noted the proposal is for single family homes rather than apartments or attached units.

Supervisor Wells and the Applicant discussed the tax credit program used to finance the program.

Supervisor Trout and the Applicant discussed the rules on rents and terms of leases.

Supervisor McCarthy and the Applicant discussed the wait list in relation to discrimination.

Vice Chairman Lofton, the Applicant, and Evan Wyatt, engineering consultant representing the Applicant, discussed the location of the proposed project site and its wetland characteristics.

Chairman DeHaven opened the public hearing.

Kerri Ann Kite, Shawnee District, expressed her support for the workforce housing project.

John Wright, Red Bud District resident and President of the Frederick County Professional Firefighters Association, said he supports the comprehensive plan amendment and rezoning for the project saying housing costs are out of reach for many.

Heidi David Young, Gainesboro District, spoke in favor of the project and asked the Board to use compassion and wisdom when voting on the issue.

Tamara Bayliss, Back Creek District, said she supports affordable housing, and this is a wonderful opportunity to provide for those working in the service industry in the County. She said the Planning Commission did not give compelling reasons for denying the project.

Mike Faison, Gainesboro District, read a letter of support for the project from the chairman of the Frederick County NAACP. He said denying workforce housing in higher income districts is akin to red-lining and suggested that the County could be inviting further scrutiny if the Board denies the project.

John South, Back Creek District, said the need for workforce housing is real but the proposed location does not meet the requirements of being close to services. He cited traffic concerns.

Jennifer Hall, Shawnee District resident and United Way Valley Assistance Network employee, explained workforce housing and how it is different from government, Section 8, or low-

income housing. She urged the Board to vote for the amendment.

Brian Nuri, Opequon District, said property values are rising but incomes are not keeping up. He said affordable housing makes areas more attractive to professional employers.

Matthew Motz, Back Creek District, said those opposing the proposal are being framed as anti-poor and anti-police officer. He said the reality is the particular parcel of land is not suited for the development. He cited road conditions which will lead to a tax burden in the future. He said the class of person is not what will cause an increase in necessary services, but rather an increase in the number of persons causes an increase in the demand for services. He asked the Board not to overturn the Planning Commission's decisions.

Tom Maloney of Apple Valley Road said the roads are not currently ready for the proposed project.

Tom Hindman, business partner of the Applicant, referenced letters of support from the Frederick County Education Association, and Fellowship Bible Church, and cited employee statistics from Valley Health.

Rick Brown, Back Creek District, commended the Board for maintaining the current tax rate and said industry pays the bills. He said there is plenty of affordable housing in the area. He said Apple Valley Road is not designed for traffic and asked the Board not to change the comprehensive plan.

Darla McCreary, Back Creek District, said affordable housing is needed but the proposed site is not appropriate. She said the project will not bring revenue to the County and will not result in home ownership. She concluded saying the project is not harmonious with the surrounding area and asked the Board to vote no.

Steven Pettler, representing the Applicant, said the proposal is not for low income or subsidized housing. He said the comments have been addressing the impacts of the proposed development, but the item for debate is a comprehensive plan amendment that would allow the opportunity for the project to be explored. He noted a plan amendment is necessary for transferred development rights to be used, and he concluded saying it is unfair to the Applicant to have the Board focusing on the impacts when the Applicant cannot discuss those until the rezoning process.

Bob Bolter, Opequon District, is involved with Faithworks Inc. He noted recent rent increases have displaced many, and said it is essential to amend the comprehensive plan. He said the site is uniquely suited to the proposed development.

Tabitha Jablonski, Red Bud District, spoke in support of affordable housing saying she is concerned about young families not being able to afford to live in the County.

Roy Sampson, Back Creek District, said there is a lot of available affordable housing and the proposed site is not the place for the development. He said the roads need updating and the proposal will hurt the values of other homes in the neighborhood.

Joseph Jablonski, Red Bud District resident and employee of Valley Assistance Network said there are a few affordable units in the County, but they are grabbed so quickly they are really not available. He said having the workforce housing option will actually increase the number of homeowners in the area by allowing people to save for a down payment.

Steve Lobell, Back Creek District, said the area cannot support the type of housing proposed. He said workforce housing is needed, but not in the currently proposed location.

Richard Kennedy, Shawnee District resident and representative of the Top of Virginia Chamber of Commerce, encouraged the Board to vote for the plan amendment in order to take the next step and analyze the project.

Chairman DeHaven closed the public hearing.

Because of the late hour, Chairman DeHaven polled the Board. By consensus, the Board agreed to continue the meeting.

Vice Chairman Lofton moved for approval of CPPA # 01-19 and Supervisor Trout seconded the motion.

Supervisor Trout said she was appalled by some of the prejudicial remarks regarding the people living in workforce housing. She asked the Board members to vote yes to allow further discussion of the proposed project.

Vice Chairman Lofton said he was originally conflicted because industrial development is his preference, but the proposed site has been for sale and is not conducive to industrial development. He said he would like the opportunity to explore the impacts of the project to the surrounding community, adding that workforce housing is needed.

Supervisor McCarthy said he would like to have the discussion on impacts before the plan is changed, and he moved to amend the main motion to delay the vote until the August meeting to allow additional road impact data to be obtained. Supervisor Slaughter seconded the motion.

Vice Chairman Lofton said he is not in favor of a delay, and it appears the applicant is being asked to go through the rezoning process now.

Supervisor McCarthy said he would like the transportation information before deciding on a plan amendment.

Supervisor Dunn noted that if the plan amendment is made, but the project is not approved, the land designation remains residential.

Supervisor Trout agreed with Vice Chairman Lofton, citing that the parcel has been cast aside as not viable for industrial development.

Chairman DeHaven said he did not know why the Board would continue comprehensive planning if they were going to have rezoning discussions prior to consideration of the comprehensive plan.

The motion to amend the main motion by adding a delay until August failed on a roll call vote as follows:

| | | | |
|-------------------------|-----|-------------------------|----|
| Blaine P. Dunn | Aye | Shannon G. Trout | No |
| Gary A. Lofton | No | Robert W. Wells | No |
| J. Douglas McCarthy | Aye | Charles S. DeHaven, Jr. | No |
| Judith McCann-Slaughter | Aye | | |

The motion for approval of CPPA # 01-19 failed on a roll call vote as follows:

| | | | |
|-------------------------|-----|-------------------------|-----|
| Blaine P. Dunn | No | Shannon G. Trout | Aye |
| Gary A. Lofton | Aye | Robert W. Wells | No |
| J. Douglas McCarthy | No | Charles S. DeHaven, Jr. | Aye |
| Judith McCann-Slaughter | No | | |

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DRAFT UPDATE OF THE 2019-2020 FREDERICK COUNTY PRIMARY AND INTERSTATE ROAD IMPROVEMENT PLANS - APPROVED

THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND THE BOARD OF SUPERVISORS FOR THE COUNTY OF FREDERICK, VIRGINIA, IN ACCORDANCE WITH SECTION 33.2-331 OF THE CODE OF VIRGINIA, WILL CONDUCT A JOINT PUBLIC HEARING. THE PURPOSE OF THIS PUBLIC HEARING IS TO RECEIVE PUBLIC COMMENT ON THE PROPOSED SIX YEAR PLAN FOR SECONDARY ROADS FOR FISCAL YEARS 2020 THROUGH 2025 IN FREDERICK COUNTY AND ON THE SECONDARY SYSTEM CONSTRUCTION BUDGET FOR FISCAL YEAR 2020. – APPROVED

Assistant Director of Planning -Transportation John Bishop discussed this annual update to the road plans saying this is an opportunity to communicate priorities and desires to VDOT. He reviewed updates that have been incorporated into the plans.

Chairman DeHaven opened the public hearing.

There were no speakers.

Chairman DeHaven closed the public hearing.

Vice Chairman Lofton moved for approval of the Primary, Interstate, and Secondary Road Plans. Supervisor McCarthy seconded the motion which carried as follows:

| | | | |
|-------------------------|-----|-------------------------|-----|
| Blaine P. Dunn | Aye | Shannon G. Trout | Aye |
| Gary A. Lofton | Aye | Robert W. Wells | Aye |
| J. Douglas McCarthy | Aye | Charles S. DeHaven, Jr. | Aye |
| Judith McCann-Slaughter | Aye | | |

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BOARD LIAISON REPORTS

Supervisor McCarthy said the Handley Library Board approved the concept forwarded from Parks & Recreation regarding the addition of a trail around the lake at the Bowman Library.

CITIZEN COMMENTS

John Wright, Red Bud District resident and President of the Frederick County Professional Firefighters Association, discussed the traffic issues on Brucetown Road saying the issues are known, and asking why they are not being addressed. He said the County should work toward fixing this serious safety issue.

BOARD OF SUPERVISORS COMMENTS - None

ADJOURN

On motion of Vice Chairman Lofton, seconded by Supervisor Wells, the meeting was adjourned at 11:25 p.m.

D

PUBLIC WORKS COMMITTEE REPORT to the BOARD OF SUPERVISORS
Tuesday, May 28, 2019
8:00 a.m.
107 NORTH KENT STREET, SUITE 200, WINCHESTER, VIRGINIA

PUBLIC WORKS COMMITTEE ATTENDEES:

Committee Members Present: J. Douglas McCarthy, Chairman; Gary A. Lofton; Whitney “Whit” L. Wagner; Gene E. Fisher; and Harvey E. “Ed” Strawsnyder, Jr.

Committee Members Absent: Robert W. Wells

Staff present: Joe C. Wilder, Director of Public Works; Mike Stewart, Senior Project Manager; Kevin Alderman, Shawneeland District Manager; Rod Williams, County Attorney; Kris Tierney, County Administrator; Gloria Puffinburger, Solid Waste Manager; Ron Kimble, Landfill Manager; Kathy Whetzel, Animal Shelter Manager; Holly Grim, Assistant Animal Shelter Manager

Attachment 1 – Agenda Packet

ITEMS REQUIRING ACTION BY BOARD OF SUPERVISORS:

1-Quitclaim request for Shawneeland.

County Attorney Rod Williams explained the quitclaim request to the committee. After some discussion Supervisor Lofton made a motion to forward the request to the Board of Supervisors for scheduling of a public hearing on the disposition of any county interest in Lot 19. The motion was seconded by committee member Ed Strawsnyder. The committee unanimously approved the motion.

ITEMS FOR INFORMATION ONLY

1-Contribution from the Community Inmate Workforce.

Gloria Puffinburger discussed the positive impact the Community Inmate Workforce contribution has made in conjunction with the Virginia Adopt-A-Highway program.

2-Proposed Fiscal Year 2018/2019 Carry Forward Requests for Shawneeland, Animal Shelter, Solid Waste and the Landfill.

Each department has on-going projects related to the carry forward requests. In general, the requests are for any remaining funds left in the line items to be carried forward. These requests will go the Finance Committee on July 17, 2019 for their consideration.

- a. Shawneeland line item 16-8108-8800-00 Buildings request for \$30,000 to be carried forward for construction of additional office space. Supervisor Lofton made a motion to approve the request and forward to the Finance Committee. The motion was seconded by committee member Whit Wagner. The committee unanimously approved the motion.
- b. Shawneeland line item 16-8108-3004-04 Road Improvements. Due to the on-going culvert and road repairs, any remaining funds in this line item shall be carried forward into fiscal year 2019/2020. Supervisor Lofton made a motion to approve the request and forward to the Finance Committee. The motion was seconded by committee member Gene Fisher. The committee unanimously approved the motion.
- c. Animal Shelter line item 10-4305-3001-00 Professional Health Services and line item 10-4305-3002-02 Professional Services/Engineering and Design. Both line items represent requests from donated funds. The 3001 code represents funds for spay/neuter programs. The 3002 code represents funds for on-going engineering support for construction of the new Animals Shelter training facility. This facility will be built using all donated funds. Supervisor Lofton made a motion to approve the request and forward to the Finance Committee. The motion was seconded by committee member Ed Strawsnyder. The motion was unanimously approved by the committee.

- d. Refuse Collection line items 10-4203-3002-00 Professional Services, 10-4203-3004-03 Repair and Maintenance/Buildings, line item 10-4203-3010-00 Contractual Services. The request was for any remaining balances from these line items to be carry forward into fiscal year 2019/2020 budget. Committee member Ed Strawsnyder made a motion to approve the carry forward request and to forward them to the Finance Committee for their consideration. The motion was seconded by committee member Gene Fisher. The committee unanimously approved the motion.
- e. Landfill line items 12-4204-3002-00 Professional Services and line item 12-4204-8900-00 Improvements Other Than Buildings. Both line items are for on-going projects at the Landfill. The requests were for any remaining balances to be carried forward into fiscal year 2019/2020. Committee member Whit Wagner made a motion to approve the request and to forward them to the Finance Committee. The motion was seconded by committee member Ed Strawsnyder. The committee unanimously approved the motion.

4-Update on Public Works and Landfill Projects.

We updated the committee that work has begun on construction of the Crossover Boulevard road project. The contractor is currently obtaining permits and mobilizing equipment to the site.

We are planning to bid the construction of the Animal Shelter training facility in August 2019. The anticipated construction time is nine (9) months.

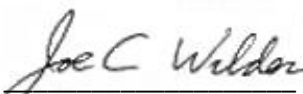
We are currently getting the agreements in place and signed for the construction of the replacement Albin Convenience Site at the old bus shop facility (SFW). We anticipate getting pricing in August of 2019.

We should be completing the construction of the Landfill leachate lagoon and force main systems by July 2019.

Respectfully submitted,

Public Works Committee

J. Douglas McCarthy, Chairman
Gary A. Lofton
Robert W. Wells
Whitney "Whit" L. Wagner
Gene E. Fisher
Harvey E. "Ed" Strawsnyder, Jr.

By 

Joe C. Wilder
Public Works Director

JCW/kco

Attachments: as stated

cc: Kris Tierney, County Administrator
Jay Tibbs, Deputy County Administrator
Ron Kimble, Landfill Manager
Gloria Puffinburger, Solid Waste Manager
Rod Williams, County Attorney
Erin Swisshelm, Assistant County Attorney
Mike Stewart, Senior Project Manager
Kevin Alderman, Shawneeland District Manager
Kathy Whetzel, Animal Shelter Manager
file



MEMORANDUM

TO: Public Works Committee

FROM: Joe C. Wilder, Director of Public Works *JCW*

SUBJECT: Meeting of May 28, 2019

DATE: May 22, 2019

There will be a meeting of the Public Works Committee on Tuesday, May 28, 2019 at 8:00 a.m. **in the conference room located on the second floor of the north end of the County Administration Building at 107 North Kent Street, Suite 200.** The agenda thus far is as follows:

1. Quitclaim request for Shawneeland Lot 19.
(Attachment 1)
2. Discuss the contribution from the Community Inmate Workforce.
(Attachment 2)
3. Proposed Fiscal Year 2018/2019 carry forward requests for Shawneeland, Animal Shelter, Solid Waste and the Landfill.
(Attachment 3)
4. Update on Landfill Projects and Public Works projects.
5. Miscellaneous Reports:
 - a. Tonnage Report: Landfill
(Attachment 4)
 - b. Recycling Report
(Attachment 5)
 - c. Animal Shelter Dog Report:
(Attachment 6)
 - d. Animal Shelter Cat Report
(Attachment 7)

JCW/kco

Attachments: as stated



COUNTY OF FREDERICK

Roderick B. Williams
County Attorney

540/722-8383
Fax 540/667-0370
E-mail rwillia@fcva.us

MEMORANDUM

TO: Public Works Committee

FROM: Roderick B. Williams
County Attorney

DATE: April 1_, 2019

RE: Shawneeland Tax Parcel Number 49A04-1-K-19 – Request for Quitclaim Deed from County

Jennifer Larrick, the record owner of what County tax and GIS records show as Tax Parcel Number 49A04-1-K-19 (“Lot 19”) in Shawneeland, has requested that the County execute a quitclaim deed to her, with respect to that lot, to rectify a title issue. Ms. Larrick in 2018 paid \$2,000.00 to a private party for a deed to Lot 19, but it appears that Lot 19 was never validly created by subdivision.

Lot 19 is shown outlined in red on the attached map. Ms. Larrick also owns Lots 17 and 18 immediately to the south of Lot 19. The large adjacent area, outlined in blue and denoted with the letter “F”, is part of the Shawneeland open space area, owned by the County since conveyance from HALOAS in 1988.

The original subdivision plat, executed by Marjec, Inc. in 1959, for the relevant portion of Shawneeland, never created Lot 19. Instead, the area encompassing what the tax and GIS records now show as Lot 19 was left unsubdivided and part of what is now the open space area owned by the County. A copy of the deed of subdivision, recorded in Deed Book 261, at Page 464, is attached hereto, with the relevant area circled in red.

In 1963, Marjec, Inc. nonetheless purported to convey Lot 19 to William Alston Duggan and Jewel Marie Duggan, husband and wife, for consideration, by deed recorded in Deed Book 297, at Page 252 (copy attached). In 2018, the Duggans having since passed away, the Duggans’ heirs sold Lot 19 to Ms. Larrick for \$2,000.00, by deed recorded as Instrument Number 180007627 (copy attached).

At some point after conveyance of Lot 19 to the Duggans in 1963, the County apparently noted Lot 19 in the vicinity where the County shows it today and began billing real estate taxes and any applicable fees against Lot 19, with Lot 19 effectively existing over the top of what today is the open space area owned by the County. Current Treasurer's records show that all taxes and fees since 2015 have been paid. Basic tax records for Lot 19 do not go back further than that, but the current zero balance suggests full payment of all taxes and fees for the last 20 years (the statute of limitations period for which real estate taxes are enforceable), as payments are applied to the oldest collectible taxes and fees due. Therefore, Ms. Larrick and the Duggans or their representatives appear to have paid taxes and fees for Lot 19, seemingly reflecting a good faith belief by these different parties that they owned Lot 19 at the relevant times.

Ms. Larrick has requested that the County execute a quitclaim deed to her for Lot 19 and has tendered a survey of the area involved. The effect of such a deed would simply be to divest any claim by the County to the Lot 19 area of 13,125 square feet. Instead of the area being subject to a claim by the County that it is part of the open space area, the Lot 19 area would vest in Ms. Larrick, free of any County claim. This appears consistent with Ms. Larrick's and the Duggans' conduct over the years, most notably the payment of taxes and fees for land that they thought they owned.

A draft quitclaim deed, with a copy of the survey plat from Ms. Larrick, is attached. I do also recommend one condition for delivery of a quitclaim deed to Ms. Larrick and that is that Ms. Larrick execute a waiver and release by which she agrees not to make any claim against the County for any taxes and fees that she paid for Lot 19 prior to delivery of the quitclaim deed. A copy of the proposed waiver is attached as well. A recommendation from the Committee as to whether to forward this matter to the Board for the scheduling of a public hearing on disposition of any County interest in Lot 19 is requested.

Attachments

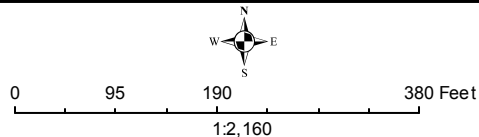
Property Map - Frederick County, VA

- Address
- Streets
- Parcel
- Towns
- County Boundary



Frederick County Information Technologies
 107 N Kent St Winchester, VA 22601
 540-665-5614

Frederick County does not give any expressed or implied warranties, conditions, representations, indemnities of any kind, statutory, or otherwise, concerning any or all of the Frederick County GIS data.



REVENUE STAMPS *
\$0.55 *
CANCELLED *

L. R. SWARTZ (SEAL)
VIRGINIA GRAY SWARTZ (SEAL)

State of Virginia,
County of Frederick,

I, Kathleen R. Kline, a Notary Public in and for the County and State aforesaid, do hereby certify that L. R. Swartz and Virginia Gray Swartz, his wife, whose names are signed to the foregoing writing, bearing date January 13, 1960, have personally appeared before me and acknowledged the same in my County and State aforesaid.

My commission expires June 19, 1960.

Given under my hand this 13th day of January, 1960.

KATHLEEN R. KLINE
Notary Public

VIRGINIA
FREDERICK COUNTY, (SCT.

This instrument of writing was produced to me on the 3rd day of February 1960 at 1:25 P. M. and with certificate of acknowledgment thereto annexed was admitted to record.

Leo D. Wilcox, CLERK

#162 *
MARJEC, INCORPORATED *
TO :::: DEED OF DEDICATION *

THIS INSTRUMENT, made and dated this 30th day of December, 1959, by Marjec, Incorporated, a corporation organized and existing under the laws of the State of Maryland and licensed to do business in the State of Virginia, who are the lot owners in that certain plat drawn by Richard U. Goode, Certified Surveyor, surveyed December 14, 1959, and attached hereto and made a part of this deed of dedication.

WHEREAS, a meeting of the Board of Directors of Marjec, Incorporated, was held in Frederick County, Virginia, on the 14th day of December, 1959, said meeting having been called for the purpose of considering and acting upon the proposed subdividing into lots of a portion of that certain tract or parcel of land which was conveyed to Marjec, Incorporated, by deed from Walter D. Myers and wife, dated the 29th day of June, 1956, and of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, in Deed Book 242, page 292. Said proposed plat is designated "Shawnee Land, Section K, Lots 1 - 4, 7 - 10, 13 - 18, 20 - 25, 27 - 48, and 50 - 72; Section L, Lots 1 - 16; and Section M, Lots 1 - 23, and providing for the following named streets: Duwamish Trail, Delaware Trail, Echota Trail, Flathead Trail, Genesee Trail, and Tomahawk Trail, each with a width of fifty (50) feet. Said sections and lots on said plat lying South of and adjoining Tomahawk Trail and immediately West of and adjoining Section P heretofore platted and dedicated by instrument dated September 19, 1959, and of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, and bounded on the West, South, East and partly on the North by the other land of Marjec, Incorporated; and,

WHEREAS, all of the Directors of the Corporation signed a waiver of notice of the time, place and purpose of said special meeting and consented to the same being held in Frederick County, Virginia, upon the property of the Corporation, and that any business transacted at such meeting should be as valid and

*For Deed of Dedication
See Deed Book 348 Pg. 552.*

effective as though it were held after notice duly given and published; and,

WHEREAS, at the said Directors meeting the following resolution was adopted; said resolution being in words and figures as follows:

"Be It Resolved, that Marjec, Incorporated, subdivide into lots Section K, Lots 1 - 4, 7 - 10, 13 - 18, 20 - 25, 27 - 48, and 50 - 72; Section L, Lots 1 - 16; and Section M, Lots 1 - 23, being a portion of that certain larger tract or parcel of land which was conveyed to Marjec, Incorporated, by deed of Walter D. Myers and wife, dated the 29th day of June, 1956, and of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, in Deed Book 242, page 292, with certain streets to be shown thereon named Duwamish Trail, Delaware Trail, Echota Trail, Flathead Trail, Genesee Trail, and Tomahawk Trail, each with a width of fifty (50) feet, and that the plat of Richard U. Goode, Certified Surveyor, surveyed December 14, 1959, be adopted as a subdivision of said parcel of land, and that said plat be, and the same is hereby approved, and that this deed of dedication does not include the dedication of the streets, trails or rights of way set forth on said plat for the use and benefit of the public, but only as a right of way to and from said lots for the use and benefit of the lot owners and their assignees, invitees and guests.

Be It Further Resolved, that a meeting of the Stockholders of Marjec, Incorporated, be called to be held upon the property of the said Corporation, in the County of Frederick, Virginia, on the 21st day of December, 1959, to consider, ratify, confirm and approve or reject the platting of a portion of the Corporation's land as set forth above, and that the said plat, together with the deed of dedication, be submitted to the Stockholders at a meeting duly assembled for the approval of said Stockholders; and that the said Stockholders grant authority to the proper officers and officials to prepare and execute all deeds of dedication and deeds of conveyance of said lots, and that they also obtain approval of the same from the Board of Supervisors of Frederick County, Virginia, and all other proper officials and persons, according to the ordinances of the County of Frederick and the statutes of Virginia;" and,

WHEREAS, the meeting of the Stockholders of Marjec, Incorporated, was held, pursuant to the call of the Board of Directors, upon the property of the Corporation, in the County of Frederick Virginia, at 10:00 A. M., on the 21st day of December, 1959, waiver of the notice of the time, place and purpose of said special meeting and consent of same being held in accordance with the call, and that any business transacted at such meeting shall be as valid and effective as though held after notice duly given and published; and,

WHEREAS, all of the Stockholders were present at said Stockholders meeting; and,

WHEREAS, at said Stockholders meeting the following resolution was adopted by affirmative vote by all of the Stockholders present; said resolution being in words and figures as follows:

"Be It Resolved, that the Stockholders of Marjec, Incorporated, approve, ratify and confirm the subdividing, platting and dedication of Section K, Lots 1 - 4, 7 - 10, 13 - 18, 20 - 25, 27 - 48, and 50 - 72; Section L, Lots 1 - 16; and Section M, Lots 1 - 23 as therein set forth, together with the streets designated and named thereon, namely, Duwamish Trail, Delaware Trail, Echota Trail,

Flathead Trail, Genesee Trail, and Tomahawk Trail, each with a width of Fifty (50) feet, all of which have been prepared by Richard U. Goode, Certified Surveyor, and Joseph A. Massie, Jr., attorney for the Corporation; and,

Be It Further Resolved, that this deed of dedication does not include the dedication of the streets, trails or rights of way set forth on said plat for the use and benefit of the public, but only as a right of way to and from said lots for the use and benefit of the lot owners and their assignees, invitees and guests; and,

Be It Further Resolved, that the President and Secretary of this Corporation be directed to execute and acknowledge the same on behalf of the Corporation and to see to it that it is properly approved by the proper officials of said County and State, and that the same be recorded by the Clerk of the Circuit Court of Frederick County, Virginia; and,

Be It Further Resolved, that the President and Secretary of this Corporation, at their discretion, sell said lots and cause to be executed and delivered deeds of conveyance for the same and for a price which is beneficial for the Corporation."

This deed of dedication to said lots is made subject to the following restrictions and covenants which shall be deemed to run with the land for the mutual protection and benefit of all lot owners:

1. Only one building to be used as a dwelling house may be permitted on any one lot, together with one garage. Said dwelling shall have a minimum floor area of 400 square feet, excluding porches or patios, with a frontage of not less than 20 feet. Said building may be of a contemporary period of modern design and may be constructed of wood, log, stone, brick, block or composition.

2. Buildings of a temporary nature, trailers and tents may be permitted for a short time, upon the approval of the Board of Directors of Marjec, Incorporated.

3. Cutting of trees may be permitted on said lots, where necessary, for the clearing of space for the dwelling and garage thereon.

4. No business of any nature whatsoever shall be conducted on said property, nor shall any buildings for commercial purposes be constructed thereon.

5. Wells for water and septic tanks or chemical toilets for sewerage must be constructed under the supervision of the Department of Health for Frederick County. No outhouses will be permitted upon the property.

6. Garbage must be kept in covered metal containers or buried. Trash, tin cans, papers, etc. must be kept in wire or metal containers or buried.

7. No signs of any nature whatsoever shall be permitted on the property, except one name sign not exceeding 6 inches in height or 36 inches in length.

8. No building may be erected within 35 feet of any front or within 10 feet of the side or rear property lines.

9. The Board of Directors of Marjec, Incorporated, or a committee appointed by them, shall determine the acceptability of the design and construction, which plan shall be presented to them before the erection of any building.

10. No lot or part thereof shall be sold, used or occupied by any person not of the Caucasian race.

11. This deed of dedication does not include the dedication of the streets, trails or rights of way set forth on said plat for the use and benefit of the public, but only as a right of way to and from said lots for the use and benefit of the lot owners and their assignees, invitees and guests.

The said Corporation does hereby declare that it is the owner of said property and that it desires to dedicate and does hereby make this deed of dedication of said subdivision of its own free will and consent.

WITNESS the signature of Donald R. Lamborne, President of Marjec, Incorporated, and its Corporate Seal hereto affixed and attested by Jean Lamborne, its Secretary, the first date hereinabove written.

(Corporate Seal)

Attested By:

JEAN LAMBORNE
Secretary

MARJEC, INCORPORATED

By DONALD R. LAMBORNE
President

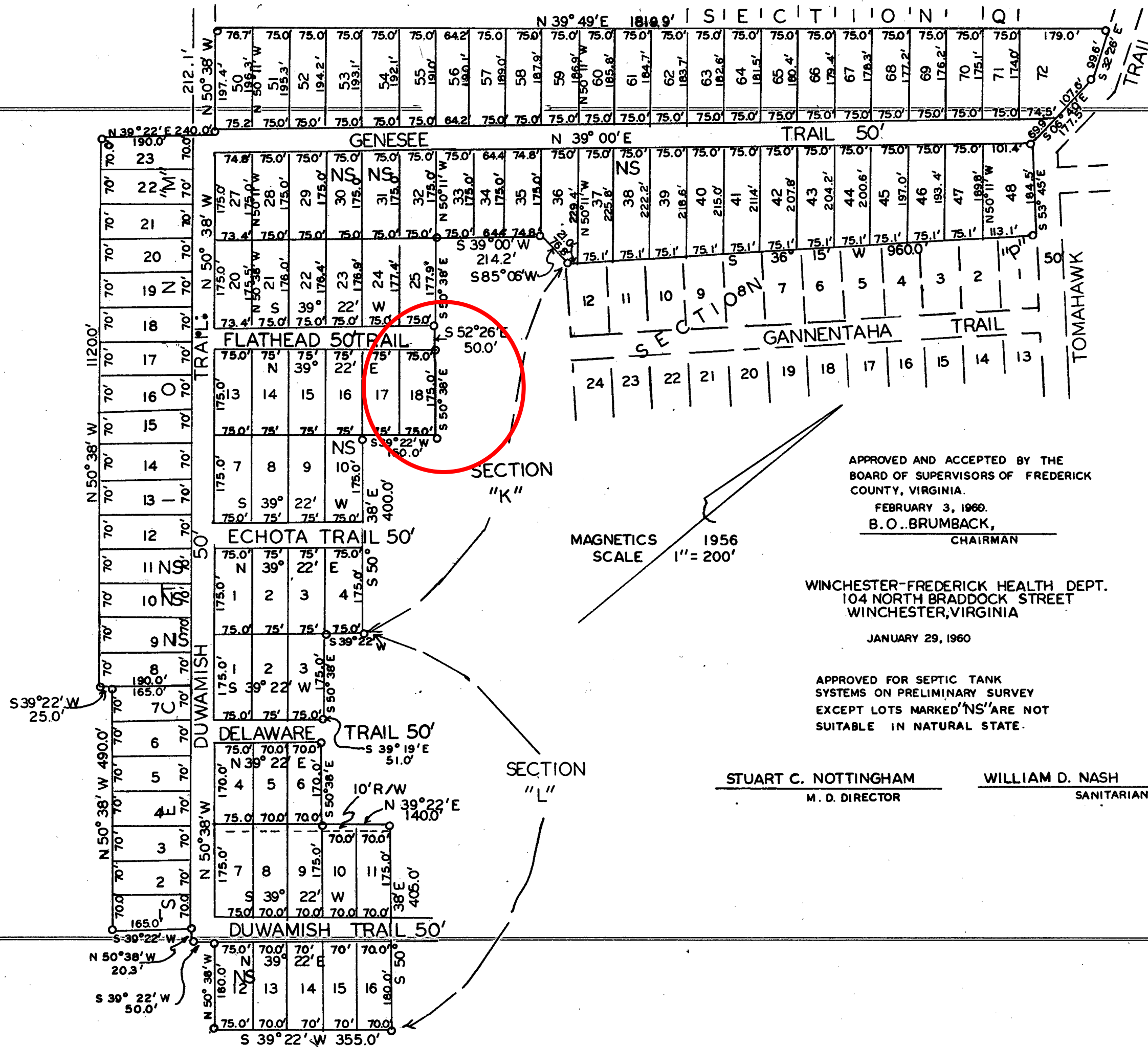
State of Virginia
County of Frederick, To-wit:

I, Janet M. Castleman, a Notary Public in and for the County and State aforesaid, do hereby certify that Donald R. Lamborne, President of Marjec, Incorporated, and Jean Lamborne, Secretary of said Corporation, whose names are signed to the foregoing writing, bearing date on the 30th day of December, 1959, have this day personally appeared before me in my County aforesaid and acknowledged the same.

Given under my hand this 28th day of January 1960.

My commission expires January 31, 1960.

JANET M. CASTLEMAN
Notary Public



APPROVED AND ACCEPTED BY THE
BOARD OF SUPERVISORS OF FREDERICK
COUNTY, VIRGINIA.

FEBRUARY 3, 1960.

B.O. BRUMBACK,
CHAIRMAN

WINCHESTER-FREDERICK HEALTH DEPT.
104 NORTH BRADDOCK STREET
WINCHESTER, VIRGINIA

JANUARY 29, 1960

APPROVED FOR SEPTIC TANK
SYSTEMS ON PRELIMINARY SURVEY
EXCEPT LOTS MARKED 'NS' ARE NOT
SUITABLE IN NATURAL STATE.

STUART C. NOTTINGHAM
M. D. DIRECTOR

WILLIAM D. NASH
SANITARIAN

FINAL PLAT
SECTION "K"

LOTS 1-4,
7-10,
13-18,
20-25,
27-48,
50-72.

SECTION "L"

LOTS 1-16

SECTION "M"

LOTS 1-23

SHAWNEE LAND

LOCATED ABOUT 10 MILES WEST OF
WINCHESTER IN BACK CREEK
MAGISTERIAL DISTRICT, FREDERICK
COUNTY, VIRGINIA.

SURVEYED DECEMBER 14, 1959

RICHARD U. GOODE
CERTIFIED SURVEYOR

VIRGINIA
FREDERICK COUNTY, (SCT.

This instrument of writing was produced to me on the 3rd day of February 1960 at 4:35 P. M. and with certificate of acknowledgment thereto annexed was admitted to record.

Lee J. Whicare, CLERK

#163 *
PAUL K. BARNETT, ET UX *
TO :: DEED *
CLARA H. PURSEL *

Del. to
Clara H.
Pursel
1/14/64

THIS DEED made and dated this 27th day of January, 1960, by and between Paul K. Barnett and Helen B. Barnett, his wife, parties of the first part, and Clara H. Pursel, party of the second part.

WITNESSETH: That for and in consideration of the sum of Ten Dollars (\$10.00) cash in hand paid, and other good and valuable consideration, the receipt of all of which is hereby acknowledged, the said parties of the first part do hereby grant, sell, and convey, with general warranty of title, unto the party of the second part, her heirs and assigns forever, all of that certain lot or parcel of land, together with all improvements and appurtenances thereto belonging, lying and being situate about three miles Northwest of Winchester, in Stonewall District, Frederick County, Virginia, and being the same land identified and designated as Lot No. 10 on the plat of the R. G. Edwards Subdivision, which is of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, in Deed Book No. 196, pages 598 and 599, said lot having a frontage of 65 feet along the Southern side of Hudson Avenue, and extending back Southward between parallel lines a distance of 199.5 feet, and being the same land that was conveyed to the parties of the first part by Harris C. Lewin et ux, by deed dated March 30, 1959, and of record in the aforesaid Clerk's Office in Deed Book No. 258, page 303. A reference to said records, and to the references therein contained, is here made for a further and more particular description of said land.

It is expressly stipulated that said land is conveyed subject to all applicable or enforceable restrictions and easements of record affecting same.

The aforesaid grantors covenant that they have the right to convey the said land to the aforesaid grantee; that the said grantee shall have quiet possession of the said land, free from all encumbrances; that they have done no act to encumber the said land; and that they will execute such further assurances of the said land as may be requisite.

Witness the following signatures and seals.

REVENUE STAMPS *
\$19.40 *
CANCELLED *

PAUL K. BARNETT (SEAL)

HELEN B. BARNETT (SEAL)

State of Virginia
County of Frederick, to-wit:

I, Virginia Ritter, a Notary Public in and for the County of Frederick, in the State of Virginia, do hereby certify that Paul K. Barnett and Helen B. Barnett, his wife, whose names are signed to the foregoing writing bearing date of January 27th, 1960, have personally appeared before me, in my county aforesaid, and acknowledged the same.

#392 *
MARJEC, INCORPORATED *
TO: :: :: :: DEED *
WILLIAM ALSTON DUGGAN, ET UX *

Mailed to:
William A. Duggan
5918 Lee Cliff Road
McLean, Va.
3-9-64

BOOK 297 PAGE 252

THIS DEED, made and dated this 10th day of July, 1963, by and between Marjec, Incorporated, a corporation organized and existing under the laws of the State of Maryland and licensed to do business in the State of Virginia, party of the first part, and William Alston Duggan and Jewel Marie Duggan, his wife, parties of the second part.

WITNESSETH: That for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable considerations, receipt of all of which is hereby acknowledged, the party of the first part does hereby grant, bargain, sell and convey, with general warranty of title, unto William Alston Duggan and Jewel Marie Duggan, his wife, jointly in fee simple as tenants by the entirety, with the right of survivorship as at common law, all of the following described property:

All of that certain lot or parcel of land designated as Lot No. 19, in Section K, of the plat and plan of "Shawnee Land," which plat, together with the deed of dedication, are of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, in Deed Book 261 at page 464. This is part of a larger tract or parcel of land which was conveyed to the party of the first part by deed of Walter D. Myers and wife dated the 29th day of June, 1956, and of record in the aforesaid Clerk's Office in Deed Book 242 at page 292, to which plat, deed of dedication and deed hereinabove mentioned reference is hereby made for a more particular description of the property hereby conveyed.

This lot or parcel of land is conveyed subject to all of the restrictions set forth in said deed of dedication which are covenants running with the land in accordance with the authority granted therein. It is further understood and agreed between the parties hereto that all of the conditions in that certain contract of sale and purchase entered into between the parties hereto for the hereinabove described lot prior to the date of this deed are not to be merged into this deed, but are to survive and to be in full force and effect hereafter.

MASSIE, SNARR & MONAHAN
ATTORNEYS AT LAW
WINCHESTER, VIRGINIA

BOOK 297 PAGE 253

The party of the first part covenants that it has the right to convey the said land to the said parties of the second part; that the said parties of the second part shall have quiet possession of said land, free from all encumbrances except as hereinabove set forth; that the said party of the first part to its knowledge has done no act to encumber said land; and that it will execute such further assurances of title as may be requisite.



IN WITNESS WHEREOF, the said Marjec, Incorporated, has caused this deed to be executed, acknowledged and delivered on its behalf by Donald R. Lamborne, its President and duly authorized agent, and its Corporate Seal to be affixed and attested by Jean Lamborne, the Secretary, this 10th day of July, 1963.

MARJEC, INCORPORATED

By Donald R. Lamborne
Donald R. Lamborne, President

(Corporate Seal)

Attest By Jean Lamborne
Jean Lamborne, Secretary

STATE OF VIRGINIA

COUNTY OF FREDERICK, To-wit:

I, Janet M. Castleman, a Notary Public in and for the County and State aforesaid, do certify that Donald R. Lamborne and Jean Lamborne, President and Secretary respectively of Marjec, Incorporated, whose names are signed to the foregoing writing, bearing date on the 10th day of July, 1963, have personally appeared before me in my County and State aforesaid and acknowledged the same.

Given under my hand this 27th day of July, 1963.

My commission expires January 22, 1964.

MASSIE, SNARR & MONAHAN
ATTORNEYS AT LAW
WINCHESTER, VIRGINIA

Janet M. Castleman
Notary Public

VIRGINIA FREDERICK COUNTY, SCT.

This instrument of writing was produced to me on the 24th day of February, 1964, at 3:35 P.M., and with certificate of acknowledgment thereto annexed was admitted to record.

George B. Whitmore
Clerk

180007627

PG0308

Winchester Title
236272WIN

RETURN TO:
RGS TITLE, LLC
500 West Jubal Early Drive #100
Winchester, VA 22601

PREPARED BY
LAW OFFICES

SHREVE,
SCHUDEL,
SAUNDERS,
JACKSON &
PARELLO, PLLC

500 West Jubal Early
Drive, Suite 100
Winchester, VA 22601

P:540-723-0602

DEED

This Deed, made this 30 day of July, 2018, by and between Alice Maud Watkinson and Caroline Julie Popp, as Devises of the Estate of Jewel Marie Duggan, GRANTORS, and Jennifer Larrick, GRANTEE;

WITNESSETH

That for and in consideration of the conveyance made hereby, the consideration received by the GRANTORS and other good and valuable consideration, receipt and sufficiency of which is hereby acknowledged, the GRANTORS subject to the matters described herein, hereby grant and convey to the GRANTEE with General Warranty and English Covenants of Title, in fee simple unto the GRANTEE, Jennifer Larrick sole owner, the following described real estate, situate, lying and being in Frederick County, Commonwealth of Virginia, (the "Real Estate"), to wit:

SEE LEGAL DESCRIPTION ON EXHIBIT A ATTACHED HERETO

AND BEING the same property conveyed by Marjec, Incorporated, a corporation unto William Alston Duggan and Jewel Marie Duggan by virtue of a deed dated July 10, 1963 and recorded February 24, 1964 in Deed Book 297 at Page 252 among the land records of Frederick County, Virginia.

NOTE: Jewel Marie Duggan departed this life on July 26, 2011 as per Will recorded in 11-190, Fiduciary Number FI-2011-00001412, devising said property to Caroline Julia Popp and Alice Maud Watkinson.

The Real Estate is conveyed subject to all recorded easements, conditions, restrictions, and agreements that lawfully apply to the Real Estate or any part thereof.

The GRANTORS covenant that said GRANTORS have the right to convey the Real Estate, that the GRANTORS have done no act to encumber the Real Estate; that the said GRANTEE shall have quiet possession of the Real Estate; and that the GRANTORS will execute such further assurances as may be requisite.

49A04-1-K-19

Tax Map Number: 49A4K19

Grantee's Address: Lot 19 Shawnee Land, VA PO Box 386, Capon Bridge, WV

Consideration: \$2,000.00

Assessed Value: \$7,000.00

Case: 236272WIN

Underwriter: Commonwealth Land Title Insurance Company
VSB#:

26711

Prepared By: Jim Pope
Va. Bar No. 24886

1/4

Deed Page 2
Case No. 236272WIN

Witness the following signatures and seals:

Alice D. Watkins

Alice Watkins, Devisee of the Estate of Jewel Marie Duggan

see attached

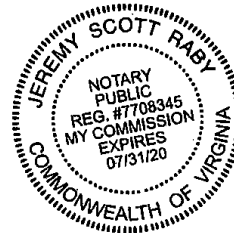
Caroline Julie Popp, Devisee of the Estate of Jewel Marie Duggan

Commonwealth of Virginia, City/County of: James City to wit:

I, the undersigned, a Notary Public for the jurisdiction aforesaid, do certify that Alice Maud Watkins, as Devisee of the Estate of Jewel Marie Duggan, whose name is signed to the foregoing document, bearing the date of the 1st day of August, 2018, acknowledged the same before me in my jurisdiction aforesaid, this 1st day of August, 2018

Jeremy Scott Raby
Notary Public

My Commission Expires: July 31st 2020



Commonwealth of Virginia, City/County of: _____ to wit:

I, the undersigned, a Notary Public for the jurisdiction aforesaid, do certify that Caroline Julia Popp, as Devisee of the Estate of Jewel Marie Duggan, whose name is signed to the foregoing document, bearing the date of the _____ day of _____, 2018, acknowledged the same before me in my jurisdiction aforesaid, this _____ day of _____, 20____

Notary Public

My Commission Expires: _____

PG0310

Witness the following signatures and seals:

see page 3 of 4

Alice Watkinson, Devisee of the Estate of Jewel Marie Duggan

[Signature]

Caroline Julie Popp, Devisee of the Estate of Jewel Marie Duggan

Commonwealth of Virginia, City/County of: _____ to wit:

I, the undersigned, a Notary Public for the jurisdiction aforesaid, do certify that Alice Maud Watkinson, as Devisee of the Estate of Jewel Marie Duggan, whose name is signed to the foregoing document, bearing the date of the _____ day of _____, 2018, acknowledged the same before me in my jurisdiction aforesaid, this _____ day of _____, 20____

Notary Public

My Commission Expires: _____

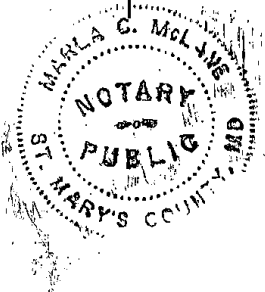
State of Maryland
Commonwealth of Virginia, City/County of: *St. Mary's* to wit:

I, the undersigned, a Notary Public for the jurisdiction aforesaid, do certify that Caroline Julia Popp, as Devisee of the Estate of Jewel Marie Duggan, whose name is signed to the foregoing document, bearing the date of the *30th* day of *July*, 2018, acknowledged the same before me in my jurisdiction aforesaid, this *30th* day of *July*, 2018

March C. Myan

Notary Public

My Commission Expires: *12/23/2020*



Deed Page 3
RGS Case No. 236272WIN

Exhibit A

Legal Description

All of that certain lot or parcel of land designated as Lot No. 19, in Section K, of the plat and plan of Shawnee Land," which plat, together with the Deed of Dedication, are of record in the Clerk's Office of the Circuit Court of Frederick County, Virginia, in Deed Book 261 at Page 464. ~~Back Creek District~~

VIRGINIA: FREDERICK COUNTY, SC1.

This instrument of writing was produced to me on

8-6-18 at 3:51 P.M.

and with certificate acknowledgement thereto annexed was admitted to record. Tax imposed by Sec. 58.1-802 of

\$ 7⁰⁰, and 58.1-801 have been paid, if assessable

Rebecca P. Hogan, Clerk

Tax Map Parcel: 49A04-1-K-19

Consideration: \$0.00

Grantee's Address:

Prepared by:
Roderick B. Williams
VSB#34310

THIS QUITCLAIM DEED, made this _____ day of _____, 2019, by and between
THE COUNTY OF FREDERICK, VIRGINIA, GRANTOR, and **Jennifer LARRICK**,
GRANTEE;

W I T N E S S E T H:

THAT FOR AND IN CONSIDERATION of the sum of TEN DOLLARS (\$10.00) cash
in hand paid by the Grantee to the Grantor, and other good and valuable consideration, the
receipt whereof is hereby acknowledged, the Grantor does hereby quitclaim, release and convey
to the Grantee, all right, title and interest of the Grantor in and to the property identified as Lot
19 on the attached Final Plat for Shawneeland, Section K, Lot 19, prepared by Darren S. Foltz,
L.S., dated April 7, 2019, said property being located in the Back Creek Magisterial District of
the County of Frederick, Virginia.

WITNESS the following signature and seal:

COUNTY OF FREDERICK, VIRGINIA

_____(SEAL)

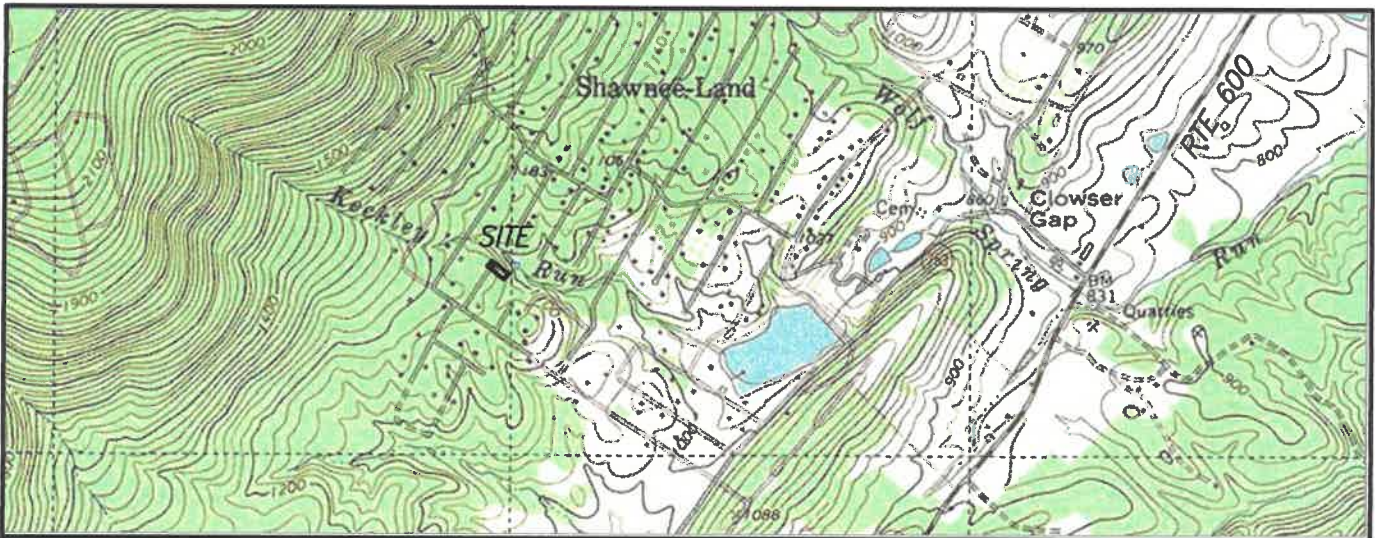
STATE OF VIRGINIA, AT LARGE,
CITY OF WINCHESTER, to-wit:

The foregoing instrument was acknowledged before me this _____ day of _____,
2019, by Kris C. Tierney, County Administrator of the County of Frederick, Virginia.

Notary Public

Registration number:

My Commission expires:



VICINITY MAP ~ SCALE: 1" = 2000'

PARENT TRACT INFORMATION: TAX ID #: 49A4-((1))-(K)-19 ZONED: R5 USE: VACANT

OWNER'S CERTIFICATE:

THE PLATTING OR DEDICATION OF THE FOLLOWING DESCRIBED LAND, 0.39 ACRES STANDING IN THE NAME OF JENNIFER LARRICK, IS WITH THE FREE CONSENT AND IN ACCORDANCE WITH THE DESIRES OF THE UNDERSIGNED OWNERS, PROPRIETORS, AND TRUSTEES, IF ANY.

JENNIFER LARRICK

NOTARY:

STATE OF _____

CITY / COUNTY _____

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____

BY JENNIFER LARRICK (DATE)

(NOTARY) _____ MY COMMISSION EXPIRES _____

APPROVALS:

FREDERICK COUNTY SUBDIVISION ADMINISTRATOR DATE

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE LAND CONTAINED IN THIS FINAL PLAT OF SUBDIVISION IS A PORTION OF THE LAND CONVEYED TO JENNIFER LARRICK, BY DEED DATED JULY 30, 2018, AND RECORDED IN THE OFFICE OF THE CLERK OF THE FREDERICK COUNTY CIRCUIT COURT AS INSTRUMENT NUMBER 180007627.

Darren S. Foltz, L.S.

DARREN S. FOLTZ, L.S.



FINAL PLAT FOR

SHAWNEELAND ~ SECTION K ~ LOT 19

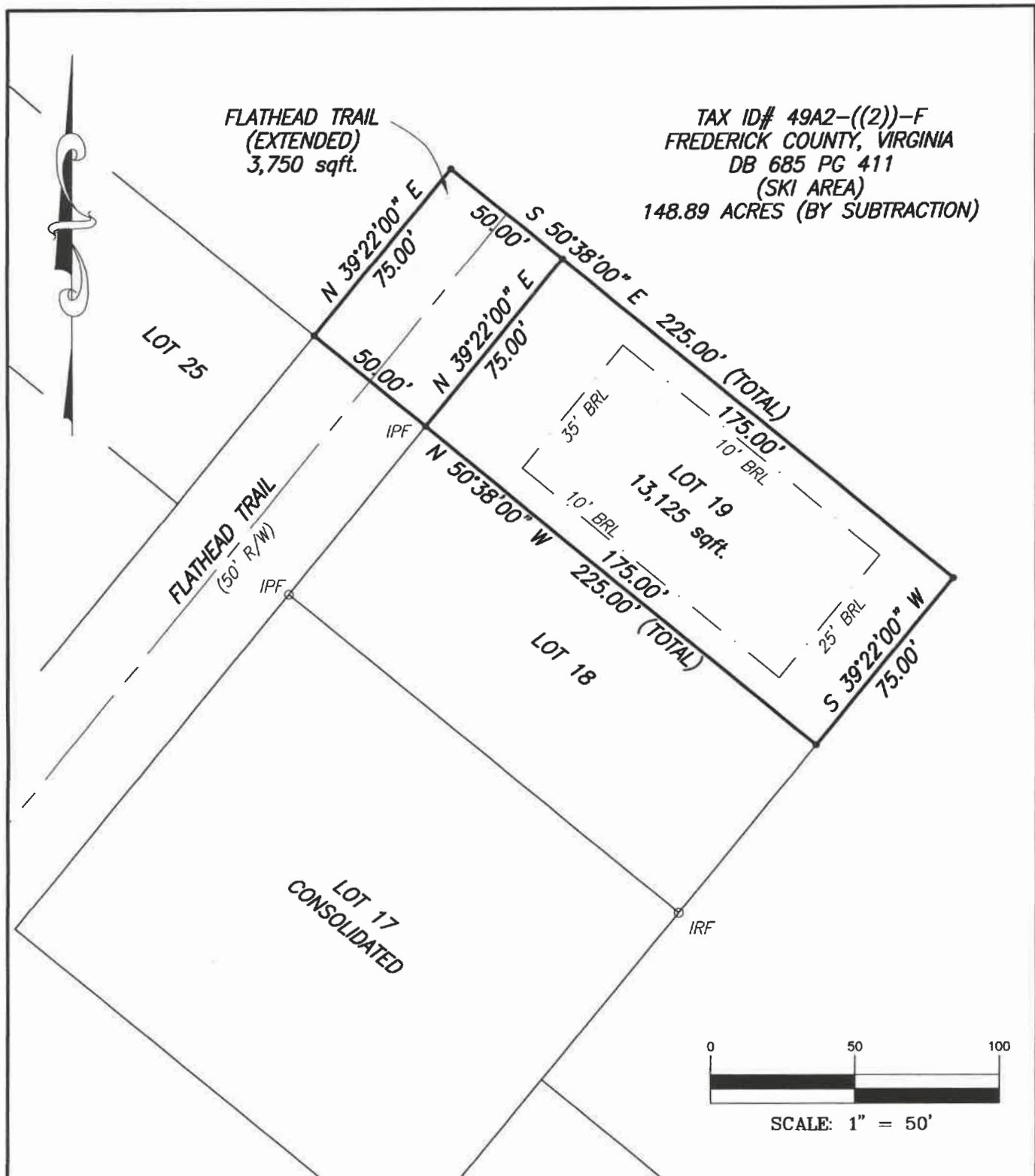
BACK CREEK MAGISTERIAL DISTRICT, FREDERICK COUNTY, VIRGINIA

DATE: APRIL 7, 2019 SCALE: 1" = 50' FILE#: 18-057

Foltz Land Surveying, Inc.

P.O. Box 23 Stephens City, Virginia 22655
Phone #: 540-323-1497 ~ www.foltzlandsurveying.com
email: foltz@visuallink.com

SHEET 1 OF 2



NOTES:

1. NO TITLE REPORT FURNISHED. EASEMENTS OTHER THAN SHOWN MAY EXIST.
2. THIS PROPERTY LIES WITHIN FLOOD ZONE "X", AREA OF MINIMAL FLOODING. AS SHOWN ON F.I.R.M. MAP #51069C-0200-D, DATED SEPTEMBER 2, 2009.
3. LOT 19 WAS PRELIMINARY PLAT APPROVED BY FREDERICK COUNTY IN 1959. IT WAS LEFT OFF FINAL PLAT APPROVED FEBRUARY 3, 1960.
4. PLAT REFERENCE: DEED BOOK 261 PAGE 467.
5. LOT 19 WAS SOLD AND DEED RECORDED JULY 10, 1963 TO WILLIAM ALSTON DUGGAN & JEWEL MARIE DUGGAN.
6. PROPERTY CORNERS ARE IRON REBAR SET UNLESS NOTED OTHERWISE.

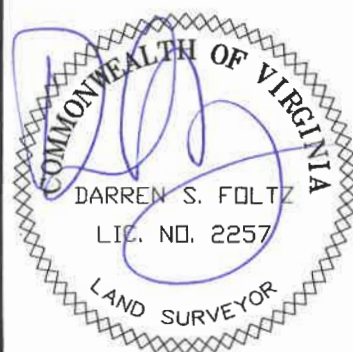
AREA TABULATION:

ORIGINAL AREA = 149.28 ACRES
R/W DEDICATION = -0.09 ACRES
LOT 19 = -0.30 ACRES

TOTAL AREA = 148.89 ACRES
(BY SUBTRACTION)

LEGEND:

IRF = IRON REBAR FOUND
IPF = IRON PIPE FOUND
BRL = BUILDING RESTRICTION LINE



FINAL PLAT
FOR
SHAWNEELAND ~ SECTION K ~ LOT 19

BACK CREEK MAGISTERIAL DISTRICT, FREDERICK COUNTY, VIRGINIA

DATE: APRIL 7, 2019

SCALE: 1" = 50'

FILE#: 18-057

Foltz Land Surveying, Inc.

P.O. Box 23 Stephens City, Virginia 22655
Phone #: 540-323-1497 ~ www.foltzlandsurveying.com
email: foltz@visuallink.com

SHEET
2
OF
2

WAIVER AND RELEASE

For and in consideration of the delivery of a quitclaim deed for a parcel of land identified as Tax Parcel Number 49A04-1-K-19 ("Lot 19") in Shawneeland and of the mutual benefits to the parties, Jennifer Larrick does hereby waive and release any and all claims that she may have against the County of Frederick (the "County") and/or any of its officers, agents, and/or employees with respect to any taxes and/or fees assessed against and/or paid by her and/or on her behalf for Lot 19 for any period prior to the date of delivery by the County to her of a quitclaim deed as to any interest of the County of Frederick in Lot 19. This waiver and release also includes, but is not limited to, waiver and release of the right to contest the amount of assessment valuation for the purposes of imposition of taxes and/or fees. Delivery of the quitclaim deed is deemed to take place contemporaneous with the execution of this waiver and release.

Jennifer Larrick

COMMONWEALTH OF VIRGINIA :
COUNTY/CITY OF _____:

Subscribed and sworn to before me this _____ day of _____, 2019.

Notary Public
Registration Number:
My Commission expires:



COUNTY of FREDERICK

Department of Public Works

540/665-5643

FAX: 540/678-0682

May 14, 2019

Sgt. Neal Steward
Community Inmate Workforce
Northwestern Adult Detention Center
141 Fort Collier Road
Winchester, VA 22603

RE: Virginia Adopt-A-Highway

Dear Sgt. Steward:

As we close out another fiscal year, I would like to take this opportunity to highlight the Community Inmate Workforce's contribution to the Virginia Adopt-a-Highway Program.

In partnership with Frederick County Clean Sweep, the Regional Detention Center adopted two roadways (Sulpher Spring Road and Aylor Road) in 2017. According to the state's records, from the adoption date in January of 2017 until the close of March 2019, the CIWF had contributed 1,058 man hours collecting litter along its two adopted roads. This is an in-kind contribution of \$25,910, benefitting both the county and the state litter control programs. These adoptions represent only a portion of the crew's efforts during the year.

Altogether, Virginia AAH estimates that its 18,000 volunteers provide \$1.35 million in cleanup services each year to the state. This is money that is saved for other much-needed expenses outside of litter pickup. Therefore, I would encourage the CIWF to renew these adoptions when they expire in 2020.

In closing, I trust that the CIWF and jail staff are proud of this outstanding commitment toward a cleaner and greener Frederick County.

Regards,

Gloria M. Puffinburger
Solid Waste Manager

cc: J. Whitley, superintendent, NRADC
J. Wilder, director, Public Works
C. Caswell, Clean Sweep crew supervisor
file



COUNTY of FREDERICK

Sanitary District of Shawneeland

Kevin Alderman
District Manager

Office: 540/877-1035

Fax: 540/877-1361

MEMORANDUM

TO: Joe Wilder, Director of Public Works

FROM: Kevin C. Alderman, District Manager, Shawneeland Sanitary District *KCA*

SUBJECT: Carry Forward of Funds from Fiscal Year 2018-2019 Budget to Fiscal Year 2019-2020 Budget

DATE: May 13, 2019

I am requesting that an amount of \$30,000.00 be carried forward from the Fiscal Year 2018-2019 Shawneeland Sanitary district budget line item 16-8108-8800-00-Buildings to line item 16-8108-8800-00-Buildings in the Fiscal Year 2019-2020 budget. This amount will be used for the construction of additional office space.

If you have any questions, please do not hesitate to call me.

KCA/pms

Cc: file



COUNTY of FREDERICK

Sanitary District of Shawneeland

Kevin Alderman
District Manager

Office: 540/877-1035
Fax: 540/877-1361

MEMORANDUM

TO: Joe Wilder, Director of Public Works

FROM: Kevin C. Alderman, District Manager, Shawneeland Sanitary District *KCA*

SUBJECT: Carry Forward of Funds from Fiscal Year 2018-2019 Budget to Fiscal Year 2019-2020 Budget

DATE: May 13, 2019

I am requesting that the remaining ending balance from line item 16-8108-3004-004-Road Improvements be carried forward from the Fiscal Year 2018-2019 Shawneeland Sanitary district budget to line item 16-8108-3004-04-Road Improvements in the Fiscal Year 2019-2020 budget. We are currently spending from this line item as we continue to make road improvements stemming from the heavy rains that Shawneeland has received in the past year.

If you have any questions, please do not hesitate to call me.

KCA/pms

Cc: file

FREDERICK COUNTY - ANIMAL SHELTER

Kathy M. Whetzel
Shelter Manager
540/667-9192 ext. 2502
FAX 540/722-6108
E-mail: kwhetzel@fcva.us

MEMORANDUM

TO: Joe Wilder, Director of Public Works

FROM: Kathy M. Whetzel, Shelter Manager

SUBJECT: FY 18/19 Carry Forwards

DATE: 5/15/19

The Shelter is requesting a funding carry forward from FY 18/19 into line item 10-4305-3001-00 Professional Health Services in the amount of \$4,426.88 or the remaining portion thereof. This amount is the unused portion of spay/neuter funding. The funds were appropriated from the Fleming donation for spaying and neutering shelter pets.

The shelter is requesting a funding carry forward from FY 18/19 into line item 10-4305-3002-02 Professional Services Engineering and Design in the amount of \$22,401.70 or the remaining portion thereof. This amount is the unused portion of the new building design funds. The funds were appropriated from the Loy donation for the design of the new shelter building.


Please contact me if you have any questions.

KMW:hag



MEMORANDUM

TO: Joe C. Wilder
Director of Public Works

FROM: Gloria M. Puffinburger 
Solid Waste Manager

RE: Carryforward Request; FY 18/19
Refuse Collection (4203)

DATE: May 22, 2018

The purpose of this memo is to request a carryforward amount of \$89,200, or the remaining balance at the end of the fiscal year, from line item 10-4203-8900-00 (*Improvements Other Than Buildings*) for costs associated with the final completion of the Stephenson citizens' convenience site. Requested funds should be placed into the 10-4203-8900-00 line item in the FY 19/20 fiscal year. Also requested carryforwards from the current fiscal year to FY 19/20 from the Refuse Collection (4203) budget include:

- Line item 10-4203-3002-0 (*Professional Services*) -- \$66,200 or the remaining balance; fund continued design work for relocation of the Albin citizens' convenience site
- Line item 10-4203-3004-03 (*Repair and Maintenance/Building*) -- \$68,425 or the remaining balance; funds for completion of site improvements at the Middletown convenience sites. Work is in the design phase.
- Line item 10-4203-3010-00 (*Contractual Services*) -- \$140,000 or remaining balance; funds for increased hauling costs based on May CPI figures and increased costs associated with recycling program.

Carryforward requests total \$363,825 or such balances that remain in the various line items at the close of the current fiscal year.

If you have any questions, please do not hesitate to contact me at Extension 8219.



MEMORANDUM

TO: Joe C. Wilder, Director of Public Works

FROM: Ron Kimble, Landfill Manager

SUBJECT: Carry Forwards to 2019/2020

DATE: May 22, 2019

The purpose of this memo is to request a carry forward of the remaining balance at the end of the fiscal year, from line item 12-4204-8900-00 (Improvements Other Than) for cost associated with on-going projects at the landfill. Requested funds should be placed into the 12-4204-8900-00 line item in the fiscal year 2019/2020 budget. We also request the remaining balance from at the end of the fiscal year from line item 12-4204-3002-00 (Professional Services).

If you have any questions, please do not hesitate to contact me at 540-665-5658.

**MEMORANDUM**

TO: Public Works Committee

FROM: Joe C. Wilder, Director of Public Works *JCW*

SUBJECT: Monthly Tonnage Report - Fiscal Year 18/19

DATE: May 22, 2019

The following is the tonnage for the months of July 2017 through June 2018, and the average monthly tonnage for fiscal years 03/04 through 18/19.

| | | |
|------------------|---------------------------|--------------------------------------|
| FY 03-04: | AVERAGE PER MONTH: | 16,348 TONS (UP 1,164 TONS) |
| FY 04-05: | AVERAGE PER MONTH: | 17,029 TONS (UP 681 TONS) |
| FY 05-06: | AVERAGE PER MONTH: | 17,785 TONS (UP 756 TONS) |
| FY 06-07: | AVERAGE PER MONTH: | 16,705 TONS (DOWN 1,080 TONS) |
| FY 07-08: | AVERAGE PER MONTH: | 13,904 TONS (DOWN 2,801 TONS) |
| FY 08-09: | AVERAGE PER MONTH: | 13,316 TONS (DOWN 588 TONS) |
| FY 09-10: | AVERAGE PER MONTH: | 12,219 TONS (DOWN 1,097 TONS) |
| FY 10-11: | AVERAGE PER MONTH: | 12,184 TONS (DOWN 35 TONS) |
| FY 11-12: | AVERAGE PER MONTH: | 12,013 TONS (DOWN 171 TONS) |
| FY 12-13: | AVERAGE PER MONTH: | 12,065 TONS (UP 52 TONS) |
| FY 13-14: | AVERAGE PER MONTH: | 12,468 TONS (UP 403 TONS) |
| FY 14-15: | AVERAGE PER MONTH: | 13,133 TONS (UP 665 TONS) |
| FY 15-16: | AVERAGE PER MONTH: | 13,984 TONS (UP 851 TONS) |
| FY 16-17: | AVERAGE PER MONTH: | 14,507 TONS (UP 523 TONS) |
| FY 17-18: | AVERAGE PER MONTH: | 15,745 TONS (UP 1,238 TONS) |
| FY 18-19: | AVERAGE PER MONTH: | 16,317 TONS (UP 572 TONS) |

| MONTH | FY 2017-2018 | FY 2018-2019 |
|-----------|--------------|--------------|
| JULY | 15,465 | 17,704 |
| AUGUST | 17,694 | 18,543 |
| SEPTEMBER | 16,813 | 14,799 |
| OCTOBER | 15,853 | 18,158 |
| NOVEMBER | 16,109 | 15,404 |
| DECEMBER | 12,644 | 14,426 |
| JANUARY | 13,295 | 13,973 |
| FEBRUARY | 13,100 | 12,764 |
| MARCH | 15,510 | 17,079 |
| APRIL | 15,469 | 20,313 |
| MAY | 18,755 | |
| JUNE | 18,228 | |

RECYCLING REPORT - FY 18/19

| <u>MONTH</u> | <u>GLASS</u> | <u>PLAST</u> | <u>AL</u>
<u>CANS</u> | <u>STEEL</u>
<u>CANS</u> | <u>PAPER</u> | <u>OCC</u> | <u>SHOES/TEX</u> | <u>ELEC</u> | <u>SCRAP</u> | <u>TOTAL</u> |
|--------------|--------------|--------------|--------------------------|-----------------------------|--------------|------------|------------------|-------------|--------------|--------------|
| JUL | | 40,320 | 1,945 | 4,620 | 78,140 | 98,621 | 9,500 | 68,580 | 292,300 | 594,026 |
| AUG | | 38,580 | 4,855 | 7,925 | 90,020 | 98,500 | 9,220 | 24,680 | 300,180 | 573,960 |
| SEP | | 32,600 | 3,120 | 6,560 | 65,600 | 88,380 | 5,380 | 52,200 | 211,500 | 465,340 |
| OCT | | 37,778 | 4,140 | 7,580 | 99,480 | 92,960 | | 51,340 | 255,960 | 549,238 |
| NOV | | 49,965 | 5,432 | 12,245 | 82,740 | 126,335 | | 25,960 | 246,374 | 549,051 |
| DEC | | 35,340 | 3,710 | 8,650 | 71,280 | 118,920 | 3,600 | 28,040 | 171,800 | 441,340 |
| JAN | | 50,800 | 2,415 | 7,500 | 91,800 | 114,400 | 8,604 | 53,180 | 172,520 | 501,219 |
| FEB | | 37,780 | 5,845 | 12,244 | 111,735 | 124,380 | 5,020 | 26,980 | 117,220 | 441,204 |
| MAR | | 26,820 | 3,300 | 7,290 | 75,680 | 87,320 | | 25,580 | 228,501 | 454,491 |
| APR | | 37,000 | 3,700 | 7,229 | 65,560 | 92,790 | 5,200 | 53,820 | 315,860 | 581,159 |
| MAY | | | | | | | | | | 0 |
| JUN | | | | | | | | | | 0 |
| TOTAL | 0 | | | | | | | | | 0 |
| FY 17-18 | 0 | 465,080 | 53,224 | 94,530 | 1,043,120 | 1,080,087 | 37,260 | 536,420 | 2,874,709 | 6,184,430 |
| FY 16-17 | 372,600 | 430,435 | 41,002 | 89,976 | 1,082,737 | 1,009,153 | 37,220 | 495,500 | 2,687,241 | 6,245,864 |
| FY 15-16 | 919,540 | 428,300 | 52,077 | 97,252 | 1,275,060 | 974,493 | 48,820 | 480,400 | 2,376,344 | 6,652,286 |
| FY 14-15 | 895,600 | 407,703 | 40,060 | 97,515 | 1,272,660 | 893,380 | 49,440 | 532,283 | 1,890,729 | 6,079,370 |
| FY 13-14 | 904,780 | 417,090 | 39,399 | 99,177 | 1,281,105 | 902,701 | 37,800 | 611,580 | 1,639,225 | 5,932,937 |
| FY 12-13 | 913,530 | 410,338 | 45,086 | 102,875 | 1,508,029 | 878,450 | 39,700 | 502,680 | 1,321,938 | 5,722,626 |
| FY 11-12 | 865,380 | 398,320 | 43,884 | 99,846 | 1,492,826 | 840,717 | 37,920 | 484,600 | 1,432,678 | 5,696,171 |
| FY 10-11 | 949,185 | 378,452 | 42,120 | 98,474 | 1,404,806 | 824,873 | 41,700 | 467,920 | 1,220,107 | 5,427,637 |
| FY 09-10 | 1,123,671 | 370,386 | 42,844 | 96,666 | 1,235,624 | 671,669 | 21,160 | 435,680 | 1,348,398 | 5,346,098 |
| FY 08-09 | 762,810 | 322,928 | 23,473 | 55,246 | 1,708,302 | 564,957 | 28,780 | 404,760 | 1,097,151 | 4,968,407 |
| FY 07-08 | 794,932 | 284,220 | 15,783 | 40,544 | 1,971,883 | 545,692 | 0 | 498,110 | 1,172,880 | 5,324,044 |
| FY 06-07 | 600,464 | 200,720 | 11,834 | 29,285 | 1,684,711 | 441,321 | 0 | 382,574 | 550,070 | 3,900,979 |
| FY 05-06 | 558,367 | 190,611 | 12,478 | 28,526 | 1,523,162 | | | 381,469 | 204,220 | 2,898,833 |
| FY 04-05 | 549,527 | 193,224 | 11,415 | 27,525 | 1,552,111 | | | 273,707 | 25,080 | 2,632,589 |
| FY 03-04 | 541,896 | 174,256 | 11,437 | 31,112 | 1,443,461 | | | 156,870 | 336,230 | 2,695,262 |
| FY 02-03 | 413,627 | 146,770 | 9,840 | 23,148 | 1,381,195 | | | 62,840 | 171,680 | 2,209,100 |
| FY 01-02 | 450,280 | 181,040 | 10,565 | 25,553 | 1,401,206 | | | 54,061 | 58,140 | 2,180,845 |
| FY 00-01 | 436,615 | 198,519 | 10,367 | 24,988 | 1,759,731 | | | | 9,620 | 2,439,840 |
| FY 99-00 | 422,447 | 177,260 | 10,177 | 22,847 | 1,686,587 | | | | 44,180 | 2,363,498 |
| FY 98-99 | 402,192 | 184,405 | 9,564 | 22,905 | 1,411,950 | | | | 48,810 | 2,079,826 |
| FY 97-98 | 485,294 | 136,110 | 13,307 | 29,775 | 1,830,000 | | | | | 2,494,486 |
| FY 96-97 | 373,106 | 211,105 | 23,584 | 46,625 | 1,690,000 | | | | | 2,344,420 |
| FY 95-96 | 511,978 | 167,486 | 28,441 | 44,995 | 1,553,060 | | | | | 2,305,960 |
| TO DATE | 14,247,821 | 6,009,678 | 548,737 | 1,234,855 | 33,150,206 | 8,547,406 | 342,540 | 6,225,034 | 17,634,721 | 87,941,078 |

FREDERICK COUNTY ESTHER BOYD ANIMAL SHELTER FY 2018-2019

DOG REPORT

| MONTH | ON HAND AT
FIRST OF MONTH | RECEIVED
AT KENNEL | BROUGHT IN
BY ACO | BITE
CASES | BORN AT
KENNEL | ADOPTED | RECLAIMED | DISPOSED | DIED AT
KENNEL | ESCAPED/
STOLEN | CARRIED OVER
NEXT MONTH |
|-------|------------------------------|-----------------------|----------------------|---------------|-------------------|---------|-----------|----------|-------------------|--------------------|----------------------------|
| JULY | 36 | 29 | 36 | 1 | 0 | 29 | 35 | 1 | 0 | 0 | 37 |
| AUG | 37 | 41 | 36 | 2 | 0 | 29 | 36 | 2 | 1 | 0 | 48 |
| SEP | 48 | 33 | 41 | 2 | 0 | 29 | 38 | 4 | 0 | 0 | 53 |
| OCT | 53 | 28 | 24 | 2 | 0 | 37 | 19 | 4 | 0 | 0 | 47 |
| NOV | 47 | 28 | 22 | 4 | 0 | 39 | 21 | 1 | 0 | 0 | 40 |
| DEC | 40 | 32 | 11 | 0 | 0 | 37 | 8 | 2 | 0 | 0 | 36 |
| JAN | 36 | 29 | 24 | 2 | 0 | 32 | 22 | 5 | 0 | 0 | 32 |
| FEB | 32 | 19 | 32 | 0 | 0 | 23 | 22 | 2 | 0 | 0 | 36 |
| MAR | 36 | 23 | 31 | 1 | 0 | 35 | 22 | 3 | 0 | 0 | 31 |
| APR | 31 | 25 | 31 | 0 | 0 | 21 | 27 | 0 | 1 | 0 | 38 |
| MAY | | | | | | | | | | | |
| JUN | | | | | | | | | | | |
| TOTAL | 396 | 287 | 288 | 14 | 0 | 311 | 250 | 24 | 2 | 0 | 398 |

In the month of April - 87 dogs in and out of kennel.

FREDERICK COUNTY ESTHER BOYD ANIMAL SHELTER FY 2018-2019

CAT REPORT

| MONTH | ON HAND AT
FIRST OF MONTH | RECEIVED
AT KENNEL | BROUGHT IN
BY ACO | BITE
CASES | BORN AT
KENNEL | ADOPTED | RECLAIMED | DISPOSED | DIED AT
KENNEL | ESCAPED/
STOLEN | CARRIED TO
NEXT MONTH |
|-------|------------------------------|-----------------------|----------------------|---------------|-------------------|---------|-----------|----------|-------------------|--------------------|--------------------------|
| JULY | 122 | 129 | 14 | 4 | 7 | 49 | 2 | 102 | 3 | 0 | 120 |
| AUG | 120 | 122 | 21 | 3 | 3 | 116 | 6 | 65 | 1 | 0 | 81 |
| SEP | 81 | 95 | 9 | 2 | 0 | 52 | 2 | 41 | 2 | 0 | 90 |
| OCT | 90 | 119 | 15 | 2 | 3 | 62 | 1 | 48 | 4 | 0 | 114 |
| NOV | 114 | 85 | 14 | 1 | 6 | 64 | 1 | 60 | 2 | 0 | 93 |
| DEC | 93 | 46 | 4 | 1 | 0 | 40 | 1 | 20 | 0 | 0 | 83 |
| JAN | 83 | 71 | 6 | 1 | 0 | 69 | 2 | 33 | 0 | 0 | 57 |
| FEB | 57 | 46 | 3 | 1 | 0 | 37 | 0 | 17 | 0 | 0 | 53 |
| MAR | 53 | 66 | 2 | 2 | 6 | 52 | 3 | 24 | 1 | 0 | 49 |
| APR | 49 | 61 | 2 | 1 | 17 | 63 | 3 | 15 | 0 | 0 | 49 |
| MAY | | | | | | | | | | | |
| JUN | | | | | | | | | | | |
| TOTAL | 862 | 840 | 90 | 18 | 42 | 604 | 21 | 425 | 13 | 0 | 789 |

In the month of April - 130 cats in and out of shelter. 37 cats transferred to other agencies.

E



COUNTY OF FREDERICK

Information Technologies

Scott Varner, Director of Information Technology

svarner@fcva.us

Voice 540.722.8261

MEMO

To: Board of Supervisors
From: Technology Committee
Subject: Board of Supervisors Information Technology Committee Report
Date: June 3, 2019

A Technologies Committee meeting was held in the First Floor Conference Room at 107 N Kent Street on Wednesday, May 29, 2019 at 8:15 a.m. Members present were Gary Lofton, Chairman, Judith McCann-Slaughter, Board Member, and Quaiser Absar, Citizen Member. Also, in attendance were Jay Tibbs, Deputy County Administrator, Scott Varner, IT and MIS Director, Benny Tyson, MIS Director, Patrick Fly, GIS Manager, Michelle Nugent, Network Operations Manager.

INFORMATION ONLY

1. The Director of Information Technology and MIS updated the Committee on current projects.
 - a. The Network Operations Team has completed the second year of the three-year plan to replace the network switching infrastructure. This project focused on the Public Safety Building and included adding additional network capacity as well as replacing all network switches and the building network core. The bulk of the work was completed on a Saturday to minimize any disruption to the 911 center.
 - b. The Pictometry fly over has been completed and all imagery delivered to the County on May 1, 2019. For the purpose of this flight the county was divided into two sections, Community and Neighborhood. The Community imagery was done at a resolution of 6" while the Neighborhood was done at 3". The flight was started in March 2019 and completed by Mid-April 2019. GIS staff is currently reviewing the imagery to ensure compliance with the standards set forth in the contract. Patrick Fly, GIS Manager, gave a brief demonstration of the Pictometry Online application.

During the Pictometry discussion, Mr. Lofton inquired about the data attributes on parcels on the GIS Website. The GIS Manager indicated that additional attributes could be attached to the parcel, if the necessary data exists. The GIS Manager will work with Planning, the Commissioner of Revenue, and other relevant departments to add proffers as an attribute.

- c. Core software systems for Public Safety were migrated to the County's virtual infrastructure and several systems upgraded during the process. The County is now providing oversight for the maintenance of the Public Safety software environment.
 - d. Network Operations is currently working with the hardware vendor and Sprint Communications to troubleshoot connectivity issues with the new mobile command terminals for the Sheriff's vehicles. All terminals have been imaged and once the connectivity issue is resolved, the units will be tested in the field by Sheriff's Office personnel. Pending the outcome of testing, the units will then be deployed. We are targeting June for completion of this project.
 - e. The fiber optic connection for the landfill is delayed due to VDOT permitting issues with Comcast. Most of the site work has been completed and is just waiting on VDOT to approve the final permit.
 - f. The County PIO, Deputy Clerk, and Information Technology have completed the setup and implementation of the Granicus Streaming Portal and Electronic Agenda Creation. We are now working to determine a soft launch date, training for the Board of Supervisors, and public information campaign.
 - g. Patrick Fly, GIS Manager, gave a brief update on the FEMA Floodplain Management project. The vendor that FEMA employed for the project had several technical issues and is restarting the project. The delay could be up to one year.
 - h. The GIS Department's new staff are already having a great impact on the addressing backlog the department was experiencing. The Director of Information Technology discussed creating a Deputy Information Technology Director position. The proposal would not include adding any additional staff. The Director will move forward with researching a job description and list of duties. The proposal will come back to the ITBOS Committee for action at a later time.
2. The Director of Information Technology and MIS updated the Committee on Cybersecurity initiatives.
 - a. The Committee discussed the necessity of implementing multi-factor authentication to add another layer of security to County systems.
 - b. The Committee was briefed on the upcoming 2nd year of mandatory cybersecurity training for all County staff.
 3. The Director of Information Technology and MIS along with the GIS manager updated the Committee on broadband grant opportunities to hopefully extend internet service to underserved areas of the County. The Director and GIS Manager attended a Virginia Telecommunications Initiative (VATI) input session in Glen Allen, Virginia, on May 28, 2019.

- a. USDA – The Director of Information Technology gave a brief overview of the grant requirements. Please see **Appendix A** for further information.
 - b. VATI – The Virginia Telecommunications Initiative (VATI) grant has now increased to \$19 million in funding for FY2020. The Director of Information Technology and the GIS Manager gave a brief overview of the grant requirements and discussed how the department is working toward capitalizing on some of this funding to improve citizen access to broadband. Please see **Appendix B** for further information.
4. The Committee reviewed and discussed changes to the ITBOS Committee Charter. The Director of Information Technology and MIS will make changes as requested and resubmit to the committee for approval before moving to the Board of Supervisors for approval.

Respectfully Submitted,

INFORMATION TECHNOLOGIES COMMITTEE

Gary Lofton, Chairman

Judith McCann-Slaughter

Douglas McCarthy

Quaiser Absar

Todd Robertson

By: _____
Scott Varner, Director of Information Technology and MIS

Appendix A

USDA Reconnect Grant Criteria

On March 23, 2018, Congress passed the Consolidated Appropriations Act, 2018 (the Act), which established a new broadband loan and grant pilot program, now called the Rural eConnectivity Pilot Program (ReConnect Program). The Act appropriated a budget authority of \$600,000,000 to be used on an expedited basis. For that reason, the United States Department of Agriculture (USDA) determined that it is in the public interest to move forward with developing procedures for the ReConnect Program within a Funding Opportunity Announcement (FOA) instead of rulemaking to meet the statutory mandate to implement this new program. An electronic copy of the ReConnect Program FOA is available under [Forms & Resources](#).

One of the essential goals of the ReConnect Program is to expand broadband service to rural areas without sufficient broadband access, defined as 10 megabits per second (Mbps) downstream and 1 Mbps upstream. The first round of applicants have three separate funding categories to choose from: 100 percent (%) loan, 50% loan / 50% grant, or 100% grant. Given the varying closing dates for each funding type, applicants will be limited to one application for this FOA.

To be eligible for a 100% loan or 50% loan / 50% grant, the proposed funded service area in an application must be in a rural area where 90% of the households do not have sufficient broadband access. To be eligible for a 100% grant, the proposed funded service area in an application must be in a rural area where 100% of the households do not have sufficient broadband access. No matter which funding type the applicant requests, the proposed network must be capable of providing service to every premise in the proposed funded service area at a speed of at minimum, 25 Mbps downstream and 3 Mbps upstream.

To be eligible to receive ReConnect Program funds, the proposed service area must meet various criteria. First, a proposed service area must contain at least 90 percent (%) of the households currently lack sufficient broadband access. Sufficient access to broadband means any rural area that has fixed, terrestrial broadband service delivering at least 10 megabits per second (Mbps) downstream and 1 Mbps upstream. For eligibility purposes, if an applicant is applying for multiple proposed funded service areas, each service area will be evaluated on a stand-alone basis.

A proposed funded service must also be located in a rural area. A rural area is any area that is not located in a city, town, or incorporated area that has a population of greater than 20,000 inhabitants or an urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants.

Appendix B

Virginia Telecommunications Initiative

The Virginia Telecommunications Initiative (VATI) has announced \$19 million in grants in FY 2020 available to local governments (includes towns, cities, counties, economic and industrial development authorities, broadband or wireless authorities, planning district commissions, etc.) to extend broadband service to currently unserved areas. To be eligible the local government must include a private-sector provider as a co-applicant.

The primary objective of VATI is to provide financial assistance to supplement construction costs by private sector broadband service providers, in partnership with local units of government to extend service to areas that presently are unserved by any broadband provider.

Applications must be submitted by a unit of government (Towns, Cities, Counties, Economic Development Authorities/Industrial Development Authorities, Broadband/Wireless Authorities, Planning District Commissions, School Districts, etc.) with a private sector provider(s) as a co-applicant. Eligible projects will be owned and operated by the private sector co-applicant.

VATI is designed to ensure that unserved areas of the Commonwealth have access to broadband speeds of at least 25 Mbps download and 3 Mbps upload. Projects proposing higher speeds in the most cost-efficient manner will receive funding priority. In each case, the co-applicant will be required to demonstrate how their proposed technology solution will deliver the promised speeds in the proposed area once operational and how capacity will be aggregated in the network design.

All applicants are required to have solicited public comment for a fifteen (15) day period before submitting applications to DHCD. If an application is received that has not undergone a fifteen (15) day public comment period, it will not be considered for review. Advertisement seeking Public Comment must be made in a non-legal, locally circulated newspaper with the largest general circulation, as well as posted on the locality website and in public buildings. The notices must provide the address, phone number, TDD, and times for submitting comments and grievances to the applicant locality. All comments must be provided to DHCD with the application

F

Development Impact Model – Oversight Committee (DIM-OC) COMMITTEE REPORT to the BOARD OF SUPERVISORS

Thursday, May 9, 2019 at 9:00 a.m.
107 NORTH KENT STREET, WINCHESTER, VIRGINIA

A Development Impact Model – Oversight Committee meeting was held in the Public Works Department Conference Room at 107 North Kent Street on Thursday, May 9, 2019 at 9:00 a.m.

ATTENDEES:

Committee Members Present:

Chuck DeHaven (BOS), Gary Lofton (BOS), Kris Tierney (County Admin.), Rob Frogale (TVBA), Stephen Pettler (TVBA).

Committee Members Absent:

Frank Wright (School Board), Roger Thomas (Planning Commission), Paige Manuel (Planning Commission).

Staff Present:

Mike Ruddy (Planning), Candice Perkins (Planning), Tyler Klein (Planning), Jay Tibbs (County Admin.), Rod Williams (County Admin.), Jason Robertson (Parks & Rec), Jon Turkel (Parks & Rec), Al Orndorff (FCPS), Kevin Kenney (FCPS & Planning Commission), Wayne Lee (FCPS).

Others Present:

Julie Herlands (Consultant, VP, Tischler-Bise), Colin McAweeney (Consultant, Tischler-Bise), Blaine Dunn (BOS), William Aikens (TVBA).

ITEMS REQUIRING ACTION BY BOARD OF SUPERVISORS:

1. Review and endorsement of the Capital Impacts Study and updated Development Impact Model (see attachments).

Frederick County has been working with Tischler-Bise to develop a Capital Impact Study and Model designed to evaluate the anticipated need for capital facilities based on growth and to determine the cost of those capital facilities to the County. Further, the model would determine the cost to the County for mitigating the infrastructure impacts associated with re-zonings. This Capital Impacts Study will assist in ensuring the County's Cash Proffer Policy complies with latest Virginia Cash Proffer legislation.

Staff and the consultant presented the draft final version of the Capital Impacts Study for Frederick County, Virginia to DIM-OC. The presentation covered what the model does and does not analyze and methodologies and cost analysis of cash proffer-eligible categories. Details and screenshots were provided of how the model will be used and Tischler-Bise went through an example of input and resulting impact.

Following the presentation and informed discussion, DIM-OC moved to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019. This motion for approval was conditioned on an adjustment to the school component of the model to reflect the use of school attendance zones for the attributable impact of a project on a school service area. Based on the Committee's direction, the model has been amended to update the school scenarios by attendance zone for each facility.

Following the endorsement of DIM-OC, a motion from the Board of Supervisors is being sought to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019.

ITEMS FOR INFORMATION ONLY

None.

Respectfully submitted,


Development Impact Model – Oversight Committee

By Mike Ruddy, AICP, Director – Planning and Development.



MEMORANDUM

TO: Board of Supervisors

FROM: Mike Ruddy, AICP, Director of Planning and Development 

RE: Review and endorsement of the Capital Impacts Study and updated Development Impact Model

DATE: June 5, 2019

Overview

Frederick County has been working with Tischler-Bise to develop a Capital Impacts Study and Model designed to evaluate the anticipated need for capital facilities based on growth and to determine the cost of those capital facilities to the County. Further, the model determines the cost to the County for mitigating the infrastructure impacts associated with re-zonings. This Capital Impact Study also assists in ensuring the County's Cash Proffer Policy complies with latest Virginia Cash Proffer legislation.

Please find attached the Capital Impacts Study, Frederick County, Virginia. The Executive Summary provides an overview of the study. This is supported by more detailed information regarding the study and model.

Report from 05/09/19 DIM-OC meeting.

The Development Impact Model - Oversight Committee (DIM-OC) met on Thursday, May 9, 2019 at 9:00 a.m. to review of the Capital Impacts Study and updated Development Impact Model.

At the DIM-OC meeting a presentation was made to DIM-OC by the consultant, Tischler-Bise, that covered what the model does and does not analyze, and methodologies and cost analysis of cash proffer-eligible categories. Details and screenshots were provided of how the model will be used and the consultants went through an example of input and resulting impact.

Following the presentation and informed discussion, DIM-OC moved to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019. This motion for approval was conditioned on an adjustment to the school

component of the model in order to reflect the use of school attendance zones for the attributable impact of a project on a service area school. Based on the Committee's direction, the model has been amended to update the school scenarios by attendance zone for each facility.

School capital impact service area adjustment.

In an effort to achieve a greater level of attribution of capital impacts to service areas, the model evaluated more granular service areas for the Schools, and also Fire and Rescue, capital impact analysis.

Several service area options were discussed with County Staff when determining the service area for the School analysis. As noted in the report, a properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e., Countywide or Urban and Rural) would reflect utilization of the schools within that area being analyzed. More detailed service areas (i.e., based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas for the School analysis were programmed based on the General Service Areas (i.e., Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. This would provide some flexibility as school boundaries are adjusted to address growth-related needs. After review from the Frederick County Development Impact Model Oversight Committee (DIM-OC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools. This adjustment is consistent with the consensus of the DIM-OC.

Recommendation.

The Development Impact Model–Oversight Committee forwarded a recommendation to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019.

This motion for approval was conditioned on an adjustment to the school component of the model to reflect the use of school attendance zones for the attributable impact of a project on a service area school. This adjustment has been incorporated into the study and model.

Action from the Board of Supervisors would be appropriate at this time.

Tischler-Bise and County Staff will be available to provide a brief overview of how the study and model is anticipated to be implemented by Frederick County.

MTR/slc

Attachment: Capital Impacts Study, Frederick County, Virginia

Capital Impacts Study

Frederick County, Virginia

Submitted to:

Frederick County, Virginia

June 3, 2019



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Bethesda, Maryland 20816

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CAPITAL IMPACTS STUDY

Frederick County, Virginia

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EXECUTIVE SUMMARY

Overview

TischlerBise has been retained by Frederick County, Virginia, to analyze the **capital impacts of new development**. The objective is to quantify the capital costs generated by new development in the County, specifically in light of changes to Cash Proffer law in Virginia. The assignment includes the development of a Capital Impacts Model (CapIM) for use in:

1. Calculating the “static” capital impact of new development by type of land use and
2. To allow County staff to use the Capital Impacts Model to determine the capital costs for development projects that take into consideration whether capacity is available or not (and therefore, whether a cash proffer can be offered and accepted by the County).

TischlerBise evaluated capital impacts for the following categories of public capital improvements: (1) Public Schools, (2) Parks and Recreation, (3) Public Safety: Sheriff, (4) Public Safety: Fire & Rescue, (5) Public Safety: Animal Protection, (6) Library, (7) General Government, (8) Courts, and (9) Environmental Services/Solid Waste. Methodologies and calculations are presented in this report as supporting documentation for estimating capital impacts from new growth as well as potential support for cash proffers.

Background on Cash Proffers

Cash proffers are one-time voluntary monetary commitments made at the time of rezoning to offset the impact on certain public facilities from new residential development. The funds ultimately collected from cash proffers are used to construct capital improvements to mitigate capital impacts with the goal of maintaining levels of service. Funds can only be used for **capital** improvements that provide **additional capacity**, not operations or maintenance. Cash proffer are calculated using level of service standards to account for infrastructure that may currently have excess capacity.

Cash proffers cannot be used to correct existing deficiencies. However, since cash proffers do not apply to “by-right” development but only apply during the rezoning process, only a portion of the impacts from new growth can be mitigated through cash proffers. Cash proffers are a small part of an overall funding strategy and should not be regarded as a total solution for infrastructure financing needs. Therefore, other strategies and revenue sources are needed to offset the impact to infrastructure from new growth.

Cash proffers are authorized under Virginia Code §15.2-2303 and §15.2-2298. A major change to cash proffer authority was enacted in 2016 affecting Section 15.2-2303.4(B) that added requirements to the acceptance of cash proffers. The new section states that localities cannot require an unreasonable proffer or deny a rezoning application or proffer condition amendment due to applicant’s failure or refusal to submit an unreasonable proffer.¹

The implementation of this change to the cash proffer law hinges on defining an unreasonable proffer, or more positively, defining a reasonable proffer. Defining reasonable proffers requires the analysis of existing capacity in public facilities as well as the demand for additional capacity from growth. This report and the accompanying Capital Impacts Model address this requirement specifically for Frederick County and provides a tool for ongoing implementation of the cash proffer law.

Furthermore, the changes to the cash proffer law restrict the infrastructure categories to public transportation facilities, public safety facilities, public school facilities, and public parks and further restricts the impacts that can be addressed to capacity improvements associated with construction projects.

¹ Virginia Code Section 15.2-2303.4(B) was revised in 2019 from restricting a local governing body from merely requesting or accepting an unreasonable proffer, to restricting a local governing body from requiring an unreasonable proffer. This allows a local governing body to discuss and negotiate with a developer to determine a reasonable proffer.

Capital Impacts Approach

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of land use for the infrastructure categories addressed in this study. The formula used to calculate each capital impact is diagrammed in a flow chart at the beginning of each chapter. Specific capital costs have been identified using local data and current dollars (2019). Because cash proffers reflect a point in time, the calculations and study should be updated periodically (typically 3 to 5 years). Costs reflect the direct impact of new development on the need for new facilities and infrastructure and do not reflect secondary or indirect impacts.

Capital impacts and resulting cash proffer amounts are calculated to recognize three key elements: ***need, benefit, and proportionality***.

- First, to justify a cash proffer for public facilities, it must be demonstrated that new development/rezonings will create a **need** for capital improvements (including an assessment of existing capacity).
- Second, new development/rezonings must derive a **benefit** from the payment of the cash proffers (i.e., in the form of public facilities constructed within a reasonable timeframe).
- Third, the cash proffer to be paid by a particular type of development (land use) should not exceed its **proportional** share of the capital cost for system improvements.

For each capital impact calculation, the report includes a summary table indicating the specific factors used to derive the amounts. These factors are referred to as “Level of Service” (LOS) standards.

The capital impacts outlined in this report reflect the actual cost to the County generated from new residential and nonresidential development, and as such, each represents the true capital impact generated by type of land use for each public facility category.

The Capital Impacts Model developed for the County by TischlerBise is the tool to use to determine if a cash proffer can be collected due to the presence of “excess capacity” or not. The Model provides a cash proffer calculation for County staff to use in determining the reasonableness of a cash proffer for a particular development project.

Methodologies

Any one of several legitimate methods may be used to calculate cash proffers. The choice of a particular method depends primarily on the service characteristics and planning requirements for the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and to some extent can be interchangeable, because each allocates facility costs in proportion to the needs created by development.

Reduced to its simplest terms, the process of calculating cash proffers involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of cash proffers can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities. The following paragraphs discuss three basic methods for calculating cash proffers and how those methods can be applied.

Plan-Based Calculation. The plan-based method allocates costs for a specified set of improvements to a specified amount of development. The improvements are identified by a facility plan and development is identified by a land use plan. In this method, the total cost of relevant facilities is divided by total future demand to calculate a cost per unit of demand. Then, the cost per unit of demand is multiplied by the amount of demand per unit of development (e.g., housing units or square feet of building area) in each category to arrive at a cost per specific unit of development (e.g., single family detached unit).

Incremental Expansion Calculation. The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as square feet per student). This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. The level of service standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, the cash proffer revenues would not be for renewal and/or replacement of existing facilities. Rather, revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community.

Cost Recovery or Buy-In Calculation. The rationale for the cost recovery approach is that new development is paying its share of the useful life and remaining capacity of facilities already built or land already purchased from which new growth will benefit. This methodology is often used for oversized systems.

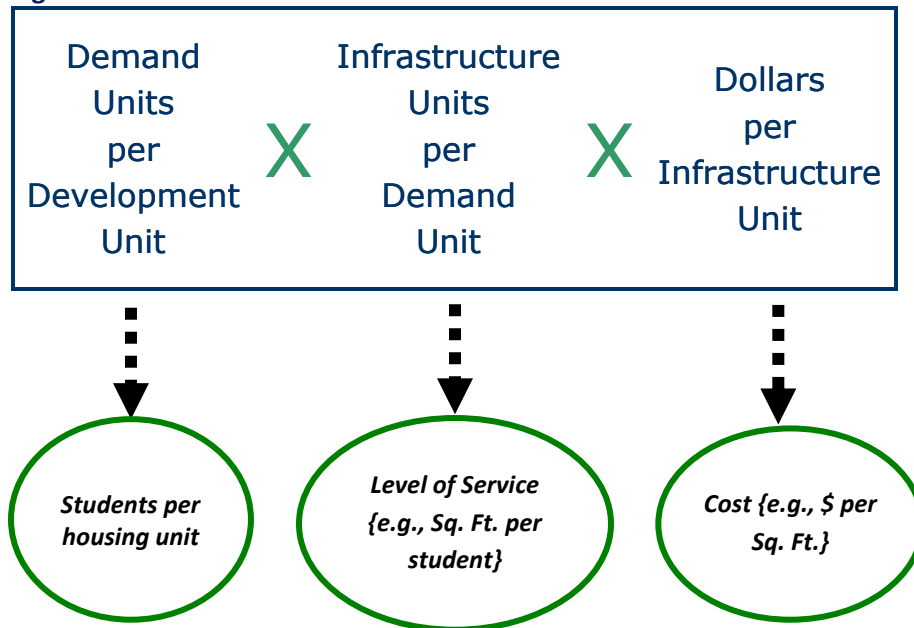
At the beginning of each capital facility chapter the chosen methodology will be explained and illustrated with a figure.

Generic Cash Proffer Calculation

In contrast to development exactions, which are typically referred to as project-level improvements, cash proffers fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction. The basic steps in a generic cash proffer formula are illustrated in Figure 1.

The first step is to determine an appropriate demand indicator, or service unit, for the particular type of infrastructure. The demand/service indicator measures the number of demand or service units for each unit of development. For example, an appropriate indicator of the demand for schools is growth in student enrollment and the increase in enrollment can be estimated from the average number of students per housing unit. The second step in the generic formula is to determine infrastructure units per demand unit, typically called **level of service (LOS) standards**. In keeping with the school example, a common LOS standard is square feet per student. The third step in the generic formula is the cost of various infrastructure units. To complete the school example, this part of the formula would establish the cost per square foot for school construction.

Figure 1. Generic Cash Proffer Formula



Credits

A general requirement common to cash proffer methodologies is the evaluation of *credits*. Two types of credits should be considered, **future revenue credits** and **site-specific credits**. Future revenue credits are necessary to avoid potential double payment situations arising from a one-time cash proffer payment plus the payment of other revenues that may also fund the same growth-related capital improvements.

Future revenue credits are dependent upon the cash proffer methodology used in the cost analysis. The incremental expansion methodology is best suited for public facilities that will be expanded incrementally in the future. Because new development will provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future principal payments on existing debt for public facilities. That is, because new development that may pay a cash proffer will also pay taxes to retire debt for the same type of infrastructure, a credit is included in the cash proffer calculation to account for this. (A credit is not necessary for interest payments if interest costs are not included in the cash proffers.)

The second type of credit is a **site-specific credit** for system improvements that have been included in the cash proffer calculations. A site-specific credit is handled during implementation and would reduce the cash proffer amount due to contributions of improvements or land that mitigate new development's impact on the infrastructure needs covered in the cash proffer program. Policies and procedures related to site-specific credits for system improvements should be addressed in the policy that establishes the Cash Proffer program. However, the general concept is that developers may be eligible for site-specific credits or reimbursements *only if they provide system improvements that have been included in the cash proffer calculations*. Project improvements normally required as part of the development approval process would not be eligible for credits against cash proffers.

Summary of Capital Impacts Approach

A summary of infrastructure categories is listed in Figure 2. To be eligible for a cash proffer, the facility must be for Public Schools, Parks and Recreation, or Public Safety (Sheriff, Fire, and Animal Services) which are noted in the figure. The noneligible infrastructure categories are included in the CapIM to capture a developments total capital impact to Frederick County. The County cannot collect a proffer for noneligible categories; however, understanding the full impact of a development (or a collection of developments) can be a tool in the long-term planning process.

The figure includes the components and serve areas used in the analysis as well. The geographies used for an infrastructure category were determined based on how the County service is being provided and through discussions with County staff. For example, most of the Parks & Recreation facilities serve only the local population, so the Urban and Rural service areas are implemented in the analysis. While the Sheriff's Office and Public Safety Building are serving the whole County.

More granular service areas were needed for the School and Fire capital impact analysis.

Several service area options were discussed with County staff when determining the service area for the School analysis. A properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e., countywide or Urban and Rural) would reflect utilization of the schools within that area being analyzed. More detailed service areas (i.e., based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas for the School analysis were programmed based on the General Service Areas (i.e., Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. This would provide some flexibility as school boundaries are adjusted to address growth-related needs. After review from the Frederick County Development Impact Model Oversight Committee (DIMOC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools.

Figure 2. Summary of Frederick County Capital Impacts Methodologies

| Type of Public Facility | Infrastructure Components and Geography Used | | Cost Allocation | Methodology |
|---|---|---|---|----------------------|
| Public Schools* | Countywide <ul style="list-style-type: none"> Transportation Vehicles Education Centers Support Facilities | Attendance Zones <ul style="list-style-type: none"> Elementary School Middle School High School | Public School Students from Residential Development | Incremental Approach |
| Parks and Recreation* | Countywide <ul style="list-style-type: none"> Indoor Recreation Facilities | Urban & Rural Service Area <ul style="list-style-type: none"> District, Community, Neighborhood Parks Paved & Unpaved Trails Community Centers | Residential | Incremental Approach |
| Public Safety: Sheriff* | <ul style="list-style-type: none"> Public Safety Building: Countywide | | Residential and Nonresidential | Incremental Approach |
| Public Safety: Fire & Rescue* | <ul style="list-style-type: none"> Fire Stations & Apparatuses: Fire Districts | | Residential and Nonresidential | Incremental Approach |
| Public Safety: Animal Protection* | <ul style="list-style-type: none"> Animal Shelter: Countywide | | Residential | Incremental Approach |
| Libraries | <ul style="list-style-type: none"> Library: Countywide | | Residential | Incremental Approach |
| General Government | <ul style="list-style-type: none"> General Government Facilities: Countywide | | Residential and Nonresidential | Incremental Approach |
| Courts | <ul style="list-style-type: none"> Court Facilities: Countywide | | Residential and Nonresidential | Incremental Approach |
| Environmental Services/Solid Waste | <ul style="list-style-type: none"> Convenience Sites: Urban & Rural Service Area Landfill: Countywide | | Residential | Incremental Approach |

***Note: the public facilities with an asterisk are eligible for cash proffers.**

LAND USE ASSUMPTIONS

This chapter documents the demographic data and land use projections to be used in the Capital Impacts Model for Frederick County. The following includes discussion and findings on:

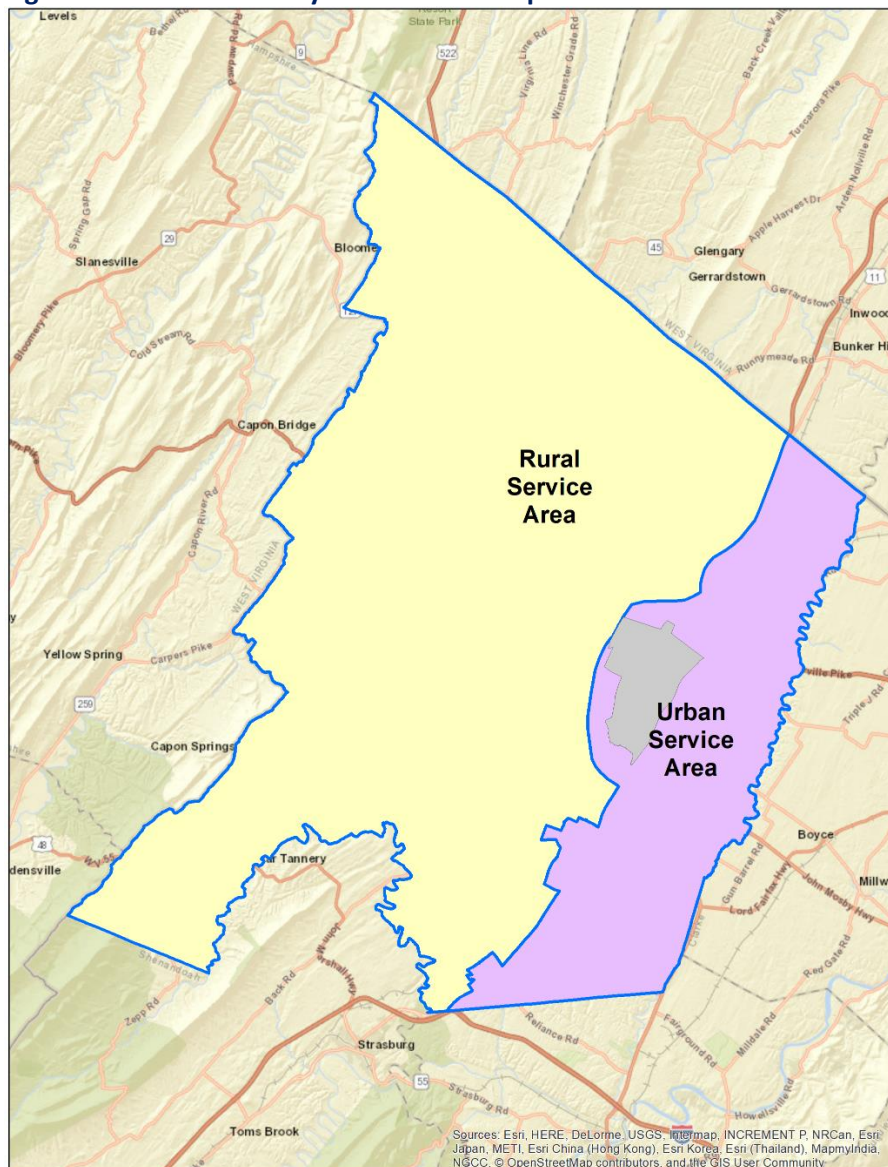
- Service Areas
- Household Sizes
- Current population and housing unit estimates
- Residential projections
- Student Generation Rates
- Current employment and nonresidential floor area estimates
- Nonresidential projections
- Vehicle Trip Generation

Note: calculations throughout this technical memo are based on an analysis conducted using Excel software. Results are discussed in the memo using one-and two-digit places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

Service Areas

After interviews with County staff, it has been decided that there will be two general service areas in the impact model: Rural and Urban. The Rural Service Area is west of Interstate 81 and Route 37, the Urban Service Area east of the highways. Furthermore, the Stephens City and Middletown municipalities are in the Urban Service Area. Being an independent city, development in the City of Winchester is not included in the Capital Impact Model. Additional service areas may be used for specific facilities in the model (i.e., school attendance zones and fire districts). In the impact model, development will generate costs within their service area and capacity issues will be identified with more detail compared to using the entire county as one service area.

Figure 3. Frederick County Service Area Map



Household Size

The capital impact analysis will use per capita standards and persons per housing unit (household size) to derive demand from housing types. (A household is a housing unit that is occupied by year-round residents.) When persons per housing unit are used in the calculations, infrastructure standards are derived using year-round population. TischlerBise recommends that capital impacts for residential development in Frederick County be analyzed according to the number of year-round residents per housing unit. Utilizing the most recent census tract data provided by the US Census Bureau, Figure 5 lists the 2016 countywide population and housing stock and persons per housing unit factors (PPHU).

In the lower half of Figure 5, the PPHU for each service area is found. **For single family units in the Rural Service Area the PPHU is 2.37 and in the Urban Service Area the PPHU is 2.62. For multifamily units in the Rural Service Area the PPHU is 1.46 and in the Urban Service Area the PPHU is 2.08.** Based on this information, households are smaller in the Rural Service Area compared to the Urban Service Area.

Figure 4. Countywide Persons per Housing Unit

| Units in Structure | Countywide | | |
|--------------------|------------|-------------|------|
| | Persons | Hsing Units | PPHU |
| Single Family [1] | 77,013 | 30,417 | 2.53 |
| Multifamily [2] | 4,121 | 2,055 | 2.01 |
| Total | 81,134 | 32,472 | 2.50 |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Figure 5. Persons Per Housing Unit by Service Area

| Units in Structure | Rural Service Area | | | Urban Service Area | | |
|----------------------------------|--------------------|-------------|------|--------------------|-------------|------|
| | Persons | Hsing Units | PPHU | Persons | Hsing Units | PPHU |
| Single Family, Detached/Attached | 24,178 | 10,139 | 2.38 | 47,390 | 17,955 | 2.64 |
| Mobile Homes | 1,081 | 499 | 2.17 | 4,365 | 1,825 | 2.39 |
| 2 to 4 | 127 | 82 | 1.55 | 895 | 454 | 1.97 |
| 5 or More | 254 | 179 | 1.42 | 2,846 | 1,342 | 2.12 |

| Units in Structure | Rural Service Area | | | Urban Service Area | | |
|--------------------|--------------------|-------------|------|--------------------|-------------|------|
| | Persons | Hsing Units | PPHU | Persons | Hsing Units | PPHU |
| Single Family [1] | 25,259 | 10,638 | 2.37 | 51,755 | 19,780 | 2.62 |
| Multifamily [2] | 381 | 260 | 1.46 | 3,741 | 1,795 | 2.08 |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Service Area Residential Proportion of Frederick County

In Figure 6 the population and housing units are totaled for each service area. According to census tract data from the US Census Bureau, about two-thirds of Frederick County's population live in the Urban Service Area. Additionally, the majority of single family and multifamily housing units are in the Urban Service Area. Most of the housing in the Rural Service Area is single family units.

Figure 6. Service Area Proportion of Frederick County, 2016

| Service Area | Population | % | Single Family Units [1] | % | Multifamily Units [2] | % |
|-------------------------|---------------|-------------|-------------------------|-------------|-----------------------|-------------|
| Rural Service Area | 25,639 | 32% | 10,638 | 35% | 260 | 13% |
| Urban Service Area | 55,495 | 68% | 19,780 | 65% | 1,795 | 87% |
| Frederick County | 81,134 | 100% | 30,417 | 100% | 2,055 | 100% |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Building Permit Activity

Provided by the County, Figure 7 lists the annual building permit data for 2013-2017. Over the past five years, there are been a steady increase of new single family homes (single family, townhouse, and mobile homes) being built, averaging 547 units annually. Significantly fewer multifamily units have been constructed, only 45 new units on average each year. In total, the County has grown by about 600 housing units every year, with an uptick in the last three years.

Figure 7. Building Permit Totals 2013-2017

| Housing Type | 2013 | 2014 | 2015 | 2016 | 2017 | Annual Average |
|---------------|------|------|------|------|------|----------------|
| Single Family | 300 | 325 | 428 | 473 | 501 | 405 |
| Townhouse | 56 | 111 | 99 | 180 | 104 | 110 |
| Multifamily | 0 | 0 | 137 | 24 | 64 | 45 |
| Mobile Home | 17 | 18 | 45 | 37 | 41 | 32 |
| Total | 373 | 454 | 709 | 714 | 710 | 592 |

Source: Frederick County Planning & Development Department

| Housing Type | Annual Average |
|---------------|----------------|
| Single Family | 547 |
| Multifamily | 45 |
| Total | 592 |

Current Population and Housing Units

The base year for the fiscal impact model is 2018. To calculate the County's population, building permit data is added to data from the Weldon Cooper Center for Public Service at the University of Virginia. As of July 1, 2017, the Weldon Cooper Center estimated the County's population to be 85,820. Since the estimate covers half of 2017, the new residents from half of the building permits in 2017 is added to this population estimate to find the base year's population. Shown in Figure 8, the persons per housing unit factors are applied to the building permit totals to find the residents generated from the new units in the second half of 2017. As a result of adding the new residents to the 2017 population estimate, there are 86,702 residents in the base year.

Figure 8. Countywide Base Year Population

| Housing Type | Half of 2017 Building Permits [1] | Persons per Housing Unit [2] | New Residents Generated |
|---------------|-----------------------------------|------------------------------|-------------------------|
| Single Family | 323 | 2.53 | 818 |
| Multifamily | 32 | 2.01 | 64 |
| Total | 355 | | 882 |

| July 1, 2017 Pop. Estimate [3] | Base Year (2018) Pop. Estimate |
|--------------------------------|--------------------------------|
| 85,820 | 86,702 |

[1] Source: Frederick County Planning & Development Department

[2] Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

[3] Source: Demographics Research Group of the Weldon Cooper Center for Public Service, March 2017

Population estimates for each service area is necessary as well. To estimate the base year population in each service area, the population split found in Figure 6 is applied (32 percent Rural/68 percent Urban). Shown below, there are 27,399 residents estimated to be in the Rural Service Area and 59,303 residents estimated to be in the Urban Service Area.

Figure 9. Base Year Population by Service Area

| Population | Base Year 2018 |
|-------------------------|----------------|
| Rural Service Area | 27,399 |
| Urban Service Area | 59,303 |
| Countywide Total | 86,702 |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Weldon Cooper Center for Public Service, March 2017; TischlerBise analysis

Base year housing totals are provided by County staff. To align with household size data, single family-detached, single family-attached, and mobile homes are combined into the single family category. As a result, 96 percent of the 35,566 housing units in Frederick County are single family.

Figure 10. Countywide Base Year Housing Units

| Housing Type | Units | % |
|--------------------------|---------------|-------------|
| Single Family - Detached | 27,914 | 78% |
| Single Family - Attached | 3,918 | 11% |
| Multifamily | 1,248 | 4% |
| Mobile Homes | 2,486 | 7% |
| Total | 35,566 | 100% |

| Housing Type | Units | % |
|---------------|---------------|-------------|
| Single Family | 34,318 | 96% |
| Multifamily | 1,248 | 4% |
| Total | 35,566 | 100% |

Source: Frederick County Planning & Development Department

Along with population, the housing stock for each service area needs to be estimated for the capital impact model. By applying the US Census data in Figure 6 to the Countywide housing totals, the single family and multifamily housing stock is estimated. Shown in Figure 11, there are 12,160 housing units in the Rural Service Area and 23,406 housing units in the Urban Service Area.

Figure 11. Service Area Base Year Housing Unit

| Service Area | Base Year
2018 |
|---------------------------|-------------------|
| Rural Service Area | |
| Single Family Units | 12,002 |
| Multifamily Units | 158 |
| Total | 12,160 |
| Urban Service Area | |
| Single Family Units | 22,316 |
| Multifamily Units | 1,090 |
| Total | 23,406 |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Frederick County Planning & Development Dept; TischlerBise analysis

Population and Housing Unit Projections

Countywide population projections were estimated by applying a straight-line approach to the University of Virginia's Weldon Cooper Center for Public Service 2025 and 2030 population estimates. In the next ten years, the County's population is projected to increase by 14 percent, or 11,790 residents. The annual percent increase in population is applied to housing totals to project housing development. Over 4,700 housing units are estimated to develop in the next ten years, the majority being single family.

To estimate the service areas' population and housing unit totals, the current proportional splits for population and housing units are applied to the Countywide totals. Nearly 70 percent of the population growth over the next ten years in the Frederick County is anticipated to occur in the Urban Service Area.

Figure 12. Population and Housing Unit Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Population | 86,702 | 87,748 | 88,794 | 89,839 | 90,885 | 91,931 | 92,977 | 94,023 | 95,512 | 97,002 | 98,492 | 11,790 |
| | <i>Increase</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,490</i> | <i>1,490</i> | <i>1,490</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 34,318 | 34,727 | 35,136 | 35,545 | 35,954 | 36,363 | 36,772 | 37,181 | 37,761 | 38,341 | 38,921 | 4,603 |
| Multifamily | 1,248 | 1,263 | 1,278 | 1,293 | 1,307 | 1,322 | 1,337 | 1,352 | 1,373 | 1,394 | 1,415 | 167 |
| Total | 35,566 | 35,990 | 36,414 | 36,838 | 37,262 | 37,685 | 38,109 | 38,533 | 39,134 | 39,735 | 40,336 | 4,770 |
| | <i>Increase</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>601</i> | <i>601</i> | <i>601</i> | |
| Rural Service Area | | | | | | | | | | | | |
| Population | 27,399 | 27,729 | 28,059 | 28,390 | 28,720 | 29,051 | 29,381 | 29,712 | 30,183 | 30,653 | 31,124 | 3,726 |
| | <i>Increase</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>471</i> | <i>471</i> | <i>471</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 12,002 | 12,145 | 12,288 | 12,431 | 12,574 | 12,717 | 12,860 | 13,003 | 13,206 | 13,409 | 13,611 | 1,610 |
| Multifamily | 158 | 160 | 162 | 164 | 165 | 167 | 169 | 171 | 174 | 176 | 179 | 21 |
| Total | 12,160 | 12,305 | 12,450 | 12,594 | 12,739 | 12,884 | 13,029 | 13,174 | 13,380 | 13,585 | 13,791 | 1,631 |
| | <i>Increase</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>205</i> | <i>205</i> | <i>205</i> | |
| Urban Service Area | | | | | | | | | | | | |
| Population | 59,303 | 60,019 | 60,734 | 61,449 | 62,165 | 62,880 | 63,595 | 64,311 | 65,330 | 66,349 | 67,368 | 8,064 |
| | <i>Increase</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>1,019</i> | <i>1,019</i> | <i>1,019</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 22,316 | 22,582 | 22,848 | 23,114 | 23,380 | 23,646 | 23,912 | 24,178 | 24,555 | 24,932 | 25,309 | 2,993 |
| Multifamily | 1,090 | 1,103 | 1,116 | 1,129 | 1,142 | 1,155 | 1,168 | 1,181 | 1,199 | 1,218 | 1,236 | 146 |
| Total | 23,406 | 23,685 | 23,964 | 24,243 | 24,522 | 24,801 | 25,080 | 25,359 | 25,755 | 26,150 | 26,546 | 3,139 |
| | <i>Increase</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>396</i> | <i>396</i> | <i>396</i> | |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Weldon Cooper Center for Public Service, March 2017; TischlerBise analysis

Student Generation Rates and Current Enrollment

Frederick County provided student generation rates for elementary, middle, and high school. The term "student generation rate" refers to the number of public school students per housing unit in the County. Public school students are a subset of school-aged children, which also includes students in private schools and home-schooled children. Student generation rates (SGR) for single family-detached, single family-attached, multifamily, and mobile home units are provided in Figure 13.

Figure 13. Student Generation Rates

| Housing Type | Elem School SGR | Middle School SGR | High School SGR | Total SGR |
|------------------------|-----------------|-------------------|-----------------|-----------|
| Single Family-Detached | 0.155 | 0.091 | 0.126 | 0.371 |
| Single Family-Attached | 0.188 | 0.085 | 0.093 | 0.367 |
| Multifamily | 0.164 | 0.076 | 0.077 | 0.317 |
| Mobile Home | 0.220 | 0.109 | 0.123 | 0.452 |

Source: Frederick County Planning & Development Dept

From information provided by Frederick County staff, the current student enrollment is 13,354.

Figure 14. Current Student Enrollment, as of Spring 2018

| Grade Level | Number of Students | Percent of Total |
|--------------|--------------------|------------------|
| Elementary | 5,828 | 44% |
| Middle | 3,243 | 24% |
| High | 4,283 | 32% |
| Total | 13,354 | 100% |

Source: Frederick County Planning & Development Dept

Student Generation Projections

Student enrollment is projected based on housing growth. In the housing projections, single family units include single family-detached, single family-attached, and mobile homes. To accurately apply the student generation rate to the housing projections, the weighted average of the three housing types is calculated. Over the next ten years, it is projected that Frederick County will increase by 1,757 students. The largest increase is in the Elementary school level.

Figure 15. Countywide Student Enrollment Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|-------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Students | | | | | | | | | | | | |
| Elementary | 5,828 | 5,884 | 5,953 | 6,023 | 6,092 | 6,161 | 6,231 | 6,300 | 6,398 | 6,496 | 6,595 | 767 |
| Middle | 3,243 | 3,274 | 3,313 | 3,351 | 3,390 | 3,428 | 3,467 | 3,506 | 3,560 | 3,615 | 3,670 | 427 |
| High | 4,283 | 4,324 | 4,375 | 4,426 | 4,477 | 4,528 | 4,579 | 4,630 | 4,702 | 4,774 | 4,846 | 563 |
| Total | 13,354 | 13,483 | 13,641 | 13,800 | 13,959 | 14,118 | 14,277 | 14,435 | 14,660 | 14,886 | 15,111 | 1,757 |
| | <i>Increase</i> | <i>129</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>225</i> | <i>225</i> | <i>225</i> | |

Source: Frederick County Planning & Development Dept; TischlerBise analysis

Current Employment and Nonresidential Floor Area Estimates

To allow for employment estimates to be determined for the service areas, base year data is sourced from the ESRI's online Business Analyst database. Organized by NAICS code, Figure 16 lists the 2018 employment in Frederick County. It is estimated that there are 28,212 jobs in the County.

Figure 16. 2018 Countywide Employment by NAICS Code

| NAICS Sector | Employment | % |
|---|---------------|-------------|
| Agriculture, Forestry, Fishing & Hunting | 95 | 0.3% |
| Mining | 50 | 0.2% |
| Utilities | 194 | 0.7% |
| Construction | 2,978 | 10.6% |
| Manufacturing | 4,480 | 15.9% |
| Wholesale Trade | 2,127 | 7.5% |
| Retail Trade | 4,838 | 17.1% |
| Transportation & Warehousing | 907 | 3.2% |
| Information | 363 | 1.3% |
| Finance & Insurance | 542 | 1.9% |
| Real Estate, Rental & Leasing | 529 | 1.9% |
| Professional, Scientific & Tech Services | 1,161 | 4.1% |
| Management of Companies & Enterprises | 4 | 0.0% |
| Administrative & Support | 587 | 2.1% |
| Educational Services | 2,019 | 7.2% |
| Health Care & Social Assistance | 1,127 | 4.0% |
| Arts, Entertainment & Recreation | 256 | 0.9% |
| Accommodation & Food Services | 3,333 | 11.8% |
| Other Services (except Public Administration) | 1,475 | 5.2% |
| Public Administration | 1,147 | 4.1% |
| Total | 28,212 | 100% |

Source: ESRI Business Analyst, 2018

To streamline projections, the NAICS employment totals are simplified to four industry sectors: Retail, Office, Industrial, and Institutional. In Figure 17, it is shown that the largest employment industry in the County is Industrial. Retail has a significant presence as well, while Office and Institutional have a similar proportion of the employment market.

Figure 17. Base Year Countywide Employment by Industry Sector

| Industry | Employment | % |
|---------------|---------------|-------------|
| Retail | 8,427 | 30% |
| Office | 4,661 | 17% |
| Industrial | 10,831 | 38% |
| Institutional | 4,293 | 15% |
| Total | 28,212 | 100% |

Source: ESRI Business Analyst, 2018

Base year countywide nonresidential floor area has been provided by the Planning & Development Department. As of 2018, there is 19.2 million square feet of Industrial floor area, 6 million square feet of Retail, 5.2 million square feet of Institutional, and 1.9 million square feet of Office totaling 32.2 million square feet. Following development trends, the Industrial industry sector tends to have a large floor area due to warehousing and manufacturing developments. Conversely, the Office industry sector requires a much smaller floor area to conduct business.

Figure 18. Base Year Countywide Nonresidential Floor Area by Industry Sector

| Industry | Nonres. Floor Area (sq. ft.) | % |
|---------------|------------------------------|-------------|
| Retail | 5,950,977 | 18% |
| Office | 1,894,270 | 6% |
| Industrial | 19,161,953 | 60% |
| Institutional | 5,173,527 | 16% |
| Total | 32,180,727 | 100% |

Source: Frederick County Planning & Development Dept

In Figure 19, the County's square foot per job factors are found by applying the base year employment to the nonresidential floor area. As shown in the figure, it is expected that the Industrial and Institutional industries have much higher factors because of the uses of the space (i.e. warehousing and schools, respectively). These factors are used to determine the floor area in the capital impact model's service areas.

Figure 19. Square Foot per Job Factors

| Industry | Nonres. Floor Area (sq. ft.) | Employment | Sq. Ft. per Job |
|---------------|------------------------------|---------------|-----------------|
| Retail | 5,950,977 | 8,427 | 706 |
| Office | 1,894,270 | 4,661 | 406 |
| Industrial | 19,161,953 | 10,831 | 1,769 |
| Institutional | 5,173,527 | 4,293 | 1,205 |
| Total | 32,180,727 | 28,212 | 1,141 |

Source: Frederick County Planning & Development Dept;
ESRI Business Analyst; TischlerBise analysis

Service Area Current Employment and Nonresidential Floor Area

As noted above, at least two service areas are anticipated to be used in the capital impacts model: Rural and Urban. A map is provided at the begin of this memo, Figure 3. ESRI's online Business Analyst tool is used to determine the employment split between the areas. Shown in Figure 20, 72 percent of the jobs in Frederick County are in the Urban Service Area. In the Urban Service Area, the Industrial category has over 7,800 jobs and the Retail sector has over 6,500 jobs, while the other two sectors have over 3,000 jobs. In the Rural Service Area, there are approximately 7,300 jobs (26 percent of the County), the Industrial industry being the largest employer.

Figure 20. Job Split by Service Area

| Industry | Rural | | Urban | | Total |
|---------------|-------|-----|--------|-----|--------|
| | Jobs | % | Jobs | % | |
| Retail | 1,897 | 23% | 6,530 | 77% | 8,427 |
| Office | 1,353 | 29% | 3,308 | 71% | 4,661 |
| Industrial | 3,017 | 28% | 7,814 | 72% | 10,831 |
| Institutional | 1,005 | 23% | 3,288 | 77% | 4,293 |
| Total | 7,272 | 26% | 20,940 | 74% | 28,212 |

Source: ESRI Business Analyst, 2018

The square foot per job factors listed in Figure 19 are applied to the employment totals in the service areas to calculate the nonresidential floor area. In the Urban Service Area, there is estimated 23.7 million square feet of nonresidential floor area, the Industrial industry accounting for the highest share. In the Rural Service Area, there is estimated to be 8.4 million square feet of nonresidential floor area, the Industrial industry accounting for the highest share as well. Overall, about 74 percent of the nonresidential floor area in the County is in the Urban Service Area.

Figure 21. Nonresidential Floor Area by Service Area

| Industry | Rural | | Urban | |
|---------------|-------|-----------|--------|------------|
| | Jobs | Sq. Ft. | Jobs | Sq. Ft. |
| Retail | 1,897 | 1,339,734 | 6,530 | 4,611,243 |
| Office | 1,353 | 549,857 | 3,308 | 1,344,414 |
| Industrial | 3,017 | 5,338,211 | 7,814 | 13,823,742 |
| Institutional | 1,005 | 1,210,696 | 3,288 | 3,962,831 |
| Total | 7,272 | 8,438,497 | 20,940 | 23,742,230 |

Source: Frederick County Planning & Development Dept; ESRI Business Analyst; TischlerBise analysis

Employment and Nonresidential Floor Area Projections

According to the County's 2035 *Comprehensive Plan*, from 2015 to 2025 the County is expected to increase in 6,145 jobs. Staying consistent with the County's *Plan*, an average of 615 jobs per year is applied to the Countywide base year total to project employment in the Capital Impact Model. Furthermore, the *Plan* anticipates Institutional (healthcare) and Retail jobs to be the biggest shares of the job increase; Industrial then Office having the smallest shares. To account for this, Figure 22 lists the assumed percent of the job growth for each industry that is used in the projections.

Figure 22. Percent of Job Growth by Industry

| Industry | Percent of Job Growth |
|---------------|-----------------------|
| Retail | 30% |
| Office | 15% |
| Industrial | 25% |
| Institutional | 30% |

Nonresidential floor area is projected based on the employment growth and average square feet per employee factors from the Institute of Transportation Engineers' (ITE). Calculated in the last column in Figure 23 are the square feet per employee factors for a number of land uses. Based on the employment totals, the Shopping Center (ITE 820) land use factor will be used to project the Retail floor area, General Office (ITE 710) for Office, Manufacturing (ITE 140) for Industrial, and Hospital (ITE 610) for Institutional.

Figure 23. Institute of Transportation Engineers' Demand Factors

| ITE Code | Land Use | Demand Unit | Wkdy Trip Ends Per Dmd Unit* | Wkdy Trip Ends Per Employee* | Emp Per Dmd Unit | Sq Ft Per Emp |
|----------|----------------------------|-------------|------------------------------|------------------------------|------------------|---------------|
| 110 | Light Industrial | 1,000 Sq Ft | 4.96 | 3.05 | 1.63 | 615 |
| 130 | Industrial Park | 1,000 Sq Ft | 3.37 | 2.91 | 1.16 | 864 |
| 140 | Manufacturing | 1,000 Sq Ft | 3.93 | 2.47 | 1.59 | 628 |
| 150 | Warehousing | 1,000 Sq Ft | 1.74 | 5.05 | 0.34 | 2,902 |
| 254 | Assisted Living | bed | 2.60 | 4.24 | 0.61 | na |
| 320 | Motel | room | 3.35 | 25.17 | 0.13 | na |
| 520 | Elementary School | 1,000 Sq Ft | 19.52 | 21.00 | 0.93 | 1,076 |
| 530 | High School | 1,000 Sq Ft | 14.07 | 22.25 | 0.63 | 1,581 |
| 540 | Community College | student | 1.15 | 14.61 | 0.08 | na |
| 550 | University/College | student | 1.56 | 8.89 | 0.18 | na |
| 565 | Day Care | student | 4.09 | 21.38 | 0.19 | na |
| 610 | Hospital | 1,000 Sq Ft | 10.72 | 3.79 | 2.83 | 354 |
| 620 | Nursing Home | 1,000 Sq Ft | 6.64 | 2.91 | 2.28 | 438 |
| 710 | General Office (avg size) | 1,000 Sq Ft | 9.74 | 3.28 | 2.97 | 337 |
| 760 | Research & Dev Center | 1,000 Sq Ft | 11.26 | 3.29 | 3.42 | 292 |
| 770 | Business Park | 1,000 Sq Ft | 12.44 | 4.04 | 3.08 | 325 |
| 820 | Shopping Center (avg size) | 1,000 Sq Ft | 37.75 | 16.11 | 2.34 | 427 |

* Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017)

Listed in Figure 24, over the next ten years, it is projected that Frederick County will grow by 6,145 jobs.

- Institutional sector is projected to grow by 1,844 jobs,
- Retail sector by 1,844 jobs,
- Industrial sector by 1,536 jobs, and
- Office sector by 922 jobs.

Based on the job growth, the County is projected to grow by 2.7 million square feet of nonresidential floor area. About a third of the growth comes from the Industrial sector, while the Retail and Institutional sectors have significant growth as well.

Additionally, Countywide employment projections are split into the two service areas based on the proportional base year totals. The Urban Service Area is projected to grow by 4,603 jobs and the Rural Service Area is projected to grow by 1,542 jobs. To calculate the floor area in each service area, the square foot per job factors are applied to the job growth. As a result, the Urban Service Area grows by 2 million square feet and the Rural Service Area grows by 700,000 square feet.

Figure 24. Employment and Nonresidential Floor Area Projections

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 8,427 | 8,611 | 8,796 | 8,980 | 9,164 | 9,349 | 9,533 | 9,717 | 9,902 | 10,086 | 10,271 | 1,844 |
| Office | 4,661 | 4,753 | 4,845 | 4,938 | 5,030 | 5,122 | 5,214 | 5,306 | 5,398 | 5,491 | 5,583 | 922 |
| Industrial | 10,831 | 10,985 | 11,138 | 11,292 | 11,446 | 11,599 | 11,753 | 11,906 | 12,060 | 12,214 | 12,367 | 1,536 |
| Institutional | 4,293 | 4,477 | 4,662 | 4,846 | 5,030 | 5,215 | 5,399 | 5,583 | 5,768 | 5,952 | 6,137 | 1,844 |
| Total | 28,212 | 28,827 | 29,441 | 30,056 | 30,670 | 31,285 | 31,899 | 32,514 | 33,128 | 33,743 | 34,357 | 6,145 |
| | <i>Increase</i> | 615 | 615 | 614 | 615 | 615 | 614 | 615 | 615 | 615 | 615 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 5,951 | 6,030 | 6,108 | 6,187 | 6,266 | 6,344 | 6,423 | 6,502 | 6,580 | 6,659 | 6,738 | 787 |
| Office | 1,894 | 1,925 | 1,956 | 1,987 | 2,018 | 2,049 | 2,081 | 2,112 | 2,143 | 2,174 | 2,205 | 310 |
| Industrial | 19,162 | 19,259 | 19,355 | 19,452 | 19,548 | 19,645 | 19,741 | 19,838 | 19,934 | 20,031 | 20,127 | 966 |
| Institutional | 5,174 | 5,239 | 5,304 | 5,369 | 5,434 | 5,499 | 5,565 | 5,630 | 5,695 | 5,760 | 5,825 | 652 |
| Total | 32,181 | 32,452 | 32,724 | 32,995 | 33,266 | 33,538 | 33,809 | 34,081 | 34,352 | 34,624 | 34,895 | 2,714 |
| | <i>Increase</i> | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | |
| Rural Service Area | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 1,897 | 1,939 | 1,980 | 2,022 | 2,063 | 2,105 | 2,146 | 2,188 | 2,229 | 2,271 | 2,312 | 415 |
| Office | 1,353 | 1,380 | 1,406 | 1,433 | 1,460 | 1,487 | 1,514 | 1,540 | 1,567 | 1,594 | 1,621 | 268 |
| Industrial | 3,017 | 3,060 | 3,103 | 3,146 | 3,189 | 3,231 | 3,274 | 3,317 | 3,360 | 3,403 | 3,445 | 428 |
| Institutional | 1,005 | 1,048 | 1,091 | 1,134 | 1,177 | 1,220 | 1,263 | 1,307 | 1,350 | 1,393 | 1,436 | 431 |
| Total | 7,272 | 7,426 | 7,580 | 7,735 | 7,889 | 8,043 | 8,197 | 8,351 | 8,506 | 8,660 | 8,814 | 1,542 |
| | <i>Increase</i> | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 1,340 | 1,357 | 1,375 | 1,393 | 1,411 | 1,428 | 1,446 | 1,464 | 1,481 | 1,499 | 1,517 | 177 |
| Office | 550 | 559 | 568 | 577 | 586 | 595 | 604 | 613 | 622 | 631 | 640 | 90 |
| Industrial | 5,338 | 5,365 | 5,392 | 5,419 | 5,446 | 5,473 | 5,500 | 5,526 | 5,553 | 5,580 | 5,607 | 269 |
| Institutional | 1,211 | 1,226 | 1,241 | 1,256 | 1,272 | 1,287 | 1,302 | 1,317 | 1,333 | 1,348 | 1,363 | 153 |
| Total | 8,438 | 8,507 | 8,576 | 8,645 | 8,714 | 8,783 | 8,852 | 8,921 | 8,989 | 9,058 | 9,127 | 689 |
| | <i>Increase</i> | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | |
| Urban Service Area | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 6,530 | 6,673 | 6,816 | 6,958 | 7,101 | 7,244 | 7,387 | 7,530 | 7,673 | 7,815 | 7,958 | 1,428 |
| Office | 3,308 | 3,373 | 3,439 | 3,504 | 3,570 | 3,635 | 3,701 | 3,766 | 3,831 | 3,897 | 3,962 | 654 |
| Industrial | 7,814 | 7,924 | 8,035 | 8,146 | 8,257 | 8,368 | 8,479 | 8,589 | 8,700 | 8,811 | 8,922 | 1,108 |
| Institutional | 3,288 | 3,430 | 3,571 | 3,712 | 3,853 | 3,994 | 4,136 | 4,277 | 4,418 | 4,559 | 4,700 | 1,412 |
| Total | 20,940 | 21,400 | 21,861 | 22,321 | 22,781 | 23,241 | 23,702 | 24,162 | 24,622 | 25,083 | 25,543 | 4,603 |
| | <i>Increase</i> | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 4,611 | 4,672 | 4,733 | 4,794 | 4,855 | 4,916 | 4,977 | 5,038 | 5,099 | 5,160 | 5,221 | 610 |
| Office | 1,344 | 1,366 | 1,388 | 1,411 | 1,433 | 1,455 | 1,477 | 1,499 | 1,521 | 1,543 | 1,565 | 220 |
| Industrial | 13,824 | 13,893 | 13,963 | 14,033 | 14,102 | 14,172 | 14,242 | 14,311 | 14,381 | 14,451 | 14,520 | 697 |
| Institutional | 3,963 | 4,013 | 4,063 | 4,113 | 4,163 | 4,212 | 4,262 | 4,312 | 4,362 | 4,412 | 4,462 | 499 |
| Total | 23,742 | 23,945 | 24,147 | 24,350 | 24,553 | 24,755 | 24,958 | 25,160 | 25,363 | 25,565 | 25,768 | 2,026 |
| | <i>Increase</i> | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | |

Source: Frederick County 2035 Comprehensive Plan; Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); ESRI Business Analyst; TischlerBise analysis

Vehicle Trip Generation

Residential Vehicle Trips

A customized trip rate is calculated for the single family and multifamily units in Frederick County. In Figure 25, the most recent data from the American Community Survey is inputted into equations provided by the ITE to calculate the trip ends per housing unit factor. A single family unit is estimated to generate 10.54 trip ends on an average weekday and a multifamily unit is estimated to generate 5.61 trip ends on an average weekday.

Figure 25. Customized Residential Trip End Rates

| | Vehicles Available (1) | Households (2) | | Total Households | Vehicles per Household by Tenure |
|----------------------|------------------------|----------------------|-------------------|------------------|----------------------------------|
| | | Single Family Units* | Multifamily Units | | |
| Owner-occupied | 55,623 | 23,166 | 200 | 23,366 | 2.38 |
| Renter-occupied | 10,568 | 4,732 | 1,816 | 6,548 | 1.61 |
| TOTAL | 66,191 | 27,898 | 2,016 | 29,914 | 2.21 |
| Housing Units (6) => | | 30,417 | 2,055 | 32,472 | |

| | Persons (3) | Trip Ends (4) | Vehicles by Type of Housing | Trip Ends (5) | Average Trip Ends | Trip Ends per Housing Unit | ITE Trip Ends Per Unit | Difference from ITE |
|-------------------|---------------|----------------|-----------------------------|----------------|-------------------|----------------------------|------------------------|---------------------|
| Single Family | 77,013 | 231,672 | 62,784 | 409,313 | 320,493 | 10.54 | 9.44 | 12% |
| Multifamily Units | 4,121 | 9,356 | 3,407 | 13,717 | 11,537 | 5.61 | 5.44 | 3% |
| TOTAL | 81,134 | 241,028 | 66,191 | 423,030 | 332,029 | 10.23 | | |

* Includes Single Family Detached, Attached, and Manufactured Homes

(1) Vehicles available by tenure from Table B25046, 2011-2015 American Community Survey 5-Year Estimates.

(2) Households by tenure and units in structure from Table B25032, American Community Survey, 2011-2015.

(3) Persons by units in structure from Table B25033, American Community Survey, 2011-2015.

(4) Vehicle trips ends based on persons using formulas from [Trip Generation](#) (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $\text{EXP}(0.89 \cdot \text{LN}(\text{persons}) + 1.72)$. To approximate the average population of the ITE studies, persons were divided by 286 and the equation result multiplied by 286. For multifamily housing (ITE 221), the fitted curve equation is $(2.29 \cdot \text{persons}) - 81.02$.

(5) Vehicle trip ends based on vehicles available using formulas from [Trip Generation](#) (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $\text{EXP}(0.99 \cdot \text{LN}(\text{vehides}) + 1.93)$. To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 485 and the equation result multiplied by 485.

For multifamily housing (ITE 220), the fitted curve equation is $(3.94 \cdot \text{vehides}) + 293.58$ (ITE 2012).

(6) Housing units from Table B25024, American Community Survey, 2011-2015.

Residential Vehicle Trips Adjustment Factors

A vehicle trip end is the out-bound or in-bound leg of a vehicle trip. As a result, to not double count trips, a standard 50 percent adjustment is applied to trip ends to calculate a vehicle trip. For example, the out-bound trip from a person's home to work is attributed to the housing unit and the trip from work back home is attributed to the employer.

However, an additional adjustment is necessary to capture County residents' work-bound trips that are outside of the County. The trip adjustment factor includes two components. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of out-bound trips (which are 50 percent of all trip ends). Also, utilizing the most recent data from the Census Bureau's web application "OnTheMap," 77 percent of the Frederick County workers travel outside the County for work. In combination, these factors account for 12 percent of additional production trips ($0.31 \times 0.50 \times 0.77 = 0.12$). Shown in Figure 26, the total adjustment factor for residential housing units includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (12 percent of production trips) for a total of 62 percent.

Figure 26. Frederick County Trip Adjustment Factor for Commuters

| | |
|--|------------|
| Employed Frederick County Residents (2015) | 38,410 |
| Frederick County Residents Working in County (2015) | 8,830 |
| Frederick County Residents Commuting Outside County for Work | 29,580 |
| Percent Commuting out of the County | 77% |
| Additional Production Trips | 12% |
| | |
| General Trip Adjustment Factor | 50% |
| Residential Trip Adjustment Factor | 62% |

Source: U.S. Census, OnTheMap Application

Nonresidential Vehicle Trips

Vehicle trip generation for nonresidential land uses are calculated by using ITE's average daily trip end rates and adjustment factors found in their recently published 10th edition of *Trip Generation*. **The weekday trip end per 1,000 square feet factors highlighted in Figure 27 are used to estimate the trip generation in Frederick County.**

Figure 27. Institute of Transportation Engineers Nonresidential Trip Factors

| ITE Code | Land Use | Demand Unit | Wkdy Trip Ends Per Dmd Unit* | Wkdy Trip Ends Per Employee* | Emp Per Dmd Unit | Sq Ft Per Emp |
|----------|----------------------------|-------------|------------------------------|------------------------------|------------------|---------------|
| 110 | Light Industrial | 1,000 Sq Ft | 4.96 | 3.05 | 1.63 | 615 |
| 130 | Industrial Park | 1,000 Sq Ft | 3.37 | 2.91 | 1.16 | 864 |
| 140 | Manufacturing | 1,000 Sq Ft | 3.93 | 2.47 | 1.59 | 628 |
| 150 | Warehousing | 1,000 Sq Ft | 1.74 | 5.05 | 0.34 | 2,902 |
| 254 | Assisted Living | bed | 2.60 | 4.24 | 0.61 | na |
| 320 | Motel | room | 3.35 | 25.17 | 0.13 | na |
| 520 | Elementary School | 1,000 Sq Ft | 19.52 | 21.00 | 0.93 | 1,076 |
| 530 | High School | 1,000 Sq Ft | 14.07 | 22.25 | 0.63 | 1,581 |
| 540 | Community College | student | 1.15 | 14.61 | 0.08 | na |
| 550 | University/College | student | 1.56 | 8.89 | 0.18 | na |
| 565 | Day Care | student | 4.09 | 21.38 | 0.19 | na |
| 610 | Hospital | 1,000 Sq Ft | 10.72 | 3.79 | 2.83 | 354 |
| 620 | Nursing Home | 1,000 Sq Ft | 6.64 | 2.91 | 2.28 | 438 |
| 710 | General Office (avg size) | 1,000 Sq Ft | 9.74 | 3.28 | 2.97 | 337 |
| 760 | Research & Dev Center | 1,000 Sq Ft | 11.26 | 3.29 | 3.42 | 292 |
| 770 | Business Park | 1,000 Sq Ft | 12.44 | 4.04 | 3.08 | 325 |
| 820 | Shopping Center (avg size) | 1,000 Sq Ft | 37.75 | 16.11 | 2.34 | 427 |

* Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017)

For nonresidential land uses, the standard 50 percent adjustment is applied to Office, Industrial, and Institutional development types. A lower vehicle trip adjustment factor is used for Retail because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. An average pass-by rate from ITE is applied to Retail, resulting in a trip adjustment factor of 38 percent.

In Figure 28, the Institute for Transportation Engineers' land use code, daily vehicle trip end rate, and trip adjustment factor is listed for each land use.

Figure 28. Frederick County Summary of Averages Daily Vehicle Trip Factors

| Land Use | Vehicle Trip Ends | Trip Adj. % | Avg. Daily Vehicle Trip Rate (Adj.) |
|---|-------------------|-------------|-------------------------------------|
| Residential (per housing unit) | | | |
| Single Family | 10.54 | 0.62 | 6.53 |
| Multifamily | 5.61 | 0.62 | 3.48 |
| Nonresidential (per 1,000 square feet) | | | |
| Retail | 37.75 | 0.38 | 14.35 |
| Office | 9.74 | 0.50 | 4.87 |
| Industrial | 3.93 | 0.50 | 1.97 |
| Institutional | 19.52 | 0.50 | 9.76 |

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Vehicle Trip Projections

The base year vehicle trip totals and vehicle trip projections are calculated by combining the vehicle trip end factors, the trip adjustment factors, and the residential and nonresidential projections for housing and floor area growth. In the base year, residential land uses account for 228,533 vehicle trips and nonresidential land uses account for 182,739 vehicle trips in Frederick County. Through 2028, there will be a total increase of 51,708 daily vehicle trips with the majority of the growth being generated by single family units (58 percent) and Retail (22 percent) development.

Furthermore, 70 percent of the current vehicle trips in the County are generated in the Urban Service Area. In total, by 2028, the Urban Service area will increase by 36,121 vehicle trips and the Rural Service Area will increase by 15,586 vehicle trips.

Figure 29. Frederick County Total Daily Vehicle Trip Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 224,189 | 226,861 | 229,533 | 232,205 | 234,877 | 237,549 | 240,221 | 242,893 | 246,682 | 250,470 | 254,259 | 30,069 |
| Multifamily | 4,344 | 4,396 | 4,447 | 4,499 | 4,551 | 4,603 | 4,654 | 4,706 | 4,780 | 4,853 | 4,926 | 583 |
| Subtotal | 228,533 | 231,257 | 233,981 | 236,704 | 239,428 | 242,152 | 244,876 | 247,599 | 251,461 | 255,323 | 259,185 | 30,652 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 85,367 | 86,495 | 87,624 | 88,752 | 89,881 | 91,010 | 92,138 | 93,267 | 94,395 | 95,524 | 96,652 | 11,286 |
| Office | 9,225 | 9,376 | 9,527 | 9,679 | 9,830 | 9,981 | 10,132 | 10,283 | 10,434 | 10,586 | 10,737 | 1,512 |
| Industrial | 37,653 | 37,843 | 38,033 | 38,222 | 38,412 | 38,602 | 38,792 | 38,981 | 39,171 | 39,361 | 39,551 | 1,897 |
| Institutional | 50,494 | 51,130 | 51,766 | 52,402 | 53,038 | 53,674 | 54,310 | 54,946 | 55,583 | 56,219 | 56,855 | 6,361 |
| Subtotal | 182,739 | 184,844 | 186,950 | 189,055 | 191,161 | 193,267 | 195,372 | 197,478 | 199,583 | 201,689 | 203,794 | 21,056 |
| Grand Total | 411,272 | 416,101 | 420,931 | 425,760 | 430,589 | 435,418 | 440,248 | 445,077 | 451,045 | 457,012 | 462,980 | 51,708 |
| | <i>Increase</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>5,968</i> | <i>5,968</i> | <i>5,968</i> | |
| Rural Service Area | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 78,404 | 79,338 | 80,273 | 81,207 | 82,142 | 83,076 | 84,011 | 84,945 | 86,270 | 87,595 | 88,920 | 10,516 |
| Multifamily | 550 | 556 | 563 | 569 | 576 | 582 | 589 | 595 | 605 | 614 | 623 | 74 |
| Subtotal | 78,954 | 79,895 | 80,836 | 81,777 | 82,718 | 83,659 | 84,600 | 85,541 | 86,875 | 88,209 | 89,543 | 10,590 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 19,218 | 19,473 | 19,727 | 19,981 | 20,235 | 20,489 | 20,743 | 20,997 | 21,251 | 21,505 | 21,759 | 2,541 |
| Office | 2,678 | 2,722 | 2,766 | 2,809 | 2,853 | 2,897 | 2,941 | 2,985 | 3,029 | 3,073 | 3,117 | 439 |
| Industrial | 10,490 | 10,542 | 10,595 | 10,648 | 10,701 | 10,754 | 10,807 | 10,860 | 10,912 | 10,965 | 11,018 | 529 |
| Institutional | 11,816 | 11,965 | 12,114 | 12,263 | 12,412 | 12,561 | 12,710 | 12,858 | 13,007 | 13,156 | 13,305 | 1,489 |
| Subtotal | 44,202 | 44,702 | 45,202 | 45,701 | 46,201 | 46,701 | 47,200 | 47,700 | 48,200 | 48,699 | 49,199 | 4,997 |
| Grand Total | 123,156 | 124,597 | 126,037 | 127,478 | 128,919 | 130,359 | 131,800 | 133,240 | 135,074 | 136,908 | 138,742 | 15,586 |
| | <i>Increase</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,834</i> | <i>1,834</i> | <i>1,834</i> | |
| Urban Service Area | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 145,785 | 147,523 | 149,260 | 150,998 | 152,735 | 154,473 | 156,211 | 157,948 | 160,412 | 162,875 | 165,339 | 19,553 |
| Multifamily | 3,794 | 3,839 | 3,885 | 3,930 | 3,975 | 4,020 | 4,066 | 4,111 | 4,175 | 4,239 | 4,303 | 509 |
| Subtotal | 149,580 | 151,362 | 153,145 | 154,928 | 156,711 | 158,493 | 160,276 | 162,059 | 164,587 | 167,114 | 169,642 | 20,062 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 66,148 | 67,023 | 67,897 | 68,772 | 69,646 | 70,521 | 71,395 | 72,270 | 73,144 | 74,019 | 74,893 | 8,745 |
| Office | 6,547 | 6,655 | 6,762 | 6,869 | 6,976 | 7,084 | 7,191 | 7,298 | 7,406 | 7,513 | 7,620 | 1,073 |
| Industrial | 27,164 | 27,301 | 27,437 | 27,574 | 27,711 | 27,848 | 27,985 | 28,122 | 28,259 | 28,396 | 28,532 | 1,369 |
| Institutional | 38,677 | 39,164 | 39,652 | 40,139 | 40,626 | 41,114 | 41,601 | 42,088 | 42,575 | 43,063 | 43,550 | 4,873 |
| Subtotal | 138,536 | 140,142 | 141,748 | 143,354 | 144,960 | 146,566 | 148,172 | 149,778 | 151,384 | 152,990 | 154,595 | 16,059 |
| Grand Total | 288,116 | 291,505 | 294,893 | 298,282 | 301,671 | 305,059 | 308,448 | 311,837 | 315,970 | 320,104 | 324,237 | 36,121 |
| | <i>Increase</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>4,134</i> | <i>4,134</i> | <i>4,134</i> | |

Source: [Trip Generation](#), Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Functional Population

Both residential and nonresidential developments increase the demand on County services and facilities. To calculate the proportional share between residential and nonresidential demand on service and facilities, a functional population approach is often used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the County through a 24-hour day.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Frederick County are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the County are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the County working. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data, residential development accounts for 77 percent of the functional population, while nonresidential development accounts for 23 percent, see Figure 30.

Figure 30. Frederick County Functional Population

| Demand Units in 2015 | | | |
|---|--------|-------------------|--------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| Residential Subtotal | | | 1,374,140 |
| Residential Share ==> | | | 77% |
| Nonresidential | | | |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| Nonresidential Subtotal | | | 414,750 |
| Nonresidential Share ==> | | | 23% |
| TOTAL | | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs

^ Hours per day allocated to land use (residential or nonresidential).

PROJECT APPROACH

The assignment for Frederick County involves two main elements:

1. Calculating the “static” capital impact of new development by type of land use and
2. To allow County staff to use the Capital Impacts Model to determine the capital costs for development projects that take into consideration whether capacity is available or not (and therefore, whether a cash proffer can be offered and accepted by the County).

This report provides the static list of capital impacts and supporting narrative.

The Model calculates the cost to serve the land use first and then determines whether there are capacity needs in the service area for the particular facility. Therefore, throughout this report, service areas/regions are identified with levels of service reported in that way.

Two sections are provided in the following pages: (I) Cash Proffer Categories and (II) Non-Cash Proffer Categories.

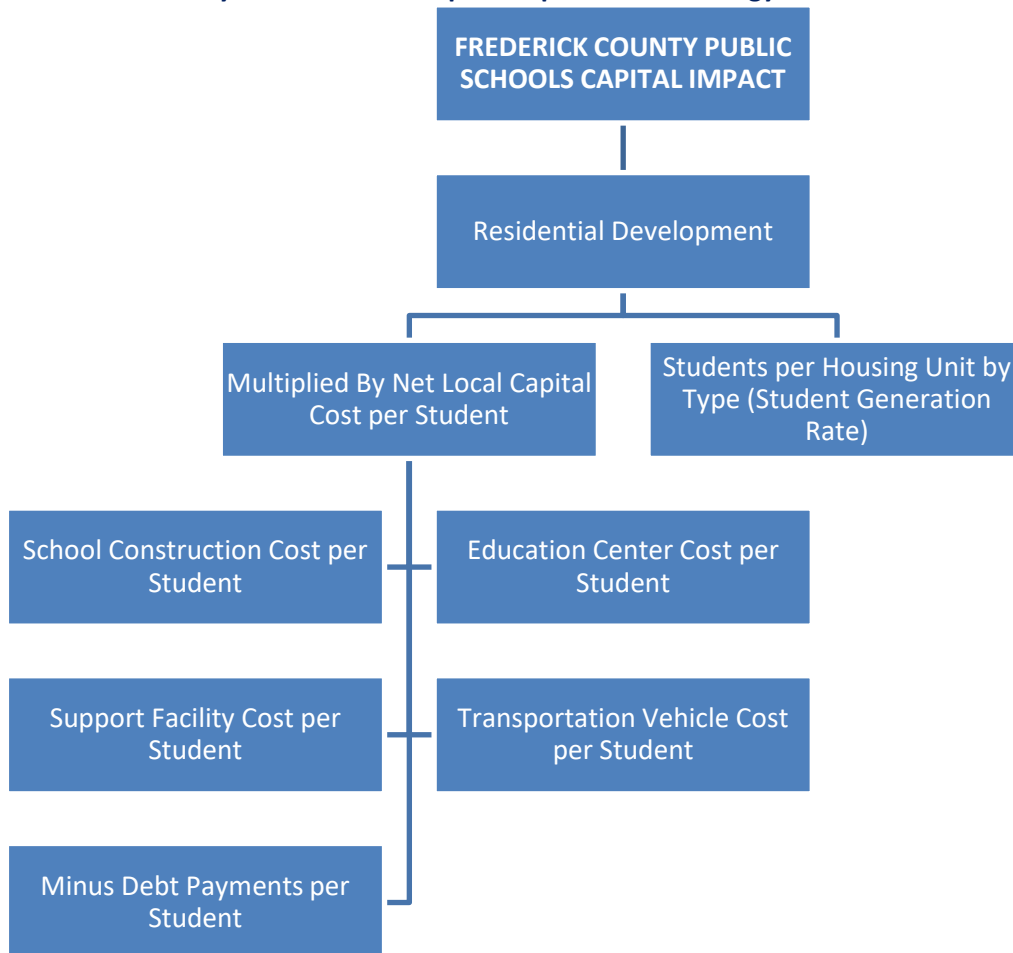
I. Cash Proffer Categories

PUBLIC SCHOOLS CAPITAL IMPACTS

Public School capital impacts are determined using the **incremental methodology** and costs are allocated 100 percent to residential development. The methodology is based on the cost to provide future public school capacity due to growth and is calculated using the current average Frederick County public school student generation rates, projects listed in the County's Capital Improvement Plan (by type of unit), level of service standards (capacity), and local costs.

The incremental methodology used to calculate the capital impacts is illustrated in Figure 31. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. Schools capital impacts are derived from the product of students per housing unit (by type of unit) and the net capital cost per student. The boxes in the next level down indicate detail on the components included in the proffer. A credit for future payments on existing General Obligation and other debt is included.

Figure 31. Frederick County Public Schools Capital Impacts Methodology Chart



School Capital Impact Service Areas

Several service area options were discussed with County staff. A properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e. countywide or Urban and Rural) would result in utilization of the schools within that area being analyzed. While more detailed service areas (i.e. based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas were programmed based on the General Service Areas (i.e. Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. After review from the Frederick County Development Impact Model Oversight Committee (DIMOC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools.

Public School Students per Housing Unit

Frederick County provided student generation rates by type of housing unit and grade level. The term "student generation rate" refers to the number of public school students per housing unit in the County. (Public school students are a subset of school-age children, which includes students in private schools and home-schooled children. *Data reflect public school students only.*)

Student generation rates are calculated for four housing unit types: (1) single family detached; (2) single family attached; (3) multifamily; (4) age-restricted single family. Rates are provided for three school grade levels: (1) Elementary School (grades K-5); (2) Middle School (6-8) and (3) High School (grades 9-12).

Average rates for Frederick County Public Schools are shown below. The Age-Restricted Single Family housing unit is assumed to not generate any students.

Figure 32. Frederick County Student Generation Rates

| Housing Type | ES | MS | HS | Total |
|------------------------------|-------|-------|-------|-------|
| Single Family-Detached | 0.155 | 0.091 | 0.126 | 0.372 |
| Single Family-Attached | 0.188 | 0.085 | 0.093 | 0.366 |
| Multifamily | 0.164 | 0.076 | 0.077 | 0.317 |
| Age Restricted Single Family | 0.000 | 0.000 | 0.000 | 0.000 |

Source: Frederick County Planning & Development Dept.

Public School Facilities Level of Service Standards

This section provides current inventories and levels of service for elementary, middle, and high schools in Frederick County Public Schools. The data contained in these tables determine Level of Service (LOS) infrastructure standards for school buildings and sites on which the capital impacts are based. Levels of service are shown based on two sets of figures—current enrollment and capacity. The enrollment in the model will be updated annually and set to the enrollment as of December 31.

Elementary Schools

As indicated in Figure 33, County elementary schools have a total of 823,826 square feet of floor area on 235 acres. At the end of 2018, the total enrollment was 6,155 students and the total capacity was 5,973 students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 103 percent utilization.

Levels of service are shown in the far right column of Figure 33. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 138 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 33. Frederick County Public Schools Elementary Schools Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| Apple Pie Ridge | 14.2 | 65,120 | 456 | 459 | 99% | 142 |
| Armell | 15.0 | 70,281 | 641 | 558 | 115% | 126 |
| Bass-Hoover | 18.3 | 64,630 | 627 | 553 | 113% | 117 |
| Evendale | 27.77 | 82,585 | 535 | 624 | 86% | 132 |
| Gainesboro | 18.9 | 96,488 | 459 | 562 | 82% | 172 |
| Greenwood Mill | 15.2 | 100,465 | 639 | 696 | 92% | 144 |
| Indian Hollow | 19.5 | 59,065 | 424 | 405 | 105% | 146 |
| Middletown | 15.0 | 70,281 | 479 | 482 | 99% | 146 |
| Orchard View | 37.4 | 76,227 | 495 | 450 | 110% | 169 |
| Redbud Run | 43.7 | 70,697 | 727 | 670 | 109% | 106 |
| Stonewall | 10.0 | 67,987 | 673 | 514 | 131% | 132 |
| Countywide Total | 235.0 | 823,826 | 6,155 | 5,973 | 103% | 138 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

Middle School

As indicated in Figure 34, County middle schools have a total of 612,690 square feet of floor area on 117.7 acres. At the end of 2018, the total enrollment was 3,227 students and the total capacity was 3,420

students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 94 percent utilization.

Levels of service are shown in the far right column of Figure 34. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 179 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 34. Frederick County Public Schools: Middle Schools Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| Admiral Byrd | 27.77 | 159,966 | 975 | 900 | 108% | 178 |
| Frederick County | 39.09 | 187,764 | 713 | 900 | 79% | 209 |
| James Wood MS | 26.91 | 149,952 | 925 | 900 | 103% | 167 |
| Robert E. Aylor | 23.90 | 115,008 | 614 | 720 | 85% | 160 |
| Countywide Total | 117.7 | 612,690 | 3,227 | 3,420 | 94% | 179 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

High School

As indicated in Figure 35, County high schools have a total of 722,547 square feet of floor area on 196.6 acres. At the end of 2018, the total enrollment was 4,265 students and the total capacity was 3,785 students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 113 percent utilization.

Levels of service are shown in the far right column of Figure 35. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 191 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 35. Frederick County Schools: High School Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| James Wood HS | 68.9 | 229,187 | 1,332 | 1,200 | 111% | 191 |
| Millbrook | 84.8 | 253,843 | 1,454 | 1,300 | 112% | 195 |
| Sherando | 40.0 | 239,517 | 1,479 | 1,285 | 115% | 186 |
| Countywide Total | 193.6 | 722,547 | 4,265 | 3,785 | 113% | 191 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

Education Centers

The level of service for Education Centers is calculated at a countywide level. As indicated in Figure 36, there are 133,286 square feet of Education Centers in the County. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total floor area by enrollment. As a result, there are 10 square feet per student.

Figure 36. Frederick County Schools: Education Centers

| Facility | Region | Value | Site Acreage | Building Square Feet | Value Per Square Feet |
|---------------------------------|------------|--------------------------------|--------------------------|--------------------------|--------------------------------|
| Dowell J. Howard Center | Countywide | \$7,456,600 | 20 | 70,417 | \$106 |
| NREP/Senseny Road School | Countywide | \$5,064,400 | 9.7 | 62,869 | \$81 |
| TOTALS | | \$12,521,000 | 29.7 | 133,286 | \$94 |
| Summary by Region/School | | | | | |
| | | Demand Units (Students) | Value per Student | Acres per Student | Building SF per Student |
| LOS based on Current Enrollment | | 13,647 | \$917 | 0.002 | 10 |
| LOS based on Capacity | | 13,178 | \$950 | 0.002 | 10 |

Support Facilities

The level of service for Support Facilities is calculated at a countywide level. As indicated in Figure 37, there are 160,755 square feet of Support Facilities in the County. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total floor area by enrollment. As a result, there are 12 square feet per student.

Figure 37. Frederick County Schools: Support Facilities

| Facility | Region | Value | Site Acreage | Building Square Feet | Value Per Square Feet |
|----------------------------------|------------|--------------------------------|--------------------------|--------------------------|--------------------------------|
| Buildings & Ground Facility | Countywide | \$2,132,600 | 12.13 | 49,626 | \$43 |
| Support Facilities Services West | Countywide | \$676,000 | 6.02 | 10,423 | \$65 |
| School Board Office | Countywide | \$3,601,700 | 6.64 | 35,494 | \$101 |
| Smithfield Facility | Countywide | \$789,876 | 1.32 | 6,380 | \$124 |
| Transportation Facility | Countywide | \$11,044,200 | 57.3 | 58,832 | \$188 |
| TOTALS | | \$18,244,376 | 83.4 | 160,755 | \$113 |
| Summary by Region/School | | | | | |
| | | Demand Units (Students) | Value per Student | Acres per Student | Building SF per Student |
| LOS based on Current Enrollment | | 13,647 | \$1,337 | 0.006 | 12 |
| LOS based on Capacity | | 13,178 | \$1,384 | 0.006 | 12 |

Transportation Vehicles

The level of service for Transportation Vehicles is calculated at a countywide level. As indicated in Figure 38, there are 229 school buses in operation. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total number of school buses by enrollment. As a result, there are 16.78 buses per 1,000 students.

Figure 38. Frederick County Schools: Transportation Vehicles

| Vehicle Type | Count | Cost per Vehicle | Total Cost |
|--------------|-------|------------------|--------------|
| School Bus | 229 | \$100,000 | \$22,900,000 |

| | |
|--------------------------|---------|
| Total Enrollment | 13,647 |
| Buses per 1,000 Students | 16.78 |
| Cost per Student | \$1,678 |

Public School Facilities in Capital Improvement Plan

The cost factor applied to the levels of service for school construction is found by analyzing planned or new schools. The recently constructed Jordan Springs Elementary School is used as the Elementary School cost factor. The Aylor Middle School Replacement in the County's CIP is used as the Middle School cost factor. And, the New High School in the County's CIP is used as the High School cost factor

Figure 39. School Facilities in Capital Improvement Plan

| Facility | Value | Building Square Feet | Value per Square Feet |
|----------------------|----------------------|----------------------|-----------------------|
| Jordan Springs ES | \$28,500,000 | 84,375 | \$337 |
| Aylor MS Replacement | \$45,500,000 | 133,000 | \$342 |
| New High School | \$122,200,000 | 297,149 | \$411 |
| TOTAL | \$167,700,000 | 430,149 | \$390 |

Source: Frederick County Capital Improvement Plan 2019-2024 Plan; Jordan Springs ES Construction Plan Set

Credit for Future Debt Payments for School Improvements

Because the County has debt financed recent school construction projects and will be debt financing future school construction, TischlerBise recommends including a credit for future principal payments. Along with debt from previous projects, the County anticipates to issue further debt for the Jordan Springs Elementary School and the Aylor Middle School projects.

A credit is necessary since new residential units that may pay school cash proffers will also contribute to future principal payments on school debt through property taxes. Credits are calculated on a per student basis to reflect the proportionate share of debt service per development unit, which is based on demand specific to the land use receiving the credit (i.e., for schools, the land use is a housing unit). It is not linked to property value, which would shift the cash proffer approach away from a land use regulation toward a tax.

The credit amount of \$9,322 is subtracted from the gross capital cost per student to derive a net capital cost per student for school facilities

Figure 40. Payment Schedule for School Debt

| Existing Plus Projected New Total Planned Debt Service | | | | | |
|--|--------------|-------------|--------------|------------|------------------|
| Fiscal Year | Principal | Interest | Total | Enrollment | Debt per Student |
| FY19 | \$10,784,583 | \$4,969,168 | \$15,753,751 | 13,483 | \$1,168 |
| FY20 | \$10,341,220 | \$4,518,435 | \$14,859,655 | 13,641 | \$1,089 |
| FY21 | \$11,017,547 | \$5,009,436 | \$16,026,983 | 13,800 | \$1,161 |
| FY22 | \$12,306,040 | \$5,913,528 | \$18,219,568 | 13,959 | \$1,305 |
| FY23 | \$13,304,444 | \$6,094,369 | \$19,398,813 | 14,118 | \$1,374 |
| FY24 | \$12,540,784 | \$5,661,720 | \$18,202,504 | 14,277 | \$1,275 |
| FY25 | \$11,730,000 | \$5,112,387 | \$16,842,387 | 14,435 | \$1,167 |
| FY26 | \$10,805,000 | \$4,605,382 | \$15,410,382 | 14,660 | \$1,051 |
| FY27 | \$9,950,000 | \$4,147,714 | \$14,097,714 | 14,886 | \$947 |
| FY28 | \$9,375,000 | \$3,738,542 | \$13,113,542 | 15,111 | \$868 |

| | |
|--------------------------|----------------|
| Discount Rate | 4.0% |
| Net Present Value | \$9,322 |

Public Schools Capital Impact Input Variables

Factors used to determine school capital impacts are summarized in Figure 41 and Figure 42. Capital impacts for public schools are based on student generation rates (i.e., public school students per housing unit) and are only determined for residential development. (For further discussion on student generation rates see the Land Use Assumptions Chapter.) Level of service standards are based on current costs per student for public school buildings as discussed in the previous sections and summarized below. The credit for future principal payments is subtracted from the gross capital cost per student to derive the net capital cost per student.

Figure 41. Elementary School Level of Service and Cost Factors

| Current Level of Service Standards | ES
Apple Pie
Ridge | ES
Armel | ES
Bass-Hoover | ES
Evendale | ES
Gainesboro | ES
Greenwood
Mill | ES
Indian
Hollow | ES
Middletown | ES
Orchard
View | ES
Redbud Run | ES
Stonewall |
|---|--------------------------|-----------------|-------------------|-----------------|------------------|-------------------------|------------------------|------------------|-----------------------|------------------|-----------------|
| Building Square Feet Per Student | 142 | 126 | 117 | 132 | 172 | 144 | 146 | 146 | 169 | 106 | 132 |
| Cost Per Square Foot | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 |
| Total Building Construction Cost Per Student | \$47,811 | \$42,446 | \$39,386 | \$44,601 | \$57,858 | \$48,645 | \$49,148 | \$49,138 | \$57,086 | \$35,560 | \$44,575 |
| Transportation Vehicle per Student | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Cost per Vehicle | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 |
| Vehicle Cost Per Student | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 |
| Education Center Square Feet per Student | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 |
| Cost per Square Foot | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 |
| Education Center Cost Per Student | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 |
| Support Facilities Square Feet per Student | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 |
| Cost per Square Foot | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 |
| Support Facilities Cost Per Student | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 |
| Total Gross Capital Cost Per Student | \$51,743 | \$46,378 | \$43,318 | \$48,533 | \$61,790 | \$52,577 | \$53,080 | \$53,070 | \$61,018 | \$39,492 | \$48,507 |
| Local Share of Capacity Cost | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Total Gross Local Capital Cost Per Student | \$51,743 | \$46,378 | \$43,318 | \$48,533 | \$61,790 | \$52,577 | \$53,080 | \$53,070 | \$61,018 | \$39,492 | \$48,507 |
| Principal Payment Credit Per Student | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 |
| Total Net Local Capital Cost Per Student | \$42,421 | \$37,056 | \$33,996 | \$39,211 | \$52,468 | \$43,255 | \$43,758 | \$43,748 | \$51,696 | \$30,170 | \$39,185 |

Figure 42. Middle School and High School Level of Service and Cost Factors

| Current Level of Service Standards | MS
Admiral Byrd | MS
Frederick County | MS
James Wood MS | MS
Robert E. Aylor | HS
James Wood HS | HS
Millbrook | HS
Sherando |
|---|--------------------|------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|
| Building Square Feet Per Student | 178 | 209 | 167 | 160 | 191 | 195 | 186 |
| Cost Per Square Foot | \$342 | \$342 | \$342 | \$342 | \$411 | \$411 | \$411 |
| Total Building Construction Cost Per Student | \$60,787 | \$71,350 | \$56,982 | \$54,629 | \$78,497 | \$80,253 | \$76,608 |
| Transportation Vehicle per Student | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Cost per Vehicle | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 |
| Vehicle Cost Per Student | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 |
| Education Center Square Feet per Student | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 |
| Cost per Square Foot | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 |
| Education Center Cost Per Student | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 |
| Support Facilities Square Feet per Student | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 |
| Cost per Square Foot | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 |
| Support Facilities Cost Per Student | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 |
| Total Gross Capital Cost Per Student | \$64,719 | \$75,282 | \$60,914 | \$58,561 | \$82,429 | \$84,185 | \$80,540 |
| Local Share of Capacity Cost | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Total Gross Local Capital Cost Per Student | \$64,719 | \$75,282 | \$60,914 | \$58,561 | \$82,429 | \$84,185 | \$80,540 |
| Principal Payment Credit Per Student | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 |
| Total Net Local Capital Cost Per Student | \$55,397 | \$65,960 | \$51,592 | \$49,239 | \$73,107 | \$74,863 | \$71,218 |

Please note: Costs are shown for both infrastructure components in this report to document development's share of the cost to provide the facilities. Despite capacity being available in some cases, there is still a "capital cost impact" to the County from new development. However, due to the current cash proffer law, capacity triggers are required for cash proffer acceptance. These capacity triggers are integrated into the CapIM and allows the user to identify the total cost of growth as well as the potential cash proffer amount (which may be different due to service area differences and existing capacities).

Capital Impacts for Public Schools

The figures below show the capital impact for Public Schools in Frederick County for each grade level. The costs are calculated by multiplying the student generation rate by the net capital cost per student for each type of school by type of housing.

For example, for a single family detached unit, the elementary student generation rate is 0.155 and in the Apple Pie Ridge attendance zone the capital cost per student is \$42,421. That student generation rate is multiplied by the capital cost to determine the capital impact of the housing unit ($0.155 \times \$42,421 = \$6,575$). This is repeated for the other school grade levels. All portions are added together to calculate the total capital impact by type of residential unit.

Figure 43. Frederick County Public Schools Capital Impact by Housing Unit, Elementary School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | | | | | | | | | |
|--|-----------------|---------|-------------|----------|------------|----------------|---------------|------------|--------------|------------|-----------|
| Capital Impact Per Housing Unit | Apple Pie Ridge | Armel | Bass-Hoover | Evendale | Gainesboro | Greenwood Mill | Indian Hollow | Middletown | Orchard View | Redbud Run | Stonewall |
| Single Family-Detached | \$6,575 | \$5,744 | \$5,269 | \$6,078 | \$8,133 | \$6,705 | \$6,782 | \$6,781 | \$8,013 | \$4,676 | \$6,074 |
| Single Family-Attached | \$7,975 | \$6,967 | \$6,391 | \$7,372 | \$9,864 | \$8,132 | \$8,227 | \$8,225 | \$9,719 | \$5,672 | \$7,367 |
| Multifamily | \$6,957 | \$6,077 | \$5,575 | \$6,431 | \$8,605 | \$7,094 | \$7,176 | \$7,175 | \$8,478 | \$4,948 | \$6,426 |
| Age Restricted Single Family | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |

Figure 44. Frederick County Public Schools Capital Impact by Housing Unit, Middle School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | | |
|--|--------------|------------------|---------------|-----------------|
| Capital Impact Per Housing Unit | Admiral Byrd | Frederick County | James Wood MS | Robert E. Aylor |
| Single Family-Detached | \$5,041 | \$6,002 | \$4,695 | \$4,481 |
| Single Family-Attached | \$4,709 | \$5,607 | \$4,385 | \$4,185 |
| Multifamily | \$4,210 | \$5,013 | \$3,921 | \$3,742 |
| Age Restricted Single Family | \$0 | \$0 | \$0 | \$0 |

Figure 45. Frederick County Public Schools Capital Impact by Housing Unit, High School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | |
|--|------------------|-----------|----------|
| Capital Impact Per Housing Unit | James Wood
HS | Millbrook | Sherando |
| Single Family-Detached | \$9,211 | \$6,002 | \$8,973 |
| Single Family-Attached | \$6,799 | \$5,607 | \$6,623 |
| Multifamily | \$5,629 | \$5,013 | \$5,484 |
| Age Restricted Single Family | \$0 | \$0 | \$0 |

School Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The School Capital Impact analysis in the CapIM model is programmed to calculate cash proffer eligible impact based on each school's utilization (current enrollment vs student capacity of the building). Once enrollment has exceeded capacity the capital impact is eligible for cash proffer. In some case, if there is excess capacity, a development may not generate enough students to exceed the threshold, so no cash proffer amount is triggered. In other cases, if there is excess capacity and a development generates enough students to exceed the capacity, only the impact from the number of students that exceeded the threshold will be eligible for cash proffer.

PARKS & RECREATION CAPITAL IMPACTS

Frederick County has a parks and recreation system with facilities that serve different geographic areas. To determine the capital impact on parks and recreation from new development in the County, the following types of facilities are analyzed for the geographic areas noted:

Countywide

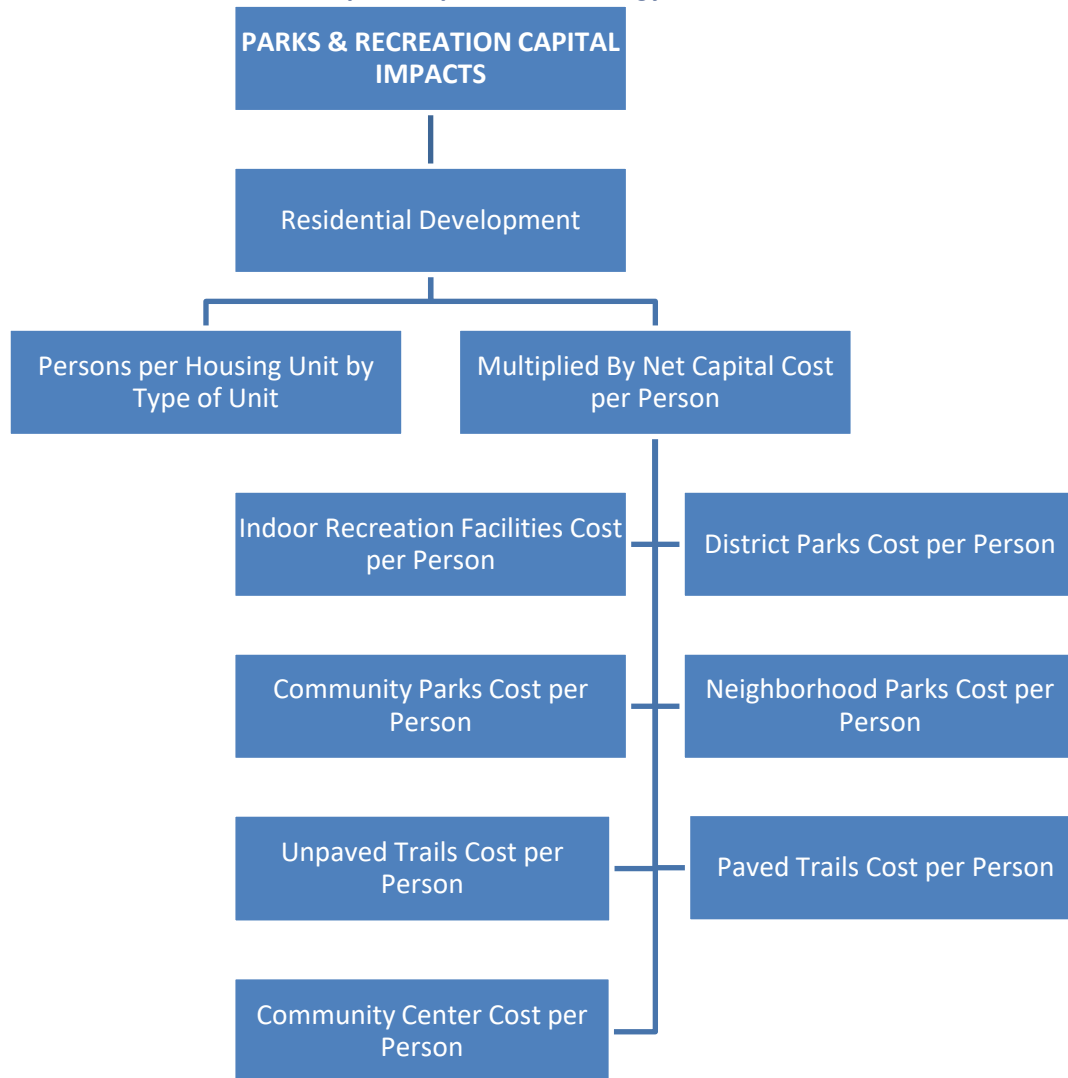
- Indoor Recreation Facilities

Service Areas

- District Parks
- Community Parks
- Neighborhood Parks
- Unpaved Trails
- Paved Trails
- Community Centers

Figure 46 diagrams the ***incremental methodology*** used to calculate the Parks & Recreation capital impact. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The Parks & Recreation capital impacts are derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person. The net capital cost is a result of the park facilities listed in the County's CIP and the level of service standard calculated at either a Countywide or Service Area basis.

Figure 46. Parks & Recreation Capital Impact Methodology Chart



Park Inventory

Shown in Figure 47, there are a number of current parks, trails, and community centers operated by the Parks & Recreation Department. Parks have been organized into three categories: District (392 acres), Community (32 acres), and Neighborhood (11.5 acres). Trails have been organized into unpaved (5.8 miles) and paved trails (4.1 miles). There is also 50,077 square feet of community centers in the County.

Figure 47. Parks & Recreation Inventory

District Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|------------|---------------------|--------------|
| Sherando | Multipurpose | 337 | \$21,881,047 | Urban |
| Clearbrook | Multipurpose | 55 | \$10,033,814 | Urban |
| Total | | 392 | \$31,914,861 | |
| Average Cost Per Acre | | | \$81,415 | |

Community Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|-----------|--------------------|--------------|
| Rose Hill | Multipurpose | 7 | \$669,913 | Rural |
| Snowden Bridge | Multipurpose | 25 | \$615,938 | Urban |
| Total | | 32 | \$1,285,850 | |
| Average Cost Per Acre | | | \$40,183 | |

Neighborhood Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|-------------|------------------|--------------|
| Frederick Heights | Multipurpose | 11 | \$500,980 | Urban |
| Reynolds Store | Multipurpose | 0.5 | \$188,500 | Rural |
| Total | | 11.5 | \$689,480 | |
| Average Cost Per Acre | | | \$59,955 | |

Unpaved Trails

| Name | Use | Miles | Value | Service Area |
|------------------------------|-----------------|------------|------------------|--------------|
| Sherando Park | Hiking | 1.5 | \$126,720 | Urban |
| Rose Hill Park | Hiking | 1.3 | \$109,824 | Rural |
| Sherando Park | Mountain Biking | 3.0 | \$62,400 | Urban |
| Total | | 5.8 | \$298,944 | |
| Average Cost Per Mile | | | \$51,542 | |

Paved Trails

| Name | Use | Miles | Value | Service Area |
|------------------------------|----------|------------|--------------------|--------------|
| Sherando Park | Multiuse | 3 | \$1,143,999 | Urban |
| Clearbrook Park | Multiuse | 1 | \$228,800 | Urban |
| Frederick Heights | Multiuse | 0.5 | \$190,667 | Urban |
| Total | | 4.1 | \$1,563,465 | |
| Average Cost Per Mile | | | \$381,333 | |

Community Centers

| Name | Use | Sq. Ft. | Value | Service Area |
|-------------------------------------|--------------|---------------|--------------------|--------------|
| Evendale | Multipurpose | 11,761 | \$175,000 | Urban |
| Greenwood | Multipurpose | 11,802 | \$250,000 | Urban |
| Sherando | Multipurpose | 6,843 | \$250,000 | Urban |
| Orchard View | Multipurpose | 7,869 | \$175,000 | Rural |
| Gainesboro | Multipurpose | 11,802 | \$250,000 | Rural |
| Total | | 50,077 | \$1,100,000 | |
| Average Cost Per Square Foot | | | \$22 | |

Source: Frederick County Parks and Recreation Asset Inventory

Parks & Recreation Facilities in Capital Improvement Plan

In Figure 48, the Park & Recreation facilities from the County's CIP that expand the County's capacity to serve their population are listed.

Figure 48. Park Facilities in Capital Improvement Plan by Type and Service Area

| District Parks | | | | | |
|---------------------------|---------------------|---------------|---------------------|------------------|--------------|
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| Sherando Park | Area 1 Development | | \$1,290,000 | \$0 | Urban |
| Sherando Park | Water Slide | | \$327,500 | \$0 | Urban |
| Clearbrook Park | Water Slide | | \$327,500 | \$0 | Urban |
| Sherando Park | Softball Complex | | \$1,723,000 | \$0 | Urban |
| Sherando Park | Ballfield Lighting | | \$856,000 | \$0 | Urban |
| Sherando Park | Area 3 Development | | \$2,250,000 | \$0 | Urban |
| New District Parks | Land Aquisition | 300.0 | \$8,262,000 | \$27,540 | Urban |
| New District Park | Land Aquisition | 150.0 | \$4,131,000 | \$27,540 | Rural |
| Total | | 450.0 | \$19,167,000 | \$42,593 | |
| Community Parks | | | | | |
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| Snowden Bridge Park | Park Development | | \$2,410,000 | \$0 | Urban |
| New Community Park | Multi-Purpose Park | 35.0 | \$2,194,000 | \$62,685 | Urban |
| Total | | 35.0 | \$4,604,000 | \$131,542 | |
| Neighborhood Parks | | | | | |
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| New Neighborhood Parks | Multi-Purpose Park | 20.0 | \$1,745,320 | \$87,266 | Urban |
| New Neighborhood Parks | Multi-Purpose Park | 40.0 | \$3,490,640 | \$87,266 | Rural |
| Total | | 60.0 | \$5,236,000 | \$87,266 | |
| Paved Trails | | | | | |
| Trail Name | Project Purpose | Miles | Value | \$/Mile | Service Area |
| Abrams Creek Trail | Paved Walking Trail | 3 | \$1,219,900 | \$406,633 | Urban |
| Total | | 3.0 | \$1,219,900 | \$406,633 | |
| Indoor Facilities | | | | | |
| Facility Name | Project Purpose | Sq. Ft. | Value | \$/SF | Service Area |
| Field House | Indoor Recreation | 44,000 | \$9,067,000 | \$206 | Countywide |
| Indoor Swimming Pool | Swimming | 35,000 | \$11,841,000 | \$338 | Countywide |
| Total | | 79,000 | \$20,908,000 | \$264 | |

The CapIM model will evaluate the capital impact a development has on all types of Park & Recreation facilities. However, to comply with the 2019 Virginia Cash Proffer law, it is only the park and recreation facilities that are included in Frederick County's CIP that are considered to be eligible for cash proffers at this time.

Parks & Recreation Level of Service and Cost Factors

For all the Parks & Recreation components, except Indoor Recreation Facilities, capital impacts are calculated based on current levels of service for existing parks and facilities. The analysis first establishes a countywide level of service for each type of facility and then determines whether there is excess capacity or a deficit in each park region for that type of park. Figure 49 lists the level of service and cost factors for District Parks, Community Parks, Neighborhood Parks, Unpaved Trails, and Paved Trails.

Levels of services are calculated at a Service Area level for each type of park based on acreage totals. Level of services are calculated at a Service Area level for each type of trails based on total miles. The methodology is based on the assumption that the County will maintain its current level of service by developing parks to serve new development. In some cases, there are not any facility types in a Service Area (District Park and Paved Trails in the Rural Service). In those cases, the countywide level of service is applied.

The figure also lists the construction cost per unit of each facility. Most cost factors originate from the County's CIP. However, there are no unpaved trails listed in the CIP, so the replacement cost of the County's current inventory was applied. The level of service is multiplied by the cost factor to calculate the cost per capita. For example, in the Urban Service Area the level of service for District Parks is 4.52 acres per 1,000 persons and the construction cost for an acre of District Parks is \$27,540. As a result, the capital cost per person in the Urban Service Area for District Parks is \$124.51.

Figure 49. Parks Level of Service Standards and Cost Factors

| Park Category | Service Area | Unit | Population | Current LOS
(Units / 1,000
persons) | Imp. Acres Req'd
at County LOS by
Category of Park | Current Excess
Capacity or
(Deficit) | Construction
Cost Per Unit | Cost Per
Capita |
|----------------------|--------------|--------------|---------------|---|--|--|-------------------------------|--------------------|
| Acres | | | | Acres/1,000 persons | | | | |
| District Park | Urban | 392.0 | 59,303 | 4.52 | 268.12 | 123.88 | \$27,540 | \$124.51 |
| | Rural | 0.0 | 27,399 | 4.52 | 123.88 | (123.88) | \$27,540 | \$124.51 |
| | Total | 392.0 | 86,702 | 4.52 | 392.00 | 0.00 | \$27,540 | \$124.51 |
| Community Park | Urban | 25.0 | 59,303 | 0.42 | 21.89 | 3.11 | \$62,685 | \$26.43 |
| | Rural | 7.0 | 27,399 | 0.26 | 10.11 | (3.11) | \$62,685 | \$16.02 |
| | Total | 32.0 | 86,702 | 0.37 | 32.00 | 0.00 | \$62,685 | \$23.14 |
| Neighborhood
Park | Urban | 11.0 | 59,303 | 0.19 | 7.87 | 3.13 | \$87,266 | \$16.19 |
| | Rural | 0.5 | 27,399 | 0.02 | 3.63 | (3.13) | \$87,266 | \$1.59 |
| | Total | 11.5 | 86,702 | 0.13 | 11.50 | 0.00 | \$87,266 | \$11.57 |
| Miles | | | | Miles/1,000 persons | | | | |
| Unpaved Trails | Urban | 4.5 | 59,303 | 0.08 | 3.97 | 0.53 | \$51,542 | \$3.91 |
| | Rural | 1.3 | 27,399 | 0.05 | 1.83 | (0.53) | \$51,542 | \$2.45 |
| | Total | 5.8 | 86,702 | 0.07 | 5.80 | 0.00 | \$51,542 | \$3.45 |
| Paved Trails | Urban | 0.5 | 59,303 | 0.01 | 0.34 | 0.16 | \$406,633 | \$3.43 |
| | Rural | 0.0 | 27,399 | 0.01 | 0.16 | (0.16) | \$406,633 | \$2.35 |
| | Total | 0.5 | 86,702 | 0.01 | 0.50 | 0.00 | \$406,633 | \$2.35 |

Cost from CIP

Cost from Inventory

Community Center Level of Service and Cost Factors

The level of service for Community Centers in Frederick County is illustrated in Figure 50. The five centers are allocated to the Service Areas based on their location. The floor area is then divided by the Service Area's population to determine the level of service. For example, there is 30,406 square feet of Community Center in the Urban Service Area which has a population of 59,303. As a result, there is a level of service of 0.51 square feet per capita.

The cost per square foot is multiplied by the level of service to find the capital cost per person. For example, the level of service in the Urban Service Area is 0.51 square feet per capita and the cost per square foot is \$22.20. As a result, the capital cost per person is \$11.32.

Figure 50. Community Center Level of Service Standards and Cost Factors

| Service Area | Population | Sq. Ft. | Value | Current LOS
(Sq. Ft./Capita) | Cost per
Square Foot | Cost per
Person |
|--------------|---------------|---------------|--------------------|---------------------------------|-------------------------|--------------------|
| Urban | 59,303 | 30,406 | \$675,000 | 0.51 | \$22.20 | \$11.32 |
| Rural | 27,399 | 19,671 | \$425,000 | 0.72 | \$21.61 | \$15.56 |
| Total | 86,702 | 50,077 | \$1,100,000 | 0.58 | \$21.97 | \$12.69 |

Indoor Recreational Facility Level of Service and Cost Factors

There are two Indoor Recreational Facilities in the County's CIP. Both are planned to be constructed oversized to accommodate future growth and to serve the whole County. So, the level of service of both facilities is based on the 2039 population. This results in the facilities having a level of service of 0.70 square feet per capita.

In Figure 51, the capital cost per person is calculated by multiplying the level of service by the construction cost per square foot.

Figure 51. Indoor Recreational Facility Level of Service and Cost Factors

| Service Area | Service Area | 2039
Population | Sq. Ft. | Value | Current LOS
(Sq. Ft./Capita) | Cost per
Square Foot | Cost per
Person |
|----------------------|--------------|--------------------|---------------|---------------------|---------------------------------|-------------------------|--------------------|
| Field House | Countywide | 113,344 | 44,000 | \$9,067,000 | 0.39 | \$206.07 | \$80.37 |
| Indoor Swimming Pool | Countywide | 113,344 | 35,000 | \$11,841,000 | 0.31 | \$338.31 | \$104.88 |
| Total | | 113,344 | 79,000 | \$20,908,000 | 0.70 | \$264.66 | \$184.46 |

Source: Frederick County 2019-2034 CIP

Parks & Recreation Input Variables and Capital Impacts

Factors used to determine parks and recreation capital impacts are summarized in Figure 52. Capital impacts for Parks & Recreation facilities are based on household size (i.e., persons per housing unit) and are only determined for residential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are seven components to the capital impact calculation:

- District Park (determined by Service Area)
- Community Park (determined by Service Area)
- Neighborhood Park (determined by Service Area)
- Unpaved Trails (determined by Service Area)
- Paved Trails (determined by Service Area)
- Community Center (determined by Service Area)
- Indoor Recreation Facilities (determined Countywide)

Parks & Recreation capital impacts are the product of persons per housing unit multiplied by the total net capital cost per person. An example of the calculation for a single family housing unit in the Urban Service Area is: the net capital cost per person for the Countywide portion (\$184.46) and the net capital cost per person for the Service Area portion (\$185.79) are multiplied by the persons per housing unit (2.62) and then summed to arrive at the capital impact for this component for a single family unit of \$970 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 52.

Please note: Costs are shown for infrastructure components in this report to document development's share of the cost to provide the facilities. Despite capacity being available in some Service Areas, there is still a "capital cost impact" to the County from new development. However, due to the current cash proffer law, capacity triggers are required for cash proffer acceptance. These capacity triggers are integrated into the CapIM and allows the user to identify the total cost of growth as well as the potential cash proffer amount (which may be different due to service area differences and existing capacities).

Figure 52. Parks & Recreation Input Variables and Capital Impact

| Infrastructure Cost | Demand Unit | Countywide | REGIONS | |
|------------------------------|-------------|-----------------|-----------------|-----------------|
| | | | Urban | Rural |
| District Parks | per capita | - | \$124.51 | \$124.51 |
| Community Parks | per capita | - | \$26.43 | \$16.02 |
| Neighborhood Parks | per capita | - | \$16.19 | \$1.59 |
| Unpaved Trails | per capita | - | \$3.91 | \$2.45 |
| Paved Trails | per capita | - | \$3.43 | \$2.35 |
| Community Centers | per capita | - | \$11.32 | \$15.56 |
| Indoor Recreation Centers | per capita | \$184.46 | - | - |
| GROSS COST PER PERSON | | \$184.46 | \$185.79 | \$162.48 |
| Debt Service Credit | | \$0.00 | \$0.00 | \$0.00 |
| NET CAPITAL COST | | \$184.46 | \$185.79 | \$162.48 |

| Residential Capital Impact per Housing Unit | Service Area: Urban | Countywide | REGION | Total |
|---|---------------------|-------------------|-------------------|-------------------|
| | | | Urban | |
| Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$483 | \$487 | \$970 |
| Single Family-Attached | 2.62 | \$483 | \$487 | \$970 |
| Multifamily | 2.08 | \$384 | \$386 | \$770 |
| Age-Restricted Single Family | 1.67 | \$308 | \$310 | \$618 |

| Residential Capital Impact per Housing Unit | Service Area: Rural | Countywide | REGION | Total |
|---|---------------------|-------------------|-------------------|-------------------|
| | | | Rural | |
| Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$437 | \$385 | \$822 |
| Single Family-Attached | 2.37 | \$437 | \$385 | \$822 |
| Multifamily | 1.46 | \$269 | \$237 | \$506 |
| Age-Restricted Single Family | 1.51 | \$279 | \$245 | \$524 |

Parks & Recreation Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The Parks & Recreation analysis includes two capacity triggers. The first being the County's CIP. A park type must be listed in the County's CIP to be eligible for a cash proffer. The second trigger is based on current capacity. A park type must have a deficit supply of facilities (i.e. park acres, trail miles) at the countywide level of service to be eligible for a cash proffer.

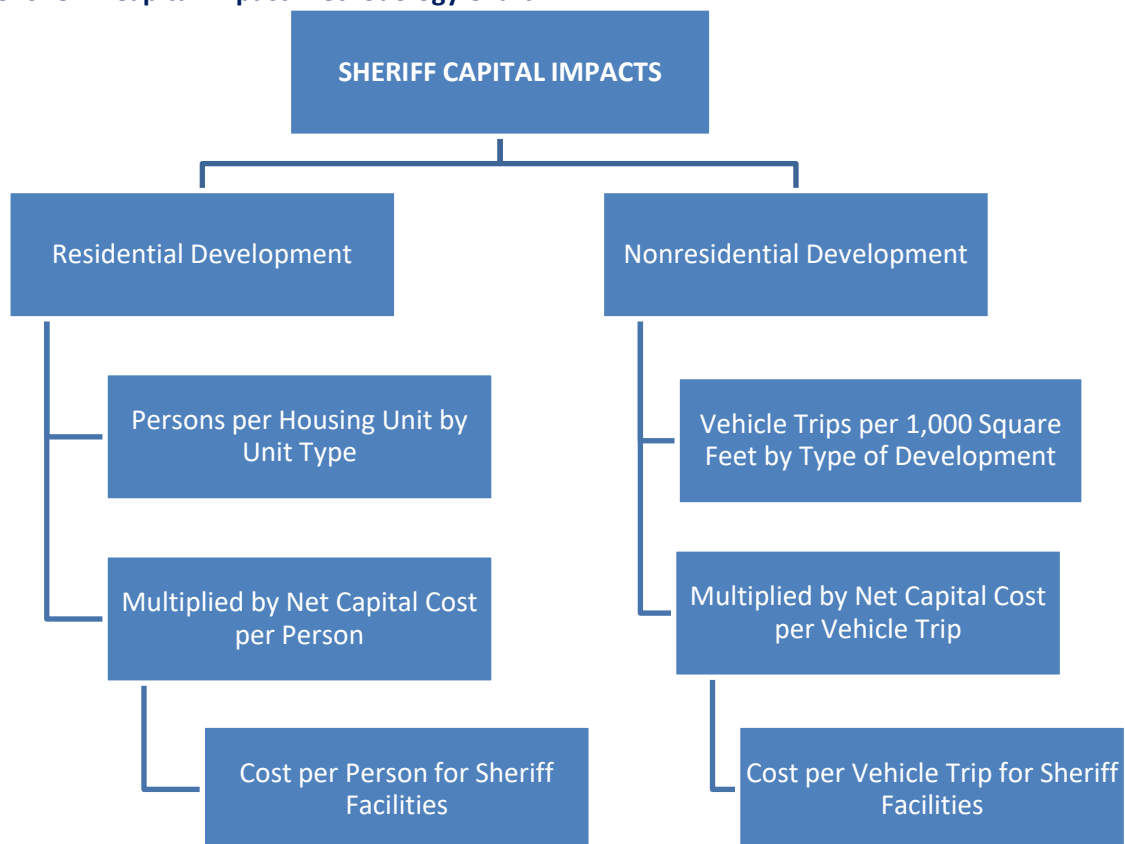
PUBLIC SAFETY CAPITAL IMPACTS: SHERIFF

There are three public facility subcategories included under Public Safety: Sheriff, Fire & Rescue, and Animal Control.

An **incremental methodology** approach is used to determine capital impacts for Sheriff facilities, which is diagrammed below. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the Sheriff capital impact is derived from the product of Sheriff service calls per person multiplied by persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of nonresidential vehicle trips per 1,000 square feet of nonresidential development multiplied by the net capital cost per vehicle trip.

The Sheriff capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. Sheriff capital impacts are calculated based on 2017 Sheriff calls for service data. The calls for service data provided by the County to TischlerBise was able to be delineated by residential and nonresidential.

Figure 53. Sheriff Capital Impact Methodology Chart



Cost Allocation for Sheriff Facilities

A report of 2017 sheriff service calls to business was provided by the Sheriff's Office. In total, there were 62,828 calls for service. Of the total, 60 percent were attributed to residential land uses and 40 percent were attributed to nonresidential land uses.

Sheriff services are provided on a countywide basis in Frederick County; substations are not used in the County. Therefore, it is recommended that one service area be used to determine the capital impact on Sheriff facilities.

Figure 54. Frederick County Sheriff Calls for Service

| Land Use | Calls for Service | % |
|----------------|-------------------|------|
| Residential | 37,565 | 60% |
| Nonresidential | 25,263 | 40% |
| Total | 62,828 | 100% |

Source: Frederick County Sheriff's Office

Sheriff Facilities Inventory and Level of Service

Sheriff capital impacts are based on current levels of service, which are derived from the current inventory of square footage and replacement value of existing facilities.

The square footage of the Public Safety Building in Frederick County is shown in Figure 55 and is allocated based on the service call data. The corresponding value of the facilities attributed to residential and nonresidential land uses is listed as well. The residential level of service, 0.26 square feet per person, is found by dividing the attributed square feet by the base year population. The nonresidential level of service, 0.08 square feet per vehicle, is found by dividing the attributed square feet by the base year nonresidential vehicle trip total.

At the bottom of the figure, the capital cost per person and nonresidential vehicle trip is calculated by multiplying the level of service with the average value per square foot of the Public Safety Building.

Figure 55. Sheriff Facilities Level of Service Standards

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|------------------------|--------|-------|----------|--------|-----------|--------------|------------|---------------|------------------|----------------|
| Public Safety Building | 38,203 | 60% | 40% | 22,842 | 15,361 | \$13,318,000 | \$348.61 | \$7,962,862 | \$5,355,138 | \$13,318,000 |
| GRAND TOTAL | 38,203 | | | 22,841 | 15,361 | \$13,318,000 | \$348.61 | \$7,962,861 | \$5,355,138 | \$13,318,000 |

Source: Frederick County Facility Inventory

| Sheriff Calls for Service | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 60% | 40% | |
| Total Sheriff Sq. Ft. | 22,841 | 15,361 | 38,202 |
| Base Year Population or Nonres. Trip | 86,702 | 182,739 | |
| Square Feet per Person or Nonres. Trip | 0.26 | 0.08 | |

Source: Frederick County Sheriff's Office

| | Residential | Nonresidential |
|--|----------------|----------------|
| Square Feet per Person or Nonres. Trip | 0.26 | 0.08 |
| Total Cost per Sq. Ft. | \$348.61 | \$348.61 |
| Cost per Person or Nonres. Trip | \$90.64 | \$27.89 |

Sheriff Input Variables and Capital Impacts

Level of service standards and cost factors for the Sheriff capital impacts are summarized from above and shown in Figure 56 and Figure 57. Capital impacts are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development. For further discussion on demand factors, see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is just one capital component in the capital impact calculation, Sheriff Facilities. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of the following figure.

Figure 56. Sheriff Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|----------------|
| Sheriff Facilities | per capita | \$90.64 |
| GROSS COST PER PERSON | | \$90.64 |
| Debt Service Credit | | \$0.00 |
| NET CAPITAL COST | | \$90.64 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$237 |
| 2.62 | \$237 |
| 2.08 | \$189 |
| 1.67 | \$151 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$215 |
| 2.37 | \$215 |
| 1.46 | \$132 |
| 1.51 | \$137 |

Figure 57. Sheriff Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------------|------------------|----------------|
| Sheriff Facilities | per vehicle trip | \$27.89 |
| GROSS COST PER VEHICLE TRIP | | \$27.89 |

Debt Service Credit \$0.00

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$27.89 |
|-------------------------|----------------|

| Nonresidential Capital Impact
per 1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$400 |
| 4.87 | \$136 |
| 1.97 | \$55 |
| 9.76 | \$272 |

| Nonresidential Capital Impact
per 1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$400 |
| 4.87 | \$136 |
| 1.97 | \$55 |
| 9.76 | \$272 |

Sheriff Cash Proffer Eligibility

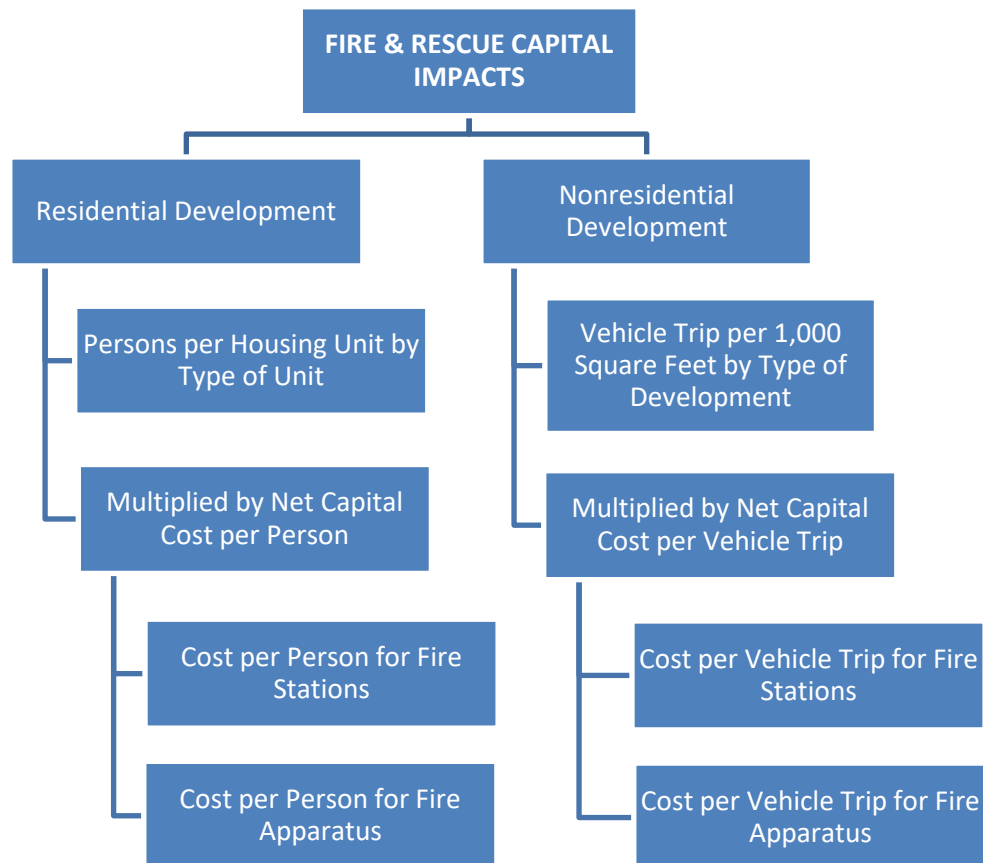
To be eligible for a cash proffer, the facility must be for Public Schools, Parks & Recreation, or Public Safety (Sheriff, Fire, and Animal Services) and a development requires additional capacity in excess of capacity available in current facilities. For Sheriff, there are no facilities listed in the CIP that would indicate a capacity increase is necessary to service future population, therefore, this **component is not included in the cash proffer calculation** at this time.

PUBLIC SAFETY CAPITAL IMPACTS: FIRE & RESCUE

Fire & Rescue is the second facility type included under the Public Safety capital impacts category. Frederick County Fire & Rescue services operate out of eleven stations. The County has invested in new and/or renovated fire and rescue stations in the recent past and has future projects programmed in the CIP. There are a number of projects in the County's CIP that will expand Fire & Rescue capacity. These new facilities will be able to serve the current population and future development. Because fire stations are organized by geographic fire districts, capital impacts are determined based on Service Area needs.

The **incremental methodology** is used to calculate the Fire & Rescue capital impact and is outlined in Figure 58. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the fire and rescue capital impact is derived from the product of persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of vehicle trips per 1,000 square feet of nonresidential space multiplied by the net capital cost per vehicle trip.

Figure 58. Fire & Rescue Capital Impact Methodology Chart



Cost Allocation for Fire & Rescue Facilities

Proportionate share factors are used to allocate demand to residential and nonresidential development where appropriate. For facilities that serve both residential and nonresidential development and without Fire & Rescue service call data, TischlerBise recommends using a proportionate share allocation based on a functional population approach. The functional population approach estimates the residential and nonresidential activity in the county by using the hours in a day. For the residents that are not working, their day is estimated to be split with 20 hours attributed to residential purposes and 4 hours to nonresidential purposes. For resident workers, 14 hours are attributed to residential purposes and 10 hours to nonresidential purposes. For non-resident workers in the county, 10 hours are attributed to nonresidential purposes in Frederick County.

Figure 59 provides detail on the approach and results, which indicate that approximately 77 percent of demand in Frederick County is from residential development and 23 percent from nonresidential.

Figure 59. Frederick County Proportionate Share Factors

| Demand Units in 2015 | | | |
|---|------------------------------------|-------------------|--------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| | Residential Subtotal | | 1,374,140 |
| | Residential Share ==> | | 77% |
| Nonresidential | | | |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| | Nonresidential Subtotal | | 414,750 |
| | Nonresidential Share ==> | | 23% |
| | TOTAL | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs.

Fire & Rescue Facilities in Capital Improvement Plan

In Figure 60, the capacity improvement projects for Fire & Rescue identified in Frederick County's CIP are listed. The two stations in the CIP that include both a cost and floor area estimate result in an average cost per square foot of \$355.

Figure 60. Fire & Rescue Facilities in Capital Improvement Plan

| Facility | Service Area | Sq. Ft. | Value | Value \$
Per Sq. Ft. |
|---|---------------|---------|-------------|-------------------------|
| Fire & Rescue Station 22 | Stephens City | 10,000 | \$3,400,000 | \$340 |
| Fire & Rescue Station 23/Annex Facility | Millwood | 10,000 | \$3,700,000 | \$370 |
| Greenwood Fire Station Renovations | Greenwood | - | - | \$0 |
| Clear Brook Replacement | Clear Brook | - | - | \$0 |
| Middletown Replacement | Middletown | - | - | \$0 |
| Total | | 20,000 | \$7,100,000 | \$355 |

Source: Frederick County 2019-2024 CIP

Fire & Rescue Facilities Level of Service and Cost Factors

The Fire & Rescue capital impacts are based on current levels of service, which are derived from the current inventory of square footage of fire station space. Found in Figure 61, the current total fire station square footage is 134,232 square feet. To attribute the floor area to residential and nonresidential development, the proportionate share factors are applied. The levels of service area calculated by dividing the attributed floor area by the demand unit. For example, 103,359 square feet are attributed to residential development and is a countywide population of 86,702. As a result, there is a level of service of 1.19 square feet per capita.

The average value per square foot of capital projects in the CIP (\$355) is applied to the levels of service to determine the capital impact. For example, the level of service for residential development is 1.19 square feet per capita. As a result, the capital impact is \$422 per person (\$355 per square foot x 1.19 square feet per person = \$422 per person).

Figure 61. Fire & Rescue Facilities Level of Service and Cost Factors

| Proportionate Share | | Residential
77% | Nonresidential
23% |
|---------------------|----------------|--------------------|-----------------------|
| Service Area | Square Feet | Res. Sq. Ft. | Nonres. Sq. Ft. |
| Stephens City | 15,032 | 11,575 | 3,457 |
| Middletown | 5,814 | 4,477 | 1,337 |
| Clear Brook | 7,325 | 5,640 | 1,685 |
| Gore | 12,496 | 9,622 | 2,874 |
| Round Hill | 16,435 | 12,655 | 3,780 |
| Gainesboro | 11,988 | 9,231 | 2,757 |
| Star Tannery | 3,408 | 2,624 | 784 |
| Greenwood | 22,000 | 16,940 | 5,060 |
| North Mountain | 7,754 | 5,971 | 1,783 |
| Reynolds Store | 14,720 | 11,334 | 3,386 |
| Millwood | 17,260 | 13,290 | 3,970 |
| Total | 134,232 | 103,359 | 30,873 |

| | Value \$
Per Sq. Ft. | Demand Unit -
Population | Residential
Square Feet | Res. LOS
(Sq. Ft./Capita) | Res. Capital
Impact/Capita |
|------------|-------------------------|-----------------------------|----------------------------|------------------------------|-------------------------------|
| Countywide | \$355 | 86,702 | 103,359 | 1.19 | \$422 |

| | Value \$
Per Sq. Ft. | Demand Unit -
Vehicle Trips | Nonresidential
Square Feet | Nonres. LOS
(Sq. Ft./Trip) | Nonres. Capital
Impact/Trip |
|------------|-------------------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------|
| Countywide | \$355 | 182,739 | 30,873 | 0.17 | \$60 |

Fire Apparatus Capital Impact

In addition to new station space, it is anticipated that the County will purchase apparatuses for the new fire stations. It is assumed that the County will expand its fleet at the same level it is current serving, so the current inventory of apparatuses is analyzed, Figure 62.

The inventory is used to determine the current level of service. There are a total of 85 vehicles with a replacement cost of \$26,930,000. The cost of the apparatuses is attributed to residential and nonresidential development based on the County's functional population. The cost is then divided by the current population or nonresidential vehicle trips.

Figure 62. Fire & Rescue Apparatus Level of Service and Cost Factor

| Apparatus | # of Units | Unit Cost (\$2017) | Total Cost (\$2017) |
|--------------|------------|--------------------|---------------------|
| Engine | 15 | \$500,000 | \$7,500,000 |
| Ladder | 3 | \$1,200,000 | \$3,600,000 |
| Ambulance | 23 | \$250,000 | \$5,750,000 |
| Tanker | 14 | \$500,000 | \$7,000,000 |
| Other | 30 | \$102,667 | \$3,080,000 |
| Total | 85 | | \$26,930,000 |

| | Residential | Nonresidential |
|---------------------------------|--------------|----------------|
| Proportionate Share | 77% | 23% |
| Cost Allocation | \$20,736,100 | \$6,193,900 |
| Population or Nonres. Trips | 86,702 | 182,739 |
| Cost per Person or Nonres. Trip | \$239 | \$34 |

Fire & Rescue Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for Fire & Rescue capital impact are summarized from above and shown below. Capital impacts for Fire & Rescue facilities are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development. For further discussion on demand factors, see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are two components in the capital impact calculation:

- Fire Stations (determined by Service Area)
- Fire Apparatus (determined by Service Area)

Since the capital cost and household sizes differ between Service Areas, the capital impact for each fire district is listed.

Figure 63. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE | FIRE DISTRICT |
|------------------------------|-------------|------------|---------------|
| | | | Millwood |
| Fire Station | per capita | n/a | \$422 |
| Fire Apparatus | per capita | n/a | \$239 |
| GROSS COST PER PERSON | | \$0 | \$661 |
| Debt Service Credit | | \$0 | \$0 |
| NET CAPITAL COST | | \$0 | \$661 |

| Residential Capital Impact per Housing Unit | Housing Unit Type | Service Area: Stephens City | COUNTYWIDE | FIRE DISTRICT | Total |
|---|------------------------------|-----------------------------|-------------------|------------------|-------------------|
| | | Persons | Capital Impact \$ | Stephens City | Capital Impact \$ |
| | | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| | Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| | Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| | Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| | Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Housing Unit Type | Service Area: Middletown | COUNTYWIDE | FIRE DISTRICT | Total |
|---|------------------------------|--------------------------|-------------------|------------------|-------------------|
| | | Persons | Capital Impact \$ | Middletown | Capital Impact \$ |
| | | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| | Single Family-Detached | 2.37 | \$0 | \$1,566 | \$1,566 |
| | Single Family-Attached | 2.37 | \$0 | \$1,566 | \$1,566 |
| | Multifamily | 1.46 | \$0 | \$965 | \$965 |
| | Age-Restricted Single Family | 1.51 | \$0 | \$998 | \$998 |

Figure 64. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential cont.

| Residential Capital Impact per Housing Unit | Service Area:
Clear Brook | COUNTYWIDE | FIRE DISTRICT
Clear Brook | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Service Area:
Gore | COUNTYWIDE | FIRE DISTRICT
Gore | Total |
|---|-----------------------|-------------------|-----------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Round Hill | COUNTYWIDE | FIRE DISTRICT
Round Hill | Total |
|---|-----------------------------|-------------------|-----------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Gainesboro | COUNTYWIDE | FIRE DISTRICT
Gainesboro | Total |
|---|-----------------------------|-------------------|-----------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Star Tannery | COUNTYWIDE | FIRE DISTRICT
Star Tannery | Total |
|---|-------------------------------|-------------------|-------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

Figure 65. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential cont.

| Residential Capital Impact per Housing Unit | Service Area: Greenwood | COUNTYWIDE | FIRE DISTRICT Greenwood | Total |
|---|-------------------------|-------------------|-------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Service Area: North Mountain | COUNTYWIDE | FIRE DISTRICT North Mountain | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area: Reynolds Store | COUNTYWIDE | FIRE DISTRICT Reynolds Store | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area: Millwood | COUNTYWIDE | FIRE DISTRICT Millwood | Total |
|---|------------------------|-------------------|------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

Figure 66. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE | FIRE DISTRICT |
|------------------------------------|------------------|------------|---------------|
| | | | Millwood |
| Fire Station | per vehicle trip | n/a | \$60 |
| Fire Apparatus | per vehicle trip | n/a | \$34 |
| GROSS COST PER VEHICLE TRIP | | \$0 | \$94 |

| | | |
|----------------------------|------------|-------------|
| Debt Service Credit | \$0 | \$0 |
| NET CAPITAL COST | \$0 | \$94 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Stephens City | COUNTYWIDE | FIRE DISTRICT
Stephens City | Total |
|---|--------------------------------|-------------------|--------------------------------|-------------------|
| | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Middletown | COUNTYWIDE | FIRE DISTRICT
Middletown | Total |
|---|-----------------------------|-------------------|-----------------------------|-------------------|
| | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Clear Brook | COUNTYWIDE | FIRE DISTRICT
Clear Brook | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Gore | COUNTYWIDE | FIRE DISTRICT
Gore | Total |
|---|-----------------------|-------------------|-----------------------|-------------------|
| | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

Figure 67. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential cont.

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Round Hill</i> | COUNTYWIDE | FIRE DISTRICT
<i>Round Hill</i> | Total |
|--|------------------------------------|-------------------|------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Gainesboro</i> | COUNTYWIDE | FIRE DISTRICT
<i>Gainesboro</i> | Total |
|--|------------------------------------|-------------------|------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Star Tannery</i> | COUNTYWIDE | FIRE DISTRICT
<i>Star Tannery</i> | Total |
|--|--------------------------------------|-------------------|--------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Greenwood</i> | COUNTYWIDE | FIRE DISTRICT
<i>Greenwood</i> | Total |
|--|-----------------------------------|-------------------|-----------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>North Mountain</i> | COUNTYWIDE | FIRE DISTRICT
<i>North Mountain</i> | Total |
|--|--|-------------------|--|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

Figure 68. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential cont.

| Nonresidential Capital Impact
per 1,000 Square Feet | Nonresidential Land Use | Service Area:
Reynolds Store | COUNTYWIDE | FIRE DISTRICT
Reynolds Store | Total |
|--|---------------------------|---------------------------------|-------------------|---------------------------------|-------------------|
| | | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| | Retail | 14.35 | \$0 | \$0 | \$0 |
| | Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| | Industrial | 1.97 | \$0 | \$0 | \$0 |
| | Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Nonresidential Land Use | Service Area:
Millwood | COUNTYWIDE | FIRE DISTRICT
Millwood | Total |
|--|---------------------------|---------------------------|-------------------|---------------------------|-------------------|
| | | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| | Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| | Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| | Industrial | 1.97 | \$0 | \$184 | \$184 |
| | Institutional | 9.76 | \$0 | \$917 | \$917 |

Fire & Rescue Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The Fire & Rescue analysis includes a capacity trigger based on the County's CIP. If there is a capacity increasing capital project (i.e. a new fire station, an improvement that increases capacity) in the County's CIP it is assumed that the corresponding Service Area needs capacity improvements to accommodate future growth. When that is the case, the capital impact is triggered as cash proffer eligible. Figure 69 lists those Service Areas (fire districts) that have capacity increasing projects listed in the CIP, thus eligible for cash proffer.

Figure 69. Fire & Rescue Capital Projects

| Fire District | Capital Need? |
|----------------|---------------|
| Stephens City | Yes |
| Middletown | Yes |
| Clear Brook | Yes |
| Gore | No |
| Round Hill | No |
| Gainesboro | No |
| Star Tannery | No |
| Greenwood | Yes |
| North Mountain | No |
| Reynolds Store | No |
| Millwood | Yes |

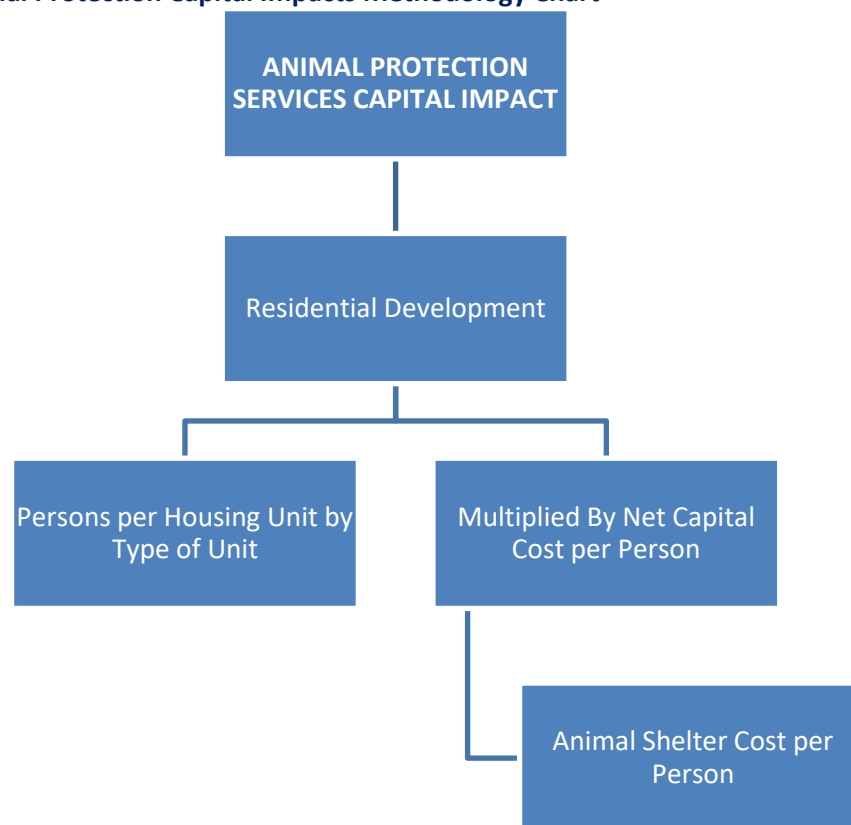
Source: Frederick County 2019-2024 CIP

PUBLIC SAFETY CAPITAL IMPACTS: ANIMAL PROTECTION

Animal Protection is the third subcategory under Public Safety capital impacts. Similar to the Sheriff facility type, there were no Animal Protection facilities included in the Frederick County's Capital Improvement Plan (CIP). Therefore, the CapIM Model uses an **incremental methodology** to calculate the capital impact, which reflects growth's share of the facility cost. Additionally, since there is no identified animal shelter capacity increasing project to accommodate future demand, **the capital impacts are not eligible for cash proffers**.

Figure 70 diagrams the incremental methodology used to calculate Animal Protection capital impacts. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The capital impact is derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person.

Figure 70. Animal Protection Capital Impacts Methodology Chart



Animal Protection Facilities Inventory and Level of Service

Frederick County's current shelter is 13,369 square feet and has a value of \$2,507,000. This results in a total cost of \$187.52 per square foot. In Figure 71, floor area is attributed 100 percent to residential development. To find the level of service, the floor area is divided by the County's current population (13,369 square feet / 86,702 residents = 0.15 square feet per person). This factor is multiplied by the average cost per square foot to calculate the cost per person of \$28.13.

Figure 71. Animal Protection Facilities and Level of Service

| Facility | Sq.Ft. | Value | \$/Sq. Ft. |
|--------------------|---------------|--------------------|-----------------|
| Animal Shelter | 13,369 | \$2,507,000 | \$187.52 |
| GRAND TOTAL | 13,369 | \$2,507,000 | \$187.52 |

Source: Frederick County Building Inventory

| Proportionate Share | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 100% | 0% | |
| Total Animal Protection Facility Sq. Ft. | 13,369 | - | 13,369 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.15 | 0.00 | |

| | Residential | Nonresidential |
|-------------------------------|----------------|----------------|
| | 0.15 | 0.00 |
| Square Feet per Person or Job | 0.15 | 0.00 |
| Total Cost per Sq. Ft. | \$187.52 | \$187.52 |
| Cost per Person or Job | \$28.13 | \$0.00 |

Animal Protection Input Variables and Capital Impacts

Factors used to determine the Animal Protection services capital impacts are summarized below. Capital impacts for Animal Protection capital impacts are based on household size (i.e., persons per housing unit) and are only determined for residential development. For further discussion on household size see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is one component in the capital impact calculation, Animal Shelter. Animal Protection services are provided on a countywide basis. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 72.

Figure 72. Animal Protection Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|----------------|
| Animal Shelter | per capita | \$28.13 |
| GROSS COST PER PERSON | | \$28.13 |

Debt Service Credit \$0.00

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$28.13 |
|-------------------------|----------------|

| Residential Capital Impact per Housing Unit | Service Area: Urban | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$74 |
| Single Family-Attached | 2.62 | \$74 |
| Multifamily | 2.08 | \$59 |
| Age-Restricted Single Family | 1.67 | \$47 |

| Residential Capital Impact per Housing Unit | Service Area: Rural | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$67 |
| Single Family-Attached | 2.37 | \$67 |
| Multifamily | 1.46 | \$41 |
| Age-Restricted Single Family | 1.51 | \$42 |

Animal Protection Cash Proffer Eligibility

To be eligible for a cash proffer, the facility must be for Public Schools, Parks and Recreation, or Public Safety (Sheriff, Fire, and Animal Services) and a development requires additional capacity in excess of capacity available in current facilities. For Animal Protection, there are no facilities listed in the CIP that would indicate a capacity increase is necessary to service future population, therefore, the capital impacts found in Figure 72 are ***not included in the cash proffer calculation*** at this time.

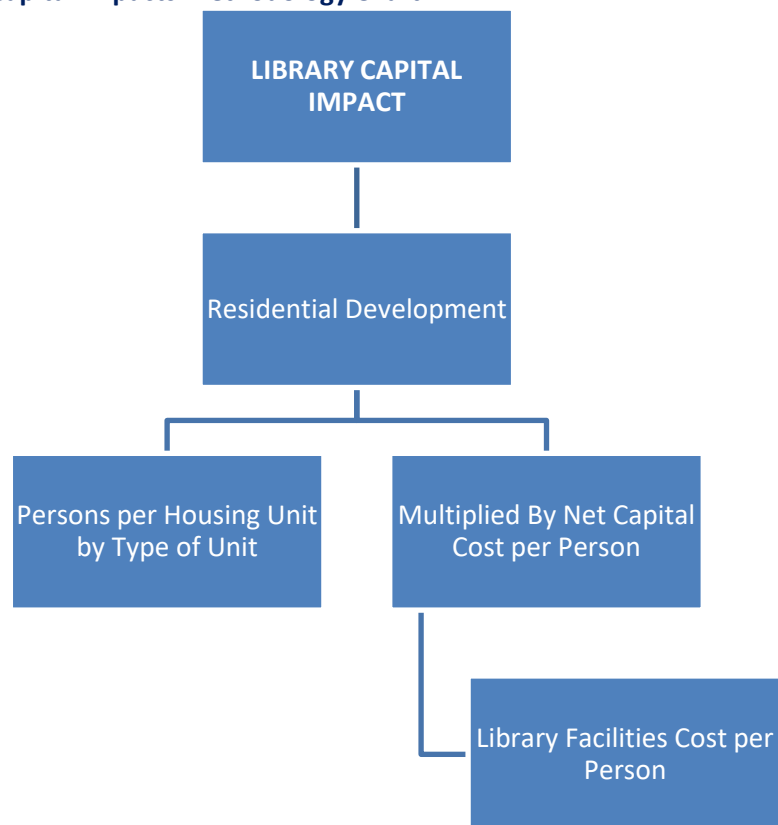
II. Non-Cash Proffer Categories

LIBRARY CAPITAL IMPACTS

Frederick County has a library system that currently includes one Central Library with two capacity projects in the County's Capital Improvement Plan (CIP). Both projects are to construct additional Countywide libraries. An **incremental methodology** will be used to determine the capital impact and is analyzed on a Countywide basis. Only residential developments will be included in the impact calculations.

Figure 73 diagrams the methodology used to determine Library capital impacts. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. Library capital impact is derived from the product of persons per housing unit (by type of unit) and the net capital cost per person. The level of service standard is calculated using the County's planned facilities and projected population. The level of service is combined with the cost per square foot of the new facilities to calculate the net capital cost per person.

Figure 73. Library Capital Impacts Methodology Chart



Library Facilities Inventory

As shown in Figure 74, the current library square footage is 31,264 square feet and has a value of \$4,465,000. The entire Bowman Library is attributed to residential development.

Figure 74. Library Facilities Level of Service Standards and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. |
|----------------|--------|-------|----------|--------|-----------|-------------|------------|
| Bowman Library | 31,264 | 100% | 0% | 31,264 | 0 | \$4,465,000 | \$142.82 |
| GRAND TOTAL | 31,264 | | | 31,264 | 0 | \$4,465,000 | \$142.82 |

Source: Frederick County Building Inventory

Library Facilities in Capital Improvement Plan

To address future growth, the County plans to build two more libraries. The square footage and cost of the projects are listed in Figure 75. In total, the CIP includes plans for 12,000 new square feet of library facilities which will cost \$4,792,269, an average cost of \$399 per square foot.

Figure 75. Planned Library Facility Level of Service Standards and Cost Factors

| Facility | Service Area | Cost | Sq. Ft. | \$/Sq. Ft |
|--------------------------------|--------------|-------------|---------|-----------|
| Library Branch - Gainesboro | Countywide | \$1,749,034 | 5,000 | \$350 |
| Library Branch - South Library | Countywide | \$3,043,235 | 7,000 | \$435 |
| Total | | \$4,792,269 | 12,000 | \$399 |

Source: Frederick County 2019-2024 CIP

Library Level of Service and Cost Factors

Shown in Figure 76, since 100 percent of library services is attributed to residential development, the level of service for libraries is calculated by dividing the current inventory floor area by the population. As a result, there is 0.36 square feet per person. The average cost for the planned library projects is applied to the level of service to calculate the capital impact per person (\$143.77).

Figure 76. Library Level of Service and Cost Factors

| Proportionate Share | Residential | Nonresidential | Total |
|-------------------------------|-------------|----------------|--------|
| | 100% | 0% | |
| Total Library Sq. Ft. | 31,264 | - | 31,264 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.36 | 0.00 | |

| | Residential | Nonresidential |
|-------------------------------|-------------|----------------|
| | 0.36 | 0.00 |
| Square Feet per Person or Job | 0.36 | 0.00 |
| Total Cost per Sq. Ft. | \$399.36 | \$399.36 |
| Cost per Person or Job | \$143.77 | \$0.00 |

Library Input Variables and Capital Impacts

Factors used to determine library capital impacts are summarized in Figure 77. Capital impacts for libraries are based on household size (i.e., persons per housing unit) and are only determined for residential development. The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is one component to the capital impact calculation, Library Facilities (Countywide).

Library capital impacts are the product of persons per housing unit multiplied by the total net capital cost per person. An example of the calculation for a single family detached unit in the Urban Service Area is: the net capital cost per person for Central Library (\$143.77) multiplied by the persons per housing unit (2.62) to arrive at the capital impact for the Library Facilities for a single family detached unit of \$377 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 77.

Figure 77. Library Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|-----------------|
| Library Facilities | per capita | \$143.77 |
| GROSS COST PER PERSON | | \$143.77 |

| | |
|-------------------------|-----------------|
| NET CAPITAL COST | \$143.77 |
|-------------------------|-----------------|

| Residential Capital Impact per Housing Unit | Service Area: Urban | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$377 |
| Single Family-Attached | 2.62 | \$377 |
| Multifamily | 2.08 | \$299 |
| Age-Restricted Single Family | 1.67 | \$240 |

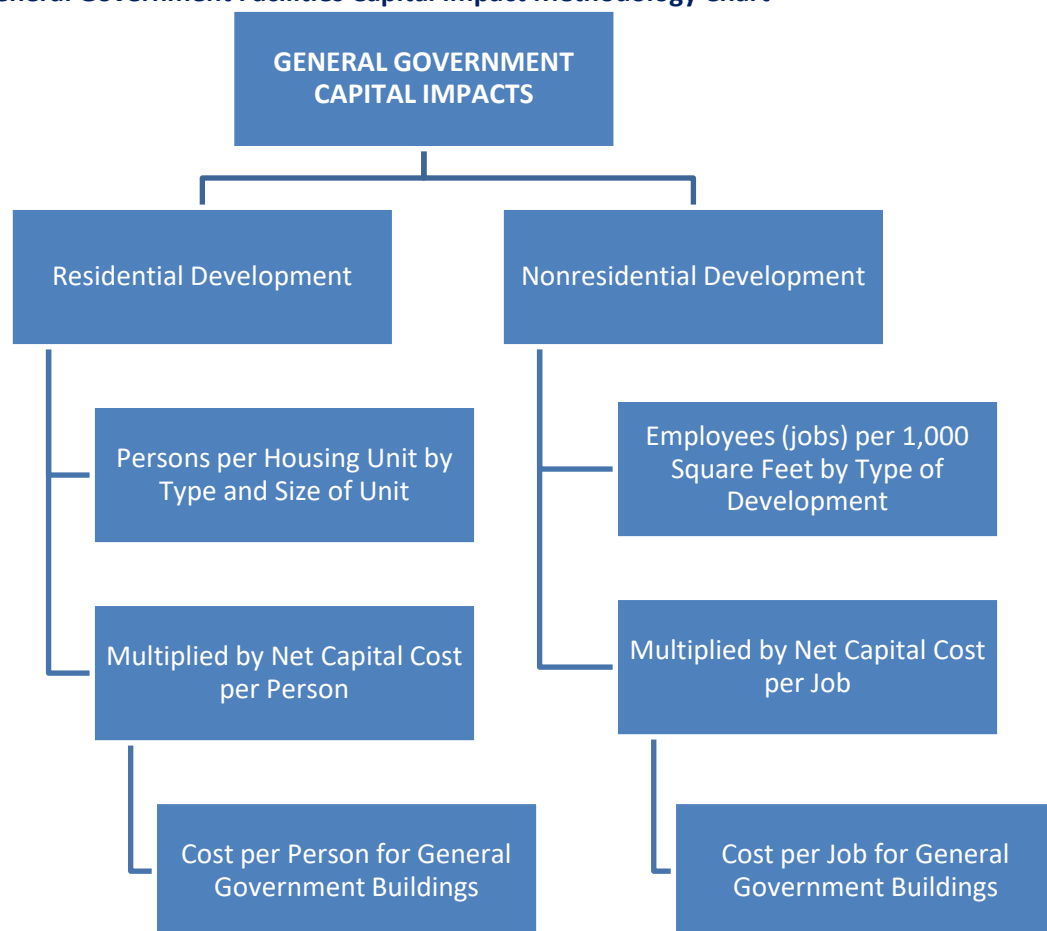
| Residential Capital Impact per Housing Unit | Service Area: Rural | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$341 |
| Single Family-Attached | 2.37 | \$341 |
| Multifamily | 1.46 | \$210 |
| Age-Restricted Single Family | 1.51 | \$217 |

GENERAL GOVERNMENT CAPITAL IMPACTS

General Government facilities capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. This is the **incremental methodology**.

General Government Facilities Capital Impact is calculated on a per capita basis for residential development and a per employee basis for nonresidential development. Figure 78 illustrates the methodology used to determine the capital impact. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the General Government Facilities capital impact is derived from the product of persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of employees per 1,000 square feet of nonresidential space multiplied by the net capital cost per employee (job).

Figure 78. General Government Facilities Capital Impact Methodology Chart



Cost Allocation for General Government Facilities

Proportionate share factors are used to allocate demand to residential and nonresidential development where appropriate. For facilities that serve both residential and nonresidential development, TischlerBise recommends using a proportionate share allocation based on a functional population approach. The functional population approach estimates the residential and nonresidential activity in the county by using the hours in a day. For the residents that are not working, their day is estimated to be split with 20 hours attributed to residential purposes and 4 hours to nonresidential purposes. For resident workers, 14 hours are attributed to residential purposes and 10 hours to nonresidential purposes. For non-resident workers in the county, 10 hours are attributed to nonresidential purposes in Frederick County.

Figure 79 provides detail on the approach and results, which indicate that approximately 77 percent of demand in Frederick County is from residential development and 23 percent from nonresidential.

Figure 79. Frederick County Proportionate Share Factors

| Demand Units in 2015 | | | |
|---|------------------------------------|-------------------|--------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| | Residential Subtotal | | 1,374,140 |
| | Residential Share ==> | | 77% |
| Nonresidential | | | |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| | Nonresidential Subtotal | | 414,750 |
| | Nonresidential Share ==> | | 23% |
| | TOTAL | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs.

General Government Facilities Level of Service and Cost Factors

General government capital impacts are based on current levels of service, which are derived from the current inventory of square footage and replacement value of current County office buildings. General government services serve a countywide base and it is recommended that one service area be used to determine the capital impact on general government facilities.

Shown in Figure 80, current general government office square footage is 100,000 square feet. Facilities' square footage and replacement costs are allocated to residential or nonresidential based on the countywide proportionate share found in Figure 79.

In total, 77,000 square feet of General Government Facilities are allocated to residential development and 23,000 square feet are allocated to nonresidential development. As a result, there is 0.89 square feet per person and 0.82 square feet per job.

The average cost per square foot of the General Government Building is applied to the levels of service to calculate the capital impact. For example, the residential capital impact is \$311.50 per person (0.89 square feet per person x \$350 per square foot = \$311.50 per person).

Figure 80. General Government Facilities Level of Service Standards and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|-----------------------------|---------|-------|----------|--------|-----------|--------------|-----------------|---------------|------------------|----------------|
| General Government Building | 100,000 | 77% | 23% | 77,000 | 23,000 | \$35,000,000 | \$350.00 | \$26,950,000 | \$8,050,000 | \$35,000,000 |
| GRAND TOTAL | 100,000 | | | 77,000 | 23,000 | \$35,000,000 | \$350.00 | \$26,950,000 | \$8,050,000 | \$35,000,000 |

Source: Frederick County Department of Planning & Development

| Proportionate Share | Residential | Nonresidential | Total |
|----------------------------------|-------------|----------------|---------|
| | 77% | 23% | |
| Total General Government Sq. Ft. | 77,000 | 23,000 | 100,000 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.89 | 0.82 | |

| | Residential | Nonresidential |
|-------------------------------|-----------------|-----------------|
| | 0.89 | 0.82 |
| Square Feet per Person or Job | 0.89 | 0.82 |
| Total Cost per Sq. Ft. | \$350.00 | \$350.00 |
| Cost per Person or Job | \$311.50 | \$287.00 |

General Government Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for the General Government capital impact are summarized from above and shown in Figure 81. Capital impacts for general government facilities are based on household size (i.e., persons per housing unit) for residential development and employees per 1,000 square feet of floor area for nonresidential development. (For further discussion on demand factors, see the chapter Land Use Assumptions.)

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is only one component in the capital impact calculation, General Government Facilities.

An example of the calculation for a single family housing unit in the Urban Service Area is: the net capital cost per person (\$311.50) multiplied by the persons per housing unit (2.62) to arrive at the capital impact per single family detached unit of \$816 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 81.

Figure 81. General Govt. Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-------------------------------|-------------|-----------------|
| General Government Facilities | per capita | \$311.50 |
| GROSS COST PER PERSON | | \$311.50 |
| NET CAPITAL COST | | \$311.50 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$816 |
| 2.62 | \$816 |
| 2.08 | \$648 |
| 1.67 | \$520 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$738 |
| 2.37 | \$738 |
| 1.46 | \$455 |
| 1.51 | \$471 |

For nonresidential land uses, the number of employees per 1,000 square feet for the respective type of land use is multiplied by the net cost per job. For example, the capital impact for a retail development is calculated as follows: 2.34 employees per 1,000 square feet x \$287 to yield an amount of \$673 per 1,000 square feet (rounded).

Figure 82. General Govt. Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-------------------------------|-------------|-----------------|
| General Government Facilities | per job | \$287.00 |
| GROSS COST PER JOB | | \$287.00 |

| | |
|-------------------------|-----------------|
| NET CAPITAL COST | \$287.00 |
|-------------------------|-----------------|

| Nonresidential Capital Impact per 1,000 Square Feet |
|---|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Employees | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 2.34 | \$673 |
| 2.97 | \$852 |
| 1.59 | \$457 |
| 2.83 | \$812 |

| Nonresidential Capital Impact per 1,000 Square Feet |
|---|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

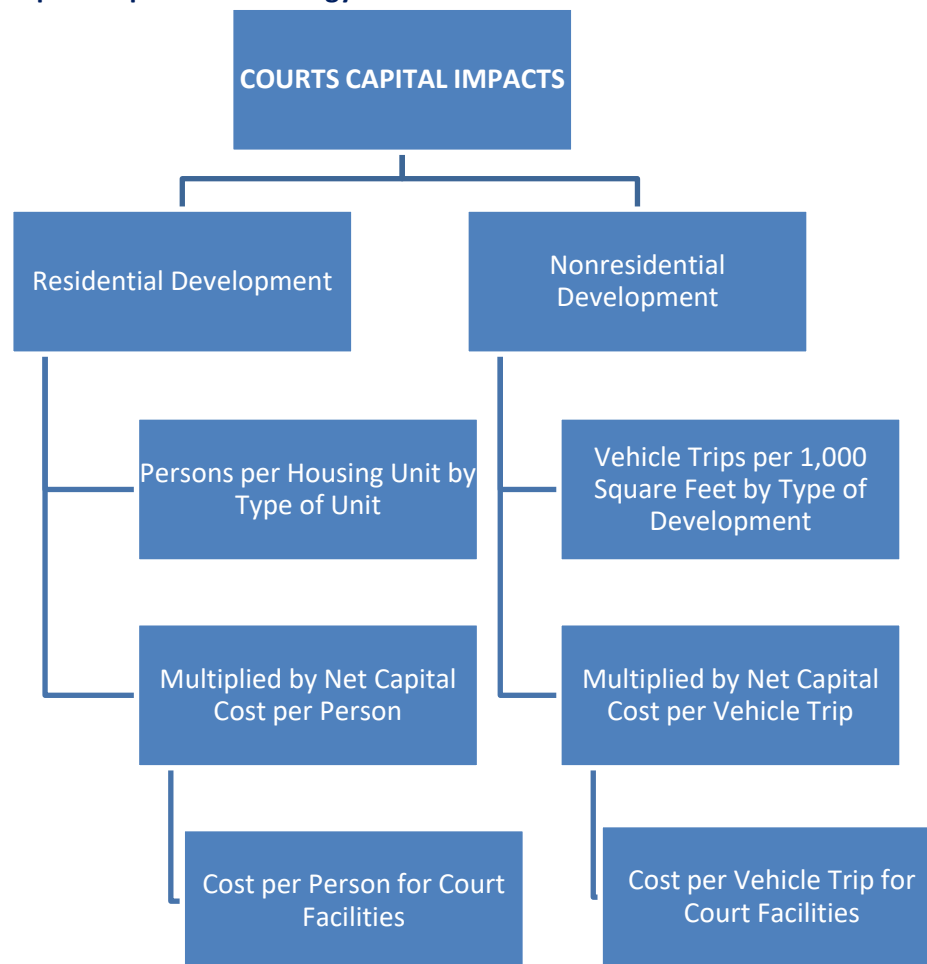
| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Employees | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 2.34 | \$673 |
| 2.97 | \$852 |
| 1.59 | \$457 |
| 2.83 | \$812 |

COURTS CAPITAL IMPACTS

Court facilities capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. This is the **incremental methodology**.

In Figure 83, the methodology used to determine the capital impact is illustrated. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the Courts capital impact is derived from the persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of vehicle trips per 1,000 square feet of nonresidential space multiplied by the net capital cost per vehicle trip (job).

Figure 83. Courts Capital Impact Methodology Chart



Cost Allocation for Court Facilities

To allocate floor area and costs of Court facilities, Sheriff calls for service data is used. A report of 2017 sheriff service calls for service was provided by the Sheriff's Office. In total, there were 62,828 calls. Of the total, 60 percent were attributed to residential land uses and 40 percent were attributed to nonresidential land uses.

Court services are provided on a countywide basis in Frederick County. Therefore, it is recommended that one service area be used to determine the capital impact on Court facilities.

Figure 84. Frederick County Sheriff Calls for Service

| Land Use | Calls for Service | % |
|----------------|-------------------|------|
| Residential | 37,565 | 60% |
| Nonresidential | 25,263 | 40% |
| Total | 62,828 | 100% |

Source: Frederick County Sheriff's Office

Court Facilities Level of Service and Cost Factors

Court facilities capital impacts are based on the current inventory. Listed in Figure 85, there are two Court facilities included in the analysis: the Smithfield Building and the Joint Judicial Center. Both buildings are occupied by other departments as well. Only the space occupied by Court facilities is included in the figure. Based on Sheriff calls for service, Court facilities are attributed to residential (60 percent) and nonresidential (40 percent). The levels of service are found by dividing the attributed floor area by the demand unit. For example, 27,798 square feet are attributed to residential development and there are 86,702 residents in Frederick County. As a result, the level of service is 0.32 square feet per person.

The capital impact of development is found by applying the average cost per square foot by the level of service. For example, the capital impact of residential development is \$83.99 (0.32 square feet per person x \$262.46 per square foot = \$83.99).

Figure 85. Court Facilities Level of Service and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|-----------------------|--------|-------|----------|--------|-----------|--------------|------------|---------------|------------------|----------------|
| Smithfield Building | 17,993 | 60% | 40% | 10,758 | 7,235 | \$2,227,624 | \$123.81 | \$1,331,901 | \$895,723 | \$2,227,624 |
| Joint Judicial Center | 28,500 | 60% | 40% | 17,040 | 11,460 | \$9,975,000 | \$350.00 | \$5,964,075 | \$4,010,925 | \$9,975,000 |
| GRAND TOTAL | 46,493 | | | 27,798 | 18,695 | \$12,202,624 | \$262.46 | \$7,295,976 | \$4,906,648 | \$12,202,624 |

Source: Frederick County Building Inventory

| Sheriff Calls for Service | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 60% | 40% | |
| Total Court Sq. Ft. | 27,798 | 18,695 | 46,493 |
| Base Year Population or Nonres. Trip | 86,702 | 182,739 | |
| Square Feet per Person or Nonres. Trip | 0.32 | 0.10 | |

Source: Frederick County Sheriff's Office

| | Residential | Nonresidential |
|--|----------------|----------------|
| Square Feet per Person or Nonres. Trip | 0.32 | 0.10 |
| Total Cost per Sq. Ft. | \$262.46 | \$262.46 |
| Cost per Person or Nonres. Trip | \$83.99 | \$26.25 |

Court Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for courts capital impact are summarized from above and shown in Figure 86. Capital impacts for court facilities are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is only one component in the capital impact calculation, Court Facilities. Court services are provided on a countywide base and it is recommended that one service area be used to determine the capital impact on court facilities. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 86.

Figure 86. Court Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-----------------------|-------------|------------|
| Courts Facilities | per capita | \$83.99 |
| GROSS COST PER PERSON | | \$83.99 |
| NET CAPITAL COST | | \$83.99 |

| Residential Capital Impact per Housing Unit |
|---|
| Housing Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$220 |
| 2.62 | \$220 |
| 2.08 | \$175 |
| 1.67 | \$140 |

| Residential Capital Impact per Housing Unit |
|---|
| Housing Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$199 |
| 2.37 | \$199 |
| 1.46 | \$123 |
| 1.51 | \$127 |

Figure 87. Court Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------------|------------------|----------------|
| Courts Facilities | per vehicle trip | \$26.25 |
| GROSS COST PER VEHICLE TRIP | | \$26.25 |

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$26.25 |
|-------------------------|----------------|

| Nonresidential Capital Impact per
1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$377 |
| 4.87 | \$128 |
| 1.97 | \$52 |
| 9.76 | \$256 |

| Nonresidential Capital Impact per
1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

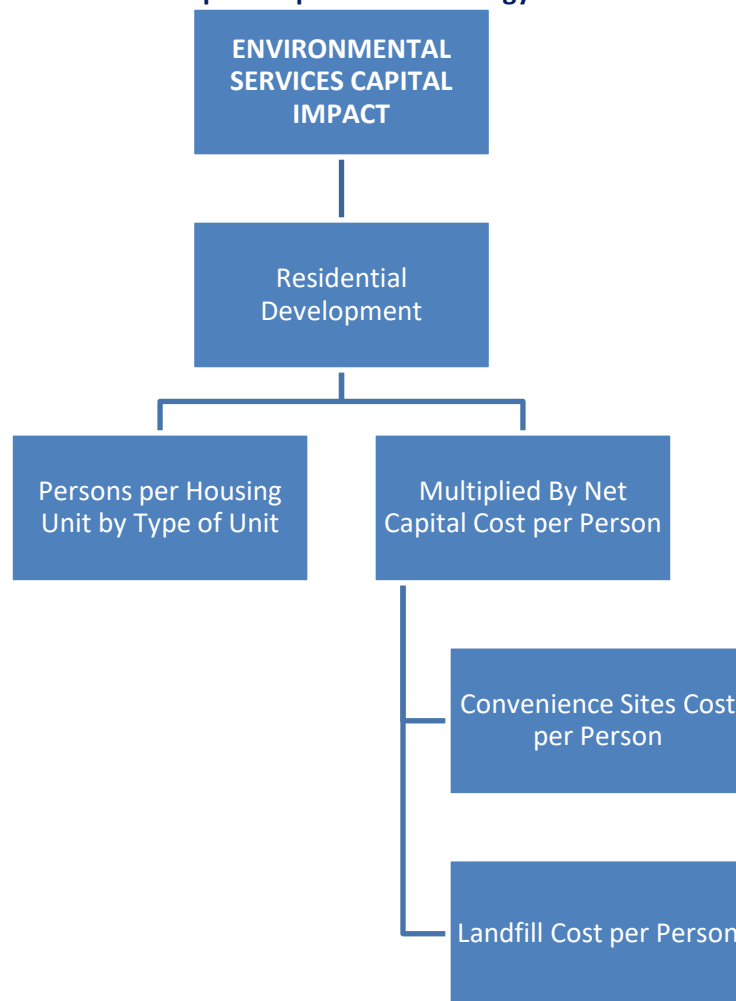
| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$377 |
| 4.87 | \$128 |
| 1.97 | \$52 |
| 9.76 | \$256 |

ENVIRONMENTAL SERVICES/SOLID WASTE CAPITAL IMPACTS

Frederick County provided both convenience sites and landfill services to its residents. It is assumed that the County's current level of service will continue into the future as the County grows. As such, the **incremental methodology** is used in the CapIM Model to determine the capital impact.

Figure 88 diagrams the general methodology used to calculate environmental services capital impact. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The capital impact is derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person. Frederick County provides convenience sites at a Service Area level and landfill centers at a Countywide level.

Figure 88. Environmental Services Capital Impacts Methodology Chart



Environmental Services Inventory

As shown in Figure 89, there are nine convenience sites and one landfill provided by the County.

Figure 89. Environmental Services Facilities Level of Service Standards and Cost Factors

| Facility | Service Area | Purpose | Acres |
|-------------------------|--------------|-----------------|-------|
| Albin | Rural | Waste & Compact | 1.0 |
| Stephenson | Urban | Waste & Compact | 3.0 |
| Gainesboro | Rural | Waste & Compact | 1.5 |
| Shawneeland | Rural | Waste & Compact | 1.0 |
| Round Hill | Rural | Waste & Compact | 6.7 |
| Middletown | Urban | Waste & Compact | 0.3 |
| Double Tollgate | Urban | Waste & Compact | 1.4 |
| Gore | Rural | Waste Cans | 1.5 |
| Star Tannery | Rural | Waste Cans | 0.5 |
| Landfill Citizen Center | Countywide | Waste & Compact | 5.0 |
| TOTAL | | | 22.9 |

Environmental Services Facilities in Capital Improvement Plan

To address future growth, the County plans to add another convenience site. The new Albin Citizens Convenience Site will be two acres and cost \$1,224,000, an average cost of \$612,000 per acre.

Figure 90. Planned Environmental Services Facility Level of Service Standards and Cost Factors

| Facility | Service Area | Acres | Value | \$/Acre |
|---------------------------------|--------------|-------|-------------|-----------|
| Albin Citizens Convenience Site | Rural | 2 | \$1,224,000 | \$612,000 |
| TOTAL | | 2 | \$1,224,000 | \$612,000 |

Source: Frederick County 2019-2024 CIP

Environmental Services Level of Service and Cost Factors

Shown in Figure 76, since 100 percent of environmental services is attributed to residential development, the level of service is calculated by dividing the current acreage by the population. As a result, there are 0.10 acres per person for convenience sites and 0.06 acres per person for landfill centers. The average cost for the planned convenience site project is applied to the level of service to calculate the capital impact per person.

Figure 91. Environmental Services Level of Service and Cost Factors

| Proportionate Share | | Service Area | |
|--------------------------|----------------|--------------|--------|
| Residential | Nonresidential | Urban | Rural |
| 100% | 0% | | |
| Convenience Site Acreage | | 5.7 | 12.2 |
| Base Year Population | | 59,303 | 27,399 |
| Acre per 1,000 Residents | | 0.10 | 0.45 |

| Proportionate Share | | Service Area |
|---------------------------------|----------------|--------------|
| Residential | Nonresidential | Countywide |
| 100% | 0% | |
| Landfill Citizen Center Acreage | | 5.0 |
| Base Year Population | | 86,702 |
| Acre per 1,000 Residents | | 0.06 |

| | Service Area | |
|--------------------------|--------------|-----------|
| | Urban | Rural |
| Acre per 1,000 Residents | 0.10 | 0.45 |
| Cost per Acre | \$612,000 | \$612,000 |
| Cost per Capita | \$61.20 | \$275.40 |

| | Service Area |
|--------------------------|--------------|
| | Countywide |
| Acre per 1,000 Residents | 0.06 |
| Cost per Acre | \$612,000 |
| Cost per Capita | \$36.72 |

Environmental Services Input Variables and Capital Impacts

Factors used to determine environmental services capital impacts are summarized below. Capital impacts for environmental services are based on household size (i.e., persons per housing unit) and are only determined for residential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are two components in the capital impact calculation, Landfill Centers and Convenience Sites. Environmental Services are provided on a countywide basis. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 92.

Figure 92. Environmental Services Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE | REGIONS | |
|------------------------------|-------------|----------------|----------------|-----------------|
| | | | Urban | Rural |
| Landfill Center | per capita | \$36.72 | n/a | n/a |
| Convenience Sites | per capita | n/a | \$61.20 | \$275.40 |
| GROSS COST PER PERSON | | \$36.72 | \$61.20 | \$275.40 |
| NET CAPITAL COST | | \$36.72 | \$61.20 | \$275.40 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE | REGION | Total |
|------------------------|-------------------|-------------------|-------------------|
| Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| 2.62 | \$96 | \$160 | \$256 |
| 2.62 | \$96 | \$160 | \$256 |
| 2.08 | \$76 | \$127 | \$203 |
| 1.67 | \$61 | \$102 | \$163 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE | REGION | Total |
|------------------------|-------------------|-------------------|-------------------|
| Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| 2.37 | \$87 | \$653 | \$740 |
| 2.37 | \$87 | \$653 | \$740 |
| 1.46 | \$53 | \$402 | \$455 |
| 1.51 | \$55 | \$416 | \$471 |

SUMMARY OF CAPITAL IMPACTS

This chapter provides an example of the summary of the **capital impacts** by type of land use. Because the school impacts are based on attendance zones and the fire impacts are based on fire districts there are a multitude of possible service area variations, so only one example is given below. The capital impacts represent new growth's fair share of the cost for capital facilities. Please see applicable chapter for detail on factors, values, and calculations used to calculate the amounts shown in the following figures.

The capital impacts for residential development are per housing unit. For nonresidential development, the capital impacts are shown per 1,000 square feet of floor area. Noted below, the totals listed in the Cash Proffer Eligible Capital Impacts column do not necessary list the actual cash proffer impacts. In the CapIM Model, triggers have been established that involve the current capacity of facilities. To comply with Virginia 2019 Cash Proffer Law, a cash proffer cannot be required if there is existing capacity to absorb the demands from residential growth. Nonresidential growth is not eligible for cash proffers.

Figure 93. Example Summary of Capital Impacts by Land Use

| CAPITAL COST IMPACTS | | | | | | Public Safety | | | | | | Cash Proffer
Eligible
Capital
Impacts* |
|------------------------------|------------------------|------------------------|-------------------|-------------|-----------------------|---------------|--------------------------|----------------------------|----------------|---------------|---------|---|
| infrastructure category>> | PUBLIC SCHOOL | | | | Parks & Rec | SHERIFF | FIRE & RESCUE | | ANIMAL PROTECT | PUBLIC SAFETY | | |
| | Elementary
Evendale | Middle
Admiral Byrd | High
Millbrook | Grand Total | Service Area
Urban | Countywide | Service Area
Millwood | Total All
Service Areas | Countywide | Grand Total | | |
| Residential | Development Unit | | | | | | | | | | | |
| | Per Housing Unit | | | | | | | | | | | |
| Single Family-Detached | Housing Unit | \$6,078 | \$5,041 | \$9,433 | \$20,552 | \$970 | \$237 | \$1,731 | \$1,731 | \$74 | \$2,042 | \$23,564 |
| Single Family-Attached | Housing Unit | \$7,372 | \$4,709 | \$6,962 | \$19,043 | \$970 | \$237 | \$1,731 | \$1,731 | \$74 | \$2,042 | \$22,055 |
| Multifamily | Housing Unit | \$6,431 | \$4,210 | \$5,764 | \$16,405 | \$770 | \$189 | \$1,374 | \$1,374 | \$59 | \$1,622 | \$18,797 |
| Age-Restricted Single Family | Housing Unit | \$0 | \$0 | \$0 | \$0 | \$618 | \$151 | \$1,103 | \$1,103 | \$47 | \$1,301 | \$1,919 |
| Nonresidential | Development Unit | | | | | | | | | | | |
| | Per 1,000 Square Feet | | | | | | | | | | | |
| Retail | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$400 | \$1,348 | \$1,348 | n/a | \$1,748 | \$1,748 |
| Office and Other Services | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$136 | \$457 | \$457 | n/a | \$593 | \$593 |
| Industrial | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$55 | \$184 | \$184 | n/a | \$239 | \$239 |
| Institutional | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$272 | \$917 | \$917 | n/a | \$1,189 | \$1,189 |

* Potential cash proffer amounts will vary based on case by case analysis where Service Area amounts may or may not be triggered due to existing capacity as well as the categories eligible to be collected.

Figure 94. Summary of Capital Impacts by Land Use

CAPITAL COST IMPACTS

| infrastructure category>> | LIBRARIES | GEN. GOVT | COURTS | ENV. SRVCS. | | Non-Eligible Capital Impacts | Total Capital Impact* |
|---------------------------|------------|------------|------------|--------------------|------------|------------------------------|-----------------------|
| | Countywide | Countywide | Countywide | Service Area Urban | Countywide | | |

| Residential | | Development Unit | Per Housing Unit | | | | | | Total |
|------------------------------|--|------------------|------------------|-------|-------|-------|------|---------|----------|
| Single Family-Detached | | Housing Unit | \$377 | \$816 | \$220 | \$160 | \$96 | \$1,669 | \$25,137 |
| Single Family-Attached | | Housing Unit | \$377 | \$816 | \$220 | \$160 | \$96 | \$1,669 | \$23,628 |
| Multifamily | | Housing Unit | \$299 | \$648 | \$175 | \$127 | \$76 | \$1,325 | \$20,046 |
| Age-Restricted Single Family | | Housing Unit | \$240 | \$520 | \$140 | \$102 | \$61 | \$1,063 | \$2,921 |

| Nonresidential | | Development Unit | Per 1,000 Square Feet | | | | | | Total |
|---------------------------|--|-------------------|-----------------------|-------|-------|-----|-----|---------|---------|
| Retail | | 1,000 Square Feet | n/a | \$673 | \$377 | n/a | n/a | \$1,050 | \$2,798 |
| Office and Other Services | | 1,000 Square Feet | n/a | \$852 | \$128 | n/a | n/a | \$980 | \$1,573 |
| Industrial | | 1,000 Square Feet | n/a | \$457 | \$52 | n/a | n/a | \$509 | \$748 |
| Institutional | | 1,000 Square Feet | n/a | \$812 | \$256 | n/a | n/a | \$1,068 | \$2,257 |

* Potential cash proffer amounts will vary based on case by case analysis where Service Area amounts may or may not be triggered due to existing capacity as well as the categories eligible to be collected.

APPENDIX A: EXAMPLE OF DEVELOPMENT RESULTS

To illustrate the Capital Impact Model (CapIM Model), the following figure provides the results from a hypothetical development project of 100 single family housing units and 20,000 square feet of retail development. The development is in the Urban Service Area, Evendale ES, Admiral Byrd MS, Millbrook HS attendance zone, and the Millwood fire district. Results show projected growth and corresponding capital impacts for cash proffer eligible infrastructure. The results also capture the capacity triggers included in the model that reflect where excess capacity currently exists in County infrastructure. The figure is merely provided to illustrate the results of a hypothetical development and do not reflect an actual development. However, they do reflect a legally supportable and reasonable cash proffer amount for these hypothetical developments.

Figure 95. Example CapIM Test Results

SUMMARY OF PROJECT OUTPUTS

| | |
|--------------|--------------|
| Project Name | Test Project |
|--------------|--------------|

CAPITAL COST IMPACTS FOR DEVELOPMENT PROPOSAL

| | RESIDENTIAL | NONRESIDENTIAL | TOTAL |
|---------------------------------|-------------|----------------|--------|
| Housing Units | 100 | - | 100 |
| Projected Population | 262 | - | 262 |
| Projected Students | | | |
| Elementary School Students | 16 | - | 16 |
| Middle School School Students | 9 | - | 9 |
| High School Students | 13 | - | 13 |
| Projected Total Students | 37 | - | 37 |
| Nonresidential Sq. Ft. | - | 20,000 | 20,000 |
| Projected Jobs | - | 47 | 47 |

CASH PROFFER ELIGIBLE INFRASTRUCTURE CATEGORIES, RESIDENTIAL

| | Total Housing | Capital Impact | Capital Impact per |
|-----------------------------|---------------|----------------|--------------------|
| Schools | 100 | \$1,447,387 | \$14,474 |
| Parks and Recreation | 100 | \$48,329 | \$483 |
| Public Safety^ | 100 | \$173,182 | \$1,732 |
| Total | 100 | \$1,668,898 | \$16,689 |

| | Total Housing | Capital Impact | Capital Impact per |
|-----------------------|---------------|----------------|--------------------|
| ^Public Safety | | | |
| Sheriff | 100 | \$0 | \$0 |
| Fire | 100 | \$173,182 | \$1,732 |
| Animal Protection | 100 | \$0 | \$0 |

APPENDIX B: CASH PROFFER BACKGROUND

Definition

A proffer is an offer by a landowner during the rezoning process to mitigate the impacts of the rezoning. It is a form of *conditional zoning*, which applies additional conditions, or requirements, in addition to existing requirements and regulations. A proffer can include the acceptance of cash payments to mitigate the impacts of a rezoning, called *cash proffers*, and are allowed under Virginia Code §15.2-2303 and §15.2-2298. Frederick County meets the requirement under 15.2-2298 of a decennial growth rate of 5 percent or more.²

Cash proffers are voluntary one-time payments used to fund capital improvements necessitated by new growth. Cash proffers are akin to *impact fees*, which have been utilized by local governments in various forms for at least fifty years.³ However, unlike impact fees, cash proffers only apply during the rezoning process and do not apply to “by-right” development. Cash proffers are not to be used to correct existing deficiencies but to provide additional capacity to serve new growth. Because cash proffers do not apply to by-right development and only apply during the rezoning process, only a portion of the impacts from new growth can be mitigated with a cash proffer system. *Cash proffers therefore have limitations for infrastructure funding and should not be regarded as the total solution for capital improvement needs. Rather, they should be considered one component of a comprehensive portfolio to ensure adequate provision of public facilities with the goal of maintaining current levels of service in a community.* Limitations are:

- Cash proffers only apply to rezonings and are not collected on any by-right development.
- Cash proffers can only be used to finance capital infrastructure that provides additional capacity and cannot be used to finance ongoing operations and/or maintenance and rehabilitation costs. Virginia law restricts the infrastructure categories to **public transportation facilities, public safety facilities, public school facilities, and public parks.**⁴
- Cash proffers cannot be deposited in the local government’s General Fund. The funds must be accounted for separately and earmarked for the capital expenses for which they were collected.
- Cash proffers cannot be used to correct existing infrastructure deficiencies unless negotiated apart from the cash proffer system presented herein, or if there is a funding plan in place to correct the deficiency for all current residents and businesses in the community.

² However, 15.2-2298 provides authority to localities that meet the growth criteria in 15.2-2298 to utilize the conditional zoning authority under 15.2-2303. This study meets the stricter requirements of 15.2-2298.

³ Other than Transportation Impact Fees, localities in the Commonwealth of Virginia are not authorized to implement impact fees.

⁴ See Virginia Code §15.2-2303.4.

- Because cash proffers reflect a point in time, the calculations and study should be updated periodically (typically 3 to 5 years). Costs reflect the direct impact of new development on the need for new facilities and infrastructure and do not reflect secondary or indirect impacts.

Approach

To ensure a reasonable relationship to new development and rezonings in particular, the cash proffer study focuses on three elements: “impact or need,” “benefit,” and “proportionality.”

Demonstrating an Impact. All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the supply of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Cash proffers are calculated in a manner to determine what the applicable cost of development-related facilities, to the extent that the need for facilities is a consequence of development that is subject to the cash proffers. In this study, the impact of development on improvement needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific facilities, based on applicable level-of-service standards.

Demonstrating a Benefit. A sufficient benefit relationship requires that cash proffer funds be segregated from other funds and expended only for the categories for which the proffers were collected. Cash proffers must be expended in a timely manner⁵ and the facilities funded by the proffers must benefit the development paying the proffers. However, this does not require that facilities funded with cash proffer revenues be available *exclusively* to development paying the proffers. In other words, existing development may use and benefit from these improvements as well.

Procedures for the earmarking and expenditure of revenues are outlined in Virginia Code (see specifically §15.2303.2(B)). These requirements are intended to ensure that developments benefit from the cash proffers paid. Thus, an adequate showing of benefit must address procedural as well as practical issues.

Demonstrating Proportionality. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate the cash proffers for various types of facilities and categories of development. The demand for facilities is measured in terms of relevant and measurable attributes of development. For example, the need for school improvements is measured by the number of public school-age children generated by development.

⁵ Virginia Code §15.2-2303.2(A) states: “The governing body of any locality accepting cash payments voluntarily proffered on or after July 1, 2005, shall, within twelve (12) years of receiving full payment of all cash proffered pursuant to an approved rezoning application, begin, or cause to begin (i) construction, (ii) site work, (iii) engineering, (iv) right-of-way acquisition, (v) surveying, or (vi) utility relocation on the improvements for which the cash payments were proffered.”

The above requirements are further reinforced in the Code of Virginia under §15.2-2303.4 (effective January 9, 2019). Specifically, Section 15.2-2303.4(B) states that localities shall not require an unreasonable proffer or deny a rezoning application or proffer condition amendment due to applicant's failure or refusal to submit an unreasonable proffer.

The implementation of the proffer changes hinges on defining an unreasonable proffer, or more positively, defining a reasonable proffer. The figure below provides further detail on the approach to meet requirements of the law.

| REASONABLE PROFFERS | | | |
|----------------------|--|---|---|
| VA Code Section | VA Code Text | Interpretation | How to Meet the Requirement |
| 15.2-2303.4
(C) | <i>addresses an impact that is specifically attributable to a proposed new residential development or other new residential use applied for</i> | The demand from the residential land use creates a need for additional capacity in the infrastructure category for which the cash proffer is being requested or offered | Establish a nexus between types of residential development and specific impacts on infrastructure in locality. (E.g., student generation rates by type of housing unit.) |
| | <i>addresses an impact to an offsite public facility</i> | The need for the capital improvement must be for a system-level facility, provided to a larger geographic area than the project site | Use system-level infrastructure to establish current levels of service in cash proffer calculations. |
| | <i>the new residential development or new residential use creates a need, or an identifiable portion of a need, for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning or proffer condition amendment</i> | The impact from the residential development causes a need for additional capacity above what is available to the applicant. The additional capacity can be for a single facility or a portion of a facility improvement. Available capacity is determined by analyzing the current and projected levels of service provided in specific categories of infrastructure in the locality. | Define current levels of service / available capacities in cash proffer analysis and identify when capacities are reached.
Identify incremental impact on facilities from residential development in cash proffer analysis. |
| | <i>each such new residential development or new residential use applied for receives a direct and material benefit from a proffer made with respect to any such public facility improvements.</i> | Entity/applicant paying the cash proffer receives a benefit in the form of a facility or portion of a facility being built or purchased. | Localities use cash proffer funding to build or purchase additional capacity in the infrastructure categories for which a cash proffer is collected. Separate funds established.
Collection and expenditure areas may be necessary to ensure “direct” benefit. |
| Source: TischlerBise | | | |

Cash Proffer Implementation and Administration Considerations

While cash proffers are voluntary contributions, there are procedures that must be followed per Virginia law and to ensure payers receive benefit from the proffer.

Accounting

Monies received are placed in a separate fund and accounted for separately and expenditures should be indicated in the capital improvement plan. Within twelve (12) years of receiving full payment of committed cash proffers, a locality must begin construction or relevant improvement for which the proffer was made. Localities that do not begin construction or other authorized alternative improvement must pay the amount to the Commonwealth Transportation Board for allocation to the secondary system construction program or the urban system construction program for the locality in which the proffered cash payments were collected (VA § 15.2-2303.2).

Cost Updates

All costs in the cash proffer calculations are given in current dollars with no assumed inflation over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of the cash proffer using consumer price index (CPI) or Marshall and Swift Building Cost Index. TischlerBise recommends using the Marshall Swift, which is specific to construction and accounts for geographic differences. The index can be applied against the calculated cash proffers. If cost estimates or other factors change significantly, calculations should be revisited. As cash proffer calculations are based on a snapshot in time, an adopted Cash Proffer policy should be periodically reviewed and updated. A full update is recommended no later than 5 years to reflect changes in development trends, infrastructure capacities, costs, funding formulas, etc.

Credits and Reimbursements

Future Revenue Credits

Credits for outstanding and future debt payments have been calculated and integrated into the cash proffer calculations where applicable in this study. A credit is not necessary for interest payments because interest costs are not included in the proffer amounts.

Site-Specific Credits

A site-specific credit could be provided to a developer (or applicant) for contributions of system improvements that have been included in the cash proffer calculations. If a developer constructs the type of system improvements included in the calculations, there could be a possible reduction in the cash proffer for the relevant portion.

Written Policies

Written policies and implementation practices should be established to cover the items identified in this section to provide consistency in the process.

APPENDIX C: SERVICE AREA MAPS

Figure 96. General Service Areas

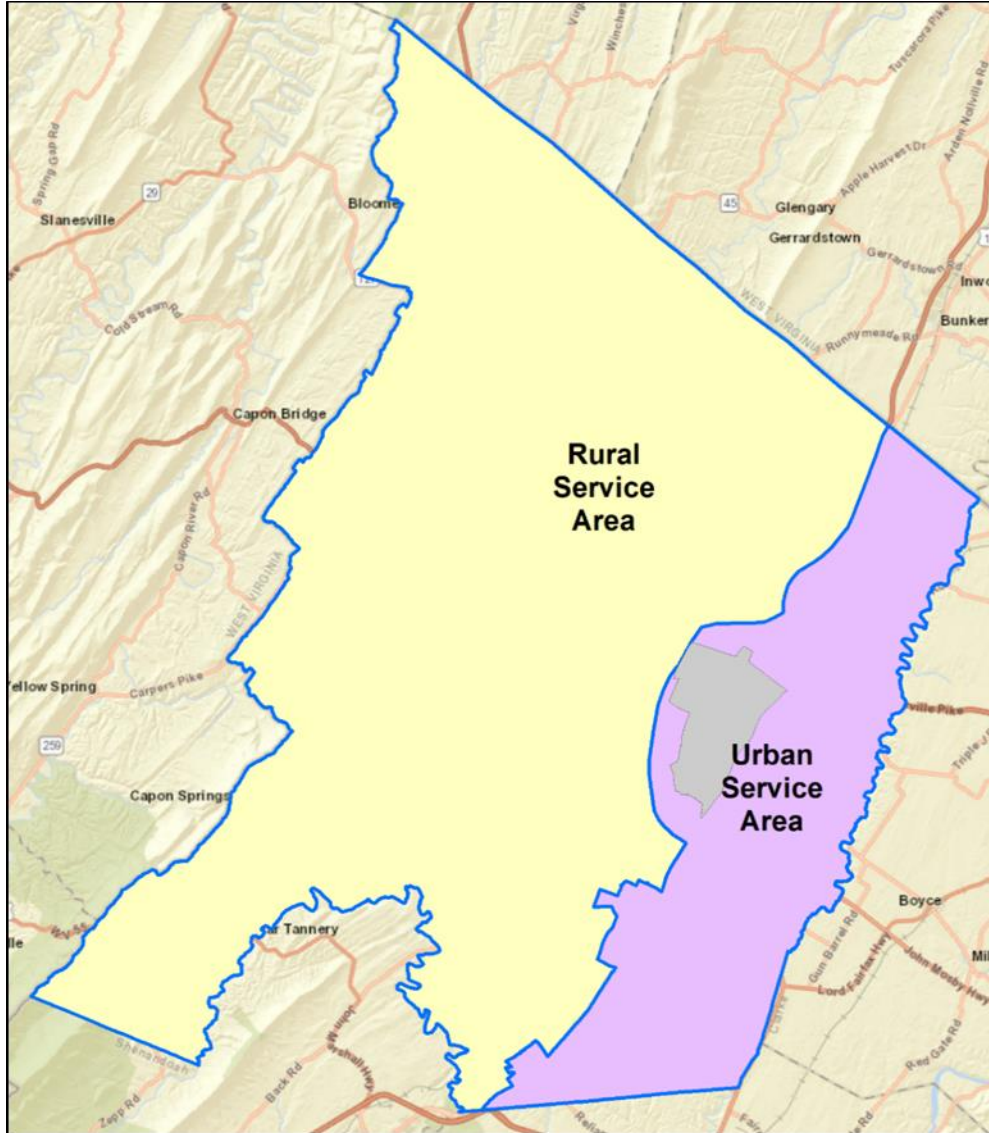


Figure 97. Elementary School Service Areas

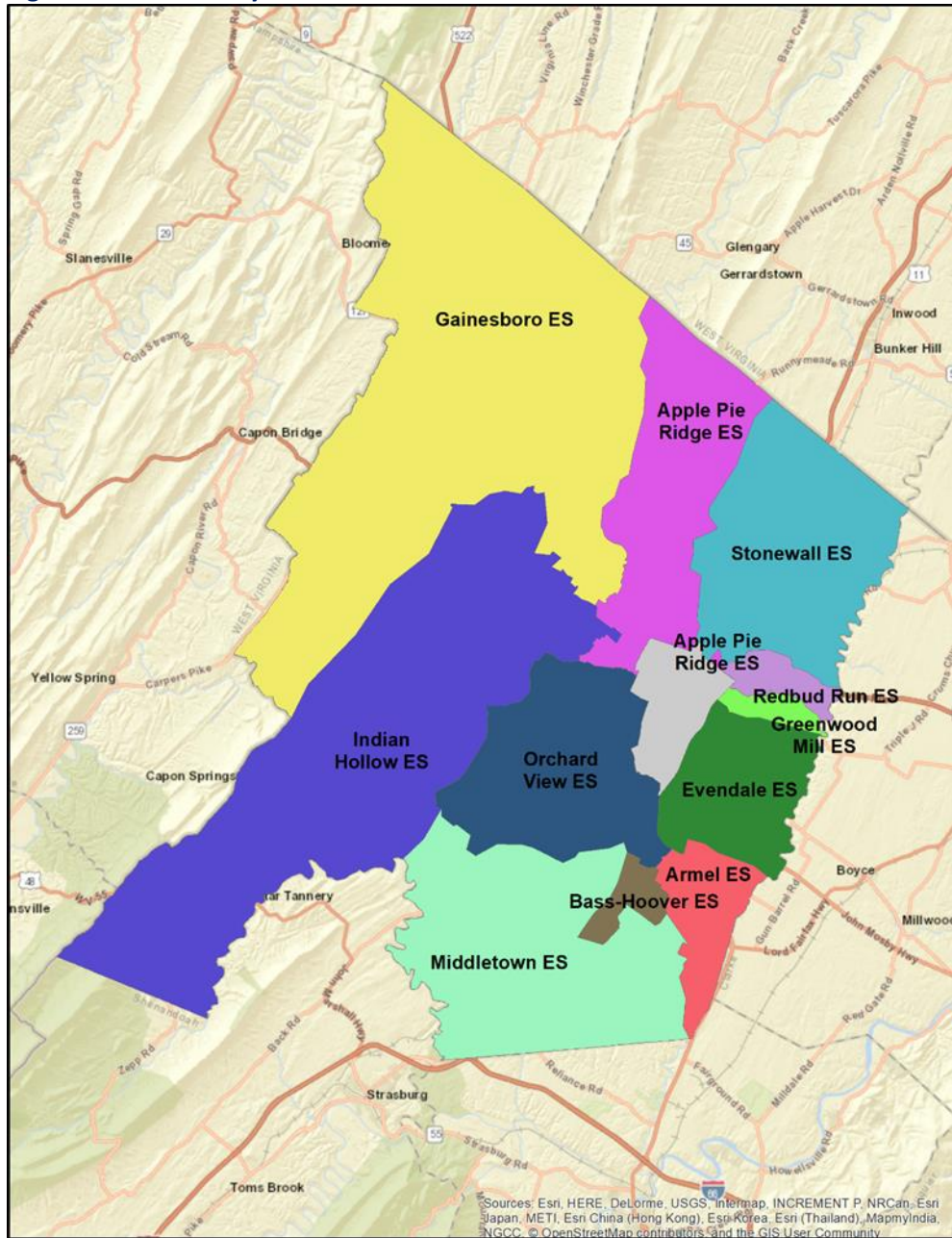


Figure 98. Middle School Service Areas

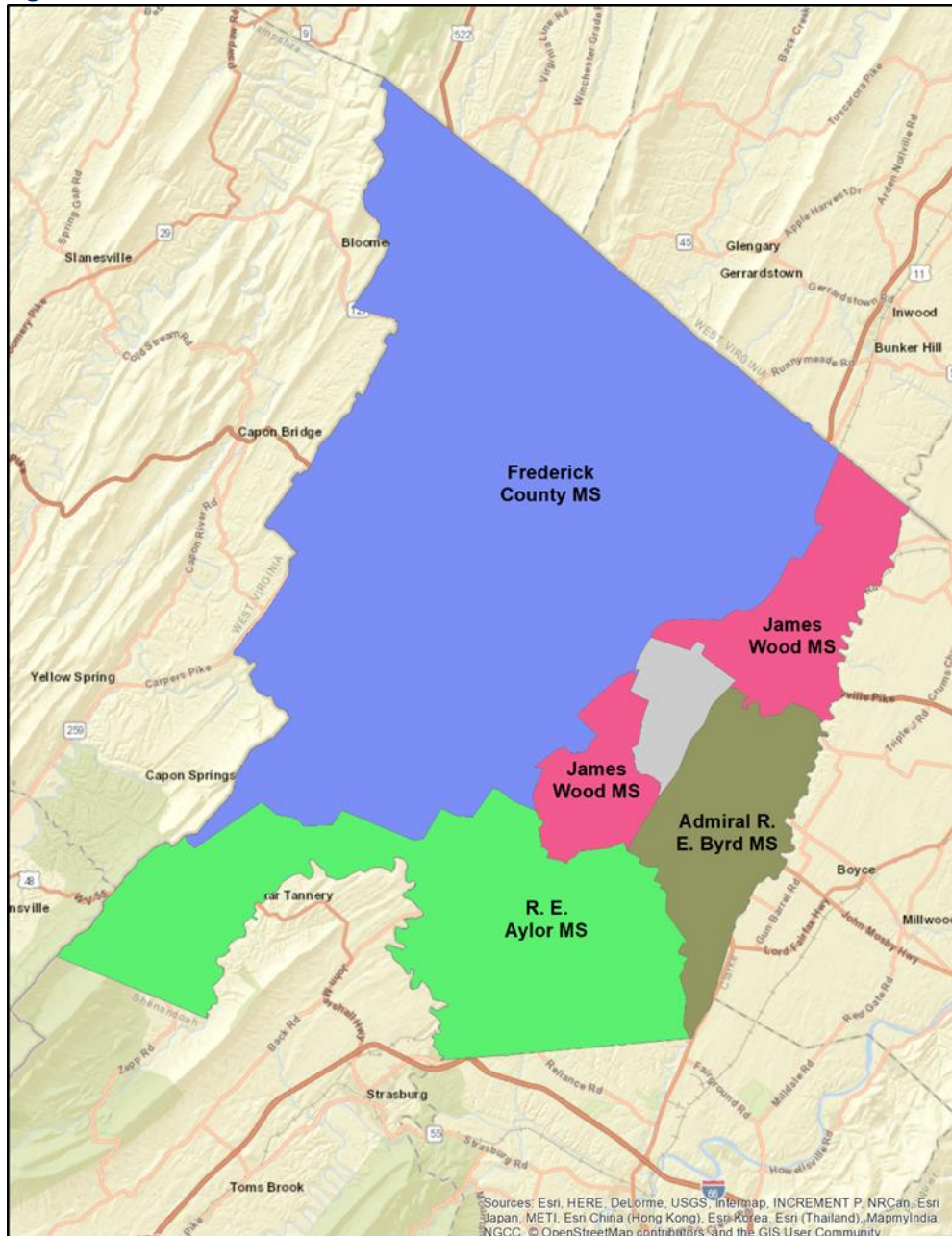


Figure 99. High School Service Areas

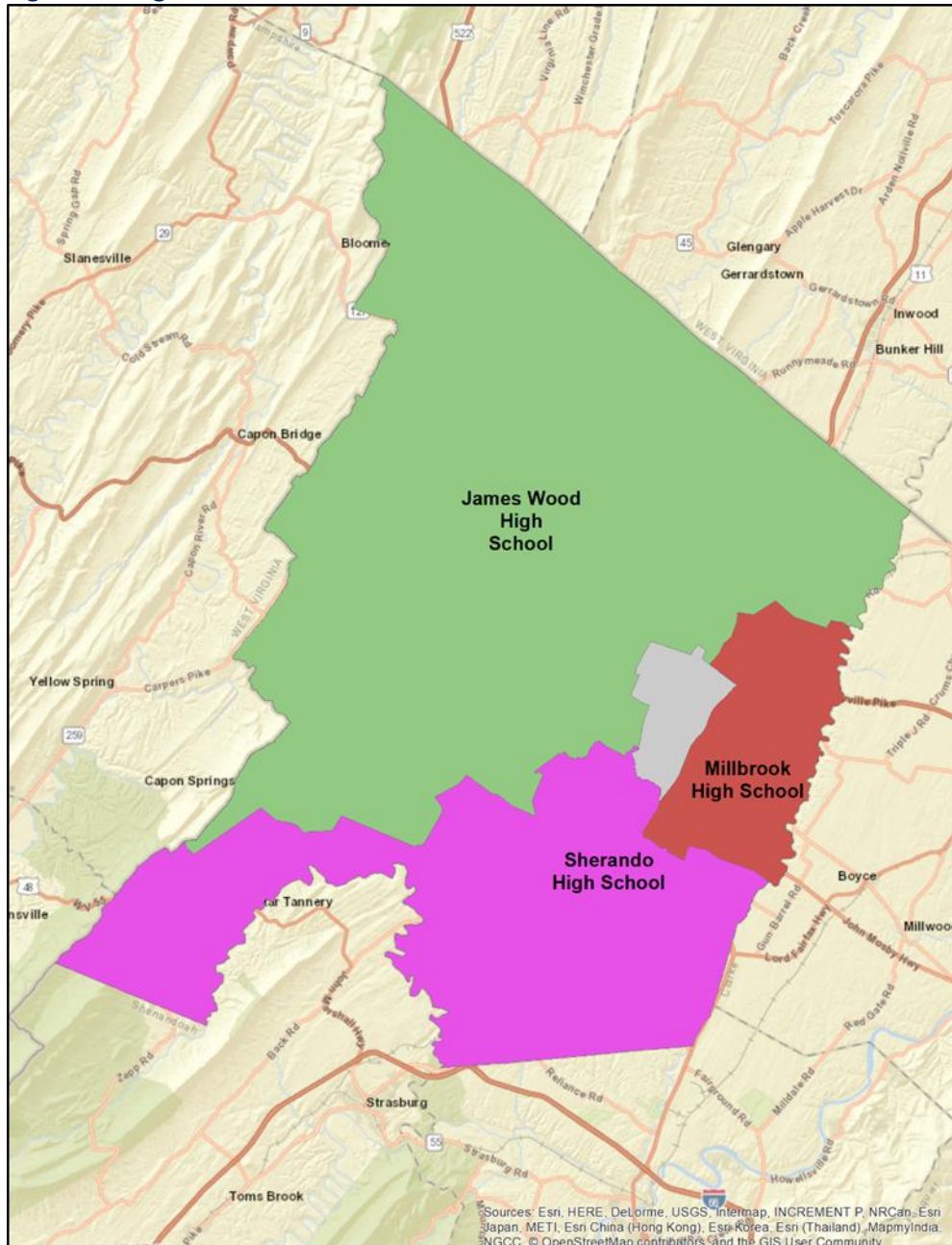
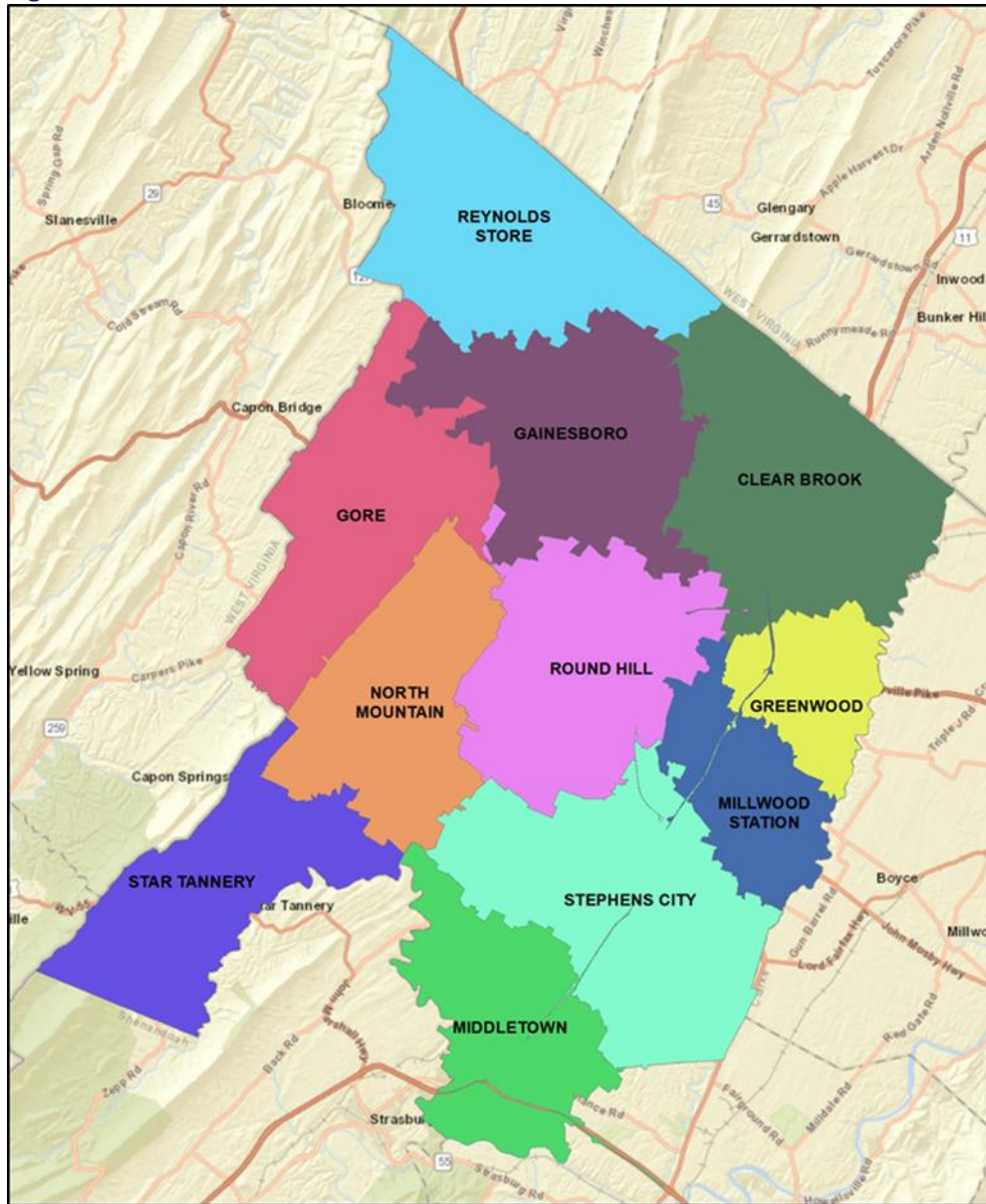


Figure 100. Fire Service Areas



G



COUNTY of FREDERICK

Jay E. Tibbs
Deputy County Administrator

540/665-6382

Fax: 540/667-0370

E-mail: jtibbs@fcva.us

MEMORANDUM

TO: Board of Supervisors
FROM: Jay E. Tibbs, Deputy County Administrator *JET*
DATE: June 6, 2019
RE: Committee Appointments

Listed below are the vacancies/appointments due through July 2019. As a reminder, in order for everyone to have ample time to review applications, and so they can be included in the agenda, please remember to submit applications prior to Friday agenda preparation. Your assistance is greatly appreciated.

JUNE 2019

Winchester-Frederick County Tourism Board

Joint Appointment with the City of Winchester

Mary Braun – Non-Profit Sector Rep. (Shen. Valley Discovery Museum)
Shen. Valley Discovery Museum

19 W. Cork Street

Winchester, VA 22601

Phone: (540)722-2020

Term Expires: 06/30/19

Three-year term

(Resigned 03/26/19)

Sharon Farinholt – Private Sector Rep. (Crown Trophy)

Crown Trophy

661 Millwood Avenue

Winchester, VA 22601

Office: (540)665-4485

Term Expires: 06/30/19

Three-year term

(Not eligible for reappointment)

Andy Gyurisin – Private Sector Rep. (Nerangis Management Corp. – Alamo Draft House)

177 Kernstown Commons Blvd.

Memorandum – Board of Supervisors
June 6, 2019
Page 2

Winchester, VA 22602
Office: (540)667-1322, Ext. 111
Term Expires: 06/30/19
Three-year term

(Executive Tourism Director advised Tourism Board Nominating Committee will be forwarding recommendation in the near future.) *The Tourism Board was formed by Joint Resolution of the Board of Supervisors and the City Council in April 2001. Recommendation for appointment is contingent upon like approval by the City of Winchester.)*

JULY 2019

Shawneeland Sanitary District Advisory Committee

Lynn Schmitt
106 Echota Trail
Winchester, VA 22602
Home: (540)877-1236
Term Expires: 07/13/19
Two-year term

(The ShawneeLand Sanitary District Advisory Committee is comprised of five members made up of resident property owners. Members serve a two-year term and are eligible for reappointment.)

VACANCIES/OTHER

Board of Equalization

Luther O. Stiles
114 Lane Street
Stephens City, VA 22655
Home: (540)869-2504
Term: 01/01/17 - 12/31/19
Three-year term

Mr. Stiles has notified staff he does not wish to be reappointed when his term expires December 31, 2019.

(Reminder there is another vacancy as well. Staff and Board of Supervisors will continue to seek applicants for seat(s) on the Board of Equalization.) *(The Board of Equalization is composed of five members. Members*

Memorandum – Board of Supervisors
June 6, 2019
Page 3

*must be free holders in the county. In October 2010, the Board of Supervisors appointed the Board of Equalization as a "permanent" board for subsequent reassessments. The original five members were appointed for the following terms: one member for a one-year term; one member for a two-year term; and three members for a three-year term. Going forward, all future appointments shall be for a three-year term. **Recommendation for appointment/reappointment are made by the Board of Supervisors and submitted to the Judge of the Frederick County Circuit Court for final appointment.)***

JET/tjp

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H



COUNTY of FREDERICK

Jay E. Tibbs

Deputy County Administrator


540/665-5666

Fax 540/667-0370

E-mail:

jtibbs@fcva.us

MEMORANDUM

| | |
|----------|--|
| TO: | Board of Supervisors |
| FROM: | Jay E. Tibbs, Deputy County Administrator  |
| SUBJECT: | Frederick/Warren County Line – Property Issue |
| DATE: | July 19, 2018 |

This is a request for the Board of Supervisors to consider a boundary adjustment to the Warren/Frederick County lines in the Foster Hollow Road area. By way of background, this apparent boundary dispute came up via the Virginia Department of Elections relative to voting precinct lines around the State. The Department wanted to ensure correct voting district classifications. The particular area in question affecting the Congressional districts because Warren County is in the 6th District and Frederick County is in the 10th.

We were contacted by Warren County administration regarding the parcels and asked to see information we had in our GIS system regarding the properties. (**Exhibit A**, which is information produced by the Warren County GIS Office.) After the Warren County data was received we had our GIS Department compare it to their information. (**Exhibit B**) Frederick County data shows the parcel as one large tract. Upon further research, we discovered the deeds for the properties designate them as Warren County properties, but the parcels are physically located within Frederick County. The various subdivisions of the original tract were approved by Warren County. The properties are currently being taxed in Warren County, the residents of the affected parcels vote in Warren County, receive services from Warren County, and their children have attended school in Warren County.

After discussions between Warren and Frederick County Administrators, it was decided to contract with Marsh & Legge Land Surveyors, PLC to complete a metes and bounds survey of the Warren/Frederick line in that area. Marsh & Legge determined the location of the line based on the recorded description that created the line. Their survey shows the line is straight from a point where the Old Valley Turnpike crossed the Cedar Creek to a stone at the old church at Route 522. (**Exhibit C**)

On February 28, 2019 Supervisor Wells, Warren County Supervisor Dan Murray, Warren County Administrator Doug Stanley, and I attended a meeting in Warren County to discuss this matter with the affected residents in that area. Following discussions with the residents and during that same meeting, a proposed adjustment to the

Warren/Frederick line was developed. (**Exhibit D**)

If an adjustment to the county line is desired, both the Frederick County and Warren County Boards of Supervisors would have to agree to the adjustment. If such an agreement is reached, both bodies would hold public hearings on the proposed adjustment and, at the conclusion of the hearings, both boards would adopt a resolution consenting to the boundary adjustment. Both boards would then file a joint petition with the Circuit Court of either Warren or Frederick County to have a new boundary line established.

Staff is bringing this item to the Board for discussion and is seeking direction. There are two potential actions for the Board to consider relative to this matter:

1. Affirm the current county line, as surveyed by Marsh & Legge, PLC, per Exhibit C.
2. Adjust the county line per Exhibit D and direct staff to advertise the public hearing on the proposed boundary adjustment.

Staff is seeking action from the Board regarding the county line boundary issue.

Should you have any questions, please do not hesitate to contact me.

Attachments

Exhibit A
Warren County GIS Department Map



Legend

- Parcels in Question
- parcels
- Warren/Frederick Boundary Line
- Address
- Roads

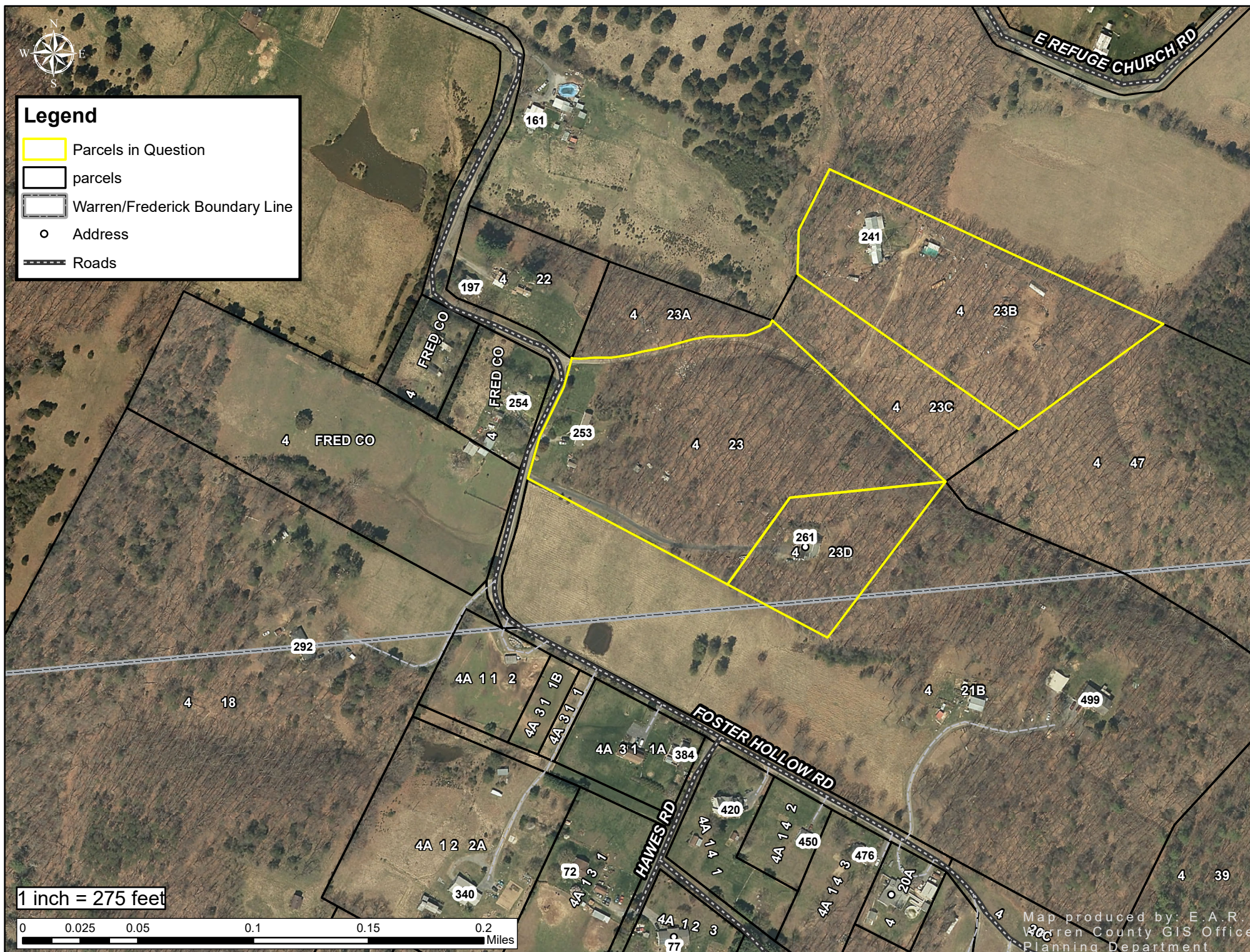


Exhibit B
Frederick County GIS Map

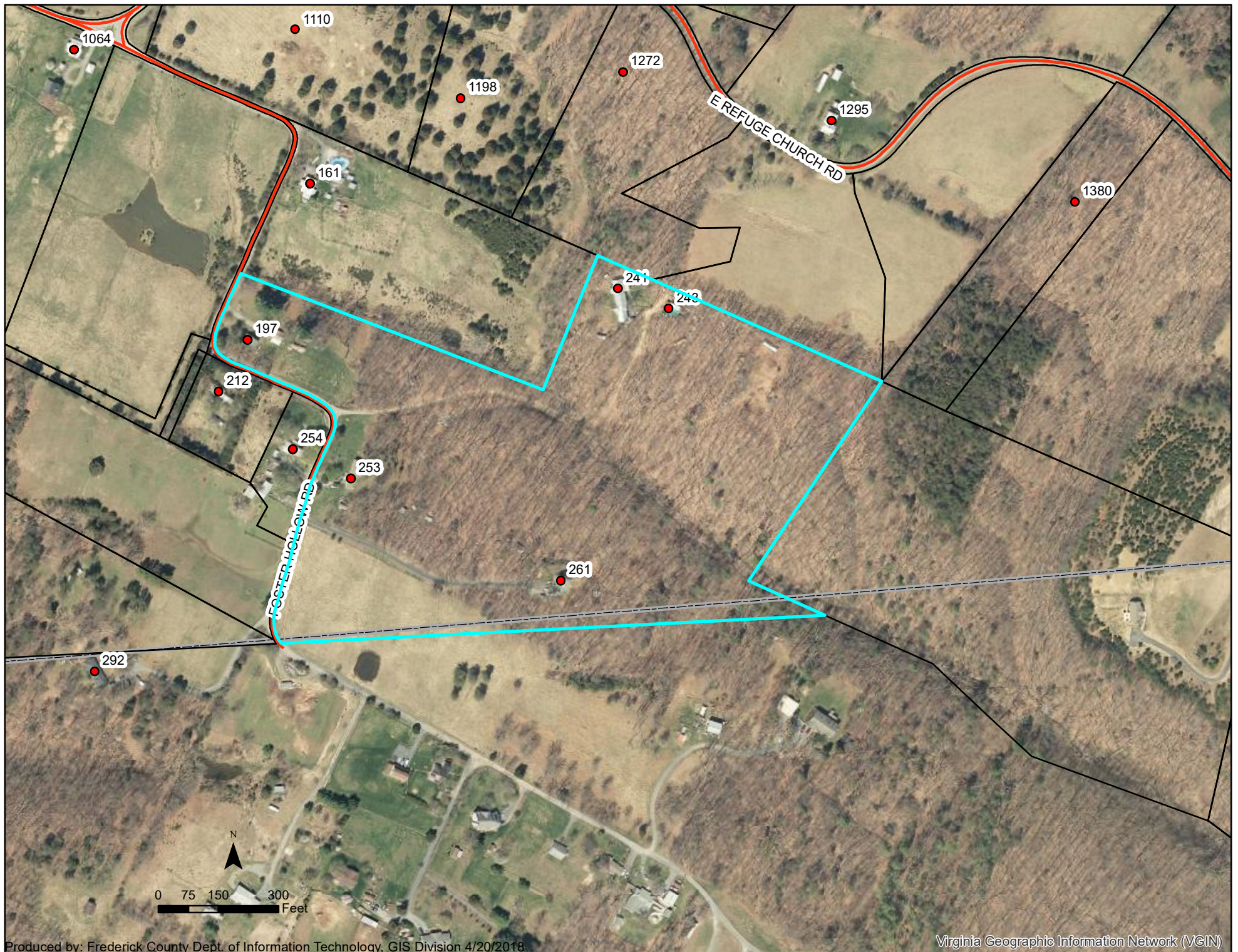
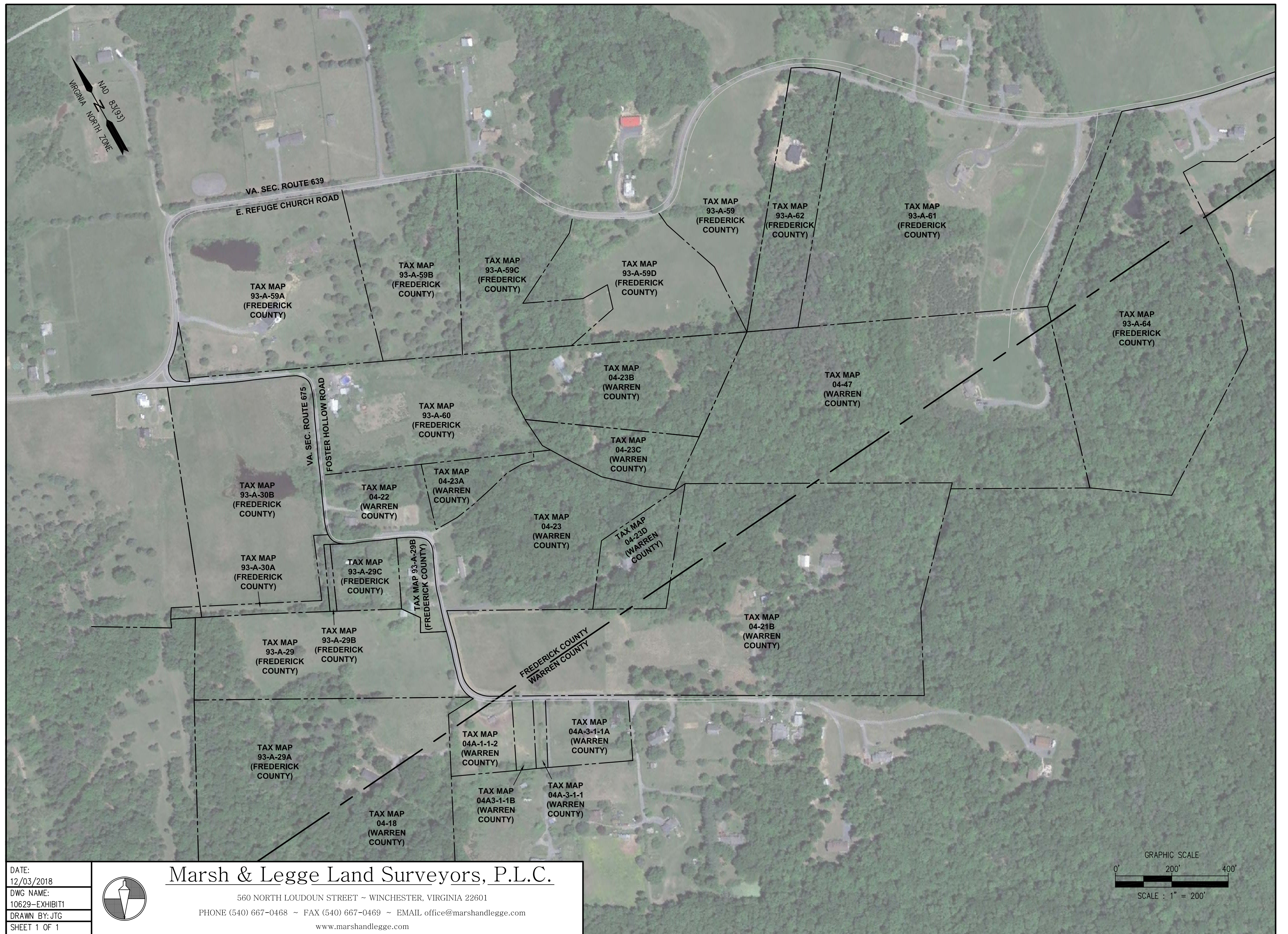
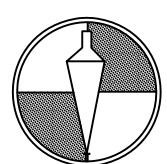


Exhibit C
Marsh & Legge, PLC Survey of
Existing Warren/Frederick County Line



DATE:
12/03/2018
DWG NAME:
10629-EXHIBIT1
DRAWN BY:JTG
SHEET 1 OF 1



Marsh & Legge Land Surveyors, P.L.C.

560 NORTH LOUDOUN STREET ~ WINCHESTER, VIRGINIA 22601

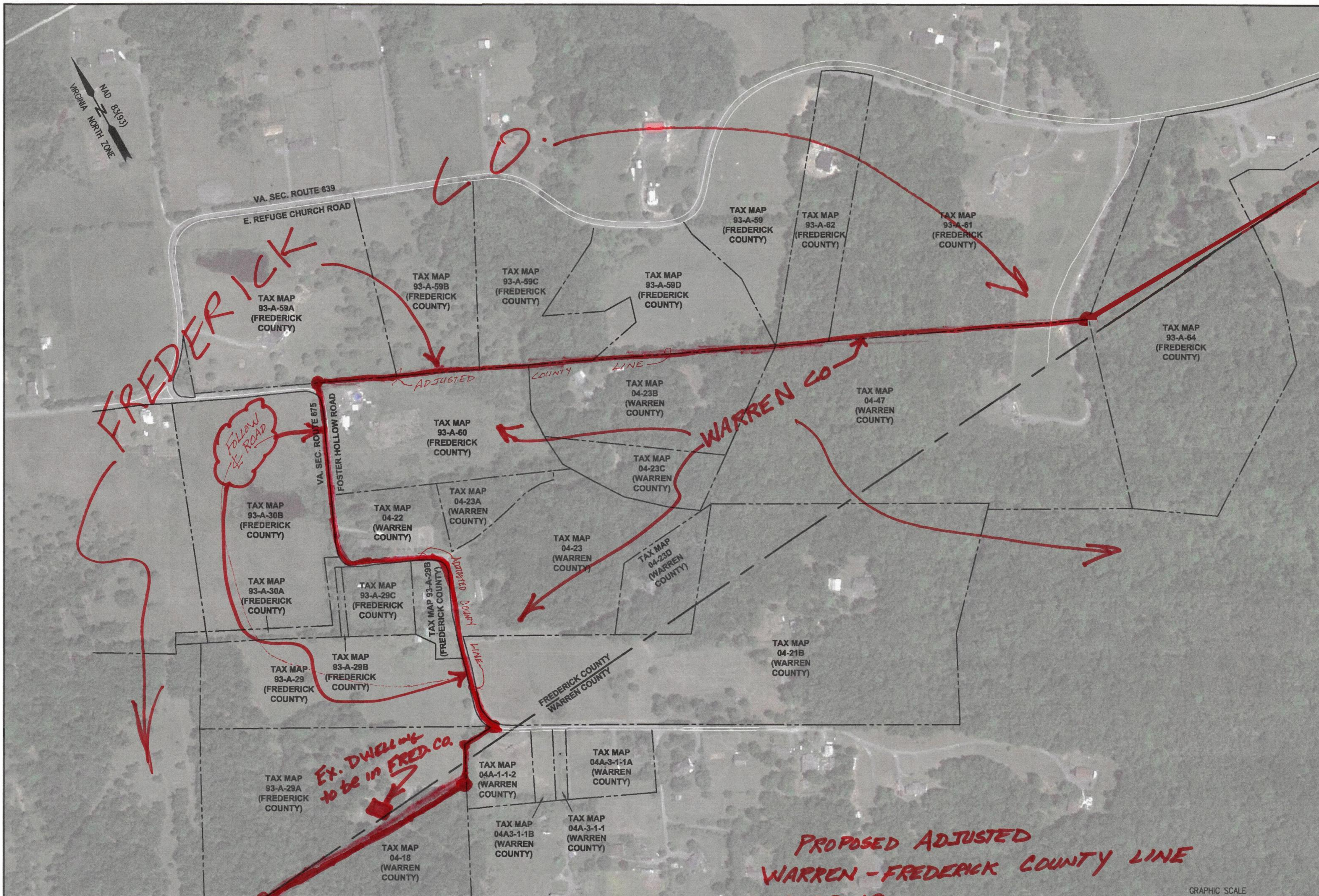
PHONE (540) 667-0468 ~ FAX (540) 667-0469 ~ EMAIL office@marshandlegge.com

www.marshandlegge.com

GRAPHIC SCALE
0' 200' 400'
SCALE : 1" = 200'

Exhibit D

**Marsh & Legge, PLC - Proposed Boundary Line
Adjustment - Frederick/Warren Line**



| | |
|-----------------------------|--|
| DATE:
12/03/2018 |  <p>Marsh & Legge Land Surveyors, P.L.C.
 560 NORTH LOUDOUN STREET ~ WINCHESTER, VIRGINIA 22601
 PHONE (540) 667-0468 ~ FAX (540) 667-0469 ~ EMAIL office@marshandlegge.com
 www.marshandlegge.com</p> |
| DWG NAME:
10629-EXHIBIT1 | |
| DRAWN BY: JTG | |
| SHEET 1 OF 1 | |

GRAPHIC SCALE
 0' 200' 400'
 SCALE: 1" = 200'

ID10629

I



COUNTY of FREDERICK

Jay E. Tibbs

Deputy County Administrator

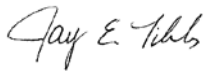
540/665-5666

Fax 540/667-0370

E-mail:

jtibbs@fcva.us

MEMORANDUM

| | |
|-----------------|--|
| TO: | Board of Supervisors |
| FROM: | Jay E. Tibbs, Deputy County Administrator  |
| SUBJECT: | Reduction/Offset of Frederick Water Debt Obligation |
| DATE: | June 6, 2019 |

As you are aware, Frederick Water (aka Frederick County Sanitation Authority) is in the process of constructing ballfields on their property in the Stephenson area. These ballfields are to be replacements for the current County operated fields at Clearbrook Park. As you also know, Carmeuse, per the terms of our lease agreement with them for the existing Clearbrook ballfields, has exercised their option to terminate that lease and has provided us with the requisite notice. The County will be vacating the existing ballfields in November 2019.

Frederick Water has contracted with Perry Engineering to construct the replacement fields and has worked with the County to get an approved site plan for those ballfields. During the site plan and design conversations, the County has identified certain features that would benefit the users of said fields. The largest of those features is the use of LED lighting technologies within the complex, which would result in greater efficiencies and performance from an energy perspective.

In conversation with Frederick Water, the cost of the features exceeds their budget for this project. In an effort to accommodate the County's desire for the more efficient lighting, as well as provide other additional improvements to the site, Frederick Water has asked if the County would be willing to off-set the costs for those features by forgiving Frederick Water's existing debt obligation in the amount of \$657,083.23.

In exchange for the reduction in the debt obligation, the County would receive the following:

1. Cost difference between Frederick Water's budget and the actual of the lighting system which is almost \$550,000 above their budget.
2. The remaining \$100,000 or so in additional items includes:
 - a. Prime and double seal to a minimum two-inch asphalt topcoat on the parking lots.
 - b. Two storage buildings to serve the ballfields.

- c. Installation of sod for all five fields so they will be playable by March 2020.

In addition, Frederick Water will give Frederick County an easement for its use of the ballfields with the intent to transfer fee simple ownership to the County once the Opequon Water Treatment Plant is operational.

By way of background concerning the obligation, the Board of Supervisors loaned proceeds to the Frederick County Sanitation Authority to facilitate the establishment of water and sewer systems in the Red Bud Run and Abrams Creek drainage areas. The first loan occurred in April 1972 in the amount of \$500,000 loaned over a period of three fiscal years. The second loan occurred in December 1974. The total amount loaned for the project was \$1,106,500.00.

In 1987, the Board of Supervisors voted to defer payment of principal and interest on this loan to facilitate the Sanitation Authority's ability to float a revenue bond with the Virginia Resources Authority to enable construction of water and sewer facilities in the Bufflick Road area. This loan has been carried on both Frederick Water's and Frederick County's financial statements as a payable and receivable respectively.

The Board of Supervisors has previously approved reductions in the loan on two occasions totaling \$208,495.00. The first was for tap fees for the National Guard Armory totaling \$130,639.00, which occurred in December 2008. The second reduction was for tap fees for the Round Hill fire station totaling \$77,856.00, which occurred in August 2015.

It is staff's recommendation that the Board authorize forgiveness of this debt to off-set the costs associated with the lighting and supporting facilities at the replacement Clearbrook ballfields. A draft agreement between the County and Frederick Water outlining the terms of the forgiveness is attached. Frederick Water has reviewed this draft agreement and is agreeable to the terms.

Staff is seeking Board approval of the agreement and authorization for the County Administrator to sign it on behalf of the County.

Attachments

AGREEMENT

This agreement is entered into this _____ day of June, 2019, by the County of Frederick, Virginia (the “County”), a political subdivision of Virginia, and the Frederick County Sanitation Authority, d/b/a Frederick Water (“Frederick Water”), a political subdivision of Virginia:

WHEREAS, Chemstone and Frederick Water have previously entered into one or more agreements containing provisions for the construction by Frederick Water of replacement ballfields (the “Replacement Ballfields”) for the ballfields the County currently operates at Clearbrook Park (the “Clearbrook Ballfields”);

WHEREAS, Frederick Water has executed a contract with Perry Engineering to construct the Replacement Ballfields according to the approved Stephenson Ballfield site plan on property it owns, Frederick County Tax Parcel Number 44-A-95, also identified as 235 Hot Run Drive;

WHEREAS, the County has identified certain desired specifications for features of the Replacement Ballfields and supporting facilities, to include utilization of LED lighting technologies that result in greater efficiencies and performance; and

WHEREAS, Frederick Water is currently indebted to the County in the amount of \$657,083.23 (the “Indebtedness”), with respect to certain previous undertakings;

NOW, THEREFORE, the County and Frederick Water hereby agree as follows:

1. Frederick Water will construct the Replacement Ballfields according to the approved site plan, such construction to include installation of lighting systems for all five of the Replacement Ballfields (to include the tee ball field) according to the plan prepared by Musco for the County, a copy of which plan is attached hereto.
2. Frederick Water will upgrade the parking lots for the Replacement Ballfields from prime and double seal to a minimum two-inch asphalt topcoat.

3. In addition to three CXT prefabricated restroom/concession buildings, Frederick Water will construct two storage structures, to serve the Replacement Ballfields.

4. Frederick Water will sod all five outfields in order for the Replacement Ballfields to be playable March 15, 2020.

5. Frederick Water will grant the County an easement for the County's use of the Replacement Ballfields property, such easement being in substantially the same form as the easement Frederick Water previously granted the County for the convenience site also located on Tax Parcel Number 44-A-95.

6. In consideration for and upon completion of the foregoing, the County will forgive the Indebtedness owed to it by Frederick Water.

7. In addition, upon the Opequon Water Treatment Plant, also planned for construction by Frederick Water on a separate portion of Tax Parcel Number 44-A-95, becoming operational, Frederick Water will grant the County a fee simple interest in the Replacement Ballfields property.

COUNTY OF FREDERICK, VIRGINIA

FREDERICK COUNTY SANITATION
AUTHORITY, d/b/a FREDERICK WATER

By _____

By _____

Its _____


Its _____

J



MEMORANDUM

TO: Board of Supervisors

FROM: Mike Ruddy, AICP, Director of Planning and Development 

RE: Review and endorsement of the Capital Impacts Study and updated Development Impact Model

DATE: June 5, 2019

Overview

Frederick County has been working with Tischler-Bise to develop a Capital Impacts Study and Model designed to evaluate the anticipated need for capital facilities based on growth and to determine the cost of those capital facilities to the County. Further, the model determines the cost to the County for mitigating the infrastructure impacts associated with re-zonings. This Capital Impact Study also assists in ensuring the County's Cash Proffer Policy complies with latest Virginia Cash Proffer legislation.

Please find attached the Capital Impacts Study, Frederick County, Virginia. The Executive Summary provides an overview of the study. This is supported by more detailed information regarding the study and model.

Report from 05/09/19 DIM-OC meeting.

The Development Impact Model - Oversight Committee (DIM-OC) met on Thursday, May 9, 2019 at 9:00 a.m. to review of the Capital Impacts Study and updated Development Impact Model.

At the DIM-OC meeting a presentation was made to DIM-OC by the consultant, Tischler-Bise, that covered what the model does and does not analyze, and methodologies and cost analysis of cash proffer-eligible categories. Details and screenshots were provided of how the model will be used and the consultants went through an example of input and resulting impact.

Following the presentation and informed discussion, DIM-OC moved to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019. This motion for approval was conditioned on an adjustment to the school

component of the model in order to reflect the use of school attendance zones for the attributable impact of a project on a service area school. Based on the Committee's direction, the model has been amended to update the school scenarios by attendance zone for each facility.

School capital impact service area adjustment.

In an effort to achieve a greater level of attribution of capital impacts to service areas, the model evaluated more granular service areas for the Schools, and also Fire and Rescue, capital impact analysis.

Several service area options were discussed with County Staff when determining the service area for the School analysis. As noted in the report, a properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e., Countywide or Urban and Rural) would reflect utilization of the schools within that area being analyzed. More detailed service areas (i.e., based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas for the School analysis were programmed based on the General Service Areas (i.e., Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. This would provide some flexibility as school boundaries are adjusted to address growth-related needs. After review from the Frederick County Development Impact Model Oversight Committee (DIM-OC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools. This adjustment is consistent with the consensus of the DIM-OC.

Recommendation.

The Development Impact Model–Oversight Committee forwarded a recommendation to accept the Capital Impacts Study and implement the use of the Capital Impacts Model, effective July 1, 2019.

This motion for approval was conditioned on an adjustment to the school component of the model to reflect the use of school attendance zones for the attributable impact of a project on a service area school. This adjustment has been incorporated into the study and model.

Action from the Board of Supervisors would be appropriate at this time.

Tischler-Bise and County Staff will be available to provide a brief overview of how the study and model is anticipated to be implemented by Frederick County.

MTR/slc

Attachment: Capital Impacts Study, Frederick County, Virginia

Capital Impacts Study

Frederick County, Virginia

Submitted to:

Frederick County, Virginia

June 3, 2019



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Suite S240

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June 2019

CAPITAL IMPACTS STUDY

Frederick County, Virginia

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EXECUTIVE SUMMARY

Overview

TischlerBise has been retained by Frederick County, Virginia, to analyze the **capital impacts of new development**. The objective is to quantify the capital costs generated by new development in the County, specifically in light of changes to Cash Proffer law in Virginia. The assignment includes the development of a Capital Impacts Model (CapIM) for use in:

1. Calculating the “static” capital impact of new development by type of land use and
2. To allow County staff to use the Capital Impacts Model to determine the capital costs for development projects that take into consideration whether capacity is available or not (and therefore, whether a cash proffer can be offered and accepted by the County).

TischlerBise evaluated capital impacts for the following categories of public capital improvements: (1) Public Schools, (2) Parks and Recreation, (3) Public Safety: Sheriff, (4) Public Safety: Fire & Rescue, (5) Public Safety: Animal Protection, (6) Library, (7) General Government, (8) Courts, and (9) Environmental Services/Solid Waste. Methodologies and calculations are presented in this report as supporting documentation for estimating capital impacts from new growth as well as potential support for cash proffers.

Background on Cash Proffers

Cash proffers are one-time voluntary monetary commitments made at the time of rezoning to offset the impact on certain public facilities from new residential development. The funds ultimately collected from cash proffers are used to construct capital improvements to mitigate capital impacts with the goal of maintaining levels of service. Funds can only be used for **capital** improvements that provide **additional capacity**, not operations or maintenance. Cash proffer are calculated using level of service standards to account for infrastructure that may currently have excess capacity.

Cash proffers cannot be used to correct existing deficiencies. However, since cash proffers do not apply to “by-right” development but only apply during the rezoning process, only a portion of the impacts from new growth can be mitigated through cash proffers. Cash proffers are a small part of an overall funding strategy and should not be regarded as a total solution for infrastructure financing needs. Therefore, other strategies and revenue sources are needed to offset the impact to infrastructure from new growth.

Cash proffers are authorized under Virginia Code §15.2-2303 and §15.2-2298. A major change to cash proffer authority was enacted in 2016 affecting Section 15.2-2303.4(B) that added requirements to the acceptance of cash proffers. The new section states that localities cannot require an unreasonable proffer or deny a rezoning application or proffer condition amendment due to applicant’s failure or refusal to submit an unreasonable proffer.¹

The implementation of this change to the cash proffer law hinges on defining an unreasonable proffer, or more positively, defining a reasonable proffer. Defining reasonable proffers requires the analysis of existing capacity in public facilities as well as the demand for additional capacity from growth. This report and the accompanying Capital Impacts Model address this requirement specifically for Frederick County and provides a tool for ongoing implementation of the cash proffer law.

Furthermore, the changes to the cash proffer law restrict the infrastructure categories to public transportation facilities, public safety facilities, public school facilities, and public parks and further restricts the impacts that can be addressed to capacity improvements associated with construction projects.

¹ Virginia Code Section 15.2-2303.4(B) was revised in 2019 from restricting a local governing body from merely requesting or accepting an unreasonable proffer, to restricting a local governing body from requiring an unreasonable proffer. This allows a local governing body to discuss and negotiate with a developer to determine a reasonable proffer.

Capital Impacts Approach

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of land use for the infrastructure categories addressed in this study. The formula used to calculate each capital impact is diagrammed in a flow chart at the beginning of each chapter. Specific capital costs have been identified using local data and current dollars (2019). Because cash proffers reflect a point in time, the calculations and study should be updated periodically (typically 3 to 5 years). Costs reflect the direct impact of new development on the need for new facilities and infrastructure and do not reflect secondary or indirect impacts.

Capital impacts and resulting cash proffer amounts are calculated to recognize three key elements: ***need, benefit, and proportionality***.

- First, to justify a cash proffer for public facilities, it must be demonstrated that new development/rezonings will create a **need** for capital improvements (including an assessment of existing capacity).
- Second, new development/rezonings must derive a **benefit** from the payment of the cash proffers (i.e., in the form of public facilities constructed within a reasonable timeframe).
- Third, the cash proffer to be paid by a particular type of development (land use) should not exceed its **proportional** share of the capital cost for system improvements.

For each capital impact calculation, the report includes a summary table indicating the specific factors used to derive the amounts. These factors are referred to as “Level of Service” (LOS) standards.

The capital impacts outlined in this report reflect the actual cost to the County generated from new residential and nonresidential development, and as such, each represents the true capital impact generated by type of land use for each public facility category.

The Capital Impacts Model developed for the County by TischlerBise is the tool to use to determine if a cash proffer can be collected due to the presence of “excess capacity” or not. The Model provides a cash proffer calculation for County staff to use in determining the reasonableness of a cash proffer for a particular development project.

Methodologies

Any one of several legitimate methods may be used to calculate cash proffers. The choice of a particular method depends primarily on the service characteristics and planning requirements for the facility type being addressed. Each method has advantages and disadvantages in a particular situation, and to some extent can be interchangeable, because each allocates facility costs in proportion to the needs created by development.

Reduced to its simplest terms, the process of calculating cash proffers involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of cash proffers can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities. The following paragraphs discuss three basic methods for calculating cash proffers and how those methods can be applied.

Plan-Based Calculation. The plan-based method allocates costs for a specified set of improvements to a specified amount of development. The improvements are identified by a facility plan and development is identified by a land use plan. In this method, the total cost of relevant facilities is divided by total future demand to calculate a cost per unit of demand. Then, the cost per unit of demand is multiplied by the amount of demand per unit of development (e.g., housing units or square feet of building area) in each category to arrive at a cost per specific unit of development (e.g., single family detached unit).

Incremental Expansion Calculation. The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as square feet per student). This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. The level of service standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, the cash proffer revenues would not be for renewal and/or replacement of existing facilities. Rather, revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community.

Cost Recovery or Buy-In Calculation. The rationale for the cost recovery approach is that new development is paying its share of the useful life and remaining capacity of facilities already built or land already purchased from which new growth will benefit. This methodology is often used for oversized systems.

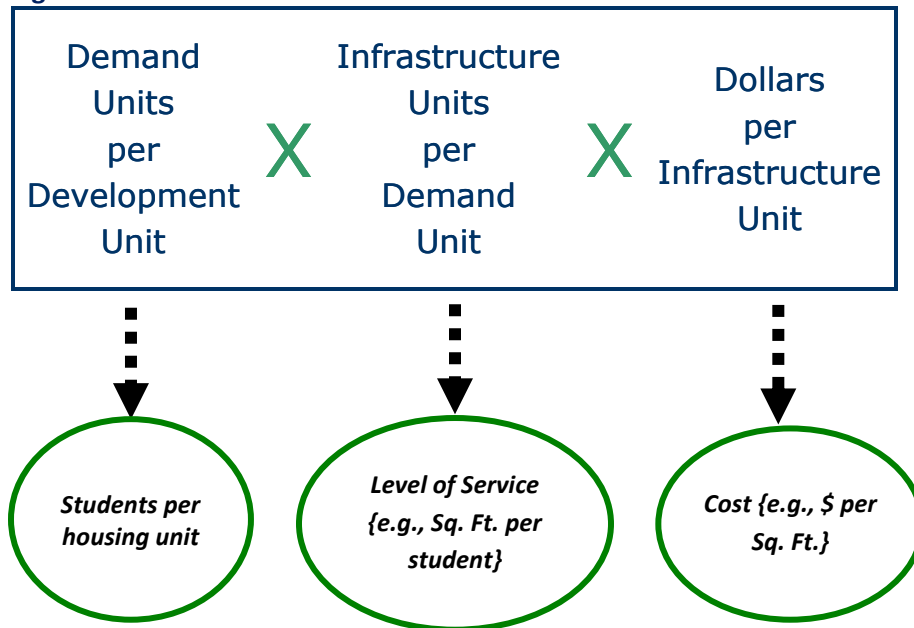
At the beginning of each capital facility chapter the chosen methodology will be explained and illustrated with a figure.

Generic Cash Proffer Calculation

In contrast to development exactions, which are typically referred to as project-level improvements, cash proffers fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction. The basic steps in a generic cash proffer formula are illustrated in Figure 1.

The first step is to determine an appropriate demand indicator, or service unit, for the particular type of infrastructure. The demand/service indicator measures the number of demand or service units for each unit of development. For example, an appropriate indicator of the demand for schools is growth in student enrollment and the increase in enrollment can be estimated from the average number of students per housing unit. The second step in the generic formula is to determine infrastructure units per demand unit, typically called **level of service (LOS) standards**. In keeping with the school example, a common LOS standard is square feet per student. The third step in the generic formula is the cost of various infrastructure units. To complete the school example, this part of the formula would establish the cost per square foot for school construction.

Figure 1. Generic Cash Proffer Formula



Credits

A general requirement common to cash proffer methodologies is the evaluation of *credits*. Two types of credits should be considered, **future revenue credits** and **site-specific credits**. Future revenue credits are necessary to avoid potential double payment situations arising from a one-time cash proffer payment plus the payment of other revenues that may also fund the same growth-related capital improvements.

Future revenue credits are dependent upon the cash proffer methodology used in the cost analysis. The incremental expansion methodology is best suited for public facilities that will be expanded incrementally in the future. Because new development will provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future principal payments on existing debt for public facilities. That is, because new development that may pay a cash proffer will also pay taxes to retire debt for the same type of infrastructure, a credit is included in the cash proffer calculation to account for this. (A credit is not necessary for interest payments if interest costs are not included in the cash proffers.)

The second type of credit is a **site-specific credit** for system improvements that have been included in the cash proffer calculations. A site-specific credit is handled during implementation and would reduce the cash proffer amount due to contributions of improvements or land that mitigate new development's impact on the infrastructure needs covered in the cash proffer program. Policies and procedures related to site-specific credits for system improvements should be addressed in the policy that establishes the Cash Proffer program. However, the general concept is that developers may be eligible for site-specific credits or reimbursements *only if they provide system improvements that have been included in the cash proffer calculations*. Project improvements normally required as part of the development approval process would not be eligible for credits against cash proffers.

Summary of Capital Impacts Approach

A summary of infrastructure categories is listed in Figure 2. To be eligible for a cash proffer, the facility must be for Public Schools, Parks and Recreation, or Public Safety (Sheriff, Fire, and Animal Services) which are noted in the figure. The noneligible infrastructure categories are included in the CapIM to capture a developments total capital impact to Frederick County. The County cannot collect a proffer for noneligible categories; however, understanding the full impact of a development (or a collection of developments) can be a tool in the long-term planning process.

The figure includes the components and serve areas used in the analysis as well. The geographies used for an infrastructure category were determined based on how the County service is being provided and through discussions with County staff. For example, most of the Parks & Recreation facilities serve only the local population, so the Urban and Rural service areas are implemented in the analysis. While the Sheriff's Office and Public Safety Building are serving the whole County.

More granular service areas were needed for the School and Fire capital impact analysis.

Several service area options were discussed with County staff when determining the service area for the School analysis. A properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e., countywide or Urban and Rural) would reflect utilization of the schools within that area being analyzed. More detailed service areas (i.e., based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas for the School analysis were programmed based on the General Service Areas (i.e., Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. This would provide some flexibility as school boundaries are adjusted to address growth-related needs. After review from the Frederick County Development Impact Model Oversight Committee (DIMOC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools.

Figure 2. Summary of Frederick County Capital Impacts Methodologies

| Type of Public Facility | Infrastructure Components and Geography Used | | Cost Allocation | Methodology |
|---|---|---|---|----------------------|
| Public Schools* | Countywide <ul style="list-style-type: none"> Transportation Vehicles Education Centers Support Facilities | Attendance Zones <ul style="list-style-type: none"> Elementary School Middle School High School | Public School Students from Residential Development | Incremental Approach |
| Parks and Recreation* | Countywide <ul style="list-style-type: none"> Indoor Recreation Facilities | Urban & Rural Service Area <ul style="list-style-type: none"> District, Community, Neighborhood Parks Paved & Unpaved Trails Community Centers | Residential | Incremental Approach |
| Public Safety: Sheriff* | <ul style="list-style-type: none"> Public Safety Building: Countywide | | Residential and Nonresidential | Incremental Approach |
| Public Safety: Fire & Rescue* | <ul style="list-style-type: none"> Fire Stations & Apparatuses: Fire Districts | | Residential and Nonresidential | Incremental Approach |
| Public Safety: Animal Protection* | <ul style="list-style-type: none"> Animal Shelter: Countywide | | Residential | Incremental Approach |
| Libraries | <ul style="list-style-type: none"> Library: Countywide | | Residential | Incremental Approach |
| General Government | <ul style="list-style-type: none"> General Government Facilities: Countywide | | Residential and Nonresidential | Incremental Approach |
| Courts | <ul style="list-style-type: none"> Court Facilities: Countywide | | Residential and Nonresidential | Incremental Approach |
| Environmental Services/Solid Waste | <ul style="list-style-type: none"> Convenience Sites: Urban & Rural Service Area Landfill: Countywide | | Residential | Incremental Approach |

***Note: the public facilities with an asterisk are eligible for cash proffers.**

LAND USE ASSUMPTIONS

This chapter documents the demographic data and land use projections to be used in the Capital Impacts Model for Frederick County. The following includes discussion and findings on:

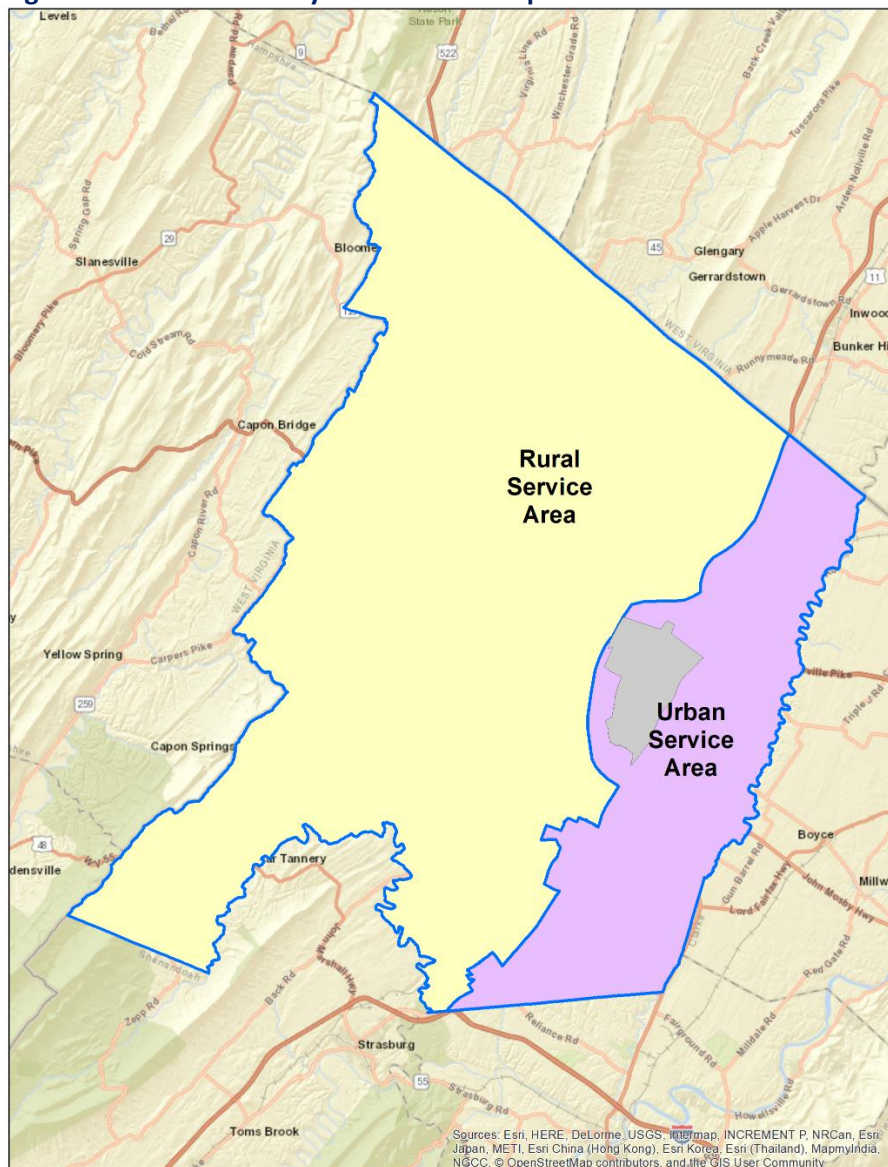
- Service Areas
- Household Sizes
- Current population and housing unit estimates
- Residential projections
- Student Generation Rates
- Current employment and nonresidential floor area estimates
- Nonresidential projections
- Vehicle Trip Generation

Note: calculations throughout this technical memo are based on an analysis conducted using Excel software. Results are discussed in the memo using one-and two-digit places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

Service Areas

After interviews with County staff, it has been decided that there will be two general service areas in the impact model: Rural and Urban. The Rural Service Area is west of Interstate 81 and Route 37, the Urban Service Area east of the highways. Furthermore, the Stephens City and Middletown municipalities are in the Urban Service Area. Being an independent city, development in the City of Winchester is not included in the Capital Impact Model. Additional service areas may be used for specific facilities in the model (i.e., school attendance zones and fire districts). In the impact model, development will generate costs within their service area and capacity issues will be identified with more detail compared to using the entire county as one service area.

Figure 3. Frederick County Service Area Map



Household Size

The capital impact analysis will use per capita standards and persons per housing unit (household size) to derive demand from housing types. (A household is a housing unit that is occupied by year-round residents.) When persons per housing unit are used in the calculations, infrastructure standards are derived using year-round population. TischlerBise recommends that capital impacts for residential development in Frederick County be analyzed according to the number of year-round residents per housing unit. Utilizing the most recent census tract data provided by the US Census Bureau, Figure 5 lists the 2016 countywide population and housing stock and persons per housing unit factors (PPHU).

In the lower half of Figure 5, the PPHU for each service area is found. **For single family units in the Rural Service Area the PPHU is 2.37 and in the Urban Service Area the PPHU is 2.62. For multifamily units in the Rural Service Area the PPHU is 1.46 and in the Urban Service Area the PPHU is 2.08.** Based on this information, households are smaller in the Rural Service Area compared to the Urban Service Area.

Figure 4. Countywide Persons per Housing Unit

| Units in Structure | Countywide | | |
|--------------------|------------|-------------|------|
| | Persons | Hsing Units | PPHU |
| Single Family [1] | 77,013 | 30,417 | 2.53 |
| Multifamily [2] | 4,121 | 2,055 | 2.01 |
| Total | 81,134 | 32,472 | 2.50 |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Figure 5. Persons Per Housing Unit by Service Area

| Units in Structure | Rural Service Area | | | Urban Service Area | | |
|----------------------------------|--------------------|-------------|------|--------------------|-------------|------|
| | Persons | Hsing Units | PPHU | Persons | Hsing Units | PPHU |
| Single Family, Detached/Attached | 24,178 | 10,139 | 2.38 | 47,390 | 17,955 | 2.64 |
| Mobile Homes | 1,081 | 499 | 2.17 | 4,365 | 1,825 | 2.39 |
| 2 to 4 | 127 | 82 | 1.55 | 895 | 454 | 1.97 |
| 5 or More | 254 | 179 | 1.42 | 2,846 | 1,342 | 2.12 |

| Units in Structure | Rural Service Area | | | Urban Service Area | | |
|--------------------|--------------------|-------------|------|--------------------|-------------|------|
| | Persons | Hsing Units | PPHU | Persons | Hsing Units | PPHU |
| Single Family [1] | 25,259 | 10,638 | 2.37 | 51,755 | 19,780 | 2.62 |
| Multifamily [2] | 381 | 260 | 1.46 | 3,741 | 1,795 | 2.08 |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Service Area Residential Proportion of Frederick County

In Figure 6 the population and housing units are totaled for each service area. According to census tract data from the US Census Bureau, about two-thirds of Frederick County's population live in the Urban Service Area. Additionally, the majority of single family and multifamily housing units are in the Urban Service Area. Most of the housing in the Rural Service Area is single family units.

Figure 6. Service Area Proportion of Frederick County, 2016

| Service Area | Population | % | Single Family Units [1] | % | Multifamily Units [2] | % |
|-------------------------|---------------|-------------|-------------------------|-------------|-----------------------|-------------|
| Rural Service Area | 25,639 | 32% | 10,638 | 35% | 260 | 13% |
| Urban Service Area | 55,495 | 68% | 19,780 | 65% | 1,795 | 87% |
| Frederick County | 81,134 | 100% | 30,417 | 100% | 2,055 | 100% |

[1] Includes attached and detached single family homes and mobile homes

[2] Includes all other types

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Building Permit Activity

Provided by the County, Figure 7 lists the annual building permit data for 2013-2017. Over the past five years, there are been a steady increase of new single family homes (single family, townhouse, and mobile homes) being built, averaging 547 units annually. Significantly fewer multifamily units have been constructed, only 45 new units on average each year. In total, the County has grown by about 600 housing units every year, with an uptick in the last three years.

Figure 7. Building Permit Totals 2013-2017

| Housing Type | 2013 | 2014 | 2015 | 2016 | 2017 | Annual Average |
|---------------|------|------|------|------|------|----------------|
| Single Family | 300 | 325 | 428 | 473 | 501 | 405 |
| Townhouse | 56 | 111 | 99 | 180 | 104 | 110 |
| Multifamily | 0 | 0 | 137 | 24 | 64 | 45 |
| Mobile Home | 17 | 18 | 45 | 37 | 41 | 32 |
| Total | 373 | 454 | 709 | 714 | 710 | 592 |

Source: Frederick County Planning & Development Department

| Housing Type | Annual Average |
|---------------|----------------|
| Single Family | 547 |
| Multifamily | 45 |
| Total | 592 |

Current Population and Housing Units

The base year for the fiscal impact model is 2018. To calculate the County's population, building permit data is added to data from the Weldon Cooper Center for Public Service at the University of Virginia. As of July 1, 2017, the Weldon Cooper Center estimated the County's population to be 85,820. Since the estimate covers half of 2017, the new residents from half of the building permits in 2017 is added to this population estimate to find the base year's population. Shown in Figure 8, the persons per housing unit factors are applied to the building permit totals to find the residents generated from the new units in the second half of 2017. As a result of adding the new residents to the 2017 population estimate, there are 86,702 residents in the base year.

Figure 8. Countywide Base Year Population

| Housing Type | Half of 2017 Building Permits [1] | Persons per Housing Unit [2] | New Residents Generated |
|---------------|-----------------------------------|------------------------------|-------------------------|
| Single Family | 323 | 2.53 | 818 |
| Multifamily | 32 | 2.01 | 64 |
| Total | 355 | | 882 |

| July 1, 2017 Pop. Estimate [3] | Base Year (2018) Pop. Estimate |
|--------------------------------|--------------------------------|
| 85,820 | 86,702 |

[1] Source: Frederick County Planning & Development Department

[2] Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

[3] Source: Demographics Research Group of the Weldon Cooper Center for Public Service, March 2017

Population estimates for each service area is necessary as well. To estimate the base year population in each service area, the population split found in Figure 6 is applied (32 percent Rural/68 percent Urban). Shown below, there are 27,399 residents estimated to be in the Rural Service Area and 59,303 residents estimated to be in the Urban Service Area.

Figure 9. Base Year Population by Service Area

| Population | Base Year 2018 |
|-------------------------|----------------|
| Rural Service Area | 27,399 |
| Urban Service Area | 59,303 |
| Countywide Total | 86,702 |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Weldon Cooper Center for Public Service, March 2017; TischlerBise analysis

Base year housing totals are provided by County staff. To align with household size data, single family-detached, single family-attached, and mobile homes are combined into the single family category. As a result, 96 percent of the 35,566 housing units in Frederick County are single family.

Figure 10. Countywide Base Year Housing Units

| Housing Type | Units | % |
|--------------------------|---------------|-------------|
| Single Family - Detached | 27,914 | 78% |
| Single Family - Attached | 3,918 | 11% |
| Multifamily | 1,248 | 4% |
| Mobile Homes | 2,486 | 7% |
| Total | 35,566 | 100% |

| Housing Type | Units | % |
|---------------|---------------|-------------|
| Single Family | 34,318 | 96% |
| Multifamily | 1,248 | 4% |
| Total | 35,566 | 100% |

Source: Frederick County Planning & Development Department

Along with population, the housing stock for each service area needs to be estimated for the capital impact model. By applying the US Census data in Figure 6 to the Countywide housing totals, the single family and multifamily housing stock is estimated. Shown in Figure 11, there are 12,160 housing units in the Rural Service Area and 23,406 housing units in the Urban Service Area.

Figure 11. Service Area Base Year Housing Unit

| Service Area | Base Year
2018 |
|---------------------------|-------------------|
| Rural Service Area | |
| Single Family Units | 12,002 |
| Multifamily Units | 158 |
| Total | 12,160 |
| Urban Service Area | |
| Single Family Units | 22,316 |
| Multifamily Units | 1,090 |
| Total | 23,406 |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Frederick County Planning & Development Dept; TischlerBise analysis

Population and Housing Unit Projections

Countywide population projections were estimated by applying a straight-line approach to the University of Virginia's Weldon Cooper Center for Public Service 2025 and 2030 population estimates. In the next ten years, the County's population is projected to increase by 14 percent, or 11,790 residents. The annual percent increase in population is applied to housing totals to project housing development. Over 4,700 housing units are estimated to develop in the next ten years, the majority being single family.

To estimate the service areas' population and housing unit totals, the current proportional splits for population and housing units are applied to the Countywide totals. Nearly 70 percent of the population growth over the next ten years in the Frederick County is anticipated to occur in the Urban Service Area.

Figure 12. Population and Housing Unit Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Population | 86,702 | 87,748 | 88,794 | 89,839 | 90,885 | 91,931 | 92,977 | 94,023 | 95,512 | 97,002 | 98,492 | 11,790 |
| | <i>Increase</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,046</i> | <i>1,490</i> | <i>1,490</i> | <i>1,490</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 34,318 | 34,727 | 35,136 | 35,545 | 35,954 | 36,363 | 36,772 | 37,181 | 37,761 | 38,341 | 38,921 | 4,603 |
| Multifamily | 1,248 | 1,263 | 1,278 | 1,293 | 1,307 | 1,322 | 1,337 | 1,352 | 1,373 | 1,394 | 1,415 | 167 |
| Total | 35,566 | 35,990 | 36,414 | 36,838 | 37,262 | 37,685 | 38,109 | 38,533 | 39,134 | 39,735 | 40,336 | 4,770 |
| | <i>Increase</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>424</i> | <i>601</i> | <i>601</i> | <i>601</i> | |
| Rural Service Area | | | | | | | | | | | | |
| Population | 27,399 | 27,729 | 28,059 | 28,390 | 28,720 | 29,051 | 29,381 | 29,712 | 30,183 | 30,653 | 31,124 | 3,726 |
| | <i>Increase</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>330</i> | <i>471</i> | <i>471</i> | <i>471</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 12,002 | 12,145 | 12,288 | 12,431 | 12,574 | 12,717 | 12,860 | 13,003 | 13,206 | 13,409 | 13,611 | 1,610 |
| Multifamily | 158 | 160 | 162 | 164 | 165 | 167 | 169 | 171 | 174 | 176 | 179 | 21 |
| Total | 12,160 | 12,305 | 12,450 | 12,594 | 12,739 | 12,884 | 13,029 | 13,174 | 13,380 | 13,585 | 13,791 | 1,631 |
| | <i>Increase</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>145</i> | <i>205</i> | <i>205</i> | <i>205</i> | |
| Urban Service Area | | | | | | | | | | | | |
| Population | 59,303 | 60,019 | 60,734 | 61,449 | 62,165 | 62,880 | 63,595 | 64,311 | 65,330 | 66,349 | 67,368 | 8,064 |
| | <i>Increase</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>715</i> | <i>1,019</i> | <i>1,019</i> | <i>1,019</i> | |
| Housing Units | | | | | | | | | | | | |
| Single Family | 22,316 | 22,582 | 22,848 | 23,114 | 23,380 | 23,646 | 23,912 | 24,178 | 24,555 | 24,932 | 25,309 | 2,993 |
| Multifamily | 1,090 | 1,103 | 1,116 | 1,129 | 1,142 | 1,155 | 1,168 | 1,181 | 1,199 | 1,218 | 1,236 | 146 |
| Total | 23,406 | 23,685 | 23,964 | 24,243 | 24,522 | 24,801 | 25,080 | 25,359 | 25,755 | 26,150 | 26,546 | 3,139 |
| | <i>Increase</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>279</i> | <i>396</i> | <i>396</i> | <i>396</i> | |

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; Weldon Cooper Center for Public Service, March 2017; TischlerBise analysis

Student Generation Rates and Current Enrollment

Frederick County provided student generation rates for elementary, middle, and high school. The term "student generation rate" refers to the number of public school students per housing unit in the County. Public school students are a subset of school-aged children, which also includes students in private schools and home-schooled children. Student generation rates (SGR) for single family-detached, single family-attached, multifamily, and mobile home units are provided in Figure 13.

Figure 13. Student Generation Rates

| Housing Type | Elem School SGR | Middle School SGR | High School SGR | Total SGR |
|------------------------|-----------------|-------------------|-----------------|-----------|
| Single Family-Detached | 0.155 | 0.091 | 0.126 | 0.371 |
| Single Family-Attached | 0.188 | 0.085 | 0.093 | 0.367 |
| Multifamily | 0.164 | 0.076 | 0.077 | 0.317 |
| Mobile Home | 0.220 | 0.109 | 0.123 | 0.452 |

Source: Frederick County Planning & Development Dept

From information provided by Frederick County staff, the current student enrollment is 13,354.

Figure 14. Current Student Enrollment, as of Spring 2018

| Grade Level | Number of Students | Percent of Total |
|--------------|--------------------|------------------|
| Elementary | 5,828 | 44% |
| Middle | 3,243 | 24% |
| High | 4,283 | 32% |
| Total | 13,354 | 100% |

Source: Frederick County Planning & Development Dept

Student Generation Projections

Student enrollment is projected based on housing growth. In the housing projections, single family units include single family-detached, single family-attached, and mobile homes. To accurately apply the student generation rate to the housing projections, the weighted average of the three housing types is calculated. Over the next ten years, it is projected that Frederick County will increase by 1,757 students. The largest increase is in the Elementary school level.

Figure 15. Countywide Student Enrollment Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|-------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Students | | | | | | | | | | | | |
| Elementary | 5,828 | 5,884 | 5,953 | 6,023 | 6,092 | 6,161 | 6,231 | 6,300 | 6,398 | 6,496 | 6,595 | 767 |
| Middle | 3,243 | 3,274 | 3,313 | 3,351 | 3,390 | 3,428 | 3,467 | 3,506 | 3,560 | 3,615 | 3,670 | 427 |
| High | 4,283 | 4,324 | 4,375 | 4,426 | 4,477 | 4,528 | 4,579 | 4,630 | 4,702 | 4,774 | 4,846 | 563 |
| Total | 13,354 | 13,483 | 13,641 | 13,800 | 13,959 | 14,118 | 14,277 | 14,435 | 14,660 | 14,886 | 15,111 | 1,757 |
| | <i>Increase</i> | <i>129</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>159</i> | <i>225</i> | <i>225</i> | <i>225</i> | |

Source: Frederick County Planning & Development Dept; TischlerBise analysis

Current Employment and Nonresidential Floor Area Estimates

To allow for employment estimates to be determined for the service areas, base year data is sourced from the ESRI's online Business Analyst database. Organized by NAICS code, Figure 16 lists the 2018 employment in Frederick County. It is estimated that there are 28,212 jobs in the County.

Figure 16. 2018 Countywide Employment by NAICS Code

| NAICS Sector | Employment | % |
|---|---------------|-------------|
| Agriculture, Forestry, Fishing & Hunting | 95 | 0.3% |
| Mining | 50 | 0.2% |
| Utilities | 194 | 0.7% |
| Construction | 2,978 | 10.6% |
| Manufacturing | 4,480 | 15.9% |
| Wholesale Trade | 2,127 | 7.5% |
| Retail Trade | 4,838 | 17.1% |
| Transportation & Warehousing | 907 | 3.2% |
| Information | 363 | 1.3% |
| Finance & Insurance | 542 | 1.9% |
| Real Estate, Rental & Leasing | 529 | 1.9% |
| Professional, Scientific & Tech Services | 1,161 | 4.1% |
| Management of Companies & Enterprises | 4 | 0.0% |
| Administrative & Support | 587 | 2.1% |
| Educational Services | 2,019 | 7.2% |
| Health Care & Social Assistance | 1,127 | 4.0% |
| Arts, Entertainment & Recreation | 256 | 0.9% |
| Accommodation & Food Services | 3,333 | 11.8% |
| Other Services (except Public Administration) | 1,475 | 5.2% |
| Public Administration | 1,147 | 4.1% |
| Total | 28,212 | 100% |

Source: ESRI Business Analyst, 2018

To streamline projections, the NAICS employment totals are simplified to four industry sectors: Retail, Office, Industrial, and Institutional. In Figure 17, it is shown that the largest employment industry in the County is Industrial. Retail has a significant presence as well, while Office and Institutional have a similar proportion of the employment market.

Figure 17. Base Year Countywide Employment by Industry Sector

| Industry | Employment | % |
|---------------|---------------|-------------|
| Retail | 8,427 | 30% |
| Office | 4,661 | 17% |
| Industrial | 10,831 | 38% |
| Institutional | 4,293 | 15% |
| Total | 28,212 | 100% |

Source: ESRI Business Analyst, 2018

Base year countywide nonresidential floor area has been provided by the Planning & Development Department. As of 2018, there is 19.2 million square feet of Industrial floor area, 6 million square feet of Retail, 5.2 million square feet of Institutional, and 1.9 million square feet of Office totaling 32.2 million square feet. Following development trends, the Industrial industry sector tends to have a large floor area due to warehousing and manufacturing developments. Conversely, the Office industry sector requires a much smaller floor area to conduct business.

Figure 18. Base Year Countywide Nonresidential Floor Area by Industry Sector

| Industry | Nonres. Floor Area (sq. ft.) | % |
|---------------|------------------------------|-------------|
| Retail | 5,950,977 | 18% |
| Office | 1,894,270 | 6% |
| Industrial | 19,161,953 | 60% |
| Institutional | 5,173,527 | 16% |
| Total | 32,180,727 | 100% |

Source: Frederick County Planning & Development Dept

In Figure 19, the County's square foot per job factors are found by applying the base year employment to the nonresidential floor area. As shown in the figure, it is expected that the Industrial and Institutional industries have much higher factors because of the uses of the space (i.e. warehousing and schools, respectively). These factors are used to determine the floor area in the capital impact model's service areas.

Figure 19. Square Foot per Job Factors

| Industry | Nonres. Floor Area (sq. ft.) | Employment | Sq. Ft. per Job |
|---------------|------------------------------|---------------|-----------------|
| Retail | 5,950,977 | 8,427 | 706 |
| Office | 1,894,270 | 4,661 | 406 |
| Industrial | 19,161,953 | 10,831 | 1,769 |
| Institutional | 5,173,527 | 4,293 | 1,205 |
| Total | 32,180,727 | 28,212 | 1,141 |

Source: Frederick County Planning & Development Dept;
ESRI Business Analyst; TischlerBise analysis

Service Area Current Employment and Nonresidential Floor Area

As noted above, at least two service areas are anticipated to be used in the capital impacts model: Rural and Urban. A map is provided at the begin of this memo, Figure 3. ESRI's online Business Analyst tool is used to determine the employment split between the areas. Shown in Figure 20, 72 percent of the jobs in Frederick County are in the Urban Service Area. In the Urban Service Area, the Industrial category has over 7,800 jobs and the Retail sector has over 6,500 jobs, while the other two sectors have over 3,000 jobs. In the Rural Service Area, there are approximately 7,300 jobs (26 percent of the County), the Industrial industry being the largest employer.

Figure 20. Job Split by Service Area

| Industry | Rural | | Urban | | Total |
|---------------|-------|-----|--------|-----|--------|
| | Jobs | % | Jobs | % | |
| Retail | 1,897 | 23% | 6,530 | 77% | 8,427 |
| Office | 1,353 | 29% | 3,308 | 71% | 4,661 |
| Industrial | 3,017 | 28% | 7,814 | 72% | 10,831 |
| Institutional | 1,005 | 23% | 3,288 | 77% | 4,293 |
| Total | 7,272 | 26% | 20,940 | 74% | 28,212 |

Source: ESRI Business Analyst, 2018

The square foot per job factors listed in Figure 19 are applied to the employment totals in the service areas to calculate the nonresidential floor area. In the Urban Service Area, there is estimated 23.7 million square feet of nonresidential floor area, the Industrial industry accounting for the highest share. In the Rural Service Area, there is estimated to be 8.4 million square feet of nonresidential floor area, the Industrial industry accounting for the highest share as well. Overall, about 74 percent of the nonresidential floor area in the County is in the Urban Service Area.

Figure 21. Nonresidential Floor Area by Service Area

| Industry | Rural | | Urban | |
|---------------|-------|-----------|--------|------------|
| | Jobs | Sq. Ft. | Jobs | Sq. Ft. |
| Retail | 1,897 | 1,339,734 | 6,530 | 4,611,243 |
| Office | 1,353 | 549,857 | 3,308 | 1,344,414 |
| Industrial | 3,017 | 5,338,211 | 7,814 | 13,823,742 |
| Institutional | 1,005 | 1,210,696 | 3,288 | 3,962,831 |
| Total | 7,272 | 8,438,497 | 20,940 | 23,742,230 |

Source: Frederick County Planning & Development Dept; ESRI Business Analyst; TischlerBise analysis

Employment and Nonresidential Floor Area Projections

According to the County's 2035 *Comprehensive Plan*, from 2015 to 2025 the County is expected to increase in 6,145 jobs. Staying consistent with the County's *Plan*, an average of 615 jobs per year is applied to the Countywide base year total to project employment in the Capital Impact Model. Furthermore, the *Plan* anticipates Institutional (healthcare) and Retail jobs to be the biggest shares of the job increase; Industrial then Office having the smallest shares. To account for this, Figure 22 lists the assumed percent of the job growth for each industry that is used in the projections.

Figure 22. Percent of Job Growth by Industry

| Industry | Percent of Job Growth |
|---------------|-----------------------|
| Retail | 30% |
| Office | 15% |
| Industrial | 25% |
| Institutional | 30% |

Nonresidential floor area is projected based on the employment growth and average square feet per employee factors from the Institute of Transportation Engineers' (ITE). Calculated in the last column in Figure 23 are the square feet per employee factors for a number of land uses. Based on the employment totals, the Shopping Center (ITE 820) land use factor will be used to project the Retail floor area, General Office (ITE 710) for Office, Manufacturing (ITE 140) for Industrial, and Hospital (ITE 610) for Institutional.

Figure 23. Institute of Transportation Engineers' Demand Factors

| ITE Code | Land Use | Demand Unit | Wkdy Trip Ends Per Dmd Unit* | Wkdy Trip Ends Per Employee* | Emp Per Dmd Unit | Sq Ft Per Emp |
|----------|----------------------------|-------------|------------------------------|------------------------------|------------------|---------------|
| 110 | Light Industrial | 1,000 Sq Ft | 4.96 | 3.05 | 1.63 | 615 |
| 130 | Industrial Park | 1,000 Sq Ft | 3.37 | 2.91 | 1.16 | 864 |
| 140 | Manufacturing | 1,000 Sq Ft | 3.93 | 2.47 | 1.59 | 628 |
| 150 | Warehousing | 1,000 Sq Ft | 1.74 | 5.05 | 0.34 | 2,902 |
| 254 | Assisted Living | bed | 2.60 | 4.24 | 0.61 | na |
| 320 | Motel | room | 3.35 | 25.17 | 0.13 | na |
| 520 | Elementary School | 1,000 Sq Ft | 19.52 | 21.00 | 0.93 | 1,076 |
| 530 | High School | 1,000 Sq Ft | 14.07 | 22.25 | 0.63 | 1,581 |
| 540 | Community College | student | 1.15 | 14.61 | 0.08 | na |
| 550 | University/College | student | 1.56 | 8.89 | 0.18 | na |
| 565 | Day Care | student | 4.09 | 21.38 | 0.19 | na |
| 610 | Hospital | 1,000 Sq Ft | 10.72 | 3.79 | 2.83 | 354 |
| 620 | Nursing Home | 1,000 Sq Ft | 6.64 | 2.91 | 2.28 | 438 |
| 710 | General Office (avg size) | 1,000 Sq Ft | 9.74 | 3.28 | 2.97 | 337 |
| 760 | Research & Dev Center | 1,000 Sq Ft | 11.26 | 3.29 | 3.42 | 292 |
| 770 | Business Park | 1,000 Sq Ft | 12.44 | 4.04 | 3.08 | 325 |
| 820 | Shopping Center (avg size) | 1,000 Sq Ft | 37.75 | 16.11 | 2.34 | 427 |

* Source: [Trip Generation](#), Institute of Transportation Engineers, 10th Edition (2017)

Listed in Figure 24, over the next ten years, it is projected that Frederick County will grow by 6,145 jobs.

- Institutional sector is projected to grow by 1,844 jobs,
- Retail sector by 1,844 jobs,
- Industrial sector by 1,536 jobs, and
- Office sector by 922 jobs.

Based on the job growth, the County is projected to grow by 2.7 million square feet of nonresidential floor area. About a third of the growth comes from the Industrial sector, while the Retail and Institutional sectors have significant growth as well.

Additionally, Countywide employment projections are split into the two service areas based on the proportional base year totals. The Urban Service Area is projected to grow by 4,603 jobs and the Rural Service Area is projected to grow by 1,542 jobs. To calculate the floor area in each service area, the square foot per job factors are applied to the job growth. As a result, the Urban Service Area grows by 2 million square feet and the Rural Service Area grows by 700,000 square feet.

Figure 24. Employment and Nonresidential Floor Area Projections

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 8,427 | 8,611 | 8,796 | 8,980 | 9,164 | 9,349 | 9,533 | 9,717 | 9,902 | 10,086 | 10,271 | 1,844 |
| Office | 4,661 | 4,753 | 4,845 | 4,938 | 5,030 | 5,122 | 5,214 | 5,306 | 5,398 | 5,491 | 5,583 | 922 |
| Industrial | 10,831 | 10,985 | 11,138 | 11,292 | 11,446 | 11,599 | 11,753 | 11,906 | 12,060 | 12,214 | 12,367 | 1,536 |
| Institutional | 4,293 | 4,477 | 4,662 | 4,846 | 5,030 | 5,215 | 5,399 | 5,583 | 5,768 | 5,952 | 6,137 | 1,844 |
| Total | 28,212 | 28,827 | 29,441 | 30,056 | 30,670 | 31,285 | 31,899 | 32,514 | 33,128 | 33,743 | 34,357 | 6,145 |
| | <i>Increase</i> | 615 | 615 | 614 | 615 | 615 | 614 | 615 | 615 | 615 | 615 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 5,951 | 6,030 | 6,108 | 6,187 | 6,266 | 6,344 | 6,423 | 6,502 | 6,580 | 6,659 | 6,738 | 787 |
| Office | 1,894 | 1,925 | 1,956 | 1,987 | 2,018 | 2,049 | 2,081 | 2,112 | 2,143 | 2,174 | 2,205 | 310 |
| Industrial | 19,162 | 19,259 | 19,355 | 19,452 | 19,548 | 19,645 | 19,741 | 19,838 | 19,934 | 20,031 | 20,127 | 966 |
| Institutional | 5,174 | 5,239 | 5,304 | 5,369 | 5,434 | 5,499 | 5,565 | 5,630 | 5,695 | 5,760 | 5,825 | 652 |
| Total | 32,181 | 32,452 | 32,724 | 32,995 | 33,266 | 33,538 | 33,809 | 34,081 | 34,352 | 34,624 | 34,895 | 2,714 |
| | <i>Increase</i> | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | |
| Rural Service Area | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 1,897 | 1,939 | 1,980 | 2,022 | 2,063 | 2,105 | 2,146 | 2,188 | 2,229 | 2,271 | 2,312 | 415 |
| Office | 1,353 | 1,380 | 1,406 | 1,433 | 1,460 | 1,487 | 1,514 | 1,540 | 1,567 | 1,594 | 1,621 | 268 |
| Industrial | 3,017 | 3,060 | 3,103 | 3,146 | 3,189 | 3,231 | 3,274 | 3,317 | 3,360 | 3,403 | 3,445 | 428 |
| Institutional | 1,005 | 1,048 | 1,091 | 1,134 | 1,177 | 1,220 | 1,263 | 1,307 | 1,350 | 1,393 | 1,436 | 431 |
| Total | 7,272 | 7,426 | 7,580 | 7,735 | 7,889 | 8,043 | 8,197 | 8,351 | 8,506 | 8,660 | 8,814 | 1,542 |
| | <i>Increase</i> | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | 154 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 1,340 | 1,357 | 1,375 | 1,393 | 1,411 | 1,428 | 1,446 | 1,464 | 1,481 | 1,499 | 1,517 | 177 |
| Office | 550 | 559 | 568 | 577 | 586 | 595 | 604 | 613 | 622 | 631 | 640 | 90 |
| Industrial | 5,338 | 5,365 | 5,392 | 5,419 | 5,446 | 5,473 | 5,500 | 5,526 | 5,553 | 5,580 | 5,607 | 269 |
| Institutional | 1,211 | 1,226 | 1,241 | 1,256 | 1,272 | 1,287 | 1,302 | 1,317 | 1,333 | 1,348 | 1,363 | 153 |
| Total | 8,438 | 8,507 | 8,576 | 8,645 | 8,714 | 8,783 | 8,852 | 8,921 | 8,989 | 9,058 | 9,127 | 689 |
| | <i>Increase</i> | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | |
| Urban Service Area | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | |
| Retail | 6,530 | 6,673 | 6,816 | 6,958 | 7,101 | 7,244 | 7,387 | 7,530 | 7,673 | 7,815 | 7,958 | 1,428 |
| Office | 3,308 | 3,373 | 3,439 | 3,504 | 3,570 | 3,635 | 3,701 | 3,766 | 3,831 | 3,897 | 3,962 | 654 |
| Industrial | 7,814 | 7,924 | 8,035 | 8,146 | 8,257 | 8,368 | 8,479 | 8,589 | 8,700 | 8,811 | 8,922 | 1,108 |
| Institutional | 3,288 | 3,430 | 3,571 | 3,712 | 3,853 | 3,994 | 4,136 | 4,277 | 4,418 | 4,559 | 4,700 | 1,412 |
| Total | 20,940 | 21,400 | 21,861 | 22,321 | 22,781 | 23,241 | 23,702 | 24,162 | 24,622 | 25,083 | 25,543 | 4,603 |
| | <i>Increase</i> | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | 460 | |
| Floor Area (1,000 square feet) | | | | | | | | | | | | |
| Retail | 4,611 | 4,672 | 4,733 | 4,794 | 4,855 | 4,916 | 4,977 | 5,038 | 5,099 | 5,160 | 5,221 | 610 |
| Office | 1,344 | 1,366 | 1,388 | 1,411 | 1,433 | 1,455 | 1,477 | 1,499 | 1,521 | 1,543 | 1,565 | 220 |
| Industrial | 13,824 | 13,893 | 13,963 | 14,033 | 14,102 | 14,172 | 14,242 | 14,311 | 14,381 | 14,451 | 14,520 | 697 |
| Institutional | 3,963 | 4,013 | 4,063 | 4,113 | 4,163 | 4,212 | 4,262 | 4,312 | 4,362 | 4,412 | 4,462 | 499 |
| Total | 23,742 | 23,945 | 24,147 | 24,350 | 24,553 | 24,755 | 24,958 | 25,160 | 25,363 | 25,565 | 25,768 | 2,026 |
| | <i>Increase</i> | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | |

Source: Frederick County 2035 Comprehensive Plan; Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); ESRI Business Analyst; TischlerBise analysis

Vehicle Trip Generation

Residential Vehicle Trips

A customized trip rate is calculated for the single family and multifamily units in Frederick County. In Figure 25, the most recent data from the American Community Survey is inputted into equations provided by the ITE to calculate the trip ends per housing unit factor. A single family unit is estimated to generate 10.54 trip ends on an average weekday and a multifamily unit is estimated to generate 5.61 trip ends on an average weekday.

Figure 25. Customized Residential Trip End Rates

| | Vehicles Available (1) | Households (2) | | Total Households | Vehicles per Household by Tenure |
|----------------------|------------------------|----------------------|-------------------|------------------|----------------------------------|
| | | Single Family Units* | Multifamily Units | | |
| Owner-occupied | 55,623 | 23,166 | 200 | 23,366 | 2.38 |
| Renter-occupied | 10,568 | 4,732 | 1,816 | 6,548 | 1.61 |
| TOTAL | 66,191 | 27,898 | 2,016 | 29,914 | 2.21 |
| Housing Units (6) => | | 30,417 | 2,055 | 32,472 | |

| | Persons (3) | Trip Ends (4) | Vehicles by Type of Housing | Trip Ends (5) | Average Trip Ends | Trip Ends per Housing Unit | ITE Trip Ends Per Unit | Difference from ITE |
|-------------------|---------------|----------------|-----------------------------|----------------|-------------------|----------------------------|------------------------|---------------------|
| Single Family | 77,013 | 231,672 | 62,784 | 409,313 | 320,493 | 10.54 | 9.44 | 12% |
| Multifamily Units | 4,121 | 9,356 | 3,407 | 13,717 | 11,537 | 5.61 | 5.44 | 3% |
| TOTAL | 81,134 | 241,028 | 66,191 | 423,030 | 332,029 | 10.23 | | |

* Includes Single Family Detached, Attached, and Manufactured Homes

(1) Vehicles available by tenure from Table B25046, 2011-2015 American Community Survey 5-Year Estimates.

(2) Households by tenure and units in structure from Table B25032, American Community Survey, 2011-2015.

(3) Persons by units in structure from Table B25033, American Community Survey, 2011-2015.

(4) Vehicle trips ends based on persons using formulas from [Trip Generation](#) (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $\text{EXP}(0.89 \cdot \text{LN}(\text{persons}) + 1.72)$. To approximate the average population of the ITE studies, persons were divided by 286 and the equation result multiplied by 286. For multifamily housing (ITE 221), the fitted curve equation is $(2.29 \cdot \text{persons}) - 81.02$.

(5) Vehicle trip ends based on vehicles available using formulas from [Trip Generation](#) (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $\text{EXP}(0.99 \cdot \text{LN}(\text{vehides}) + 1.93)$. To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 485 and the equation result multiplied by 485.

For multifamily housing (ITE 220), the fitted curve equation is $(3.94 \cdot \text{vehides}) + 293.58$ (ITE 2012).

(6) Housing units from Table B25024, American Community Survey, 2011-2015.

Residential Vehicle Trips Adjustment Factors

A vehicle trip end is the out-bound or in-bound leg of a vehicle trip. As a result, to not double count trips, a standard 50 percent adjustment is applied to trip ends to calculate a vehicle trip. For example, the out-bound trip from a person's home to work is attributed to the housing unit and the trip from work back home is attributed to the employer.

However, an additional adjustment is necessary to capture County residents' work-bound trips that are outside of the County. The trip adjustment factor includes two components. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of out-bound trips (which are 50 percent of all trip ends). Also, utilizing the most recent data from the Census Bureau's web application "OnTheMap," 77 percent of the Frederick County workers travel outside the County for work. In combination, these factors account for 12 percent of additional production trips ($0.31 \times 0.50 \times 0.77 = 0.12$). Shown in Figure 26, the total adjustment factor for residential housing units includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (12 percent of production trips) for a total of 62 percent.

Figure 26. Frederick County Trip Adjustment Factor for Commuters

| | |
|--|------------|
| Employed Frederick County Residents (2015) | 38,410 |
| Frederick County Residents Working in County (2015) | 8,830 |
| Frederick County Residents Commuting Outside County for Work | 29,580 |
| Percent Commuting out of the County | 77% |
| Additional Production Trips | 12% |
| | |
| General Trip Adjustment Factor | 50% |
| Residential Trip Adjustment Factor | 62% |

Source: U.S. Census, OnTheMap Application

Nonresidential Vehicle Trips

Vehicle trip generation for nonresidential land uses are calculated by using ITE's average daily trip end rates and adjustment factors found in their recently published 10th edition of *Trip Generation*. **The weekday trip end per 1,000 square feet factors highlighted in Figure 27 are used to estimate the trip generation in Frederick County.**

Figure 27. Institute of Transportation Engineers Nonresidential Trip Factors

| ITE Code | Land Use | Demand Unit | Wkdy Trip Ends Per Dmd Unit* | Wkdy Trip Ends Per Employee* | Emp Per Dmd Unit | Sq Ft Per Emp |
|----------|----------------------------|-------------|------------------------------|------------------------------|------------------|---------------|
| 110 | Light Industrial | 1,000 Sq Ft | 4.96 | 3.05 | 1.63 | 615 |
| 130 | Industrial Park | 1,000 Sq Ft | 3.37 | 2.91 | 1.16 | 864 |
| 140 | Manufacturing | 1,000 Sq Ft | 3.93 | 2.47 | 1.59 | 628 |
| 150 | Warehousing | 1,000 Sq Ft | 1.74 | 5.05 | 0.34 | 2,902 |
| 254 | Assisted Living | bed | 2.60 | 4.24 | 0.61 | na |
| 320 | Motel | room | 3.35 | 25.17 | 0.13 | na |
| 520 | Elementary School | 1,000 Sq Ft | 19.52 | 21.00 | 0.93 | 1,076 |
| 530 | High School | 1,000 Sq Ft | 14.07 | 22.25 | 0.63 | 1,581 |
| 540 | Community College | student | 1.15 | 14.61 | 0.08 | na |
| 550 | University/College | student | 1.56 | 8.89 | 0.18 | na |
| 565 | Day Care | student | 4.09 | 21.38 | 0.19 | na |
| 610 | Hospital | 1,000 Sq Ft | 10.72 | 3.79 | 2.83 | 354 |
| 620 | Nursing Home | 1,000 Sq Ft | 6.64 | 2.91 | 2.28 | 438 |
| 710 | General Office (avg size) | 1,000 Sq Ft | 9.74 | 3.28 | 2.97 | 337 |
| 760 | Research & Dev Center | 1,000 Sq Ft | 11.26 | 3.29 | 3.42 | 292 |
| 770 | Business Park | 1,000 Sq Ft | 12.44 | 4.04 | 3.08 | 325 |
| 820 | Shopping Center (avg size) | 1,000 Sq Ft | 37.75 | 16.11 | 2.34 | 427 |

* Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017)

For nonresidential land uses, the standard 50 percent adjustment is applied to Office, Industrial, and Institutional development types. A lower vehicle trip adjustment factor is used for Retail because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. An average pass-by rate from ITE is applied to Retail, resulting in a trip adjustment factor of 38 percent.

In Figure 28, the Institute for Transportation Engineers' land use code, daily vehicle trip end rate, and trip adjustment factor is listed for each land use.

Figure 28. Frederick County Summary of Averages Daily Vehicle Trip Factors

| Land Use | Vehicle Trip Ends | Trip Adj. % | Avg. Daily Vehicle Trip Rate (Adj.) |
|---|-------------------|-------------|-------------------------------------|
| Residential (per housing unit) | | | |
| Single Family | 10.54 | 0.62 | 6.53 |
| Multifamily | 5.61 | 0.62 | 3.48 |
| Nonresidential (per 1,000 square feet) | | | |
| Retail | 37.75 | 0.38 | 14.35 |
| Office | 9.74 | 0.50 | 4.87 |
| Industrial | 3.93 | 0.50 | 1.97 |
| Institutional | 19.52 | 0.50 | 9.76 |

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Vehicle Trip Projections

The base year vehicle trip totals and vehicle trip projections are calculated by combining the vehicle trip end factors, the trip adjustment factors, and the residential and nonresidential projections for housing and floor area growth. In the base year, residential land uses account for 228,533 vehicle trips and nonresidential land uses account for 182,739 vehicle trips in Frederick County. Through 2028, there will be a total increase of 51,708 daily vehicle trips with the majority of the growth being generated by single family units (58 percent) and Retail (22 percent) development.

Furthermore, 70 percent of the current vehicle trips in the County are generated in the Urban Service Area. In total, by 2028, the Urban Service area will increase by 36,121 vehicle trips and the Rural Service Area will increase by 15,586 vehicle trips.

Figure 29. Frederick County Total Daily Vehicle Trip Projections (2019-2028)

| | Base Year
2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total
Increase |
|---------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|
| Frederick County | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 224,189 | 226,861 | 229,533 | 232,205 | 234,877 | 237,549 | 240,221 | 242,893 | 246,682 | 250,470 | 254,259 | 30,069 |
| Multifamily | 4,344 | 4,396 | 4,447 | 4,499 | 4,551 | 4,603 | 4,654 | 4,706 | 4,780 | 4,853 | 4,926 | 583 |
| Subtotal | 228,533 | 231,257 | 233,981 | 236,704 | 239,428 | 242,152 | 244,876 | 247,599 | 251,461 | 255,323 | 259,185 | 30,652 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 85,367 | 86,495 | 87,624 | 88,752 | 89,881 | 91,010 | 92,138 | 93,267 | 94,395 | 95,524 | 96,652 | 11,286 |
| Office | 9,225 | 9,376 | 9,527 | 9,679 | 9,830 | 9,981 | 10,132 | 10,283 | 10,434 | 10,586 | 10,737 | 1,512 |
| Industrial | 37,653 | 37,843 | 38,033 | 38,222 | 38,412 | 38,602 | 38,792 | 38,981 | 39,171 | 39,361 | 39,551 | 1,897 |
| Institutional | 50,494 | 51,130 | 51,766 | 52,402 | 53,038 | 53,674 | 54,310 | 54,946 | 55,583 | 56,219 | 56,855 | 6,361 |
| Subtotal | 182,739 | 184,844 | 186,950 | 189,055 | 191,161 | 193,267 | 195,372 | 197,478 | 199,583 | 201,689 | 203,794 | 21,056 |
| Grand Total | 411,272 | 416,101 | 420,931 | 425,760 | 430,589 | 435,418 | 440,248 | 445,077 | 451,045 | 457,012 | 462,980 | 51,708 |
| | <i>Increase</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>4,829</i> | <i>5,968</i> | <i>5,968</i> | <i>5,968</i> | |
| Rural Service Area | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 78,404 | 79,338 | 80,273 | 81,207 | 82,142 | 83,076 | 84,011 | 84,945 | 86,270 | 87,595 | 88,920 | 10,516 |
| Multifamily | 550 | 556 | 563 | 569 | 576 | 582 | 589 | 595 | 605 | 614 | 623 | 74 |
| Subtotal | 78,954 | 79,895 | 80,836 | 81,777 | 82,718 | 83,659 | 84,600 | 85,541 | 86,875 | 88,209 | 89,543 | 10,590 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 19,218 | 19,473 | 19,727 | 19,981 | 20,235 | 20,489 | 20,743 | 20,997 | 21,251 | 21,505 | 21,759 | 2,541 |
| Office | 2,678 | 2,722 | 2,766 | 2,809 | 2,853 | 2,897 | 2,941 | 2,985 | 3,029 | 3,073 | 3,117 | 439 |
| Industrial | 10,490 | 10,542 | 10,595 | 10,648 | 10,701 | 10,754 | 10,807 | 10,860 | 10,912 | 10,965 | 11,018 | 529 |
| Institutional | 11,816 | 11,965 | 12,114 | 12,263 | 12,412 | 12,561 | 12,710 | 12,858 | 13,007 | 13,156 | 13,305 | 1,489 |
| Subtotal | 44,202 | 44,702 | 45,202 | 45,701 | 46,201 | 46,701 | 47,200 | 47,700 | 48,200 | 48,699 | 49,199 | 4,997 |
| Grand Total | 123,156 | 124,597 | 126,037 | 127,478 | 128,919 | 130,359 | 131,800 | 133,240 | 135,074 | 136,908 | 138,742 | 15,586 |
| | <i>Increase</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,441</i> | <i>1,834</i> | <i>1,834</i> | <i>1,834</i> | |
| Urban Service Area | | | | | | | | | | | | |
| Residential | | | | | | | | | | | | |
| Single Family | 145,785 | 147,523 | 149,260 | 150,998 | 152,735 | 154,473 | 156,211 | 157,948 | 160,412 | 162,875 | 165,339 | 19,553 |
| Multifamily | 3,794 | 3,839 | 3,885 | 3,930 | 3,975 | 4,020 | 4,066 | 4,111 | 4,175 | 4,239 | 4,303 | 509 |
| Subtotal | 149,580 | 151,362 | 153,145 | 154,928 | 156,711 | 158,493 | 160,276 | 162,059 | 164,587 | 167,114 | 169,642 | 20,062 |
| Nonresidential | | | | | | | | | | | | |
| Retail | 66,148 | 67,023 | 67,897 | 68,772 | 69,646 | 70,521 | 71,395 | 72,270 | 73,144 | 74,019 | 74,893 | 8,745 |
| Office | 6,547 | 6,655 | 6,762 | 6,869 | 6,976 | 7,084 | 7,191 | 7,298 | 7,406 | 7,513 | 7,620 | 1,073 |
| Industrial | 27,164 | 27,301 | 27,437 | 27,574 | 27,711 | 27,848 | 27,985 | 28,122 | 28,259 | 28,396 | 28,532 | 1,369 |
| Institutional | 38,677 | 39,164 | 39,652 | 40,139 | 40,626 | 41,114 | 41,601 | 42,088 | 42,575 | 43,063 | 43,550 | 4,873 |
| Subtotal | 138,536 | 140,142 | 141,748 | 143,354 | 144,960 | 146,566 | 148,172 | 149,778 | 151,384 | 152,990 | 154,595 | 16,059 |
| Grand Total | 288,116 | 291,505 | 294,893 | 298,282 | 301,671 | 305,059 | 308,448 | 311,837 | 315,970 | 320,104 | 324,237 | 36,121 |
| | <i>Increase</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>3,389</i> | <i>4,134</i> | <i>4,134</i> | <i>4,134</i> | |

Source: [Trip Generation](#), Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Functional Population

Both residential and nonresidential developments increase the demand on County services and facilities. To calculate the proportional share between residential and nonresidential demand on service and facilities, a functional population approach is often used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the County through a 24-hour day.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Frederick County are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the County are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the County working. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data, residential development accounts for 77 percent of the functional population, while nonresidential development accounts for 23 percent, see Figure 30.

Figure 30. Frederick County Functional Population

| Demand Units in 2015 | | | |
|---|--------|-------------------|--------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| Residential Subtotal | | | 1,374,140 |
| Residential Share ==> | | | 77% |
| Nonresidential | | Demand Hours/Day^ | Person Hours |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| Nonresidential Subtotal | | | 414,750 |
| Nonresidential Share ==> | | | 23% |
| TOTAL | | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs

^ Hours per day allocated to land use (residential or nonresidential).

PROJECT APPROACH

The assignment for Frederick County involves two main elements:

1. Calculating the “static” capital impact of new development by type of land use and
2. To allow County staff to use the Capital Impacts Model to determine the capital costs for development projects that take into consideration whether capacity is available or not (and therefore, whether a cash proffer can be offered and accepted by the County).

This report provides the static list of capital impacts and supporting narrative.

The Model calculates the cost to serve the land use first and then determines whether there are capacity needs in the service area for the particular facility. Therefore, throughout this report, service areas/regions are identified with levels of service reported in that way.

Two sections are provided in the following pages: (I) Cash Proffer Categories and (II) Non-Cash Proffer Categories.

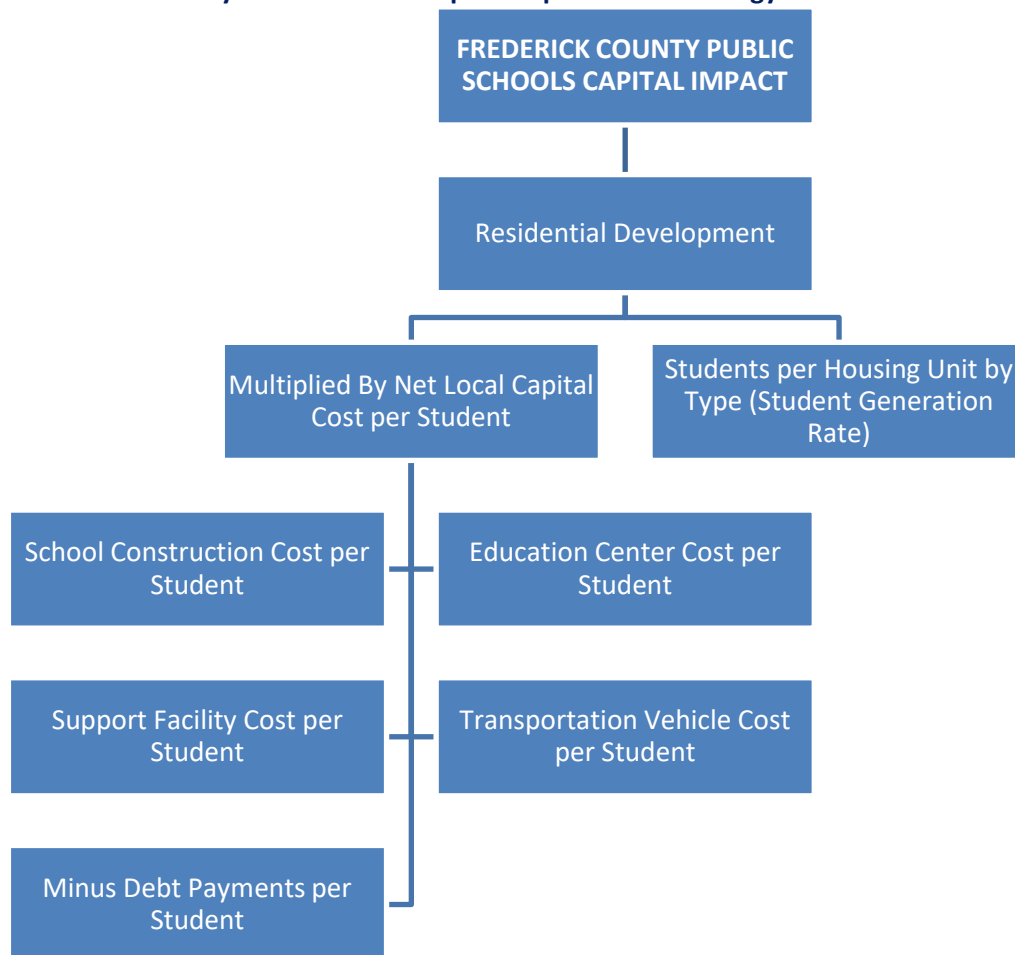
I. Cash Proffer Categories

PUBLIC SCHOOLS CAPITAL IMPACTS

Public School capital impacts are determined using the **incremental methodology** and costs are allocated 100 percent to residential development. The methodology is based on the cost to provide future public school capacity due to growth and is calculated using the current average Frederick County public school student generation rates, projects listed in the County's Capital Improvement Plan (by type of unit), level of service standards (capacity), and local costs.

The incremental methodology used to calculate the capital impacts is illustrated in Figure 31. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. Schools capital impacts are derived from the product of students per housing unit (by type of unit) and the net capital cost per student. The boxes in the next level down indicate detail on the components included in the proffer. A credit for future payments on existing General Obligation and other debt is included.

Figure 31. Frederick County Public Schools Capital Impacts Methodology Chart



School Capital Impact Service Areas

Several service area options were discussed with County staff. A properly calibrated service area is needed to accurately identify the local school utilization (enrollment compared to capacity) at each of the three grade levels. More general and larger service areas (i.e. countywide or Urban and Rural) would result in utilization of the schools within that area being analyzed. While more detailed service areas (i.e. based on school attendance zones) would result in the model analyzing only the utilization of the specific school that would be directly affected by the development.

Initially, the model's service areas were programmed based on the General Service Areas (i.e. Urban and Rural) with the Elementary School analysis splitting the Urban Service Area into North and South areas. After review from the Frederick County Development Impact Model Oversight Committee (DIMOC), a consensus was reached that the service areas should be the school attendance zones. Thus, when a development is being inputted into the Capital Impact Model, the local school at each grade level is chosen. The model then analyzes just the utilization of those schools.

Public School Students per Housing Unit

Frederick County provided student generation rates by type of housing unit and grade level. The term "student generation rate" refers to the number of public school students per housing unit in the County. (Public school students are a subset of school-age children, which includes students in private schools and home-schooled children. *Data reflect public school students only.*)

Student generation rates are calculated for four housing unit types: (1) single family detached; (2) single family attached; (3) multifamily; (4) age-restricted single family. Rates are provided for three school grade levels: (1) Elementary School (grades K-5); (2) Middle School (6-8) and (3) High School (grades 9-12).

Average rates for Frederick County Public Schools are shown below. The Age-Restricted Single Family housing unit is assumed to not generate any students.

Figure 32. Frederick County Student Generation Rates

| Housing Type | ES | MS | HS | Total |
|------------------------------|-------|-------|-------|-------|
| Single Family-Detached | 0.155 | 0.091 | 0.126 | 0.372 |
| Single Family-Attached | 0.188 | 0.085 | 0.093 | 0.366 |
| Multifamily | 0.164 | 0.076 | 0.077 | 0.317 |
| Age Restricted Single Family | 0.000 | 0.000 | 0.000 | 0.000 |

Source: Frederick County Planning & Development Dept.

Public School Facilities Level of Service Standards

This section provides current inventories and levels of service for elementary, middle, and high schools in Frederick County Public Schools. The data contained in these tables determine Level of Service (LOS) infrastructure standards for school buildings and sites on which the capital impacts are based. Levels of service are shown based on two sets of figures—current enrollment and capacity. The enrollment in the model will be updated annually and set to the enrollment as of December 31.

Elementary Schools

As indicated in Figure 33, County elementary schools have a total of 823,826 square feet of floor area on 235 acres. At the end of 2018, the total enrollment was 6,155 students and the total capacity was 5,973 students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 103 percent utilization.

Levels of service are shown in the far right column of Figure 33. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 138 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 33. Frederick County Public Schools Elementary Schools Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| Apple Pie Ridge | 14.2 | 65,120 | 456 | 459 | 99% | 142 |
| Armell | 15.0 | 70,281 | 641 | 558 | 115% | 126 |
| Bass-Hoover | 18.3 | 64,630 | 627 | 553 | 113% | 117 |
| Evendale | 27.77 | 82,585 | 535 | 624 | 86% | 132 |
| Gainesboro | 18.9 | 96,488 | 459 | 562 | 82% | 172 |
| Greenwood Mill | 15.2 | 100,465 | 639 | 696 | 92% | 144 |
| Indian Hollow | 19.5 | 59,065 | 424 | 405 | 105% | 146 |
| Middletown | 15.0 | 70,281 | 479 | 482 | 99% | 146 |
| Orchard View | 37.4 | 76,227 | 495 | 450 | 110% | 169 |
| Redbud Run | 43.7 | 70,697 | 727 | 670 | 109% | 106 |
| Stonewall | 10.0 | 67,987 | 673 | 514 | 131% | 132 |
| Countywide Total | 235.0 | 823,826 | 6,155 | 5,973 | 103% | 138 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

Middle School

As indicated in Figure 34, County middle schools have a total of 612,690 square feet of floor area on 117.7 acres. At the end of 2018, the total enrollment was 3,227 students and the total capacity was 3,420

students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 94 percent utilization.

Levels of service are shown in the far right column of Figure 34. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 179 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 34. Frederick County Public Schools: Middle Schools Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| Admiral Byrd | 27.77 | 159,966 | 975 | 900 | 108% | 178 |
| Frederick County | 39.09 | 187,764 | 713 | 900 | 79% | 209 |
| James Wood MS | 26.91 | 149,952 | 925 | 900 | 103% | 167 |
| Robert E. Aylor | 23.90 | 115,008 | 614 | 720 | 85% | 160 |
| Countywide Total | 117.7 | 612,690 | 3,227 | 3,420 | 94% | 179 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

High School

As indicated in Figure 35, County high schools have a total of 722,547 square feet of floor area on 196.6 acres. At the end of 2018, the total enrollment was 4,265 students and the total capacity was 3,785 students. Utilization is calculated by dividing enrollment by school capacity and calculated for each school. At a countywide level, Frederick County is currently at 113 percent utilization.

Levels of service are shown in the far right column of Figure 35. Level of service standards are calculated by dividing the amount of infrastructure by total capacity. Calculations are done for each school and at a countywide level there are 191 square feet per student.

The utilization percentages shown are used in the Capital Impacts Model to determine whether a cash proffer is triggered. Capacity needs are triggered at an Attendance Zone level and based on a utilization percentage at 100 percent or higher.

Figure 35. Frederick County Schools: High School Level of Service

| Attendance Zone | Site Acreage | Building Square Feet | 31-Dec-18 Enrollment | Capacity | Current Utilization | Sq. Ft. per Capacity |
|-------------------------|--------------|----------------------|----------------------|--------------|---------------------|----------------------|
| James Wood HS | 68.9 | 229,187 | 1,332 | 1,200 | 111% | 191 |
| Millbrook | 84.8 | 253,843 | 1,454 | 1,300 | 112% | 195 |
| Sherando | 40.0 | 239,517 | 1,479 | 1,285 | 115% | 186 |
| Countywide Total | 193.6 | 722,547 | 4,265 | 3,785 | 113% | 191 |

Source: Frederick County Public School Planning Office; Virginia Department of Education

Education Centers

The level of service for Education Centers is calculated at a countywide level. As indicated in Figure 36, there are 133,286 square feet of Education Centers in the County. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total floor area by enrollment. As a result, there are 10 square feet per student.

Figure 36. Frederick County Schools: Education Centers

| Facility | Region | Value | Site Acreage | Building Square Feet | Value Per Square Feet |
|---------------------------------|------------|--------------------------------|--------------------------|--------------------------|--------------------------------|
| Dowell J. Howard Center | Countywide | \$7,456,600 | 20 | 70,417 | \$106 |
| NREP/Senseny Road School | Countywide | \$5,064,400 | 9.7 | 62,869 | \$81 |
| TOTALS | | \$12,521,000 | 29.7 | 133,286 | \$94 |
| Summary by Region/School | | | | | |
| | | Demand Units (Students) | Value per Student | Acres per Student | Building SF per Student |
| LOS based on Current Enrollment | | 13,647 | \$917 | 0.002 | 10 |
| LOS based on Capacity | | 13,178 | \$950 | 0.002 | 10 |

Support Facilities

The level of service for Support Facilities is calculated at a countywide level. As indicated in Figure 37, there are 160,755 square feet of Support Facilities in the County. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total floor area by enrollment. As a result, there are 12 square feet per student.

Figure 37. Frederick County Schools: Support Facilities

| Facility | Region | Value | Site Acreage | Building Square Feet | Value Per Square Feet |
|----------------------------------|------------|--------------------------------|--------------------------|--------------------------|--------------------------------|
| Buildings & Ground Facility | Countywide | \$2,132,600 | 12.13 | 49,626 | \$43 |
| Support Facilities Services West | Countywide | \$676,000 | 6.02 | 10,423 | \$65 |
| School Board Office | Countywide | \$3,601,700 | 6.64 | 35,494 | \$101 |
| Smithfield Facility | Countywide | \$789,876 | 1.32 | 6,380 | \$124 |
| Transportation Facility | Countywide | \$11,044,200 | 57.3 | 58,832 | \$188 |
| TOTALS | | \$18,244,376 | 83.4 | 160,755 | \$113 |
| Summary by Region/School | | | | | |
| | | Demand Units (Students) | Value per Student | Acres per Student | Building SF per Student |
| LOS based on Current Enrollment | | 13,647 | \$1,337 | 0.006 | 12 |
| LOS based on Capacity | | 13,178 | \$1,384 | 0.006 | 12 |

Transportation Vehicles

The level of service for Transportation Vehicles is calculated at a countywide level. As indicated in Figure 38, there are 229 school buses in operation. At the end of 2018, the total countywide enrollment was 13,647 students. The countywide level of service is calculated by dividing the total number of school buses by enrollment. As a result, there are 16.78 buses per 1,000 students.

Figure 38. Frederick County Schools: Transportation Vehicles

| Vehicle Type | Count | Cost per Vehicle | Total Cost |
|--------------|-------|------------------|--------------|
| School Bus | 229 | \$100,000 | \$22,900,000 |

| | |
|--------------------------|---------|
| Total Enrollment | 13,647 |
| Buses per 1,000 Students | 16.78 |
| Cost per Student | \$1,678 |

Public School Facilities in Capital Improvement Plan

The cost factor applied to the levels of service for school construction is found by analyzing planned or new schools. The recently constructed Jordan Springs Elementary School is used as the Elementary School cost factor. The Aylor Middle School Replacement in the County's CIP is used as the Middle School cost factor. And, the New High School in the County's CIP is used as the High School cost factor

Figure 39. School Facilities in Capital Improvement Plan

| Facility | Value | Building Square Feet | Value per Square Feet |
|----------------------|----------------------|----------------------|-----------------------|
| Jordan Springs ES | \$28,500,000 | 84,375 | \$337 |
| Aylor MS Replacement | \$45,500,000 | 133,000 | \$342 |
| New High School | \$122,200,000 | 297,149 | \$411 |
| TOTAL | \$167,700,000 | 430,149 | \$390 |

Source: Frederick County Capital Improvement Plan 2019-2024 Plan; Jordan Springs ES Construction Plan Set

Credit for Future Debt Payments for School Improvements

Because the County has debt financed recent school construction projects and will be debt financing future school construction, TischlerBise recommends including a credit for future principal payments. Along with debt from previous projects, the County anticipates to issue further debt for the Jordan Springs Elementary School and the Aylor Middle School projects.

A credit is necessary since new residential units that may pay school cash proffers will also contribute to future principal payments on school debt through property taxes. Credits are calculated on a per student basis to reflect the proportionate share of debt service per development unit, which is based on demand specific to the land use receiving the credit (i.e., for schools, the land use is a housing unit). It is not linked to property value, which would shift the cash proffer approach away from a land use regulation toward a tax.

The credit amount of \$9,322 is subtracted from the gross capital cost per student to derive a net capital cost per student for school facilities

Figure 40. Payment Schedule for School Debt

| Existing Plus Projected New Total Planned Debt Service | | | | | |
|--|--------------|-------------|--------------|------------|------------------|
| Fiscal Year | Principal | Interest | Total | Enrollment | Debt per Student |
| FY19 | \$10,784,583 | \$4,969,168 | \$15,753,751 | 13,483 | \$1,168 |
| FY20 | \$10,341,220 | \$4,518,435 | \$14,859,655 | 13,641 | \$1,089 |
| FY21 | \$11,017,547 | \$5,009,436 | \$16,026,983 | 13,800 | \$1,161 |
| FY22 | \$12,306,040 | \$5,913,528 | \$18,219,568 | 13,959 | \$1,305 |
| FY23 | \$13,304,444 | \$6,094,369 | \$19,398,813 | 14,118 | \$1,374 |
| FY24 | \$12,540,784 | \$5,661,720 | \$18,202,504 | 14,277 | \$1,275 |
| FY25 | \$11,730,000 | \$5,112,387 | \$16,842,387 | 14,435 | \$1,167 |
| FY26 | \$10,805,000 | \$4,605,382 | \$15,410,382 | 14,660 | \$1,051 |
| FY27 | \$9,950,000 | \$4,147,714 | \$14,097,714 | 14,886 | \$947 |
| FY28 | \$9,375,000 | \$3,738,542 | \$13,113,542 | 15,111 | \$868 |

| | |
|--------------------------|----------------|
| Discount Rate | 4.0% |
| Net Present Value | \$9,322 |

Public Schools Capital Impact Input Variables

Factors used to determine school capital impacts are summarized in Figure 41 and Figure 42. Capital impacts for public schools are based on student generation rates (i.e., public school students per housing unit) and are only determined for residential development. (For further discussion on student generation rates see the Land Use Assumptions Chapter.) Level of service standards are based on current costs per student for public school buildings as discussed in the previous sections and summarized below. The credit for future principal payments is subtracted from the gross capital cost per student to derive the net capital cost per student.

Figure 41. Elementary School Level of Service and Cost Factors

| Current Level of Service Standards | ES
Apple Pie
Ridge | ES
Armel | ES
Bass-Hoover | ES
Evendale | ES
Gainesboro | ES
Greenwood
Mill | ES
Indian
Hollow | ES
Middletown | ES
Orchard
View | ES
Redbud Run | ES
Stonewall |
|---|--------------------------|-----------------|-------------------|-----------------|------------------|-------------------------|------------------------|------------------|-----------------------|------------------|-----------------|
| Building Square Feet Per Student | 142 | 126 | 117 | 132 | 172 | 144 | 146 | 146 | 169 | 106 | 132 |
| Cost Per Square Foot | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 | \$337 |
| Total Building Construction Cost Per Student | \$47,811 | \$42,446 | \$39,386 | \$44,601 | \$57,858 | \$48,645 | \$49,148 | \$49,138 | \$57,086 | \$35,560 | \$44,575 |
| Transportation Vehicle per Student | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Cost per Vehicle | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 |
| Vehicle Cost Per Student | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 |
| Education Center Square Feet per Student | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 |
| Cost per Square Foot | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 |
| Education Center Cost Per Student | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 |
| Support Facilities Square Feet per Student | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 |
| Cost per Square Foot | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 |
| Support Facilities Cost Per Student | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 |
| Total Gross Capital Cost Per Student | \$51,743 | \$46,378 | \$43,318 | \$48,533 | \$61,790 | \$52,577 | \$53,080 | \$53,070 | \$61,018 | \$39,492 | \$48,507 |
| Local Share of Capacity Cost | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Total Gross Local Capital Cost Per Student | \$51,743 | \$46,378 | \$43,318 | \$48,533 | \$61,790 | \$52,577 | \$53,080 | \$53,070 | \$61,018 | \$39,492 | \$48,507 |
| Principal Payment Credit Per Student | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 |
| Total Net Local Capital Cost Per Student | \$42,421 | \$37,056 | \$33,996 | \$39,211 | \$52,468 | \$43,255 | \$43,758 | \$43,748 | \$51,696 | \$30,170 | \$39,185 |

Figure 42. Middle School and High School Level of Service and Cost Factors

| Current Level of Service Standards | MS
Admiral Byrd | MS
Frederick County | MS
James Wood MS | MS
Robert E. Aylor | HS
James Wood HS | HS
Millbrook | HS
Sherando |
|---|--------------------|------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|
| Building Square Feet Per Student | 178 | 209 | 167 | 160 | 191 | 195 | 186 |
| Cost Per Square Foot | \$342 | \$342 | \$342 | \$342 | \$411 | \$411 | \$411 |
| Total Building Construction Cost Per Student | \$60,787 | \$71,350 | \$56,982 | \$54,629 | \$78,497 | \$80,253 | \$76,608 |
| Transportation Vehicle per Student | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Cost per Vehicle | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 |
| Vehicle Cost Per Student | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 | \$1,678 |
| Education Center Square Feet per Student | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 | 9.77 |
| Cost per Square Foot | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 | \$94 |
| Education Center Cost Per Student | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 | \$917 |
| Support Facilities Square Feet per Student | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 | 11.78 |
| Cost per Square Foot | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 | \$113 |
| Support Facilities Cost Per Student | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 | \$1,337 |
| Total Gross Capital Cost Per Student | \$64,719 | \$75,282 | \$60,914 | \$58,561 | \$82,429 | \$84,185 | \$80,540 |
| Local Share of Capacity Cost | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Total Gross Local Capital Cost Per Student | \$64,719 | \$75,282 | \$60,914 | \$58,561 | \$82,429 | \$84,185 | \$80,540 |
| Principal Payment Credit Per Student | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 | \$9,322 |
| Total Net Local Capital Cost Per Student | \$55,397 | \$65,960 | \$51,592 | \$49,239 | \$73,107 | \$74,863 | \$71,218 |

Please note: Costs are shown for both infrastructure components in this report to document development's share of the cost to provide the facilities. Despite capacity being available in some cases, there is still a "capital cost impact" to the County from new development. However, due to the current cash proffer law, capacity triggers are required for cash proffer acceptance. These capacity triggers are integrated into the CapIM and allows the user to identify the total cost of growth as well as the potential cash proffer amount (which may be different due to service area differences and existing capacities).

Capital Impacts for Public Schools

The figures below show the capital impact for Public Schools in Frederick County for each grade level. The costs are calculated by multiplying the student generation rate by the net capital cost per student for each type of school by type of housing.

For example, for a single family detached unit, the elementary student generation rate is 0.155 and in the Apple Pie Ridge attendance zone the capital cost per student is \$42,421. That student generation rate is multiplied by the capital cost to determine the capital impact of the housing unit ($0.155 \times \$42,421 = \$6,575$). This is repeated for the other school grade levels. All portions are added together to calculate the total capital impact by type of residential unit.

Figure 43. Frederick County Public Schools Capital Impact by Housing Unit, Elementary School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | | | | | | | | | |
|--|-----------------|---------|-------------|----------|------------|----------------|---------------|------------|--------------|------------|-----------|
| Capital Impact Per Housing Unit | Apple Pie Ridge | Armel | Bass-Hoover | Evendale | Gainesboro | Greenwood Mill | Indian Hollow | Middletown | Orchard View | Redbud Run | Stonewall |
| Single Family-Detached | \$6,575 | \$5,744 | \$5,269 | \$6,078 | \$8,133 | \$6,705 | \$6,782 | \$6,781 | \$8,013 | \$4,676 | \$6,074 |
| Single Family-Attached | \$7,975 | \$6,967 | \$6,391 | \$7,372 | \$9,864 | \$8,132 | \$8,227 | \$8,225 | \$9,719 | \$5,672 | \$7,367 |
| Multifamily | \$6,957 | \$6,077 | \$5,575 | \$6,431 | \$8,605 | \$7,094 | \$7,176 | \$7,175 | \$8,478 | \$4,948 | \$6,426 |
| Age Restricted Single Family | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |

Figure 44. Frederick County Public Schools Capital Impact by Housing Unit, Middle School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | | |
|--|--------------|------------------|---------------|-----------------|
| Capital Impact Per Housing Unit | Admiral Byrd | Frederick County | James Wood MS | Robert E. Aylor |
| Single Family-Detached | \$5,041 | \$6,002 | \$4,695 | \$4,481 |
| Single Family-Attached | \$4,709 | \$5,607 | \$4,385 | \$4,185 |
| Multifamily | \$4,210 | \$5,013 | \$3,921 | \$3,742 |
| Age Restricted Single Family | \$0 | \$0 | \$0 | \$0 |

Figure 45. Frederick County Public Schools Capital Impact by Housing Unit, High School

| SCHOOL CAPITAL IMPACT: Frederick County Public Schools | | | |
|--|------------------|-----------|----------|
| Capital Impact Per Housing Unit | James Wood
HS | Millbrook | Sherando |
| Single Family-Detached | \$9,211 | \$6,002 | \$8,973 |
| Single Family-Attached | \$6,799 | \$5,607 | \$6,623 |
| Multifamily | \$5,629 | \$5,013 | \$5,484 |
| Age Restricted Single Family | \$0 | \$0 | \$0 |

School Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The School Capital Impact analysis in the CapIM model is programmed to calculate cash proffer eligible impact based on each school's utilization (current enrollment vs student capacity of the building). Once enrollment has exceeded capacity the capital impact is eligible for cash proffer. In some case, if there is excess capacity, a development may not generate enough students to exceed the threshold, so no cash proffer amount is triggered. In other cases, if there is excess capacity and a development generates enough students to exceed the capacity, only the impact from the number of students that exceeded the threshold will be eligible for cash proffer.

PARKS & RECREATION CAPITAL IMPACTS

Frederick County has a parks and recreation system with facilities that serve different geographic areas. To determine the capital impact on parks and recreation from new development in the County, the following types of facilities are analyzed for the geographic areas noted:

Countywide

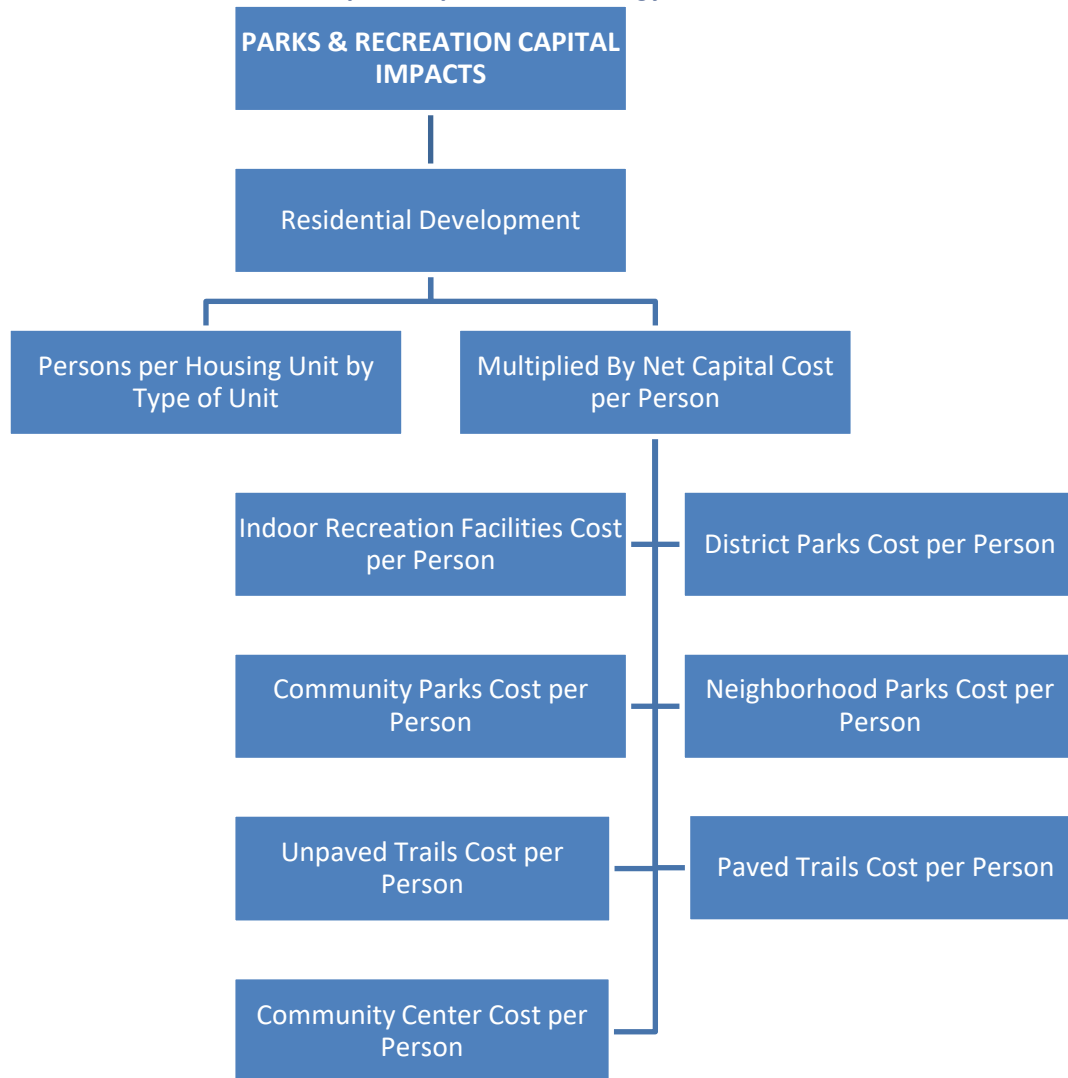
- Indoor Recreation Facilities

Service Areas

- District Parks
- Community Parks
- Neighborhood Parks
- Unpaved Trails
- Paved Trails
- Community Centers

Figure 46 diagrams the ***incremental methodology*** used to calculate the Parks & Recreation capital impact. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The Parks & Recreation capital impacts are derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person. The net capital cost is a result of the park facilities listed in the County's CIP and the level of service standard calculated at either a Countywide or Service Area basis.

Figure 46. Parks & Recreation Capital Impact Methodology Chart



Park Inventory

Shown in Figure 47, there are a number of current parks, trails, and community centers operated by the Parks & Recreation Department. Parks have been organized into three categories: District (392 acres), Community (32 acres), and Neighborhood (11.5 acres). Trails have been organized into unpaved (5.8 miles) and paved trails (4.1 miles). There is also 50,077 square feet of community centers in the County.

Figure 47. Parks & Recreation Inventory

District Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|------------|---------------------|--------------|
| Sherando | Multipurpose | 337 | \$21,881,047 | Urban |
| Clearbrook | Multipurpose | 55 | \$10,033,814 | Urban |
| Total | | 392 | \$31,914,861 | |
| Average Cost Per Acre | | | \$81,415 | |

Community Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|-----------|--------------------|--------------|
| Rose Hill | Multipurpose | 7 | \$669,913 | Rural |
| Snowden Bridge | Multipurpose | 25 | \$615,938 | Urban |
| Total | | 32 | \$1,285,850 | |
| Average Cost Per Acre | | | \$40,183 | |

Neighborhood Parks

| Name | Use | Acres | Value | Service Area |
|------------------------------|--------------|-------------|------------------|--------------|
| Frederick Heights | Multipurpose | 11 | \$500,980 | Urban |
| Reynolds Store | Multipurpose | 0.5 | \$188,500 | Rural |
| Total | | 11.5 | \$689,480 | |
| Average Cost Per Acre | | | \$59,955 | |

Unpaved Trails

| Name | Use | Miles | Value | Service Area |
|------------------------------|-----------------|------------|------------------|--------------|
| Sherando Park | Hiking | 1.5 | \$126,720 | Urban |
| Rose Hill Park | Hiking | 1.3 | \$109,824 | Rural |
| Sherando Park | Mountain Biking | 3.0 | \$62,400 | Urban |
| Total | | 5.8 | \$298,944 | |
| Average Cost Per Mile | | | \$51,542 | |

Paved Trails

| Name | Use | Miles | Value | Service Area |
|------------------------------|----------|------------|--------------------|--------------|
| Sherando Park | Multiuse | 3 | \$1,143,999 | Urban |
| Clearbrook Park | Multiuse | 1 | \$228,800 | Urban |
| Frederick Heights | Multiuse | 0.5 | \$190,667 | Urban |
| Total | | 4.1 | \$1,563,465 | |
| Average Cost Per Mile | | | \$381,333 | |

Community Centers

| Name | Use | Sq. Ft. | Value | Service Area |
|-------------------------------------|--------------|---------------|--------------------|--------------|
| Evendale | Multipurpose | 11,761 | \$175,000 | Urban |
| Greenwood | Multipurpose | 11,802 | \$250,000 | Urban |
| Sherando | Multipurpose | 6,843 | \$250,000 | Urban |
| Orchard View | Multipurpose | 7,869 | \$175,000 | Rural |
| Gainesboro | Multipurpose | 11,802 | \$250,000 | Rural |
| Total | | 50,077 | \$1,100,000 | |
| Average Cost Per Square Foot | | | \$22 | |

Source: Frederick County Parks and Recreation Asset Inventory

Parks & Recreation Facilities in Capital Improvement Plan

In Figure 48, the Park & Recreation facilities from the County's CIP that expand the County's capacity to serve their population are listed.

Figure 48. Park Facilities in Capital Improvement Plan by Type and Service Area

| District Parks | | | | | |
|---------------------------|---------------------|---------------|---------------------|------------------|--------------|
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| Sherando Park | Area 1 Development | | \$1,290,000 | \$0 | Urban |
| Sherando Park | Water Slide | | \$327,500 | \$0 | Urban |
| Clearbrook Park | Water Slide | | \$327,500 | \$0 | Urban |
| Sherando Park | Softball Complex | | \$1,723,000 | \$0 | Urban |
| Sherando Park | Ballfield Lighting | | \$856,000 | \$0 | Urban |
| Sherando Park | Area 3 Development | | \$2,250,000 | \$0 | Urban |
| New District Parks | Land Aquisition | 300.0 | \$8,262,000 | \$27,540 | Urban |
| New District Park | Land Aquisition | 150.0 | \$4,131,000 | \$27,540 | Rural |
| Total | | 450.0 | \$19,167,000 | \$42,593 | |
| Community Parks | | | | | |
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| Snowden Bridge Park | Park Development | | \$2,410,000 | \$0 | Urban |
| New Community Park | Multi-Purpose Park | 35.0 | \$2,194,000 | \$62,685 | Urban |
| Total | | 35.0 | \$4,604,000 | \$131,542 | |
| Neighborhood Parks | | | | | |
| Park Name | Project Purpose | Acres | Value | \$/Acre | Service Area |
| New Neighborhood Parks | Multi-Purpose Park | 20.0 | \$1,745,320 | \$87,266 | Urban |
| New Neighborhood Parks | Multi-Purpose Park | 40.0 | \$3,490,640 | \$87,266 | Rural |
| Total | | 60.0 | \$5,236,000 | \$87,266 | |
| Paved Trails | | | | | |
| Trail Name | Project Purpose | Miles | Value | \$/Mile | Service Area |
| Abrams Creek Trail | Paved Walking Trail | 3 | \$1,219,900 | \$406,633 | Urban |
| Total | | 3.0 | \$1,219,900 | \$406,633 | |
| Indoor Facilities | | | | | |
| Facility Name | Project Purpose | Sq. Ft. | Value | \$/SF | Service Area |
| Field House | Indoor Recreation | 44,000 | \$9,067,000 | \$206 | Countywide |
| Indoor Swimming Pool | Swimming | 35,000 | \$11,841,000 | \$338 | Countywide |
| Total | | 79,000 | \$20,908,000 | \$264 | |

The CapIM model will evaluate the capital impact a development has on all types of Park & Recreation facilities. However, to comply with the 2019 Virginia Cash Proffer law, it is only the park and recreation facilities that are included in Frederick County's CIP that are considered to be eligible for cash proffers at this time.

Parks & Recreation Level of Service and Cost Factors

For all the Parks & Recreation components, except Indoor Recreation Facilities, capital impacts are calculated based on current levels of service for existing parks and facilities. The analysis first establishes a countywide level of service for each type of facility and then determines whether there is excess capacity or a deficit in each park region for that type of park. Figure 49 lists the level of service and cost factors for District Parks, Community Parks, Neighborhood Parks, Unpaved Trails, and Paved Trails.

Levels of services are calculated at a Service Area level for each type of park based on acreage totals. Level of services are calculated at a Service Area level for each type of trails based on total miles. The methodology is based on the assumption that the County will maintain its current level of service by developing parks to serve new development. In some cases, there are not any facility types in a Service Area (District Park and Paved Trails in the Rural Service). In those cases, the countywide level of service is applied.

The figure also lists the construction cost per unit of each facility. Most cost factors originate from the County's CIP. However, there are no unpaved trails listed in the CIP, so the replacement cost of the County's current inventory was applied. The level of service is multiplied by the cost factor to calculate the cost per capita. For example, in the Urban Service Area the level of service for District Parks is 4.52 acres per 1,000 persons and the construction cost for an acre of District Parks is \$27,540. As a result, the capital cost per person in the Urban Service Area for District Parks is \$124.51.

Figure 49. Parks Level of Service Standards and Cost Factors

| Park Category | Service Area | Unit | Population | Current LOS
(Units / 1,000
persons) | Imp. Acres Req'd
at County LOS by
Category of Park | Current Excess
Capacity or
(Deficit) | Construction
Cost Per Unit | Cost Per
Capita |
|----------------------|--------------|--------------|---------------|---|--|--|-------------------------------|--------------------|
| Acres | | | | Acres/1,000 persons | | | | |
| District Park | Urban | 392.0 | 59,303 | 4.52 | 268.12 | 123.88 | \$27,540 | \$124.51 |
| | Rural | 0.0 | 27,399 | 4.52 | 123.88 | (123.88) | \$27,540 | \$124.51 |
| | Total | 392.0 | 86,702 | 4.52 | 392.00 | 0.00 | \$27,540 | \$124.51 |
| Community Park | Urban | 25.0 | 59,303 | 0.42 | 21.89 | 3.11 | \$62,685 | \$26.43 |
| | Rural | 7.0 | 27,399 | 0.26 | 10.11 | (3.11) | \$62,685 | \$16.02 |
| | Total | 32.0 | 86,702 | 0.37 | 32.00 | 0.00 | \$62,685 | \$23.14 |
| Neighborhood
Park | Urban | 11.0 | 59,303 | 0.19 | 7.87 | 3.13 | \$87,266 | \$16.19 |
| | Rural | 0.5 | 27,399 | 0.02 | 3.63 | (3.13) | \$87,266 | \$1.59 |
| | Total | 11.5 | 86,702 | 0.13 | 11.50 | 0.00 | \$87,266 | \$11.57 |
| Miles | | | | Miles/1,000 persons | | | | |
| Unpaved Trails | Urban | 4.5 | 59,303 | 0.08 | 3.97 | 0.53 | \$51,542 | \$3.91 |
| | Rural | 1.3 | 27,399 | 0.05 | 1.83 | (0.53) | \$51,542 | \$2.45 |
| | Total | 5.8 | 86,702 | 0.07 | 5.80 | 0.00 | \$51,542 | \$3.45 |
| Paved Trails | Urban | 0.5 | 59,303 | 0.01 | 0.34 | 0.16 | \$406,633 | \$3.43 |
| | Rural | 0.0 | 27,399 | 0.01 | 0.16 | (0.16) | \$406,633 | \$2.35 |
| | Total | 0.5 | 86,702 | 0.01 | 0.50 | 0.00 | \$406,633 | \$2.35 |

Cost from CIP

Cost from Inventory

Community Center Level of Service and Cost Factors

The level of service for Community Centers in Frederick County is illustrated in Figure 50. The five centers are allocated to the Service Areas based on their location. The floor area is then divided by the Service Area's population to determine the level of service. For example, there is 30,406 square feet of Community Center in the Urban Service Area which has a population of 59,303. As a result, there is a level of service of 0.51 square feet per capita.

The cost per square foot is multiplied by the level of service to find the capital cost per person. For example, the level of service in the Urban Service Area is 0.51 square feet per capita and the cost per square foot is \$22.20. As a result, the capital cost per person is \$11.32.

Figure 50. Community Center Level of Service Standards and Cost Factors

| Service Area | Population | Sq. Ft. | Value | Current LOS
(Sq. Ft./Capita) | Cost per
Square Foot | Cost per
Person |
|--------------|---------------|---------------|--------------------|---------------------------------|-------------------------|--------------------|
| Urban | 59,303 | 30,406 | \$675,000 | 0.51 | \$22.20 | \$11.32 |
| Rural | 27,399 | 19,671 | \$425,000 | 0.72 | \$21.61 | \$15.56 |
| Total | 86,702 | 50,077 | \$1,100,000 | 0.58 | \$21.97 | \$12.69 |

Indoor Recreational Facility Level of Service and Cost Factors

There are two Indoor Recreational Facilities in the County's CIP. Both are planned to be constructed oversized to accommodate future growth and to serve the whole County. So, the level of service of both facilities is based on the 2039 population. This results in the facilities having a level of service of 0.70 square feet per capita.

In Figure 51, the capital cost per person is calculated by multiplying the level of service by the construction cost per square foot.

Figure 51. Indoor Recreational Facility Level of Service and Cost Factors

| Service Area | Service Area | 2039
Population | Sq. Ft. | Value | Current LOS
(Sq. Ft./Capita) | Cost per
Square Foot | Cost per
Person |
|----------------------|--------------|--------------------|---------------|---------------------|---------------------------------|-------------------------|--------------------|
| Field House | Countywide | 113,344 | 44,000 | \$9,067,000 | 0.39 | \$206.07 | \$80.37 |
| Indoor Swimming Pool | Countywide | 113,344 | 35,000 | \$11,841,000 | 0.31 | \$338.31 | \$104.88 |
| Total | | 113,344 | 79,000 | \$20,908,000 | 0.70 | \$264.66 | \$184.46 |

Source: Frederick County 2019-2034 CIP

Parks & Recreation Input Variables and Capital Impacts

Factors used to determine parks and recreation capital impacts are summarized in Figure 52. Capital impacts for Parks & Recreation facilities are based on household size (i.e., persons per housing unit) and are only determined for residential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are seven components to the capital impact calculation:

- District Park (determined by Service Area)
- Community Park (determined by Service Area)
- Neighborhood Park (determined by Service Area)
- Unpaved Trails (determined by Service Area)
- Paved Trails (determined by Service Area)
- Community Center (determined by Service Area)
- Indoor Recreation Facilities (determined Countywide)

Parks & Recreation capital impacts are the product of persons per housing unit multiplied by the total net capital cost per person. An example of the calculation for a single family housing unit in the Urban Service Area is: the net capital cost per person for the Countywide portion (\$184.46) and the net capital cost per person for the Service Area portion (\$185.79) are multiplied by the persons per housing unit (2.62) and then summed to arrive at the capital impact for this component for a single family unit of \$970 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 52.

Please note: Costs are shown for infrastructure components in this report to document development's share of the cost to provide the facilities. Despite capacity being available in some Service Areas, there is still a "capital cost impact" to the County from new development. However, due to the current cash proffer law, capacity triggers are required for cash proffer acceptance. These capacity triggers are integrated into the CapIM and allows the user to identify the total cost of growth as well as the potential cash proffer amount (which may be different due to service area differences and existing capacities).

Figure 52. Parks & Recreation Input Variables and Capital Impact

| Infrastructure Cost | Demand Unit | Countywide | REGIONS | |
|------------------------------|-------------|-----------------|-----------------|-----------------|
| | | | Urban | Rural |
| District Parks | per capita | - | \$124.51 | \$124.51 |
| Community Parks | per capita | - | \$26.43 | \$16.02 |
| Neighborhood Parks | per capita | - | \$16.19 | \$1.59 |
| Unpaved Trails | per capita | - | \$3.91 | \$2.45 |
| Paved Trails | per capita | - | \$3.43 | \$2.35 |
| Community Centers | per capita | - | \$11.32 | \$15.56 |
| Indoor Recreation Centers | per capita | \$184.46 | - | - |
| GROSS COST PER PERSON | | \$184.46 | \$185.79 | \$162.48 |
| Debt Service Credit | | \$0.00 | \$0.00 | \$0.00 |
| NET CAPITAL COST | | \$184.46 | \$185.79 | \$162.48 |

| Residential Capital Impact per Housing Unit | Service Area: Urban | Countywide | REGION | Total |
|---|---------------------|-------------------|-------------------|-------------------|
| | | | Urban | |
| Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$483 | \$487 | \$970 |
| Single Family-Attached | 2.62 | \$483 | \$487 | \$970 |
| Multifamily | 2.08 | \$384 | \$386 | \$770 |
| Age-Restricted Single Family | 1.67 | \$308 | \$310 | \$618 |

| Residential Capital Impact per Housing Unit | Service Area: Rural | Countywide | REGION | Total |
|---|---------------------|-------------------|-------------------|-------------------|
| | | | Rural | |
| Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$437 | \$385 | \$822 |
| Single Family-Attached | 2.37 | \$437 | \$385 | \$822 |
| Multifamily | 1.46 | \$269 | \$237 | \$506 |
| Age-Restricted Single Family | 1.51 | \$279 | \$245 | \$524 |

Parks & Recreation Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The Parks & Recreation analysis includes two capacity triggers. The first being the County's CIP. A park type must be listed in the County's CIP to be eligible for a cash proffer. The second trigger is based on current capacity. A park type must have a deficit supply of facilities (i.e. park acres, trail miles) at the countywide level of service to be eligible for a cash proffer.

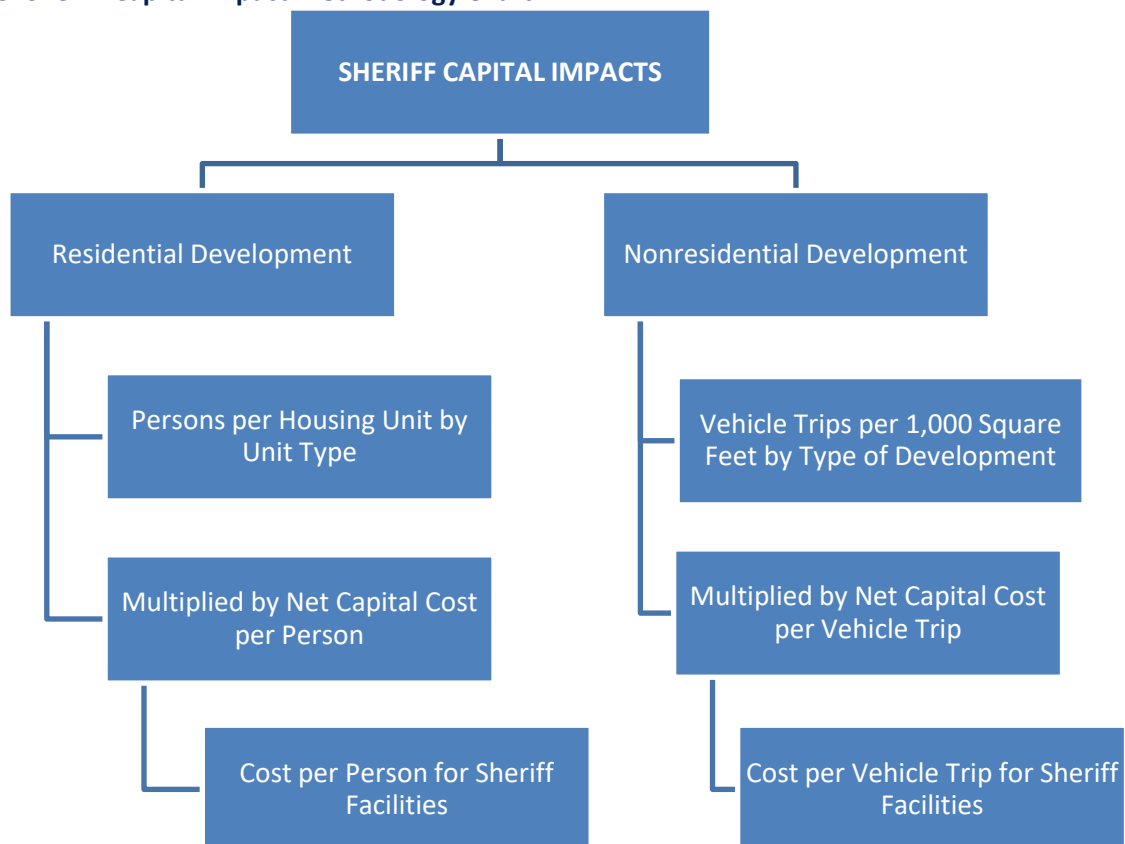
PUBLIC SAFETY CAPITAL IMPACTS: SHERIFF

There are three public facility subcategories included under Public Safety: Sheriff, Fire & Rescue, and Animal Control.

An **incremental methodology** approach is used to determine capital impacts for Sheriff facilities, which is diagrammed below. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the Sheriff capital impact is derived from the product of Sheriff service calls per person multiplied by persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of nonresidential vehicle trips per 1,000 square feet of nonresidential development multiplied by the net capital cost per vehicle trip.

The Sheriff capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. Sheriff capital impacts are calculated based on 2017 Sheriff calls for service data. The calls for service data provided by the County to TischlerBise was able to be delineated by residential and nonresidential.

Figure 53. Sheriff Capital Impact Methodology Chart



Cost Allocation for Sheriff Facilities

A report of 2017 sheriff service calls to business was provided by the Sheriff's Office. In total, there were 62,828 calls for service. Of the total, 60 percent were attributed to residential land uses and 40 percent were attributed to nonresidential land uses.

Sheriff services are provided on a countywide basis in Frederick County; substations are not used in the County. Therefore, it is recommended that one service area be used to determine the capital impact on Sheriff facilities.

Figure 54. Frederick County Sheriff Calls for Service

| Land Use | Calls for Service | % |
|----------------|-------------------|------|
| Residential | 37,565 | 60% |
| Nonresidential | 25,263 | 40% |
| Total | 62,828 | 100% |

Source: Frederick County Sheriff's Office

Sheriff Facilities Inventory and Level of Service

Sheriff capital impacts are based on current levels of service, which are derived from the current inventory of square footage and replacement value of existing facilities.

The square footage of the Public Safety Building in Frederick County is shown in Figure 55 and is allocated based on the service call data. The corresponding value of the facilities attributed to residential and nonresidential land uses is listed as well. The residential level of service, 0.26 square feet per person, is found by dividing the attributed square feet by the base year population. The nonresidential level of service, 0.08 square feet per vehicle, is found by dividing the attributed square feet by the base year nonresidential vehicle trip total.

At the bottom of the figure, the capital cost per person and nonresidential vehicle trip is calculated by multiplying the level of service with the average value per square foot of the Public Safety Building.

Figure 55. Sheriff Facilities Level of Service Standards

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|------------------------|--------|-------|----------|--------|-----------|--------------|------------|---------------|------------------|----------------|
| Public Safety Building | 38,203 | 60% | 40% | 22,842 | 15,361 | \$13,318,000 | \$348.61 | \$7,962,862 | \$5,355,138 | \$13,318,000 |
| GRAND TOTAL | 38,203 | | | 22,841 | 15,361 | \$13,318,000 | \$348.61 | \$7,962,861 | \$5,355,138 | \$13,318,000 |

Source: Frederick County Facility Inventory

| Sheriff Calls for Service | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 60% | 40% | |
| Total Sheriff Sq. Ft. | 22,841 | 15,361 | 38,202 |
| Base Year Population or Nonres. Trip | 86,702 | 182,739 | |
| Square Feet per Person or Nonres. Trip | 0.26 | 0.08 | |

Source: Frederick County Sheriff's Office

| | Residential | Nonresidential |
|--|----------------|----------------|
| Square Feet per Person or Nonres. Trip | 0.26 | 0.08 |
| Total Cost per Sq. Ft. | \$348.61 | \$348.61 |
| Cost per Person or Nonres. Trip | \$90.64 | \$27.89 |

Sheriff Input Variables and Capital Impacts

Level of service standards and cost factors for the Sheriff capital impacts are summarized from above and shown in Figure 56 and Figure 57. Capital impacts are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development. For further discussion on demand factors, see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is just one capital component in the capital impact calculation, Sheriff Facilities. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of the following figure.

Figure 56. Sheriff Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|----------------|
| Sheriff Facilities | per capita | \$90.64 |
| GROSS COST PER PERSON | | \$90.64 |

Debt Service Credit \$0.00

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$90.64 |
|-------------------------|----------------|

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |

| |
|------------------------------|
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$237 |
| 2.62 | \$237 |
| 2.08 | \$189 |
| 1.67 | \$151 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |

| |
|------------------------------|
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$215 |
| 2.37 | \$215 |
| 1.46 | \$132 |
| 1.51 | \$137 |

Figure 57. Sheriff Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------------|------------------|----------------|
| Sheriff Facilities | per vehicle trip | \$27.89 |
| GROSS COST PER VEHICLE TRIP | | \$27.89 |

Debt Service Credit \$0.00

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$27.89 |
|-------------------------|----------------|

| Nonresidential Capital Impact
per 1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$400 |
| 4.87 | \$136 |
| 1.97 | \$55 |
| 9.76 | \$272 |

| Nonresidential Capital Impact
per 1,000 Square Feet |
|--|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$400 |
| 4.87 | \$136 |
| 1.97 | \$55 |
| 9.76 | \$272 |

Sheriff Cash Proffer Eligibility

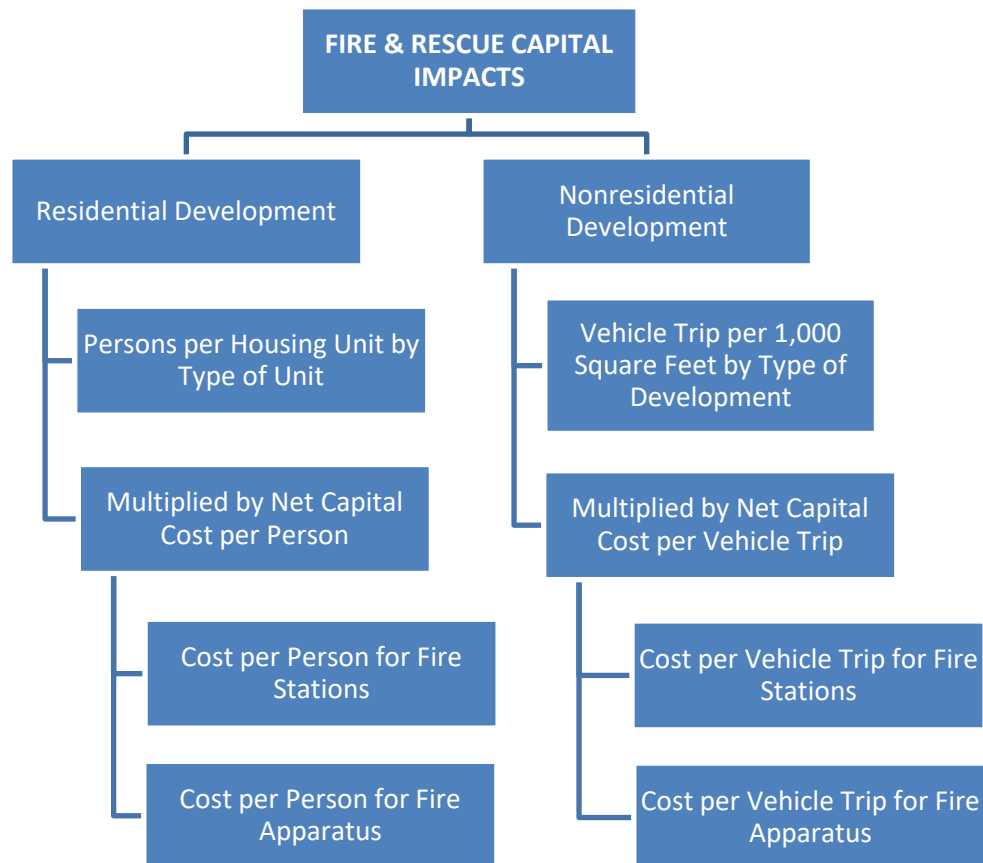
To be eligible for a cash proffer, the facility must be for Public Schools, Parks & Recreation, or Public Safety (Sheriff, Fire, and Animal Services) and a development requires additional capacity in excess of capacity available in current facilities. For Sheriff, there are no facilities listed in the CIP that would indicate a capacity increase is necessary to service future population, therefore, this **component is not included in the cash proffer calculation** at this time.

PUBLIC SAFETY CAPITAL IMPACTS: FIRE & RESCUE

Fire & Rescue is the second facility type included under the Public Safety capital impacts category. Frederick County Fire & Rescue services operate out of eleven stations. The County has invested in new and/or renovated fire and rescue stations in the recent past and has future projects programmed in the CIP. There are a number of projects in the County's CIP that will expand Fire & Rescue capacity. These new facilities will be able to serve the current population and future development. Because fire stations are organized by geographic fire districts, capital impacts are determined based on Service Area needs.

The **incremental methodology** is used to calculate the Fire & Rescue capital impact and is outlined in Figure 58. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the fire and rescue capital impact is derived from the product of persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of vehicle trips per 1,000 square feet of nonresidential space multiplied by the net capital cost per vehicle trip.

Figure 58. Fire & Rescue Capital Impact Methodology Chart



Cost Allocation for Fire & Rescue Facilities

Proportionate share factors are used to allocate demand to residential and nonresidential development where appropriate. For facilities that serve both residential and nonresidential development and without Fire & Rescue service call data, TischlerBise recommends using a proportionate share allocation based on a functional population approach. The functional population approach estimates the residential and nonresidential activity in the county by using the hours in a day. For the residents that are not working, their day is estimated to be split with 20 hours attributed to residential purposes and 4 hours to nonresidential purposes. For resident workers, 14 hours are attributed to residential purposes and 10 hours to nonresidential purposes. For non-resident workers in the county, 10 hours are attributed to nonresidential purposes in Frederick County.

Figure 59 provides detail on the approach and results, which indicate that approximately 77 percent of demand in Frederick County is from residential development and 23 percent from nonresidential.

Figure 59. Frederick County Proportionate Share Factors

| Demand Units in 2015 | | | |
|---|------------------------------------|-------------------|--------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| | Residential Subtotal | | 1,374,140 |
| | Residential Share ==> | | 77% |
| Nonresidential | | | |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| | Nonresidential Subtotal | | 414,750 |
| | Nonresidential Share ==> | | 23% |
| | TOTAL | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs.

Fire & Rescue Facilities in Capital Improvement Plan

In Figure 60, the capacity improvement projects for Fire & Rescue identified in Frederick County's CIP are listed. The two stations in the CIP that include both a cost and floor area estimate result in an average cost per square foot of \$355.

Figure 60. Fire & Rescue Facilities in Capital Improvement Plan

| Facility | Service Area | Sq. Ft. | Value | Value \$
Per Sq. Ft. |
|---|---------------|---------|-------------|-------------------------|
| Fire & Rescue Station 22 | Stephens City | 10,000 | \$3,400,000 | \$340 |
| Fire & Rescue Station 23/Annex Facility | Millwood | 10,000 | \$3,700,000 | \$370 |
| Greenwood Fire Station Renovations | Greenwood | - | - | \$0 |
| Clear Brook Replacement | Clear Brook | - | - | \$0 |
| Middletown Replacement | Middletown | - | - | \$0 |
| Total | | 20,000 | \$7,100,000 | \$355 |

Source: Frederick County 2019-2024 CIP

Fire & Rescue Facilities Level of Service and Cost Factors

The Fire & Rescue capital impacts are based on current levels of service, which are derived from the current inventory of square footage of fire station space. Found in Figure 61, the current total fire station square footage is 134,232 square feet. To attribute the floor area to residential and nonresidential development, the proportionate share factors are applied. The levels of service area calculated by dividing the attributed floor area by the demand unit. For example, 103,359 square feet are attributed to residential development and is a countywide population of 86,702. As a result, there is a level of service of 1.19 square feet per capita.

The average value per square foot of capital projects in the CIP (\$355) is applied to the levels of service to determine the capital impact. For example, the level of service for residential development is 1.19 square feet per capita. As a result, the capital impact is \$422 per person (\$355 per square foot x 1.19 square feet per person = \$422 per person).

Figure 61. Fire & Rescue Facilities Level of Service and Cost Factors

| Proportionate Share | | Residential
77% | Nonresidential
23% |
|---------------------|----------------|--------------------|-----------------------|
| Service Area | Square Feet | Res. Sq. Ft. | Nonres. Sq. Ft. |
| Stephens City | 15,032 | 11,575 | 3,457 |
| Middletown | 5,814 | 4,477 | 1,337 |
| Clear Brook | 7,325 | 5,640 | 1,685 |
| Gore | 12,496 | 9,622 | 2,874 |
| Round Hill | 16,435 | 12,655 | 3,780 |
| Gainesboro | 11,988 | 9,231 | 2,757 |
| Star Tannery | 3,408 | 2,624 | 784 |
| Greenwood | 22,000 | 16,940 | 5,060 |
| North Mountain | 7,754 | 5,971 | 1,783 |
| Reynolds Store | 14,720 | 11,334 | 3,386 |
| Millwood | 17,260 | 13,290 | 3,970 |
| Total | 134,232 | 103,359 | 30,873 |

| | Value \$
Per Sq. Ft. | Demand Unit -
Population | Residential
Square Feet | Res. LOS
(Sq. Ft./Capita) | Res. Capital
Impact/Capita |
|------------|-------------------------|-----------------------------|----------------------------|------------------------------|-------------------------------|
| Countywide | \$355 | 86,702 | 103,359 | 1.19 | \$422 |

| | Value \$
Per Sq. Ft. | Demand Unit -
Vehicle Trips | Nonresidential
Square Feet | Nonres. LOS
(Sq. Ft./Trip) | Nonres. Capital
Impact/Trip |
|------------|-------------------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------|
| Countywide | \$355 | 182,739 | 30,873 | 0.17 | \$60 |

Fire Apparatus Capital Impact

In addition to new station space, it is anticipated that the County will purchase apparatuses for the new fire stations. It is assumed that the County will expand its fleet at the same level it is current serving, so the current inventory of apparatuses is analyzed, Figure 62.

The inventory is used to determine the current level of service. There are a total of 85 vehicles with a replacement cost of \$26,930,000. The cost of the apparatuses is attributed to residential and nonresidential development based on the County's functional population. The cost is then divided by the current population or nonresidential vehicle trips.

Figure 62. Fire & Rescue Apparatus Level of Service and Cost Factor

| Apparatus | # of Units | Unit Cost (\$2017) | Total Cost (\$2017) |
|--------------|------------|--------------------|---------------------|
| Engine | 15 | \$500,000 | \$7,500,000 |
| Ladder | 3 | \$1,200,000 | \$3,600,000 |
| Ambulance | 23 | \$250,000 | \$5,750,000 |
| Tanker | 14 | \$500,000 | \$7,000,000 |
| Other | 30 | \$102,667 | \$3,080,000 |
| Total | 85 | | \$26,930,000 |

| | Residential | Nonresidential |
|---------------------------------|--------------|----------------|
| Proportionate Share | 77% | 23% |
| Cost Allocation | \$20,736,100 | \$6,193,900 |
| Population or Nonres. Trips | 86,702 | 182,739 |
| Cost per Person or Nonres. Trip | \$239 | \$34 |

Fire & Rescue Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for Fire & Rescue capital impact are summarized from above and shown below. Capital impacts for Fire & Rescue facilities are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development. For further discussion on demand factors, see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are two components in the capital impact calculation:

- Fire Stations (determined by Service Area)
- Fire Apparatus (determined by Service Area)

Since the capital cost and household sizes differ between Service Areas, the capital impact for each fire district is listed.

Figure 63. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE | FIRE DISTRICT |
|------------------------------|-------------|------------|---------------|
| | | | Millwood |
| Fire Station | per capita | n/a | \$422 |
| Fire Apparatus | per capita | n/a | \$239 |
| GROSS COST PER PERSON | | \$0 | \$661 |
| Debt Service Credit | | \$0 | \$0 |
| NET CAPITAL COST | | \$0 | \$661 |

| Residential Capital Impact per Housing Unit | Housing Unit Type | Service Area: Stephens City | COUNTYWIDE | FIRE DISTRICT | Total |
|---|------------------------------|-----------------------------|-------------------|------------------|-------------------|
| | | Persons | Capital Impact \$ | Stephens City | Capital Impact \$ |
| | | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| | Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| | Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| | Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| | Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Housing Unit Type | Service Area: Middletown | COUNTYWIDE | FIRE DISTRICT | Total |
|---|------------------------------|--------------------------|-------------------|------------------|-------------------|
| | | Persons | Capital Impact \$ | Middletown | Capital Impact \$ |
| | | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| | Single Family-Detached | 2.37 | \$0 | \$1,566 | \$1,566 |
| | Single Family-Attached | 2.37 | \$0 | \$1,566 | \$1,566 |
| | Multifamily | 1.46 | \$0 | \$965 | \$965 |
| | Age-Restricted Single Family | 1.51 | \$0 | \$998 | \$998 |

Figure 64. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential cont.

| Residential Capital Impact per Housing Unit | Service Area:
Clear Brook | COUNTYWIDE | FIRE DISTRICT
Clear Brook | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Service Area:
Gore | COUNTYWIDE | FIRE DISTRICT
Gore | Total |
|---|-----------------------|-------------------|-----------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Round Hill | COUNTYWIDE | FIRE DISTRICT
Round Hill | Total |
|---|-----------------------------|-------------------|-----------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Gainesboro | COUNTYWIDE | FIRE DISTRICT
Gainesboro | Total |
|---|-----------------------------|-------------------|-----------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area:
Star Tannery | COUNTYWIDE | FIRE DISTRICT
Star Tannery | Total |
|---|-------------------------------|-------------------|-------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

Figure 65. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Residential cont.

| Residential Capital Impact per Housing Unit | Service Area: Greenwood | COUNTYWIDE | FIRE DISTRICT Greenwood | Total |
|---|-------------------------|-------------------|-------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

| Residential Capital Impact per Housing Unit | Service Area: North Mountain | COUNTYWIDE | FIRE DISTRICT North Mountain | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area: Reynolds Store | COUNTYWIDE | FIRE DISTRICT Reynolds Store | Total |
|---|------------------------------|-------------------|------------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$0 | \$0 | \$0 |
| Single Family-Attached | 2.37 | \$0 | \$0 | \$0 |
| Multifamily | 1.46 | \$0 | \$0 | \$0 |
| Age-Restricted Single Family | 1.51 | \$0 | \$0 | \$0 |

| Residential Capital Impact per Housing Unit | Service Area: Millwood | COUNTYWIDE | FIRE DISTRICT Millwood | Total |
|---|------------------------|-------------------|------------------------|-------------------|
| Housing Unit Type | Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Single Family-Attached | 2.62 | \$0 | \$1,731 | \$1,731 |
| Multifamily | 2.08 | \$0 | \$1,374 | \$1,374 |
| Age-Restricted Single Family | 1.67 | \$0 | \$1,103 | \$1,103 |

Figure 66. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE | FIRE DISTRICT |
|------------------------------------|------------------|------------|---------------|
| | | | Millwood |
| Fire Station | per vehicle trip | n/a | \$60 |
| Fire Apparatus | per vehicle trip | n/a | \$34 |
| GROSS COST PER VEHICLE TRIP | | \$0 | \$94 |

| | | |
|----------------------------|------------|-------------|
| Debt Service Credit | \$0 | \$0 |
| NET CAPITAL COST | \$0 | \$94 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Stephens City | COUNTYWIDE | FIRE DISTRICT
Stephens City | Total |
|---|--------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | Vehicle Trip | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Middletown | COUNTYWIDE | FIRE DISTRICT
Middletown | Total |
|---|-----------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | Vehicle Trip | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Clear Brook | COUNTYWIDE | FIRE DISTRICT
Clear Brook | Total |
|---|------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | Vehicle Trip | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet
Nonresidential Land Use | Service Area:
Gore | COUNTYWIDE | FIRE DISTRICT
Gore | Total |
|---|-----------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | Vehicle Trip | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. | Capital Impact \$
Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

Figure 67. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential cont.

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Round Hill</i> | COUNTYWIDE | FIRE DISTRICT
<i>Round Hill</i> | Total |
|--|------------------------------------|-------------------|------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Gainesboro</i> | COUNTYWIDE | FIRE DISTRICT
<i>Gainesboro</i> | Total |
|--|------------------------------------|-------------------|------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Star Tannery</i> | COUNTYWIDE | FIRE DISTRICT
<i>Star Tannery</i> | Total |
|--|--------------------------------------|-------------------|--------------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>Greenwood</i> | COUNTYWIDE | FIRE DISTRICT
<i>Greenwood</i> | Total |
|--|-----------------------------------|-------------------|-----------------------------------|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| Industrial | 1.97 | \$0 | \$184 | \$184 |
| Institutional | 9.76 | \$0 | \$917 | \$917 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Service Area:
<i>North Mountain</i> | COUNTYWIDE | FIRE DISTRICT
<i>North Mountain</i> | Total |
|--|--|-------------------|--|-------------------|
| Nonresidential Land Use | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| Retail | 14.35 | \$0 | \$0 | \$0 |
| Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| Industrial | 1.97 | \$0 | \$0 | \$0 |
| Institutional | 9.76 | \$0 | \$0 | \$0 |

Figure 68. Fire & Rescue Facilities Input Variables and Capital Impacts by Land Use, Nonresidential cont.

| Nonresidential Capital Impact
per 1,000 Square Feet | Nonresidential Land Use | Service Area:
Reynolds Store | COUNTYWIDE | FIRE DISTRICT
Reynolds Store | Total |
|--|---------------------------|---------------------------------|-------------------|---------------------------------|-------------------|
| | | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| | Retail | 14.35 | \$0 | \$0 | \$0 |
| | Office and Other Services | 4.87 | \$0 | \$0 | \$0 |
| | Industrial | 1.97 | \$0 | \$0 | \$0 |
| | Institutional | 9.76 | \$0 | \$0 | \$0 |

| Nonresidential Capital Impact
per 1,000 Square Feet | Nonresidential Land Use | Service Area:
Millwood | COUNTYWIDE | FIRE DISTRICT
Millwood | Total |
|--|---------------------------|---------------------------|-------------------|---------------------------|-------------------|
| | | Vehicle Trip | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| | | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| | Retail | 14.35 | \$0 | \$1,348 | \$1,348 |
| | Office and Other Services | 4.87 | \$0 | \$457 | \$457 |
| | Industrial | 1.97 | \$0 | \$184 | \$184 |
| | Institutional | 9.76 | \$0 | \$917 | \$917 |

Fire & Rescue Cash Proffer Eligibility

To comply with the 2019 Cash Proffer law, a capacity need must be established. The Fire & Rescue analysis includes a capacity trigger based on the County's CIP. If there is a capacity increasing capital project (i.e. a new fire station, an improvement that increases capacity) in the County's CIP it is assumed that the corresponding Service Area needs capacity improvements to accommodate future growth. When that is the case, the capital impact is triggered as cash proffer eligible. Figure 69 lists those Service Areas (fire districts) that have capacity increasing projects listed in the CIP, thus eligible for cash proffer.

Figure 69. Fire & Rescue Capital Projects

| Fire District | Capital Need? |
|----------------|---------------|
| Stephens City | Yes |
| Middletown | Yes |
| Clear Brook | Yes |
| Gore | No |
| Round Hill | No |
| Gainesboro | No |
| Star Tannery | No |
| Greenwood | Yes |
| North Mountain | No |
| Reynolds Store | No |
| Millwood | Yes |

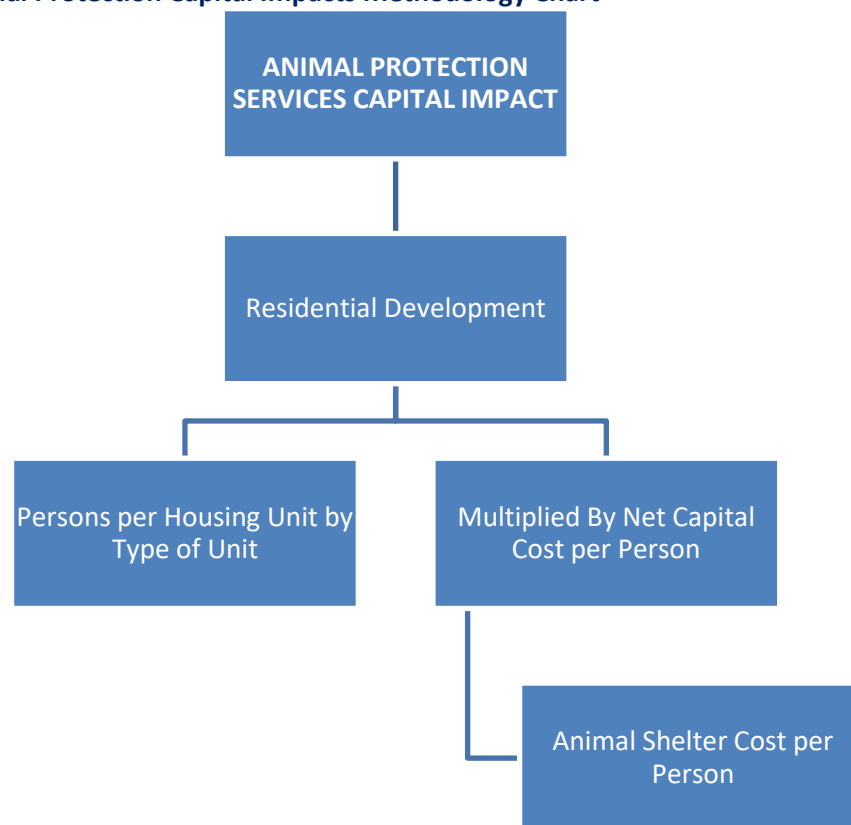
Source: Frederick County 2019-2024 CIP

PUBLIC SAFETY CAPITAL IMPACTS: ANIMAL PROTECTION

Animal Protection is the third subcategory under Public Safety capital impacts. Similar to the Sheriff facility type, there were no Animal Protection facilities included in the Frederick County's Capital Improvement Plan (CIP). Therefore, the CapIM Model uses an **incremental methodology** to calculate the capital impact, which reflects growth's share of the facility cost. Additionally, since there is no identified animal shelter capacity increasing project to accommodate future demand, **the capital impacts are not eligible for cash proffers.**

Figure 70 diagrams the incremental methodology used to calculate Animal Protection capital impacts. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The capital impact is derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person.

Figure 70. Animal Protection Capital Impacts Methodology Chart



Animal Protection Facilities Inventory and Level of Service

Frederick County's current shelter is 13,369 square feet and has a value of \$2,507,000. This results in a total cost of \$187.52 per square foot. In Figure 71, floor area is attributed 100 percent to residential development. To find the level of service, the floor area is divided by the County's current population (13,369 square feet / 86,702 residents = 0.15 square feet per person). This factor is multiplied by the average cost per square foot to calculate the cost per person of \$28.13.

Figure 71. Animal Protection Facilities and Level of Service

| Facility | Sq.Ft. | Value | \$/Sq. Ft. |
|--------------------|---------------|--------------------|-----------------|
| Animal Shelter | 13,369 | \$2,507,000 | \$187.52 |
| GRAND TOTAL | 13,369 | \$2,507,000 | \$187.52 |

Source: Frederick County Building Inventory

| Proportionate Share | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 100% | 0% | |
| Total Animal Protection Facility Sq. Ft. | 13,369 | - | 13,369 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.15 | 0.00 | |

| | Residential | Nonresidential |
|-------------------------------|----------------|----------------|
| | 0.15 | 0.00 |
| Square Feet per Person or Job | 0.15 | 0.00 |
| Total Cost per Sq. Ft. | \$187.52 | \$187.52 |
| Cost per Person or Job | \$28.13 | \$0.00 |

Animal Protection Input Variables and Capital Impacts

Factors used to determine the Animal Protection services capital impacts are summarized below. Capital impacts for Animal Protection capital impacts are based on household size (i.e., persons per housing unit) and are only determined for residential development. For further discussion on household size see the Land Use Assumptions Chapter.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is one component in the capital impact calculation, Animal Shelter. Animal Protection services are provided on a countywide basis. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 72.

Figure 72. Animal Protection Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|----------------|
| Animal Shelter | per capita | \$28.13 |
| GROSS COST PER PERSON | | \$28.13 |

Debt Service Credit \$0.00

| | |
|-------------------------|----------------|
| NET CAPITAL COST | \$28.13 |
|-------------------------|----------------|

| Residential Capital Impact per Housing Unit | Service Area: Urban | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$74 |
| Single Family-Attached | 2.62 | \$74 |
| Multifamily | 2.08 | \$59 |
| Age-Restricted Single Family | 1.67 | \$47 |

| Residential Capital Impact per Housing Unit | Service Area: Rural | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$67 |
| Single Family-Attached | 2.37 | \$67 |
| Multifamily | 1.46 | \$41 |
| Age-Restricted Single Family | 1.51 | \$42 |

Animal Protection Cash Proffer Eligibility

To be eligible for a cash proffer, the facility must be for Public Schools, Parks and Recreation, or Public Safety (Sheriff, Fire, and Animal Services) and a development requires additional capacity in excess of capacity available in current facilities. For Animal Protection, there are no facilities listed in the CIP that would indicate a capacity increase is necessary to service future population, therefore, the capital impacts found in Figure 72 are ***not included in the cash proffer calculation*** at this time.

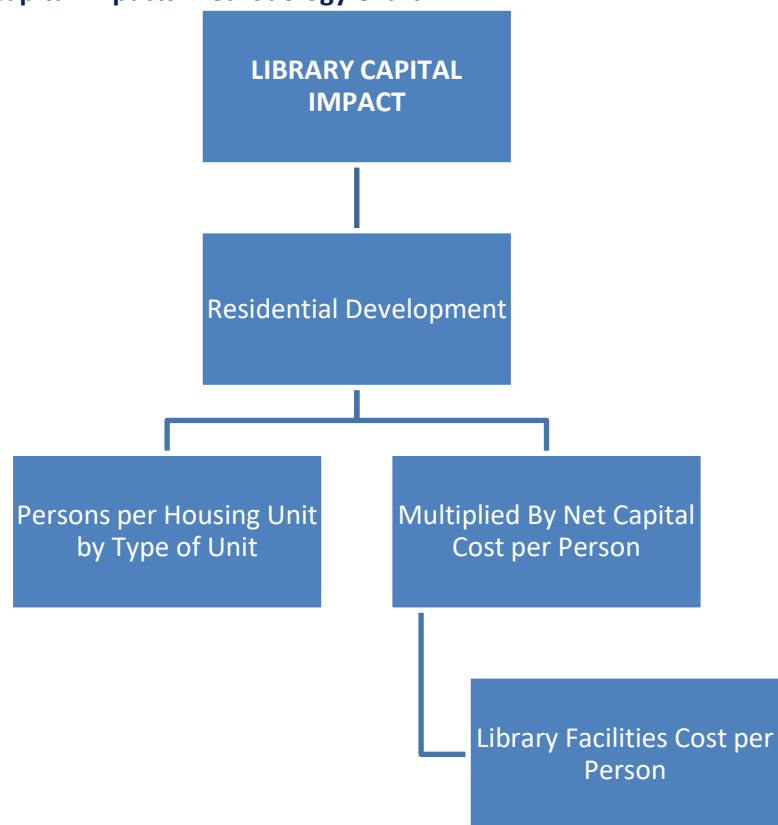
II. Non-Cash Proffer Categories

LIBRARY CAPITAL IMPACTS

Frederick County has a library system that currently includes one Central Library with two capacity projects in the County's Capital Improvement Plan (CIP). Both projects are to construct additional Countywide libraries. An **incremental methodology** will be used to determine the capital impact and is analyzed on a Countywide basis. Only residential developments will be included in the impact calculations.

Figure 73 diagrams the methodology used to determine Library capital impacts. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. Library capital impact is derived from the product of persons per housing unit (by type of unit) and the net capital cost per person. The level of service standard is calculated using the County's planned facilities and projected population. The level of service is combined with the cost per square foot of the new facilities to calculate the net capital cost per person.

Figure 73. Library Capital Impacts Methodology Chart



Library Facilities Inventory

As shown in Figure 74, the current library square footage is 31,264 square feet and has a value of \$4,465,000. The entire Bowman Library is attributed to residential development.

Figure 74. Library Facilities Level of Service Standards and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. |
|----------------|--------|-------|----------|--------|-----------|-------------|------------|
| Bowman Library | 31,264 | 100% | 0% | 31,264 | 0 | \$4,465,000 | \$142.82 |
| GRAND TOTAL | 31,264 | | | 31,264 | 0 | \$4,465,000 | \$142.82 |

Source: Frederick County Building Inventory

Library Facilities in Capital Improvement Plan

To address future growth, the County plans to build two more libraries. The square footage and cost of the projects are listed in Figure 75. In total, the CIP includes plans for 12,000 new square feet of library facilities which will cost \$4,792,269, an average cost of \$399 per square foot.

Figure 75. Planned Library Facility Level of Service Standards and Cost Factors

| Facility | Service Area | Cost | Sq. Ft. | \$/Sq. Ft |
|--------------------------------|--------------|-------------|---------|-----------|
| Library Branch - Gainesboro | Countywide | \$1,749,034 | 5,000 | \$350 |
| Library Branch - South Library | Countywide | \$3,043,235 | 7,000 | \$435 |
| Total | | \$4,792,269 | 12,000 | \$399 |

Source: Frederick County 2019-2024 CIP

Library Level of Service and Cost Factors

Shown in Figure 76, since 100 percent of library services is attributed to residential development, the level of service for libraries is calculated by dividing the current inventory floor area by the population. As a result, there is 0.36 square feet per person. The average cost for the planned library projects is applied to the level of service to calculate the capital impact per person (\$143.77).

Figure 76. Library Level of Service and Cost Factors

| Proportionate Share | Residential | Nonresidential | Total |
|-------------------------------|-------------|----------------|--------|
| | 100% | 0% | |
| Total Library Sq. Ft. | 31,264 | - | 31,264 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.36 | 0.00 | |

| | Residential | Nonresidential |
|-------------------------------|-------------|----------------|
| | 0.36 | 0.00 |
| Square Feet per Person or Job | 0.36 | 0.00 |
| Total Cost per Sq. Ft. | \$399.36 | \$399.36 |
| Cost per Person or Job | \$143.77 | \$0.00 |

Library Input Variables and Capital Impacts

Factors used to determine library capital impacts are summarized in Figure 77. Capital impacts for libraries are based on household size (i.e., persons per housing unit) and are only determined for residential development. The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is one component to the capital impact calculation, Library Facilities (Countywide).

Library capital impacts are the product of persons per housing unit multiplied by the total net capital cost per person. An example of the calculation for a single family detached unit in the Urban Service Area is: the net capital cost per person for Central Library (\$143.77) multiplied by the persons per housing unit (2.62) to arrive at the capital impact for the Library Facilities for a single family detached unit of \$377 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 77.

Figure 77. Library Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------|-------------|-----------------|
| Library Facilities | per capita | \$143.77 |
| GROSS COST PER PERSON | | \$143.77 |

| | |
|-------------------------|-----------------|
| NET CAPITAL COST | \$143.77 |
|-------------------------|-----------------|

| Residential Capital Impact per Housing Unit | Service Area: Urban | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.62 | \$377 |
| Single Family-Attached | 2.62 | \$377 |
| Multifamily | 2.08 | \$299 |
| Age-Restricted Single Family | 1.67 | \$240 |

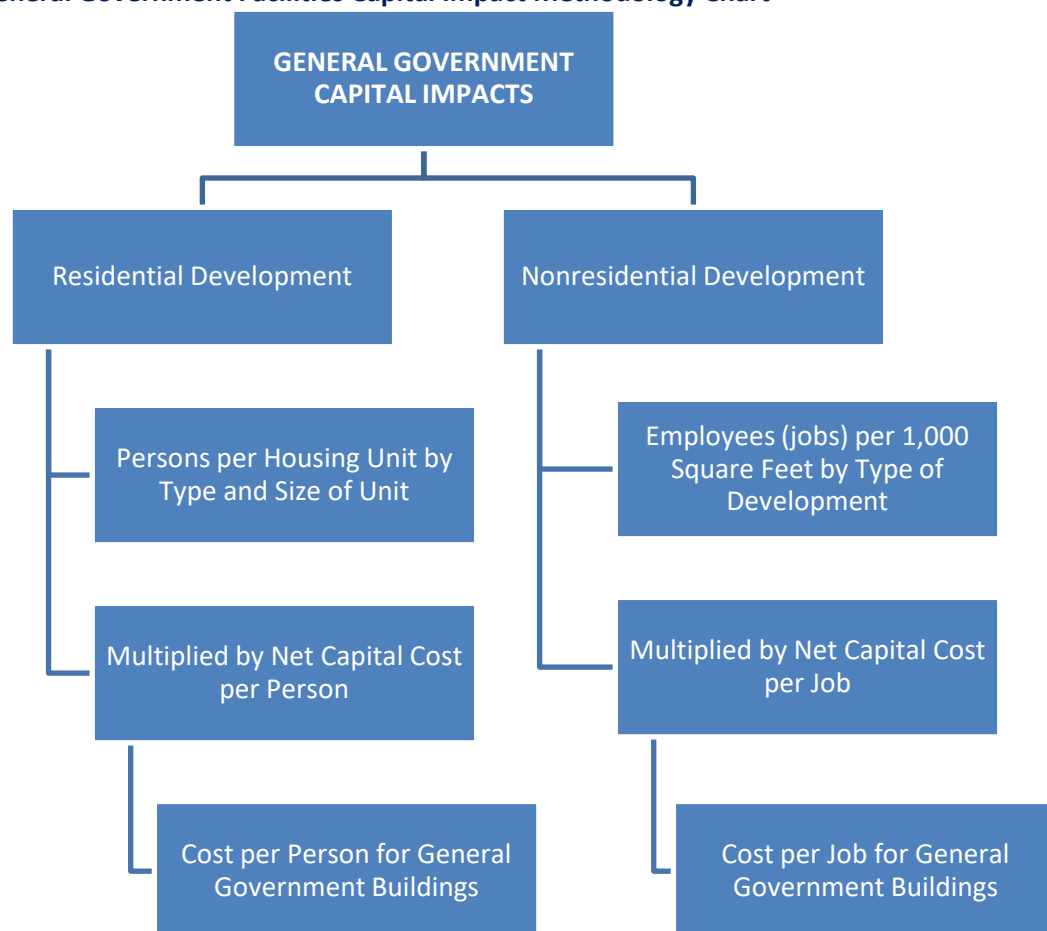
| Residential Capital Impact per Housing Unit | Service Area: Rural | COUNTYWIDE |
|---|---------------------|-------------------|
| Unit Type | Persons | Capital Impact \$ |
| | Per Housing Unit | Per Housing Unit |
| Single Family-Detached | 2.37 | \$341 |
| Single Family-Attached | 2.37 | \$341 |
| Multifamily | 1.46 | \$210 |
| Age-Restricted Single Family | 1.51 | \$217 |

GENERAL GOVERNMENT CAPITAL IMPACTS

General Government facilities capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. This is the **incremental methodology**.

General Government Facilities Capital Impact is calculated on a per capita basis for residential development and a per employee basis for nonresidential development. Figure 78 illustrates the methodology used to determine the capital impact. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the General Government Facilities capital impact is derived from the product of persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of employees per 1,000 square feet of nonresidential space multiplied by the net capital cost per employee (job).

Figure 78. General Government Facilities Capital Impact Methodology Chart



Cost Allocation for General Government Facilities

Proportionate share factors are used to allocate demand to residential and nonresidential development where appropriate. For facilities that serve both residential and nonresidential development, TischlerBise recommends using a proportionate share allocation based on a functional population approach. The functional population approach estimates the residential and nonresidential activity in the county by using the hours in a day. For the residents that are not working, their day is estimated to be split with 20 hours attributed to residential purposes and 4 hours to nonresidential purposes. For resident workers, 14 hours are attributed to residential purposes and 10 hours to nonresidential purposes. For non-resident workers in the county, 10 hours are attributed to nonresidential purposes in Frederick County.

Figure 79 provides detail on the approach and results, which indicate that approximately 77 percent of demand in Frederick County is from residential development and 23 percent from nonresidential.

Figure 79. Frederick County Proportionate Share Factors

| Demand Units in 2015 | | | |
|---|------------------------------------|-------------------|------------------|
| Residential | | Demand Hours/Day^ | Person Hours |
| Population* | 80,230 | | |
| Residents Not Working | 41,820 | 20 | 836,400 |
| Resident Workers** | 38,410 | | |
| Worked in County** | 8,830 | 14 | 123,620 |
| Worked Outside of County** | 29,580 | 14 | 414,120 |
| | Residential Subtotal | | 1,374,140 |
| | Residential Share ==> | | 77% |
| Nonresidential | | | |
| Non-Working Residents | 41,820 | 4 | 167,280 |
| Jobs Located in County** | 24,747 | | |
| Residents Working in County** | 8,830 | 10 | 88,300 |
| Non-Resident Workers (Inflow Commuters) | 15,917 | 10 | 159,170 |
| | Nonresidential Subtotal | | 414,750 |
| | Nonresidential Share ==> | | 23% |
| | TOTAL | | 1,788,890 |

* Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

** Source: 2015 Inflow/Outflow Analysis, OnTheMap Application, U.S. Census Bureau data for all jobs.

General Government Facilities Level of Service and Cost Factors

General government capital impacts are based on current levels of service, which are derived from the current inventory of square footage and replacement value of current County office buildings. General government services serve a countywide base and it is recommended that one service area be used to determine the capital impact on general government facilities.

Shown in Figure 80, current general government office square footage is 100,000 square feet. Facilities' square footage and replacement costs are allocated to residential or nonresidential based on the countywide proportionate share found in Figure 79.

In total, 77,000 square feet of General Government Facilities are allocated to residential development and 23,000 square feet are allocated to nonresidential development. As a result, there is 0.89 square feet per person and 0.82 square feet per job.

The average cost per square foot of the General Government Building is applied to the levels of service to calculate the capital impact. For example, the residential capital impact is \$311.50 per person (0.89 square feet per person x \$350 per square foot = \$311.50 per person).

Figure 80. General Government Facilities Level of Service Standards and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|-----------------------------|---------|-------|----------|--------|-----------|--------------|-----------------|---------------|------------------|----------------|
| General Government Building | 100,000 | 77% | 23% | 77,000 | 23,000 | \$35,000,000 | \$350.00 | \$26,950,000 | \$8,050,000 | \$35,000,000 |
| GRAND TOTAL | 100,000 | | | 77,000 | 23,000 | \$35,000,000 | \$350.00 | \$26,950,000 | \$8,050,000 | \$35,000,000 |

Source: Frederick County Department of Planning & Development

| Proportionate Share | Residential | Nonresidential | Total |
|----------------------------------|-------------|----------------|---------|
| | 77% | 23% | |
| Total General Government Sq. Ft. | 77,000 | 23,000 | 100,000 |
| Base Year Population or Jobs | 86,702 | 28,212 | |
| Square Feet per Person or Job | 0.89 | 0.82 | |

| | Residential | Nonresidential |
|-------------------------------|-----------------|-----------------|
| | 0.89 | 0.82 |
| Square Feet per Person or Job | 0.89 | 0.82 |
| Total Cost per Sq. Ft. | \$350.00 | \$350.00 |
| Cost per Person or Job | \$311.50 | \$287.00 |

General Government Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for the General Government capital impact are summarized from above and shown in Figure 81. Capital impacts for general government facilities are based on household size (i.e., persons per housing unit) for residential development and employees per 1,000 square feet of floor area for nonresidential development. (For further discussion on demand factors, see the chapter Land Use Assumptions.)

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is only one component in the capital impact calculation, General Government Facilities.

An example of the calculation for a single family housing unit in the Urban Service Area is: the net capital cost per person (\$311.50) multiplied by the persons per housing unit (2.62) to arrive at the capital impact per single family detached unit of \$816 (rounded). Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 81.

Figure 81. General Govt. Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-------------------------------|-------------|-----------------|
| General Government Facilities | per capita | \$311.50 |
| GROSS COST PER PERSON | | \$311.50 |
| NET CAPITAL COST | | \$311.50 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$816 |
| 2.62 | \$816 |
| 2.08 | \$648 |
| 1.67 | \$520 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$738 |
| 2.37 | \$738 |
| 1.46 | \$455 |
| 1.51 | \$471 |

For nonresidential land uses, the number of employees per 1,000 square feet for the respective type of land use is multiplied by the net cost per job. For example, the capital impact for a retail development is calculated as follows: 2.34 employees per 1,000 square feet x \$287 to yield an amount of \$673 per 1,000 square feet (rounded).

Figure 82. General Govt. Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-------------------------------|-------------|-----------------|
| General Government Facilities | per job | \$287.00 |
| GROSS COST PER JOB | | \$287.00 |

| | |
|-------------------------|-----------------|
| NET CAPITAL COST | \$287.00 |
|-------------------------|-----------------|

| Nonresidential Capital Impact per 1,000 Square Feet |
|---|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Employees | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 2.34 | \$673 |
| 2.97 | \$852 |
| 1.59 | \$457 |
| 2.83 | \$812 |

| Nonresidential Capital Impact per 1,000 Square Feet |
|---|
| Nonresidential Land Use |

| |
|---------------------------|
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

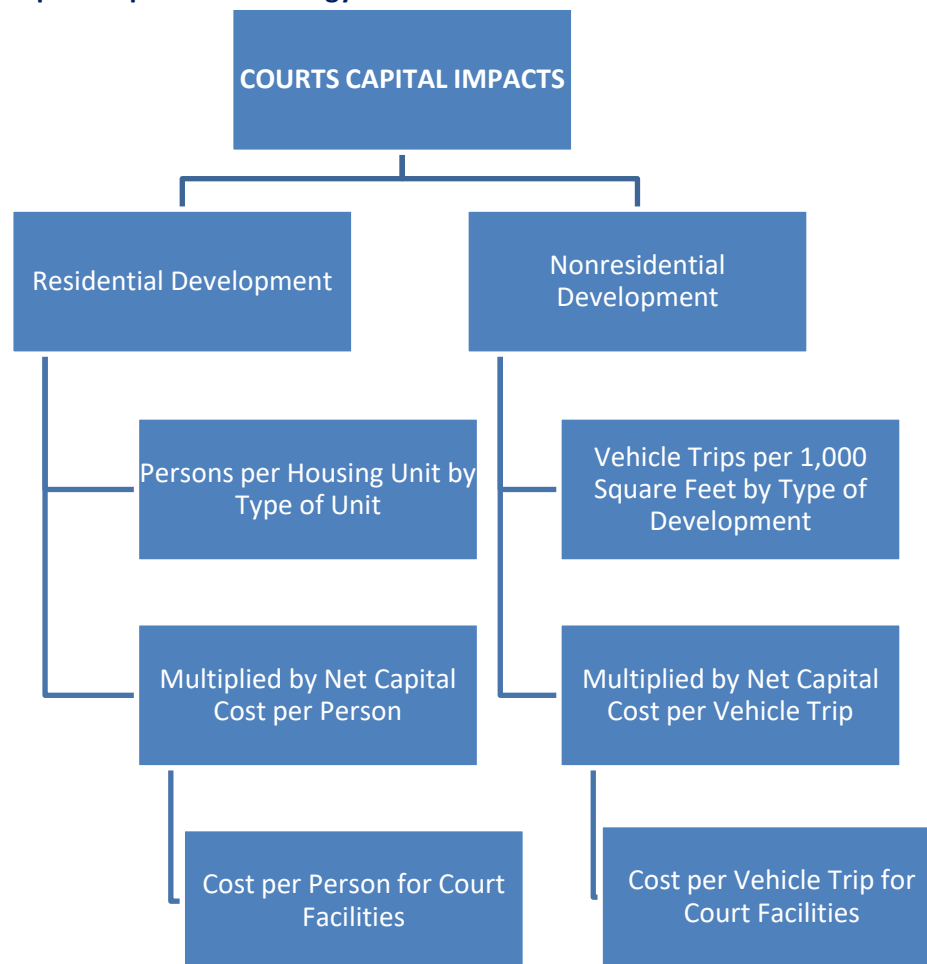
| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Employees | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 2.34 | \$673 |
| 2.97 | \$852 |
| 1.59 | \$457 |
| 2.83 | \$812 |

COURTS CAPITAL IMPACTS

Court facilities capital impacts are based on the County's current level of service and the cost to expand those facilities to serve growth. This is the **incremental methodology**.

In Figure 83, the methodology used to determine the capital impact is illustrated. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion of the Courts capital impact is derived from the persons per housing unit (by type) multiplied by the net capital cost per person. The nonresidential portion is derived from the product of vehicle trips per 1,000 square feet of nonresidential space multiplied by the net capital cost per vehicle trip (job).

Figure 83. Courts Capital Impact Methodology Chart



Cost Allocation for Court Facilities

To allocate floor area and costs of Court facilities, Sheriff calls for service data is used. A report of 2017 sheriff service calls for service was provided by the Sheriff's Office. In total, there were 62,828 calls. Of the total, 60 percent were attributed to residential land uses and 40 percent were attributed to nonresidential land uses.

Court services are provided on a countywide basis in Frederick County. Therefore, it is recommended that one service area be used to determine the capital impact on Court facilities.

Figure 84. Frederick County Sheriff Calls for Service

| Land Use | Calls for Service | % |
|----------------|-------------------|------|
| Residential | 37,565 | 60% |
| Nonresidential | 25,263 | 40% |
| Total | 62,828 | 100% |

Source: Frederick County Sheriff's Office

Court Facilities Level of Service and Cost Factors

Court facilities capital impacts are based on the current inventory. Listed in Figure 85, there are two Court facilities included in the analysis: the Smithfield Building and the Joint Judicial Center. Both buildings are occupied by other departments as well. Only the space occupied by Court facilities is included in the figure. Based on Sheriff calls for service, Court facilities are attributed to residential (60 percent) and nonresidential (40 percent). The levels of service are found by dividing the attributed floor area by the demand unit. For example, 27,798 square feet are attributed to residential development and there are 86,702 residents in Frederick County. As a result, the level of service is 0.32 square feet per person.

The capital impact of development is found by applying the average cost per square foot by the level of service. For example, the capital impact of residential development is \$83.99 (0.32 square feet per person x \$262.46 per square foot = \$83.99).

Figure 85. Court Facilities Level of Service and Cost Factors

| Facility | Sq.Ft. | Res % | Nonres % | Res SF | Nonres SF | Value | \$/Sq. Ft. | Res. Value \$ | Nonres. Value \$ | Total Value \$ |
|-----------------------|--------|-------|----------|--------|-----------|--------------|------------|---------------|------------------|----------------|
| Smithfield Building | 17,993 | 60% | 40% | 10,758 | 7,235 | \$2,227,624 | \$123.81 | \$1,331,901 | \$895,723 | \$2,227,624 |
| Joint Judicial Center | 28,500 | 60% | 40% | 17,040 | 11,460 | \$9,975,000 | \$350.00 | \$5,964,075 | \$4,010,925 | \$9,975,000 |
| GRAND TOTAL | 46,493 | | | 27,798 | 18,695 | \$12,202,624 | \$262.46 | \$7,295,976 | \$4,906,648 | \$12,202,624 |

Source: Frederick County Building Inventory

| Sheriff Calls for Service | Residential | Nonresidential | Total |
|--|-------------|----------------|--------|
| | 60% | 40% | |
| Total Court Sq. Ft. | 27,798 | 18,695 | 46,493 |
| Base Year Population or Nonres. Trip | 86,702 | 182,739 | |
| Square Feet per Person or Nonres. Trip | 0.32 | 0.10 | |

Source: Frederick County Sheriff's Office

| | Residential | Nonresidential |
|--|----------------|----------------|
| | 0.32 | 0.10 |
| Square Feet per Person or Nonres. Trip | 0.32 | 0.10 |
| Total Cost per Sq. Ft. | \$262.46 | \$262.46 |
| Cost per Person or Nonres. Trip | \$83.99 | \$26.25 |

Court Facilities Input Variables and Capital Impacts

Level of service standards and cost factors for courts capital impact are summarized from above and shown in Figure 86. Capital impacts for court facilities are based on household size (i.e., persons per housing unit) for residential development and vehicle trips per 1,000 square feet of floor area for nonresidential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there is only one component in the capital impact calculation, Court Facilities. Court services are provided on a countywide base and it is recommended that one service area be used to determine the capital impact on court facilities. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 86.

Figure 86. Court Facilities Input Variables and Capital Impacts by Land Use, Residential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|-----------------------|-------------|------------|
| Courts Facilities | per capita | \$83.99 |
| GROSS COST PER PERSON | | \$83.99 |
| NET CAPITAL COST | | \$83.99 |

| Residential Capital Impact per Housing Unit |
|---|
| Housing Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.62 | \$220 |
| 2.62 | \$220 |
| 2.08 | \$175 |
| 1.67 | \$140 |

| Residential Capital Impact per Housing Unit |
|---|
| Housing Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Persons | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit |
| 2.37 | \$199 |
| 2.37 | \$199 |
| 1.46 | \$123 |
| 1.51 | \$127 |

Figure 87. Court Facilities Input Variables and Capital Impacts by Land Use, Nonresidential

| Infrastructure Cost | Demand Unit | COUNTYWIDE |
|------------------------------------|------------------|----------------|
| Courts Facilities | per vehicle trip | \$26.25 |
| GROSS COST PER VEHICLE TRIP | | \$26.25 |
| NET CAPITAL COST | | \$26.25 |

| Nonresidential Capital Impact per
1,000 Square Feet |
|--|
| Nonresidential Land Use |
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

| Service Area:
Urban | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$377 |
| 4.87 | \$128 |
| 1.97 | \$52 |
| 9.76 | \$256 |

| Nonresidential Capital Impact per
1,000 Square Feet |
|--|
| Nonresidential Land Use |
| Retail |
| Office and Other Services |
| Industrial |
| Institutional |

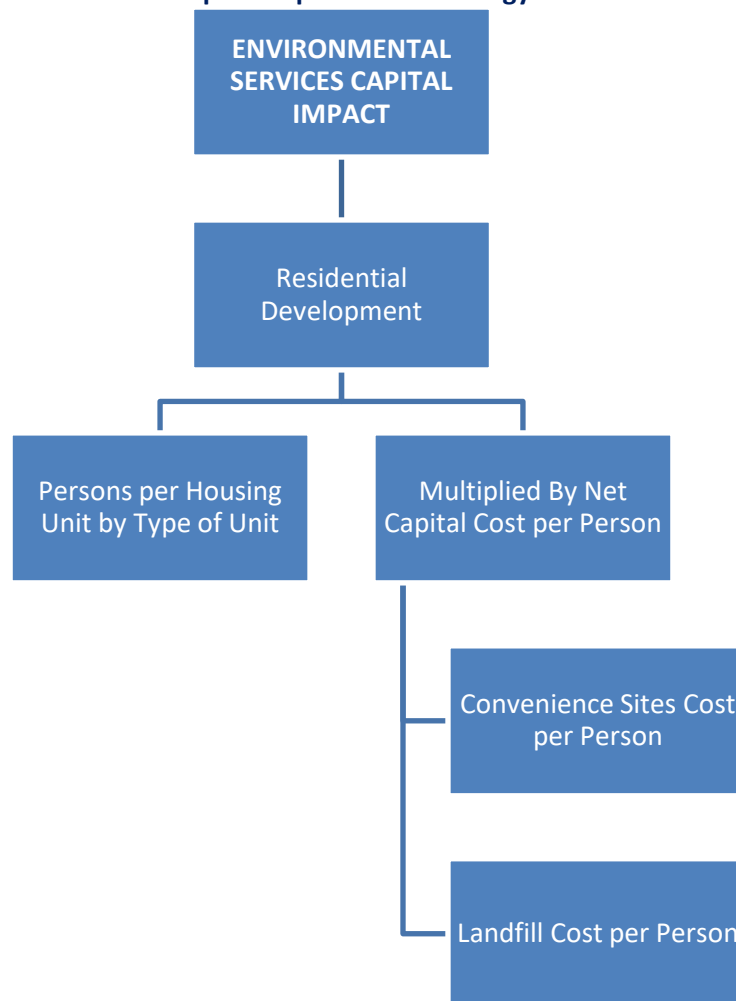
| Service Area:
Rural | COUNTYWIDE |
|------------------------|-------------------|
| Vehicle Trips | Capital Impact \$ |
| Per 1,000 Sq.Ft. | Per 1,000 Sq.Ft. |
| 14.35 | \$377 |
| 4.87 | \$128 |
| 1.97 | \$52 |
| 9.76 | \$256 |

ENVIRONMENTAL SERVICES/SOLID WASTE CAPITAL IMPACTS

Frederick County provided both convenience sites and landfill services to its residents. It is assumed that the County's current level of service will continue into the future as the County grows. As such, the **incremental methodology** is used in the CapIM Model to determine the capital impact.

Figure 88 diagrams the general methodology used to calculate environmental services capital impact. Costs are allocated 100 percent to residential development. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The capital impact is derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person. Frederick County provides convenience sites at a Service Area level and landfill centers at a Countywide level.

Figure 88. Environmental Services Capital Impacts Methodology Chart



Environmental Services Inventory

As shown in Figure 89, there are nine convenience sites and one landfill provided by the County.

Figure 89. Environmental Services Facilities Level of Service Standards and Cost Factors

| Facility | Service Area | Purpose | Acres |
|-------------------------|--------------|-----------------|-------|
| Albin | Rural | Waste & Compact | 1.0 |
| Stephenson | Urban | Waste & Compact | 3.0 |
| Gainesboro | Rural | Waste & Compact | 1.5 |
| Shawneeland | Rural | Waste & Compact | 1.0 |
| Round Hill | Rural | Waste & Compact | 6.7 |
| Middletown | Urban | Waste & Compact | 0.3 |
| Double Tollgate | Urban | Waste & Compact | 1.4 |
| Gore | Rural | Waste Cans | 1.5 |
| Star Tannery | Rural | Waste Cans | 0.5 |
| Landfill Citizen Center | Countywide | Waste & Compact | 5.0 |
| TOTAL | | | 22.9 |

Environmental Services Facilities in Capital Improvement Plan

To address future growth, the County plans to add another convenience site. The new Albin Citizens Convenience Site will be two acres and cost \$1,224,000, an average cost of \$612,000 per acre.

Figure 90. Planned Environmental Services Facility Level of Service Standards and Cost Factors

| Facility | Service Area | Acres | Value | \$/Acre |
|---------------------------------|--------------|-------|-------------|-----------|
| Albin Citizens Convenience Site | Rural | 2 | \$1,224,000 | \$612,000 |
| TOTAL | | 2 | \$1,224,000 | \$612,000 |

Source: Frederick County 2019-2024 CIP

Environmental Services Level of Service and Cost Factors

Shown in Figure 76, since 100 percent of environmental services is attributed to residential development, the level of service is calculated by dividing the current acreage by the population. As a result, there are 0.10 acres per person for convenience sites and 0.06 acres per person for landfill centers. The average cost for the planned convenience site project is applied to the level of service to calculate the capital impact per person.

Figure 91. Environmental Services Level of Service and Cost Factors

| Proportionate Share | | Service Area | |
|--------------------------|----------------|--------------|--------|
| Residential | Nonresidential | Urban | Rural |
| 100% | 0% | | |
| Convenience Site Acreage | | 5.7 | 12.2 |
| Base Year Population | | 59,303 | 27,399 |
| Acre per 1,000 Residents | | 0.10 | 0.45 |

| Proportionate Share | | Service Area |
|---------------------------------|----------------|--------------|
| Residential | Nonresidential | Countywide |
| 100% | 0% | |
| Landfill Citizen Center Acreage | | 5.0 |
| Base Year Population | | 86,702 |
| Acre per 1,000 Residents | | 0.06 |

| | Service Area | |
|--------------------------|--------------|-----------|
| | Urban | Rural |
| Acre per 1,000 Residents | 0.10 | 0.45 |
| Cost per Acre | \$612,000 | \$612,000 |
| Cost per Capita | \$61.20 | \$275.40 |

| | Service Area |
|--------------------------|--------------|
| | Countywide |
| Acre per 1,000 Residents | 0.06 |
| Cost per Acre | \$612,000 |
| Cost per Capita | \$36.72 |

Environmental Services Input Variables and Capital Impacts

Factors used to determine environmental services capital impacts are summarized below. Capital impacts for environmental services are based on household size (i.e., persons per housing unit) and are only determined for residential development.

The top portion of the figure summarizes cost factors per demand unit by type of facility. In this case, there are two components in the capital impact calculation, Landfill Centers and Convenience Sites. Environmental Services are provided on a countywide basis. Since the household sizes differ between Service Areas, the capital impact for each Service Area is listed in the lower portion of Figure 92.

Figure 92. Environmental Services Input Variables and Capital Impacts by Type of Housing Unit

| Infrastructure Cost | Demand Unit | COUNTYWIDE | REGIONS | |
|------------------------------|-------------|----------------|----------------|-----------------|
| | | | Urban | Rural |
| Landfill Center | per capita | \$36.72 | n/a | n/a |
| Convenience Sites | per capita | n/a | \$61.20 | \$275.40 |
| GROSS COST PER PERSON | | \$36.72 | \$61.20 | \$275.40 |
| NET CAPITAL COST | | \$36.72 | \$61.20 | \$275.40 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Urban | COUNTYWIDE | REGION | Total |
|------------------------|-------------------|-------------------|-------------------|
| Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| 2.62 | \$96 | \$160 | \$256 |
| 2.62 | \$96 | \$160 | \$256 |
| 2.08 | \$76 | \$127 | \$203 |
| 1.67 | \$61 | \$102 | \$163 |

| Residential Capital Impact per Housing Unit |
|---|
| Unit Type |
| Single Family-Detached |
| Single Family-Attached |
| Multifamily |
| Age-Restricted Single Family |

| Service Area:
Rural | COUNTYWIDE | REGION | Total |
|------------------------|-------------------|-------------------|-------------------|
| Persons | Capital Impact \$ | Capital Impact \$ | Capital Impact \$ |
| Per Housing Unit | Per Housing Unit | Per Housing Unit | Per Housing Unit |
| 2.37 | \$87 | \$653 | \$740 |
| 2.37 | \$87 | \$653 | \$740 |
| 1.46 | \$53 | \$402 | \$455 |
| 1.51 | \$55 | \$416 | \$471 |

SUMMARY OF CAPITAL IMPACTS

This chapter provides an example of the summary of the **capital impacts** by type of land use. Because the school impacts are based on attendance zones and the fire impacts are based on fire districts there are a multitude of possible service area variations, so only one example is given below. The capital impacts represent new growth's fair share of the cost for capital facilities. Please see applicable chapter for detail on factors, values, and calculations used to calculate the amounts shown in the following figures.

The capital impacts for residential development are per housing unit. For nonresidential development, the capital impacts are shown per 1,000 square feet of floor area. Noted below, the totals listed in the Cash Proffer Eligible Capital Impacts column do not necessarily list the actual cash proffer impacts. In the CapIM Model, triggers have been established that involve the current capacity of facilities. To comply with Virginia 2019 Cash Proffer Law, a cash proffer cannot be required if there is existing capacity to absorb the demands from residential growth. Nonresidential growth is not eligible for cash proffers.

Figure 93. Example Summary of Capital Impacts by Land Use

| CAPITAL COST IMPACTS | | | | | | Public Safety | | | | | | Cash Proffer
Eligible
Capital
Impacts* |
|------------------------------|------------------------|------------------------|-------------------|-------------|-----------------------|---------------|--------------------------|----------------------------|----------------|---------------|---------|---|
| infrastructure category>> | PUBLIC SCHOOL | | | | Parks & Rec | SHERIFF | FIRE & RESCUE | | ANIMAL PROTECT | PUBLIC SAFETY | | |
| | Elementary
Evendale | Middle
Admiral Byrd | High
Millbrook | Grand Total | Service Area
Urban | Countywide | Service Area
Millwood | Total All
Service Areas | Countywide | Grand Total | | |
| Residential | Development Unit | | | | | | | | | | | |
| | Per Housing Unit | | | | | | | | | | | |
| Single Family-Detached | Housing Unit | \$6,078 | \$5,041 | \$9,433 | \$20,552 | \$970 | \$237 | \$1,731 | \$1,731 | \$74 | \$2,042 | \$23,564 |
| Single Family-Attached | Housing Unit | \$7,372 | \$4,709 | \$6,962 | \$19,043 | \$970 | \$237 | \$1,731 | \$1,731 | \$74 | \$2,042 | \$22,055 |
| Multifamily | Housing Unit | \$6,431 | \$4,210 | \$5,764 | \$16,405 | \$770 | \$189 | \$1,374 | \$1,374 | \$59 | \$1,622 | \$18,797 |
| Age-Restricted Single Family | Housing Unit | \$0 | \$0 | \$0 | \$0 | \$618 | \$151 | \$1,103 | \$1,103 | \$47 | \$1,301 | \$1,919 |
| Nonresidential | Development Unit | | | | | | | | | | | |
| | Per 1,000 Square Feet | | | | | | | | | | | |
| Retail | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$400 | \$1,348 | \$1,348 | n/a | \$1,748 | \$1,748 |
| Office and Other Services | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$136 | \$457 | \$457 | n/a | \$593 | \$593 |
| Industrial | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$55 | \$184 | \$184 | n/a | \$239 | \$239 |
| Institutional | 1,000 Square Feet | n/a | n/a | n/a | n/a | n/a | \$272 | \$917 | \$917 | n/a | \$1,189 | \$1,189 |

* Potential cash proffer amounts will vary based on case by case analysis where Service Area amounts may or may not be triggered due to existing capacity as well as the categories eligible to be collected.

Figure 94. Summary of Capital Impacts by Land Use

CAPITAL COST IMPACTS

| infrastructure category>> | LIBRARIES | GEN.
GOVT | COURTS | ENV. SRVCS. | | Non-
Eligible
Capital
Impacts | Total
Capital
Impact* |
|---------------------------|------------|--------------|------------|-----------------------|------------|--|-----------------------------|
| | Countywide | Countywide | Countywide | Service Area
Urban | Countywide | | |

| Residential | | Development Unit | Per Housing Unit | | | | | | Total |
|------------------------------|--|------------------|------------------|-------|-------|-------|------|---------|----------|
| Single Family-Detached | | Housing Unit | \$377 | \$816 | \$220 | \$160 | \$96 | \$1,669 | \$25,137 |
| Single Family-Attached | | Housing Unit | \$377 | \$816 | \$220 | \$160 | \$96 | \$1,669 | \$23,628 |
| Multifamily | | Housing Unit | \$299 | \$648 | \$175 | \$127 | \$76 | \$1,325 | \$20,046 |
| Age-Restricted Single Family | | Housing Unit | \$240 | \$520 | \$140 | \$102 | \$61 | \$1,063 | \$2,921 |

| Nonresidential | | Development Unit | Per 1,000 Square Feet | | | | | | Total |
|---------------------------|--|-------------------|-----------------------|-------|-------|-----|-----|---------|---------|
| Retail | | 1,000 Square Feet | n/a | \$673 | \$377 | n/a | n/a | \$1,050 | \$2,798 |
| Office and Other Services | | 1,000 Square Feet | n/a | \$852 | \$128 | n/a | n/a | \$980 | \$1,573 |
| Industrial | | 1,000 Square Feet | n/a | \$457 | \$52 | n/a | n/a | \$509 | \$748 |
| Institutional | | 1,000 Square Feet | n/a | \$812 | \$256 | n/a | n/a | \$1,068 | \$2,257 |

* Potential cash proffer amounts will vary based on case by case analysis where Service Area amounts may or may not be triggered due to existing capacity as well as the categories eligible to be collected.

APPENDIX A: EXAMPLE OF DEVELOPMENT RESULTS

To illustrate the Capital Impact Model (CapIM Model), the following figure provides the results from a hypothetical development project of 100 single family housing units and 20,000 square feet of retail development. The development is in the Urban Service Area, Evendale ES, Admiral Byrd MS, Millbrook HS attendance zone, and the Millwood fire district. Results show projected growth and corresponding capital impacts for cash proffer eligible infrastructure. The results also capture the capacity triggers included in the model that reflect where excess capacity currently exists in County infrastructure. The figure is merely provided to illustrate the results of a hypothetical development and do not reflect an actual development. However, they do reflect a legally supportable and reasonable cash proffer amount for these hypothetical developments.

Figure 95. Example CapIM Test Results

SUMMARY OF PROJECT OUTPUTS

| | |
|--------------|--------------|
| Project Name | Test Project |
|--------------|--------------|

CAPITAL COST IMPACTS FOR DEVELOPMENT PROPOSAL

| | RESIDENTIAL | NONRESIDENTIAL | TOTAL |
|---------------------------------|-------------|----------------|--------|
| Housing Units | 100 | - | 100 |
| Projected Population | 262 | - | 262 |
| Projected Students | | | |
| Elementary School Students | 16 | - | 16 |
| Middle School School Students | 9 | - | 9 |
| High School Students | 13 | - | 13 |
| Projected Total Students | 37 | - | 37 |
| Nonresidential Sq. Ft. | - | 20,000 | 20,000 |
| Projected Jobs | - | 47 | 47 |

CASH PROFFER ELIGIBLE INFRASTRUCTURE CATEGORIES, RESIDENTIAL

| | Total Housing | Capital Impact | Capital Impact per |
|-----------------------------|---------------|----------------|--------------------|
| Schools | 100 | \$1,447,387 | \$14,474 |
| Parks and Recreation | 100 | \$48,329 | \$483 |
| Public Safety^ | 100 | \$173,182 | \$1,732 |
| Total | 100 | \$1,668,898 | \$16,689 |

| | Total Housing | Capital Impact | Capital Impact per |
|-----------------------|---------------|----------------|--------------------|
| ^Public Safety | | | |
| Sheriff | 100 | \$0 | \$0 |
| Fire | 100 | \$173,182 | \$1,732 |
| Animal Protection | 100 | \$0 | \$0 |

APPENDIX B: CASH PROFFER BACKGROUND

Definition

A proffer is an offer by a landowner during the rezoning process to mitigate the impacts of the rezoning. It is a form of *conditional zoning*, which applies additional conditions, or requirements, in addition to existing requirements and regulations. A proffer can include the acceptance of cash payments to mitigate the impacts of a rezoning, called *cash proffers*, and are allowed under Virginia Code §15.2-2303 and §15.2-2298. Frederick County meets the requirement under 15.2-2298 of a decennial growth rate of 5 percent or more.²

Cash proffers are voluntary one-time payments used to fund capital improvements necessitated by new growth. Cash proffers are akin to *impact fees*, which have been utilized by local governments in various forms for at least fifty years.³ However, unlike impact fees, cash proffers only apply during the rezoning process and do not apply to “by-right” development. Cash proffers are not to be used to correct existing deficiencies but to provide additional capacity to serve new growth. Because cash proffers do not apply to by-right development and only apply during the rezoning process, only a portion of the impacts from new growth can be mitigated with a cash proffer system. *Cash proffers therefore have limitations for infrastructure funding and should not be regarded as the total solution for capital improvement needs. Rather, they should be considered one component of a comprehensive portfolio to ensure adequate provision of public facilities with the goal of maintaining current levels of service in a community.* Limitations are:

- Cash proffers only apply to rezonings and are not collected on any by-right development.
- Cash proffers can only be used to finance capital infrastructure that provides additional capacity and cannot be used to finance ongoing operations and/or maintenance and rehabilitation costs. Virginia law restricts the infrastructure categories to **public transportation facilities, public safety facilities, public school facilities, and public parks.**⁴
- Cash proffers cannot be deposited in the local government’s General Fund. The funds must be accounted for separately and earmarked for the capital expenses for which they were collected.
- Cash proffers cannot be used to correct existing infrastructure deficiencies unless negotiated apart from the cash proffer system presented herein, or if there is a funding plan in place to correct the deficiency for all current residents and businesses in the community.

² However, 15.2-2298 provides authority to localities that meet the growth criteria in 15.2-2298 to utilize the conditional zoning authority under 15.2-2303. This study meets the stricter requirements of 15.2-2298.

³ Other than Transportation Impact Fees, localities in the Commonwealth of Virginia are not authorized to implement impact fees.

⁴ See Virginia Code §15.2-2303.4.

- Because cash proffers reflect a point in time, the calculations and study should be updated periodically (typically 3 to 5 years). Costs reflect the direct impact of new development on the need for new facilities and infrastructure and do not reflect secondary or indirect impacts.

Approach

To ensure a reasonable relationship to new development and rezonings in particular, the cash proffer study focuses on three elements: “impact or need,” “benefit,” and “proportionality.”

Demonstrating an Impact. All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the supply of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Cash proffers are calculated in a manner to determine what the applicable cost of development-related facilities, to the extent that the need for facilities is a consequence of development that is subject to the cash proffers. In this study, the impact of development on improvement needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific facilities, based on applicable level-of-service standards.

Demonstrating a Benefit. A sufficient benefit relationship requires that cash proffer funds be segregated from other funds and expended only for the categories for which the proffers were collected. Cash proffers must be expended in a timely manner⁵ and the facilities funded by the proffers must benefit the development paying the proffers. However, this does not require that facilities funded with cash proffer revenues be available *exclusively* to development paying the proffers. In other words, existing development may use and benefit from these improvements as well.

Procedures for the earmarking and expenditure of revenues are outlined in Virginia Code (see specifically §15.2303.2(B)). These requirements are intended to ensure that developments benefit from the cash proffers paid. Thus, an adequate showing of benefit must address procedural as well as practical issues.

Demonstrating Proportionality. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate the cash proffers for various types of facilities and categories of development. The demand for facilities is measured in terms of relevant and measurable attributes of development. For example, the need for school improvements is measured by the number of public school-age children generated by development.

⁵ Virginia Code §15.2-2303.2(A) states: “The governing body of any locality accepting cash payments voluntarily proffered on or after July 1, 2005, shall, within twelve (12) years of receiving full payment of all cash proffered pursuant to an approved rezoning application, begin, or cause to begin (i) construction, (ii) site work, (iii) engineering, (iv) right-of-way acquisition, (v) surveying, or (vi) utility relocation on the improvements for which the cash payments were proffered.”

The above requirements are further reinforced in the Code of Virginia under §15.2-2303.4 (effective January 9, 2019). Specifically, Section 15.2-2303.4(B) states that localities shall not require an unreasonable proffer or deny a rezoning application or proffer condition amendment due to applicant's failure or refusal to submit an unreasonable proffer.

The implementation of the proffer changes hinges on defining an unreasonable proffer, or more positively, defining a reasonable proffer. The figure below provides further detail on the approach to meet requirements of the law.

| REASONABLE PROFFERS | | | |
|----------------------|--|---|---|
| VA Code Section | VA Code Text | Interpretation | How to Meet the Requirement |
| 15.2-2303.4
(C) | <i>addresses an impact that is specifically attributable to a proposed new residential development or other new residential use applied for</i> | The demand from the residential land use creates a need for additional capacity in the infrastructure category for which the cash proffer is being requested or offered | Establish a nexus between types of residential development and specific impacts on infrastructure in locality. (E.g., student generation rates by type of housing unit.) |
| | <i>addresses an impact to an offsite public facility</i> | The need for the capital improvement must be for a system-level facility, provided to a larger geographic area than the project site | Use system-level infrastructure to establish current levels of service in cash proffer calculations. |
| | <i>the new residential development or new residential use creates a need, or an identifiable portion of a need, for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning or proffer condition amendment</i> | The impact from the residential development causes a need for additional capacity above what is available to the applicant. The additional capacity can be for a single facility or a portion of a facility improvement. Available capacity is determined by analyzing the current and projected levels of service provided in specific categories of infrastructure in the locality. | Define current levels of service / available capacities in cash proffer analysis and identify when capacities are reached.
Identify incremental impact on facilities from residential development in cash proffer analysis. |
| | <i>each such new residential development or new residential use applied for receives a direct and material benefit from a proffer made with respect to any such public facility improvements.</i> | Entity/applicant paying the cash proffer receives a benefit in the form of a facility or portion of a facility being built or purchased. | Localities use cash proffer funding to build or purchase additional capacity in the infrastructure categories for which a cash proffer is collected. Separate funds established.
Collection and expenditure areas may be necessary to ensure “direct” benefit. |
| Source: TischlerBise | | | |

Cash Proffer Implementation and Administration Considerations

While cash proffers are voluntary contributions, there are procedures that must be followed per Virginia law and to ensure payers receive benefit from the proffer.

Accounting

Monies received are placed in a separate fund and accounted for separately and expenditures should be indicated in the capital improvement plan. Within twelve (12) years of receiving full payment of committed cash proffers, a locality must begin construction or relevant improvement for which the proffer was made. Localities that do not begin construction or other authorized alternative improvement must pay the amount to the Commonwealth Transportation Board for allocation to the secondary system construction program or the urban system construction program for the locality in which the proffered cash payments were collected (VA § 15.2-2303.2).

Cost Updates

All costs in the cash proffer calculations are given in current dollars with no assumed inflation over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of the cash proffer using consumer price index (CPI) or Marshall and Swift Building Cost Index. TischlerBise recommends using the Marshall Swift, which is specific to construction and accounts for geographic differences. The index can be applied against the calculated cash proffers. If cost estimates or other factors change significantly, calculations should be revisited. As cash proffer calculations are based on a snapshot in time, an adopted Cash Proffer policy should be periodically reviewed and updated. A full update is recommended no later than 5 years to reflect changes in development trends, infrastructure capacities, costs, funding formulas, etc.

Credits and Reimbursements

Future Revenue Credits

Credits for outstanding and future debt payments have been calculated and integrated into the cash proffer calculations where applicable in this study. A credit is not necessary for interest payments because interest costs are not included in the proffer amounts.

Site-Specific Credits

A site-specific credit could be provided to a developer (or applicant) for contributions of system improvements that have been included in the cash proffer calculations. If a developer constructs the type of system improvements included in the calculations, there could be a possible reduction in the cash proffer for the relevant portion.

Written Policies

Written policies and implementation practices should be established to cover the items identified in this section to provide consistency in the process.

APPENDIX C: SERVICE AREA MAPS

Figure 96. General Service Areas

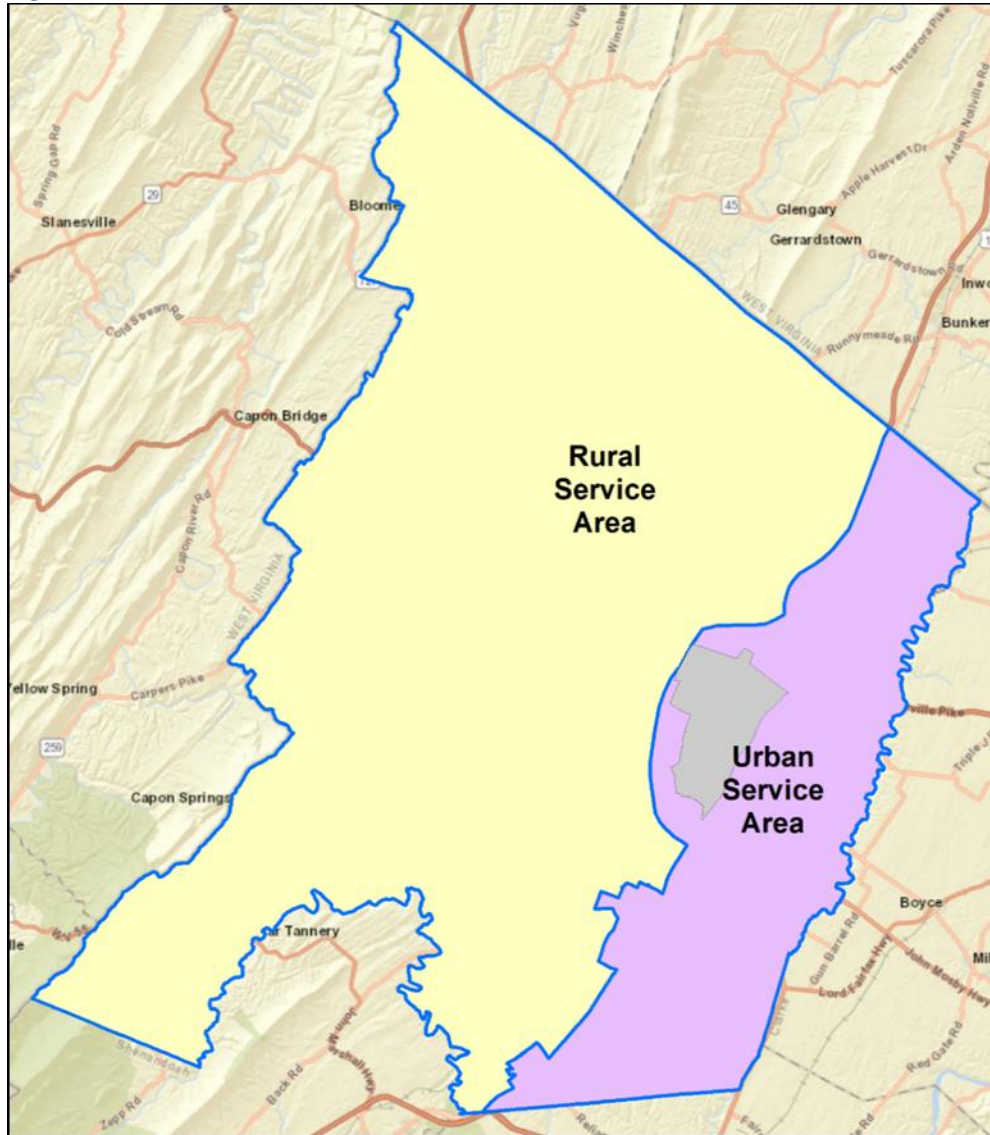


Figure 97. Elementary School Service Areas

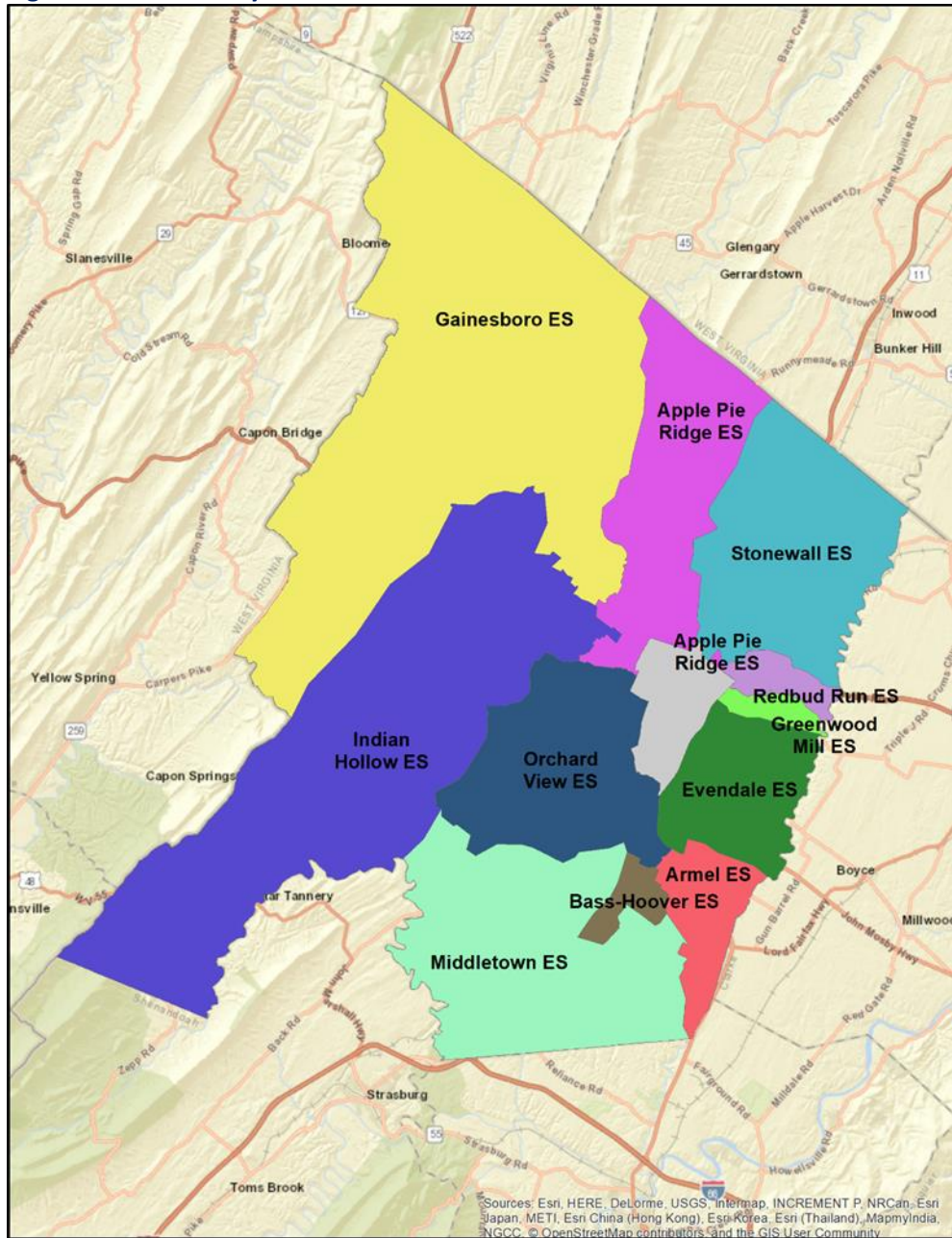


Figure 98. Middle School Service Areas

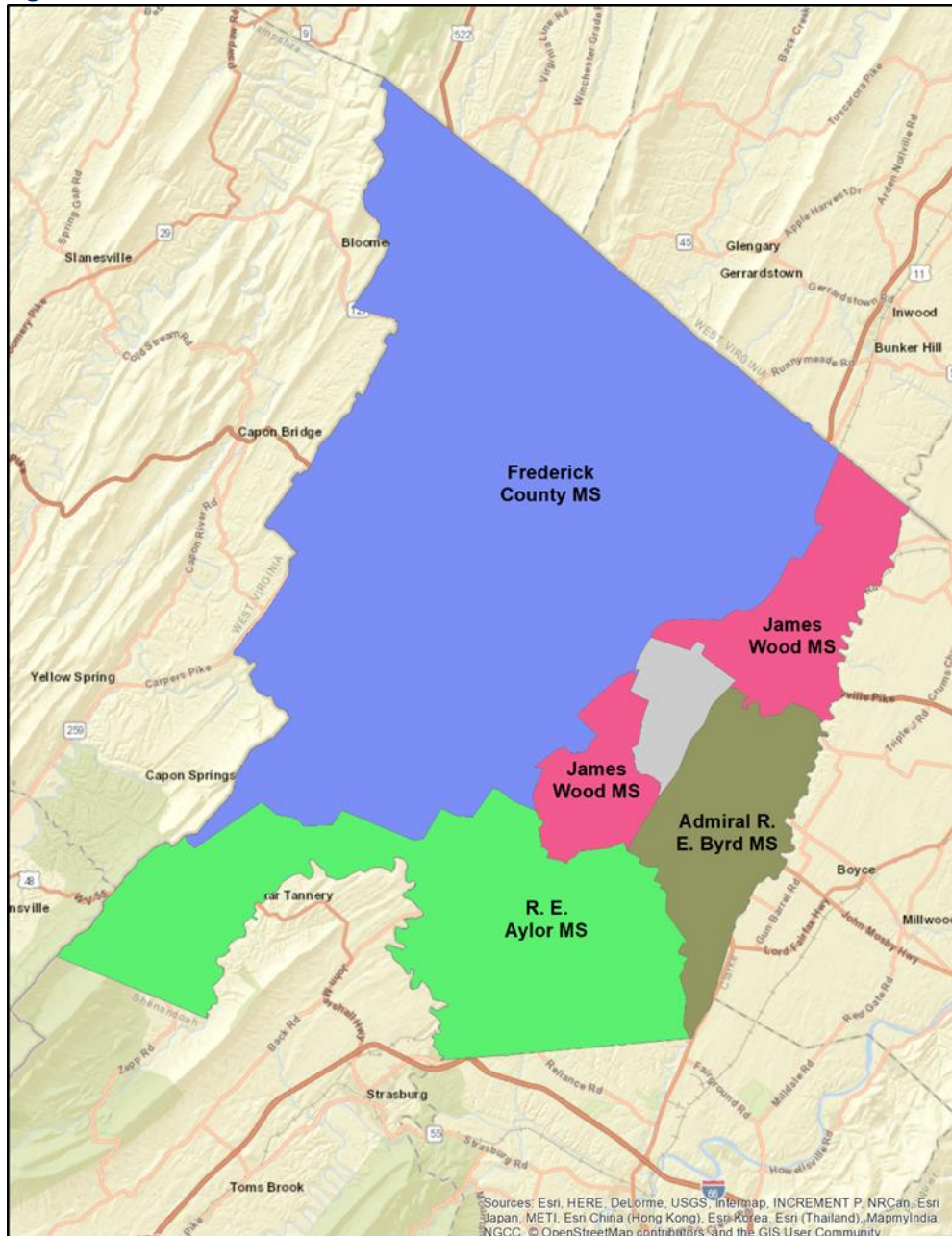


Figure 99. High School Service Areas

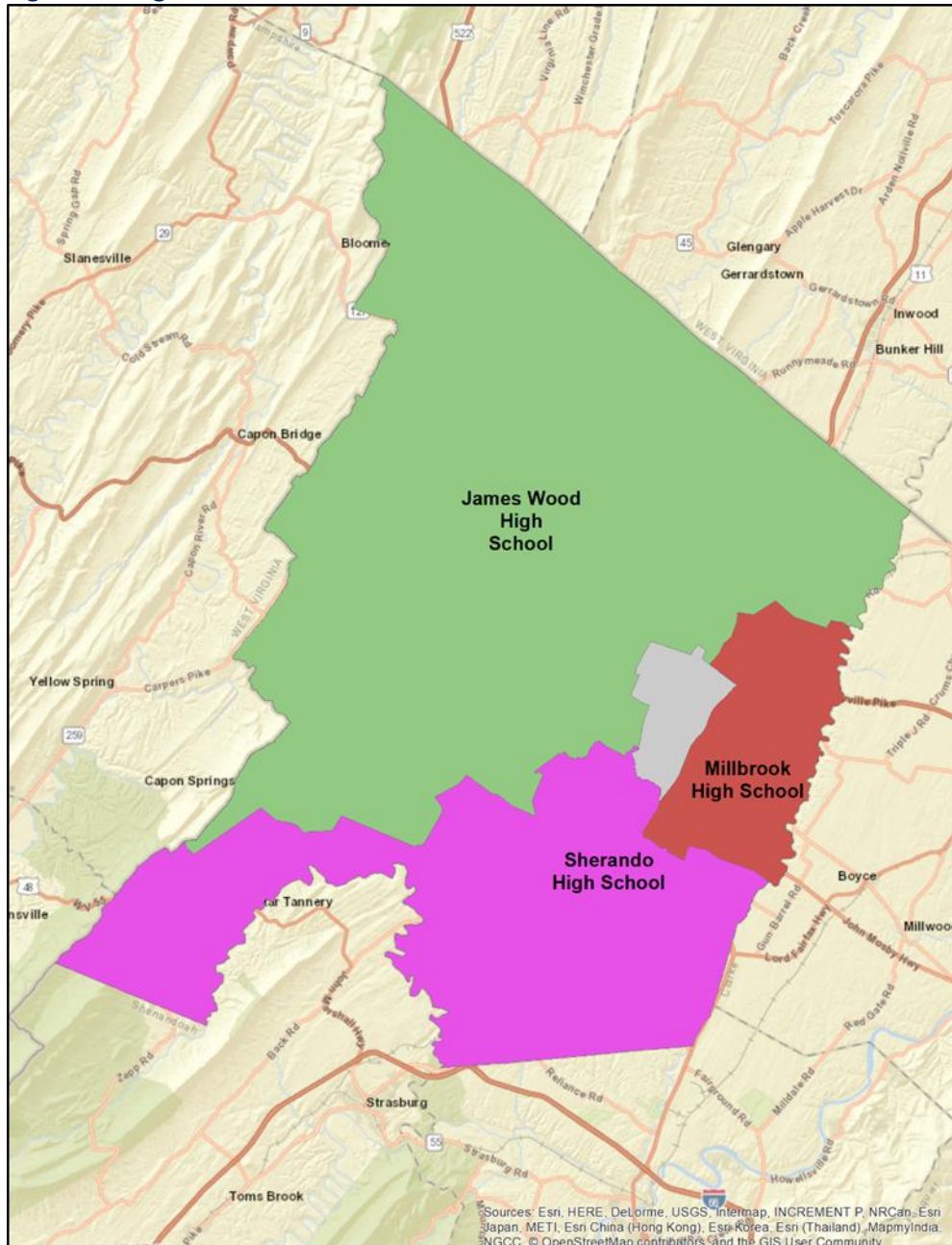
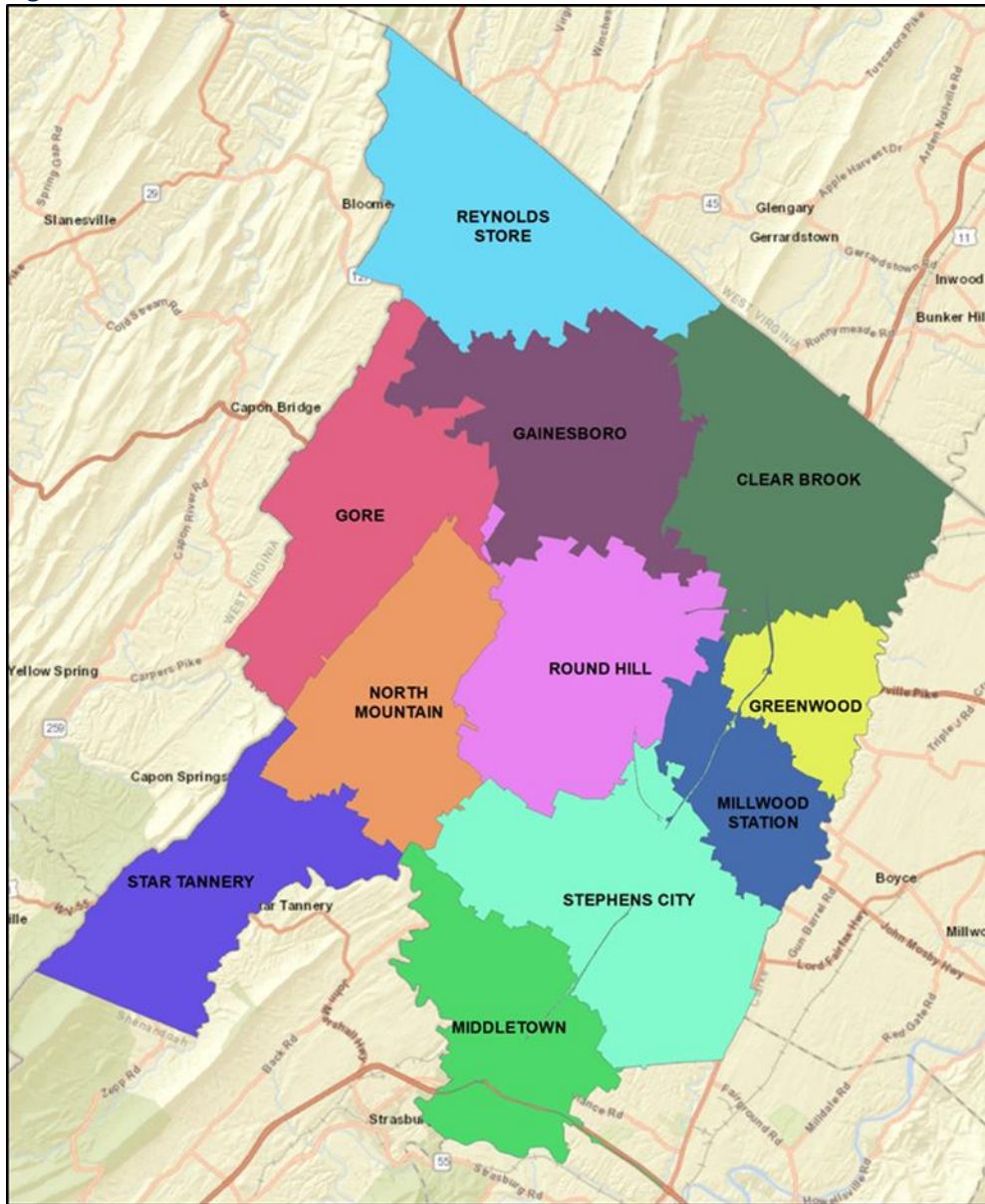


Figure 100. Fire Service Areas



K



**APPLICATION FOR OUTDOOR FESTIVAL PERMIT
COUNTY OF FREDERICK, VIRGINIA**

(Please Print Clearly)

| APPLICANT INFORMATION | | | | |
|---|--|---|--|---|
| Name of Applicant: <u>TYLER WAKEMAN</u> | | | | |
| Telephone Number(s): <u>540-686-2038</u> <input type="checkbox"/> home <input type="checkbox"/> office <input checked="" type="checkbox"/> cell _____ <input type="checkbox"/> home <input type="checkbox"/> office <input type="checkbox"/> cell | | | | |
| Address: <u>7328 VALLEY PIKE, MIDDLETOWN, VA 22645</u> | | | | |
| Contact Email: <u>PEAKLEAFMUSIC@GMAIL.COM</u> | | | | |
| FESTIVAL EVENT ORGANIZATIONAL INFORMATION | | | | |
| Festival Event | Name of Festival: <u>PEAK LEAF MUSIC & BREWERS FESTIVAL</u> | | | |
| Cost of Admission to Festival: <u>\$35-\$45</u> | | Business License Obtained: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| Date(s) | Start Time | End Time | Maximum No. of Tickets Offered For Sale Per Day | Estimated No. of Attendees Per Day |
| October 19th, 2019 | 12:00 pm | 8:00 pm | 500 | 500 |
| | | | | |
| | | | | |
| Location | Address: <u>CORNER OF VALLEY PIKE & ST. ROUTE 634, MIDDLETOWN, VA 22645</u> | | | |
| Owner of Property | Name(s): <u>WAKELAND MANOR, INC.</u>
Address: <u>300 CRAIG DR, STEPHENS CITY, VA 22655</u>
<small>(*NOTE: Applicant may be required to provide a statement or other documentation indicating consent by the owner(s) for use of the property and related parking for the festival.)</small> | | | |
| Promoter | Name(s): <u>TYLER WAKEMAN</u>
Address: <u>7328 VALLEY PIKE, MIDDLETOWN, VA 22645</u>
<small>(*NOTE: For festivals other than not-for-profit, promoter may need to check with the Frederick County Commissioner of Revenue to determine compliance with County business license requirements; in addition, promoters who have repeat or ongoing business in Virginia may be required to register with the VA State Corporation Commission for legal authority to conduct business in Virginia.)</small> | | | |
| Financial Backer | Name(s): <u>TYLER WAKEMAN</u>
Address: <u>7328 VALLEY PIKE, MIDDLETOWN, VA 22645</u> | | | |
| Performer | Name of Person(s) or Group(s): <u>FOLK SOUL REVIVAL, 3-4 MORE TBD.</u>

<small>(*NOTE: Applicant may need to update information as performers are booked for festival event.)</small> | | | |

FESTIVAL EVENT LOGISTICS INFORMATION AND DOCUMENTATION

1. Attach a copy of the printed ticket or badge of admission to the festival, containing the date(s) and time(s) of such festival (may be marked as "sample"). ☐ copy attached OR ☒ copy to be provided as soon as available
2. Provide a plan for adequate sanitation facilities as well as garbage, trash, and sewage disposal for persons at the festival. This plan must meet the requirements of all state and local statutes, ordinances, and regulations, and must be approved by the VA Department of Health (Lord Fairfax Health District).
Numerous trash receptacles with attendant monitoring. Eight (8) portable toilets, one (1) wheel chair accessible portable toilet, and 2 hand washing sinks. Food trucks to work under their own permits with Virginia Department of Health.
3. Provide a plan for providing food, water, and lodging for the persons at the festival. This plan must meet the requirements of all state and local statutes, ordinances, and regulations, and must be approved by the VA Department of Health (Lord Fairfax Health District).
Food - 2-3 food trucks. Water is for sale at non alcoholic/merchandise tent.
4. Provide a plan for adequate medical facilities for persons at the festival. This plan must meet the requirements of all state and local statutes, ordinances, and regulations, and must be approved by the County Fire Chief or Fire Marshal and the local fire and rescue company.
Frederick County Fire & Rescue, as well as Middletown Fire Station, will be contacted in advance for fire and rescue purposes. First Aid tent staffed by licensed EMT.
5. Provide a plan for adequate fire protection. This plan must meet the requirements of all state and local statutes, ordinances, and regulations, and must be approved by the County Fire Chief or Fire Marshal and the local fire and rescue company.
Frederick County Fire & Rescue, as well as Middletown Fire Station will be contacted in advance for fire and rescue purposes. Fire extinguishers will be available at food trucks, first aid tent, and stage.
6. Provide a plan for adequate parking facilities and traffic control in and around the festival area. (A diagram may be submitted.)
Enter festival grounds from Cougill Rd (Rt. 634). Parking on site. If traffic backs up on Rt. 11, vehicles can use southbound shoulder and northbound center lane. Officer to direct traffic is needed.
7. State whether any outdoor lights or lighting will be utilized: ☒ YES ☐ NO
If yes, provide a plan or submit a diagram showing the location of such lights and the proximity relative to the property boundaries and neighboring properties. In addition, show the location of shielding devices or other equipment to be used to prevent unreasonable glow beyond the property on which the festival is located.
Lights will be hung on stage projecting back and down towards the artists until 7:00 PM. Stage lighting will be left on until everyone leaves by 8:00 PM. Vendors will provide own lighting for their own tents.
8. State whether alcoholic beverages will be served: ☒ YES ☐ NO
If yes, provide details on how it will be controlled.
Obtain a banquet special events permit from VA ABC. 20-30 breweries will set up tents and pour 5 oz. samples for patrons from 12:00 PM to 3:00 PM for free. Beer will be available for purchase by same breweries from 3:00 PM to 7:00 PM

(NOTE: Evidence of any applicable VA ABC permit must also be provided and posted at the festival as required. Applicant may need to confirm with the VA ABC that a license is not required from that agency in order for festival attendees to bring their own alcoholic beverages to any event that is open to the general public upon payment of the applicable admission fee.)

FESTIVAL PROVISIONS

Applicant makes the following statements:

- A. Music shall not be rendered nor entertainment provided for more than eight (8) hours in any twenty-four (24) hour period, such twenty-four (24) hour period to be measured from the beginning of the first performance at the festival.
- B. Music shall not be played, either by mechanical device or live performance, in such a manner that the sound emanating therefrom exceeds 73 decibels at the property on which the festival is located.
- C. No person under the age of eighteen (18) years of age shall be admitted to any festival unless accompanied by a parent or guardian, the parent or guardian to remain with such person at all times. (NOTE: It may be necessary to post signs to this effect.)
- D. The Board, its lawful agents, and/or duly constituted law enforcement officers shall have permission to go upon the property where the festival is being held at any time for the purpose of determining compliance with the provisions of the County ordinance.

CERTIFICATION

I, the undersigned Applicant, hereby certify that all information, statements, and documents provided in connection with this Application are true and correct to the best of my knowledge. In addition, Applicant agrees that the festival event and its attendees shall comply with the provisions of the Frederick County ordinance pertaining to festivals as well as the festival provisions contained herein.



Signature of Applicant

TYLER H. WAKEMAN

Printed Name of Applicant

Date: 4/25/2019

**THE BOARD SHALL HAVE THE RIGHT TO REVOKE ANY PERMIT ISSUED UNDER THIS ORDINANCE
UPON NON-COMPLIANCE WITH ANY OF ITS PROVISIONS AND CONDITIONS.**

L



COUNTY of FREDERICK

Jay E. Tibbs

Deputy County Administrator

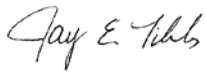
540/665-5666

Fax 540/667-0370

E-mail:

jtibbs@fcva.us

MEMORANDUM

| | |
|-----------------|--|
| TO: | Board of Supervisors |
| FROM: | Jay E. Tibbs, Deputy County Administrator  |
| SUBJECT: | Renewal of Cable Franchise Agreement with Comcast |
| DATE: | June 6, 2019 |

Comcast of California/Maryland/Pennsylvania/Virginia/West Virginia, LLC ("Comcast") has an existing non-exclusive cable franchise within the County, which was granted by the Board for a ten-year period in 2009. This franchise and its governing agreement were set to expire on April 1, 2019; however, the Board of Supervisors at its March 13, 2019 meeting granted a short-term extension to the existing agreement until June 30, 2019.

Staff has negotiated the renewal terms for the proposed agreement that would grant Comcast a nonexclusive franchise to provide cable television service within Frederick County for a period of 10 years. Some of the terms of the proposed renewal include:

- Decreased density requirement from the current density of 30 homes per linear mile to 25 homes per linear mile. In addition, Comcast has agreed to conduct a feasibility study of an area with at least 20 homes per square mile.
- There is a new provision for homes that do not meet the density requirement necessary to get service. Those homeowners would have to pay for the running of cable beyond 275 feet from the line. This provision did not exist in our previous franchise agreement.
- High Definition (HD) output for County channels following a three-year waiting period.
- County channels will remain in the basic service tier
- Consideration for relocation of Frederick County Government's and Frederick County Schools' current cable drop, should we or the schools relocate our facility during the franchise term. Frederick County would pay the costs for any cable run to a relocated facility located over 200 feet from the main line.

In exchange for the above, the only material concession made is giving up the existing Fire and Rescue training channel.

Other changes include:

- Updates to reflect changes in the law since the franchise agreement's last renewal.
- Caps were established for liquidated damages (This change does not limit Frederick County's right to move to revoke the franchise agreement should Comcast start approaching those damage caps or otherwise breach its obligations under the agreement).

A copy of the renewal agreement is attached for your review.

Following the public hearing, staff is seeking Board approval of the renewal of the cable franchise agreement with Comcast.

Attachments

CABLE FRANCHISE AGREEMENT

BETWEEN

FREDERICK COUNTY, VIRGINIA

AND

COMCAST OF CALIFORNIA/MARYLAND/PENNSYLVANIA/VIRGINIA/WEST
VIRGINIA, LLC

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FRANCHISE AGREEMENT

THIS AGREEMENT is entered into by and between Frederick County, Virginia (the "County"), and Comcast of California/Maryland/Pennsylvania/Virginia/West Virginia, LLC (hereinafter referred to as the "Franchisee").

WHEREAS, Franchisee currently holds a cable franchise from the County;

WHEREAS, Franchisee has requested that the County renew the franchise;

WHEREAS, the County is a "franchising authority" in accordance with Title VI of the Communications Act (*see* 47 U.S.C. §522(10)) and is authorized to grant one or more nonexclusive cable franchises pursuant to the Code of Virginia, Va. Code Ann. § 15.2- 2108.20(A) and the Cable Television Chapter of the Frederick County Code ("Cable Ordinance");

WHEREAS, the County has identified the future cable-related needs and interests of the County and its citizens;

WHEREAS, the County has found Franchisee to be financially, technically and legally qualified to operate the Cable System;

WHEREAS, the County has determined that in accordance with the provisions of the Cable Ordinance and applicable law the grant of a nonexclusive renewal franchise to Franchisee is consistent with the public interest; and,

NOW, THEREFORE, in consideration of the faithful performance and strict observance by the Franchisee of all the terms, provisions, conditions, obligations and reservations hereinafter set forth or provided for herein, and in consideration of the grant to the Franchisee by the County of a cable franchise, it is hereby agreed between the parties hereto as follows:

SECTION 1 – Grant and Acceptance of Franchise

1.1 The County hereby grants to the Franchisee a non-exclusive franchise to erect, install, construct, reconstruct, replace, relocate, modify, repair, maintain, operate in or upon, under, above, across and from the streets, avenues, highways, sidewalks, bridges, and other public ways, easements, and rights-of-way, including, but not limited to, public utility easements, dedicated utility strips, or easements dedicated for compatible uses and any temporary or permanent fixtures or improvements located thereon as now existing and all extensions thereof, and additions thereto, in and belonging to the County (the "Public Rights-of-Way"), all poles, wires, cable, cables, transformers, amplifiers, underground conduits, manholes and other television and/or radio conductors and fixtures for the purpose of the ownership, maintenance and operation

in the County of a Cable System for the provision of Cable Service all in strict accordance with the laws, ordinances and regulations of the United States of America, the Commonwealth of Virginia, and the generally applicable laws ordinances and regulations of the County, as now existing or hereafter adopted or amended. Public Rights-of-Way shall also mean any easement now or hereafter held by the County within the Franchise Area for the purpose of public travel, or for utility or public service use dedicated for compatible uses, and shall include other easements or rights-of-way as shall within their proper use and meaning entitle the Franchisee to the use thereof for the purposes of installing, operating, and maintaining the Franchisee's Cable System.

1.2 The Franchisee hereby accepts the franchise and warrants and represents that it has examined all of the provisions of this Franchise Agreement, and it accepts and agrees to all the provisions contained therein.

1.3 Nothing in this Franchise Agreement shall be construed to prohibit the County from exercising its police powers in accordance with applicable law. If the County's lawful exercise of its police powers materially alters the rights, benefits, obligations, or duties of this Franchise Agreement, the Franchisee and the County shall negotiate in good faith to modify this Franchise Agreement to the mutual satisfaction of both parties to minimize the negative effects on the Franchisee of the material alteration.

SECTION 2 - Definitions

Terms not defined herein shall have the meanings ascribed to them in the Code of Virginia, Article 1.2, §15.2-2108.19 et. seq. and the Cable Communications Policy Act of 1984, as amended from time to time, 47 U.S.C. §§521 - 631 (the "Cable Act"), and Chapter 61 of the Frederick County Code. The following words and phrases shall have the meanings ascribed to them as follows:

2.1 "Access Channel" shall mean a channel which Franchisee shall make available to the County without charge for noncommercial educational or governmental use for the transmission of Video Programming.

2.2 "Basic Service" shall mean the service tier that includes the retransmission of local television broadcast signals as well as the Access Channels required by this Franchise.

2.3 "Cable Service" shall be defined herein as it is defined under 47 U.S.C. § 522(6).

2.4 "Cable System" shall be defined herein as it is defined under 47 U.S.C. § 522(7).

2.5 "Educational Access Channel" shall mean an Access Channel available for educational use as provided herein.

2.6 “Effective Date” shall mean July 1, 2019.

2.7 “Federal Communications Commission” or “FCC” shall mean the present federal agency of that name as constituted by the Communications Act of 1934, or any successor agency created by the United States Congress.

2.8 “Franchise Area” shall mean the unincorporated portions of the County.

2.9 “FCPS” shall mean the Frederick County Public Schools.

2.10 “Government Access Channel” shall mean an Access Channel available for governmental use as provided herein.

2.11 “Gross Revenue” shall mean all revenue, as determined in accordance with generally accepted accounting principles, that is actually received by the Franchisee and derived from the operation of the Cable System to provide Cable Services in the Franchise Area; however, "gross revenue" shall not include: (i) refunds or rebates made to Subscribers or other third parties; (ii) any revenue which is received from the sale of merchandise over home shopping channels carried on the Cable System, but not including revenue received from home shopping channels for the use of the Cable Service to sell merchandise; (iii) any tax, fee, or charge collected by the Franchisee and remitted to a governmental entity or its agent or designee, including without limitation a local public access or education group; (iv) program launch fees; (v) directory or Internet advertising revenue including, but not limited to, yellow page, white page, banner advertisement, and electronic publishing; (vi) a sale of Cable Service for resale or for use as a component part of or for the integration into Cable Services to be resold in the ordinary course of business, when the reseller is required to pay or collect franchise fees or similar fees on the resale of the Cable Service; (vii) revenues received by any affiliate or any other person in exchange for supplying goods or services used by the Franchisee to provide Cable Service; and (viii) revenue derived from services classified as non-cable services under federal law, including, without limitation, revenue derived from telecommunications services and information services, and any other revenues attributed by the Franchisee to non-cable services in accordance with rules, regulations, standards, or orders of the Federal Communications Commission.

2.12 “School Board” shall mean the County School Board of Frederick County Virginia.

2.13 “Subscriber” shall mean a person or user of the Cable System who lawfully receives Cable Service therefrom with the Franchisee’s express permission.

2.14 “Video Programming” shall be defined herein as it is defined under 47 U.S.C. § 522(20).

SECTION 3 – Rights Reserved by the County

3.1 This franchise is granted subject to the right of the County:

3.1.1 In accordance with the terms herein, to revoke the franchise for failure to comply with the material provisions of this Agreement or any other generally applicable local, state, or federal laws or regulations, as reasonably determined by the County.

3.1.2 In accordance with the terms herein, to require proper and adequate extensions of plant and Service and maintenance thereof at a level meeting the technical performance requirements in Section 7 herein.

3.1.3 To prevent unjust discrimination or preferential practices in service or rates, provided, however, that nothing contained herein shall prohibit the Franchisee from offering bulk discounts, promotional discounts, package discounts, or other such pricing strategies as part of its customary business practice, provided that the same are not discriminatory in letter or practice.

3.1.4 To require reasonable, continuous, and uninterrupted service to Subscribers throughout the entire period of the franchise.

3.1.5 To control and regulate the use of its streets, alleys, bridges, rights-of way, and public places and the space above and beneath them.

3.1.6 Through its appropriately designated representatives, to inspect all construction or installation work performed pursuant to the provisions of this Franchise Agreement and make such inspections as it shall find necessary to ensure compliance with the terms of this Agreement and pertinent provisions of law.

3.1.7 To levy upon the Franchisee all taxes and fees otherwise applicable to business organizations within the geographical area encompassed by the Franchisee's operations within the Franchise Area.

3.2 This Franchise Agreement and the right it grants to use and occupy the Public Rights-of-Way to operate a Cable System shall not be exclusive, and the County reserves the right to grant other franchises for similar uses or for other uses of the public rights-of-way, or any portions thereof to any person, or to make any such use themselves, at any time during the term of this Franchise Agreement. This Franchise Agreement does not prohibit or grant any authority to use the Public Rights-of-Way for any purpose other than the operation of a Cable System, and the County reserves all of its rights with respect to any other uses of the Cable System or the Public Rights-of-Way.

3.2.1 If the County grants a competitive franchise, or other authorization to provide similar wired video services, which, in the reasonable opinion of the

Franchisee, contains more favorable or less burdensome terms or conditions than this Franchise Agreement, the Franchisee may notify the County that it wishes to renegotiate certain specified provisions of the Franchise Agreement. Within thirty (30) days after the Franchisee provides such notice, both parties must begin to negotiate in good faith, and either party to this Franchise Agreement may request changes to amend this Agreement so that neither the Franchisee's Franchise Agreement nor the authorization of the competitor contains terms that are more favorable or less burdensome than the other. For purposes of this section, the franchises must be viewed as a whole, not on a provision-by-provision basis, and must be compared with due regard for the circumstances existing at the time each was granted. This provision shall only apply to the extent the competitor is utilizing the public rights-of-way to provide video services and the County has the authority to regulate the provision of those video services.

3.2.2 In the event an application to provide wired video services, is filed with the County proposing to serve the Franchise Area, in whole or in part, the County shall serve or require to be served a copy of such application upon any existing Franchisee or incumbent cable operator by registered or certified mail or via nationally recognized overnight courier service.

3.2.3 In the event that an operator, providing video services, serves residents of the County under a franchise, or other authorization to provide similar wired video services, issued by the state or federal government that is unavailable to the Franchisee, the Franchisee shall have a right to request Franchise amendments that relieve the Franchisee of regulatory burdens that create a competitive disadvantage to the Franchisee. In requesting amendments, the Franchisee shall file a petition seeking to amend the Franchise. Such petition shall: (1) indicate the presence of a non-franchised competitor or one that has a state or federal franchise; (2) identify the basis for Franchisee's belief that certain provisions of the Franchise place Franchisee at a competitive disadvantage; and (3) identify the regulatory burdens to be amended or repealed in order to eliminate the competitive disadvantage. The Board of Supervisors shall hold a public hearing to evaluate the petition and hear the views of interested parties. The County shall not unreasonably withhold consent to the Franchisee's petition.

SECTION 4 - Term

The term of this franchise shall be ten (10) years from the Effective Date, unless sooner terminated or renewed in accordance with the terms of this Franchise Agreement. Any renewal of this Franchise shall be governed by and comply with the provisions of Title 15.2, Chapter 21, Article 1.2 of the Code of Virginia and Section 626 of the Cable Act [47 U.S.C. §546], as amended.

SECTION 5 – Territorial Extent of Franchise

The Franchisee is authorized to operate a Cable System throughout the entire Franchise Area, and shall construct, maintain and operate its system throughout such Franchise Area, in accordance with the terms of this Franchise Agreement.

SECTION 6 – Public, Educational, and Government Services

6.1 Access Channels:

6.1.1 In order to ensure universal availability of public, educational and government programming ("PEG"), Franchisee shall continue to provide two (2) Access Channels on the Basic Service tier, or as required by applicable law, to be used for PEG access video programming provided by the County or its designee. The Access Channels shall be designated as follows: one (1) dedicated Government Access Channel carrying programming related to the government of Frederick County, and one (1) Educational Access Channel dedicated to the FCPS. The County may request an additional Access Channel at its discretion, and Franchisee shall make such an additional channel available upon one-hundred twenty (120) days' written notice, provided that the additional Access Channel shall only be made available if each existing Access Channels meets the following standard: at least eight (8) hours a day over a consecutive sixteen (16) week period has been programmed with original, non-duplicative, non-character generated, non-alphanumeric, locally-produced PEG Access programming Monday through Friday. The County must provide Franchisee with written, detailed documentation evidencing the usage meets the threshold requirement for each channel. Each Access Channel shall consist of the system capacity required to provide the transmission of a video signal, with accompanying audio, that is capable of producing sound and picture of NTSC quality or better based on the standard compression technology then in use in the System.

6.1.2 The Franchisee shall also transmit to subscribers in the County all PEG access channels made available to residents of the City of Winchester, for as long as the City and the County are served from the same headend.

6.1.3 Following the third anniversary of the Effective Date of this Franchise, upon one hundred twenty (120) days written request by the County, Franchisee shall distribute the Government Access Channel in High-Definition (HD) format within the Franchise Area. The HD channel shall be a rebroadcast of the current Standard-Definition Government Access Channel. The County acknowledges that HD Access Channels may require Subscribers to buy or lease special equipment, available to all Subscribers, and subscribe to those tiers of Cable Service upon which HD channels are made available. Franchisee is not required to provide free HD equipment to Subscribers or the County.

6.1.4 The Franchisee shall continue to provide, at its sole expense, (1) a fiber optic link from the County Administration Building, located at 107 North Kent Street, Winchester, Virginia 22601, to the Franchisee's head-end; and (2) a fiber optic link from the School Administration Building, located at 1415 Amherst Street, Winchester, Virginia 22601, to the head-end. Both links shall include all electronic and other equipment needed to transmit signals from the respective origination sites to the headend, to be provided by Franchisee at its sole expense. Upon receipt of such signals at the headend, Franchisee shall transmit the signals to subscribers in the County over the respective Access Channels.

6.1.4.1 Within one hundred eighty (180) days of a written request by the County, Franchisee shall relocate each fiber link one (1) time during the term of this agreement as follows: (i) the new location must be located within two hundred (200) feet of Franchisee's main distribution line; and, (ii) The County shall provide access to such new PEG origination site at least ninety (90) days prior to the anticipated use of the PEG origination site. The timeline for relocation of any fiber link shall be subject to the timely granting of any and all required permits, walk-out, make ready, and the detection of all underground utilities. Franchisee shall be responsible for the costs associated with the first two hundred (200) feet of cable related to a relocation of any fiber link hereunder. The County shall be responsible for any remaining costs and payment shall be made in advance to Franchisee subject to Franchisee providing the County with a detailed estimate of such costs.

6.1.5 Franchisee recognizes that the availability of all of the Access Channels to residents of the County is an important public policy goal of the County. The County recognizes that the burden of obtaining access to PEG programming should be equitably shared among competing providers. Franchisee recognizes that in the event that a competing cable operator obtains a franchise from the County, the County anticipates that any such franchise will require the competing cable operator to make the programming transmitted on the Access Channels available to its subscribers, and that such competing cable operator should obtain the programming from its source as does Franchisee. Direct interconnection between the Franchisee and any competitor shall not be required by this Franchise. Franchisee agrees to cooperate in good faith with the County in making the Access Channels available to such a competitor in a manner that does not interfere with Franchisee's Cable System, which may include the evaluation and implementation of multiple connections at PEG programming origination points. Franchisee also agrees that it will not interfere in any way with the County's efforts to make the PEG programming available to any such competitor.

6.1.6 The Access Channels shall be carried on the Basic Service tier in a format that is technically equivalent to and provides the same technical capabilities as other similar channels carried on the Basic Service tier.

6.2 In support of the County's production of local PEG programming, Franchisee shall provide to the County PEG Capital funding in the amount of fifty cents (\$0.50) per subscriber per month ("Recurring PEG Capital Grant"). The Recurring PEG Capital Grant shall be used by the County for PEG access equipment, including, but not limited to, studio and portable production equipment, editing equipment and program playback equipment, or for renovation or construction of PEG access facilities. The Recurring PEG Capital Grant, along with a brief summary of the subscriber information upon which it is based, shall be delivered to the County no later than forty-five (45) days after the end of each calendar quarter throughout the Franchise Term.

SECTION 7 – Technical Performance Test Standards and Signal Quality

7.1 Franchisee's Cable System shall meet or exceed the following requirements:

7.1.1 The Cable System shall be designed to be an active two-way plant for subscriber interaction, if any, required for selection or use of Cable Service. The Cable System shall be capable of supporting premium services including High Definition content.

7.1.2 The Cable System shall be operated in a manner such that it is in compliance with FCC standards and requirements with respect to interference. The Cable System shall be operated in such a manner as to minimize interference with the reception of off-the-air signals by a subscriber. The Franchisee shall insure that signals carried by the Cable System, or originating outside the Cable System wires, cable, fibers, electronics and facilities, do not ingress or egress into or out of the Cable System in excess of FCC standards. In particular, the Franchisee shall not operate the Cable System in such a manner as to pose unwarranted interference with emergency radio services, aeronautical navigational frequencies or any airborne navigational reception in normal flight patterns, or any other type of wireless communications, pursuant to FCC regulations.

7.2 The Franchisee shall design its Cable System so that it may be interconnected with other cable systems and open video systems in the Franchise Area. Interconnection of systems may be made by direct cable connection, microwave link, satellite, or other appropriate methods.

7.3 The Franchisee shall provide standby power generating capacity at the headend and at all hubs. The Franchisee shall maintain standby power capable of at least twenty-four (24) hours duration at the headend and all hubs. Franchisee shall install automatic response systems to alert the Franchisee when commercial power is interrupted. The headend generator shall be tested as necessary to assure operational reliability. The power supplies serving the distribution plant shall be capable of providing

power to the Cable System for not less than two (2) hours according to manufacturer specifications in the event of an electrical outage.

7.4 Franchisee shall comply with the Emergency Alert System requirements of the FCC in order that emergency messages may be distributed over the System.

7.5 The Cable System shall meet or exceed the applicable technical standards set forth in Title 47, Part 76, Subpart K of the Code of Federal Regulations, 47 C.F.R. §§ 76.601 *et seq* and shall comply with all current applicable codes including the National Electrical Safety Code, the National Electrical Code, and any other applicable federal laws and regulations.

SECTION 8 - Construction Schedule

8.1 Subject to §8.2herein and §61-9 of the Cable Ordinance, the Franchisee shall provide Cable Service to all residents and other persons requesting such service within the Franchise Area. The area served by the Franchisee as of the Effective Date is shown on Exhibit B. It shall be the right of all Subscribers to continue to receive Cable Service from Franchisee insofar as their financial and other obligations to Franchisee are honored. Franchisee reserves the right to deny or terminate service for theft of service, damage to equipment, abusive conduct directed towards Franchisee's employees or agents, or other good cause. The Franchisee shall act to the best of its ability so as to ensure that all Subscribers receive continuous, uninterrupted Cable Service. For the purposes of this subsection, "uninterrupted" does not include short term outages of the Cable System for repair, maintenance or testing.

8.2 The Franchisee shall extend the Cable System to all areas in the County having a density of twenty five (25) occupied homes per linear mile or greater measured in strand footage from the nearest point on the Cable System trunk or feeder line from which a usable cable signal can be obtained. If the County believes that an area of the County meets the density standard, the County may at any time inform the Franchisee and direct the Franchisee to verify whether the standard is met. Franchisee shall provide the County a written report within sixty (60) days of receipt of such a request, stating whether the density standard has been met and, if not, (i) the actual density of the area in question; and (ii) how the density was calculated. For purposes of this section, a home shall only be counted in the density calculation if such home is within two hundred seventy-five (275) feet of the public right of way. Should, through new construction, an area within the Franchise Area meet the density requirements, Franchisee shall provide Cable Service to such area within one (1) year after it confirms that the density requirements have been met following notice from the County that one (1) or more residents has requested Cable Service.

8.2.1 In the event that the owner of any home not meeting the density requirement herein agrees, in writing, to pay the excess cost of extending Cable Service to their home, then Franchisee shall provide Cable Service to such home,

provided that such homeowner's payment obligation shall only apply to the costs incurred in extending cable more than two hundred seventy-five (275) feet from the public right of way.

8.2.2 In addition, if the County believes that an area of the County meets a twenty (20) homes per mile or greater density standard, the County may inform the Franchisee and Franchisee shall complete a feasibility survey to determine whether it will complete such build. It will be at Franchisees sole determination as to whether to complete any such build.

8.3 The Franchisee agrees to use commercially reasonable efforts to inform itself of all newly-planned developments within the County and to work with developers to cooperate in pre-installation of facilities to support Cable Service. The County will endeavor to provide the Franchisee with notice of such newly-planned developments, and will include the Franchisee on its list of entities to be contacted regarding new development proposals.

SECTION 9 – Standards and Restrictions as to Construction and Installation

9.1 Prior to the erection or installation of any towers, poles, tower guys, tower anchors, underground conduits, manholes or fixtures for use in connection with the installation, construction, maintenance, or operation of the Cable System under this Franchise Agreement, the Franchisee shall first obtain all generally applicable permits, licenses, or other forms of approval or authorization from the County as required by its policies and Ordinances . Notwithstanding such approval, however, the County, or appropriate representatives thereof, shall have the right to inspect all construction of installation work performed under this Agreement and make such inspections as may be necessary to ensure compliance with the terms of the Agreement and other pertinent provisions of law. Notwithstanding the requirements herein, Franchisee shall not be required to obtain a permit for individual drop connections to subscribers, servicing or installing pedestals or other similar facilities, or other instances of routine maintenance or repair to its Cable System.

9.2 Any contractor proposed for installation, maintenance, or repair of the system or system equipment must be experienced in cable installation or in any other capacity for which retained, and must comply with applicable State laws and local ordinances.

9.3 The Franchisee's system and associated equipment erected by the Franchisee shall be located as to cause minimum interference with the proper use of streets, alleys, and other public ways and places, and to cause minimum interference with the rights and reasonable convenience of property owners who adjoin any of the said streets, alleys or other public ways and places. No pole or other fixtures placed in any public ways by the Franchisee shall be placed in such a manner as to interfere with the usual travel on such public way.

9.4 All cable system installation shall be underground in those areas of the County where public utilities providing both telephone and electric service are underground at the time of installation. In areas where either telephone or electric facilities are above ground at the time of installation, the Franchisee may install its system above ground, provided that at such time as such utility facilities are required to be placed underground by the County or are placed underground, the Franchisee shall likewise and at the same time reinstall its system underground without additional cost to the County or to the individual subscribers affected by such reinstallation. Franchisee shall be given reasonable notice and access to the public utilities' facilities at the time that such are placed underground and shall be entitled to reimbursement of its relocation costs from any public or private funds raised for the project and made available to other users of the Public Way. Nothing in this Agreement shall be construed to require the Franchisee to construct, operate, or maintain underground any ground-mounted appurtenances such as customer taps, line extenders, system passive devices, amplifiers, power supplies, pedestals, or other related equipment.

9.5 The desire of the subscriber as to the point of entry into the residence or other structure shall be observed wherever possible. Runs in building interiors shall be as unobtrusive as possible, consistent with normal installation practices of the Franchisee.

9.6 If in connection with the construction, operation, maintenance, or repair of the Cable System the Franchisee disturbs any pavement, sidewalk, driveway or other surfacing, Franchisee shall, at its own cost and expense and in a manner approved by the County, replace and restore all paving, sidewalk, driveway or surface of any street or alley disturbed to a condition reasonably comparable to the condition existing before said work was commenced.

9.7 If the County lawfully elects to alter or change the grade of any street, alley or other public way, Franchisee, upon reasonable notice by the County (which shall not be less than thirty (30) business days), shall remove, relay and relocate its poles, wires, cables, underground conduits, manholes and other fixtures, provided that the County shall reimburse Franchisee for removal or relocation of its facilities to the same extent that the County reimburses telephone, electric utilities, or other similarly situated entities under similar circumstances.

9.8 Franchisee shall, upon written request of any person holding a building moving permit issued by the County, temporarily raise or lower its wires to permit the moving of buildings. The expense of such temporary removal, raising or lowering of wires shall be paid by the person requesting the same, and the Franchisee shall have the authority to require such payment in advance. The franchisee shall be given not less than seven (7)) days' advance notice to arrange for such temporary wire changes.

9.9 Nothing contained herein shall be deemed to waive, amend or otherwise modify the currently existing standards established and in effect throughout the County as

to zoning requirements, permits, fees, or inspections which normally apply to construction activities within the County.

9.10 Franchisee will comply with all applicable Virginia Department of Transportation (VDOT) standards as to its installation and maintenance of equipment and facilities within the public rights-of-way.

SECTION 10 – Maintenance and Customer Service

The Franchisee shall:

10.1 Maintain all wires, conduits, cable and other real and personal property and facilities comprising the Cable System in good working order and condition.

10.2 At all times maintain reasonably accessible to the Franchise Area a force of agents or employees in sufficient numbers and of sufficient technical qualifications to safely, adequately and promptly repair any structural damages to system equipment which is located in, over, under, or upon public streets, ways, or places, and to immediately secure the public safety in the vicinity thereof, prior to, and during the making of said repairs.

10.3 Operate the Cable System continuously, with call center personnel available twenty-four (24) hours a day, seven days per week, through a publicly-listed telephone number, to receive requests for maintenance or repairs. Call center personnel shall be available during Normal Business Hours for all other requests or inquiries. "Normal Business Hours" means those hours during which most similar businesses in the community are open to serve customers, but must include some evening hours at least one night per week and/or some weekend hours.

10.4 Render efficient service, locate and repair malfunctions promptly, and begin working on service interruptions promptly and in no event later than twenty-four (24) hours after the interruption becomes known, seven days per week The Franchisee must begin actions to correct other service problems the next business day after notification of the service problem. Franchisee must maintain a toll-free telephone line, available twenty-four (24) hours a day, seven (7) days a week for Subscriber calls and complaints.

10.5 Furnish information, as subscribers are connected or reconnected to the Cable System, concerning the procedures for making inquiries or complaints. Such information shall include, at a minimum, the address, telephone number and hours of operation of the Franchisee, and the department where such inquiries and complaints are to be addressed.

10.6 Bill all subscribers in a consistent (absent promotional pricing as allowed under this agreement), non-discriminatory manner, regardless of subscriber's level of

service. In no case shall any subscriber be required to pay for services in excess of thirty (30) days prior to receipt of such service. No late fee shall be imposed for the first twenty (20) days from the date of the mailing of the bill.

10.7 Under Normal Operating Conditions and subject to notification and request by affected subscribers and to reasonable verification by Franchisee of a Cable Service outage, rebate a pro rata portion of the fee charged to any subscriber for each calendar month in which such subscriber has experienced more than 24 hours of Cable Service outage, with the rebate being based on the total hours of outage compared to the total number of hours available in the month to which such rebate applies.

SECTION 11 – Service to Schools and Municipal Buildings

11.1 Franchisee shall continue to provide, without charge, one (1) service drop and one (1) service outlet activated for Basic Service to each existing public building listed in Exhibit A currently receiving courtesy service, including, without limitation, each public school, each public library, each police, fire and rescue station, volunteer fire department, and every other location occupied or used by the County for governmental administrative purposes. The County may also, at its sole discretion, from time to time designate additional public building locations to receive one (1) service drop and one (1) service outlet activated for Basic Service, in which case Exhibit A shall be amended to include such locations, provided that at the time of such designation the designated location is located no more than two hundred fifty (250) feet from the nearest point on Franchisee's system from which a usable cable signal can be obtained. Franchisee shall extend service to such additional locations within one hundred twenty (120) days of receiving written notice from the County.

11.2 Franchisee shall provide each public school in the County, with the tier of cable service currently known as Digital Starter Service, or the comparable tier of digital cable service at no charge, provided that the School Board shall bear the cost of obtaining and installing cablecards or other end user equipment necessary for television sets in the schools to receive such programming. There shall be no limit on the number of outlets to be served at each school facility, provided that the School Board bears the cost and responsibility of installing, maintaining and repairing all outlets beyond the initial service outlet that Franchisee provides free of charge. Subject to Section 11.1, Franchisee shall extend its obligations under this provision to any school constructed during the term of this Franchise Agreement. Franchisee will extend service to such additional locations within one hundred twenty (120) days of receiving written notice from the County or School Board.

SECTION 12 – Franchise Fees

12.1 Franchisee shall comply with the provisions of Section 58.1-645 *et seq.* of the Code of Virginia, pertaining to the Virginia Communications Sales and Use Tax, as

amended (the "Communications Tax"), and Sections 12.2 through 12.6 of this Agreement shall not have any effect, for so long as the Communications Tax or a successor state or local tax that would constitute a franchise fee for purposes of 47 U.S.C. § 542, as amended, is imposed on the sale of cable services by the Franchisee to subscribers in the County.

12.2 In the event that the Communications Tax is repealed and no successor state or local tax is enacted that would constitute a franchise fee for purposes of 47 U.S.C. § 542, as amended, Franchisee shall pay to the County a Franchise fee of five percent (5%) of annual Gross Operating Revenues, beginning on the effective date of the repeal of such tax (the "Repeal Date"). Beginning on the Repeal Date, the terms of Section 12.2 through 12.6 of this Agreement shall take effect. In accordance with Title VI of the Communications Act, the twelve (12) month period applicable under the Franchise for the computation of the Franchise fee shall be a calendar year. Such payments shall be made no later than forty-five (45) days following the end of each calendar quarter. Should Franchisee submit an incorrect amount, Franchisee shall be allowed to add or subtract that amount in a subsequent quarter, but no later than ninety (90) days following the close of the calendar year for which such amounts were applicable; such correction shall be documented in the supporting information required under Section 12.3 below.

12.3 Each Franchise fee payment shall be accompanied by a brief report prepared by a representative of Franchisee showing the basis for the computation, and a breakdown by major revenue categories (such as Basic Service, premium service, etc.). The County shall have the right to reasonably request further supporting information for each Franchise fee payment.

12.4 The period of limitation for recovery of any Franchise fee payable hereunder shall be five (5) years from the date on which payment by Franchisee is due.

12.5 If Cable Services subject to the franchise fee required under this Section 12 are provided to subscribers in conjunction with other services, the franchise fee shall be applied to the retail price of the Cable Services, as reflected in the books and records of the Franchisee in accordance with generally accepted accounting principles and FCC or state public utility regulatory commission rules, regulations, standards or orders. Any discounts resulting from purchasing the services as a bundle shall be reasonably allocated among the respective services that constitute the bundled transaction. Equipment may be allocated at full retail price.

12.6 Audit:

12.6.1 The County, or such Person or Persons designated by the County, shall have the right to inspect and copy records and the right to audit and to recompute any amounts determined to be payable under this Franchise, without regard to by whom they are held; provided, however, that any such inspection shall take place within three (3) years from the date the Franchising Authority receives such payment, after which period any such payment shall be considered

final.. If an audit discloses an overpayment or underpayment of franchise fees, the County shall notify the Franchisee of such overpayment or underpayment within ninety (90) days of the date the audit was completed. The County, in its sole discretion, shall determine the completion date for any audit conducted hereunder. Audit completion is not to be unreasonably delayed by either party.

12.6.2 Upon the completion of any such audit by the County, the County shall provide to the Franchisee a final report setting forth the County's findings in detail, including any and all substantiating documentation. In the event of an alleged underpayment, the Franchisee shall have thirty (30) days from the receipt of the report to provide the County with a written response agreeing to or refuting the results of the audit, including any substantiating documentation. Based on these reports and responses, the parties shall agree upon a "Final Settlement Amount." For purposes of this Section, the term "Final Settlement Amount(s)" shall mean the agreed upon underpayment or overpayment, if any, to the County by the Franchisee as a result of any such audit. If the parties cannot agree on a "Final Settlement Amount," the parties shall submit the dispute to a mutually agreed upon mediator within sixty (60) days of reaching an impasse. In the event an agreement is not reached at mediation, either party may bring an action to have the disputed amount determined by a court of law.

12.6.3 The Franchisee shall be responsible for providing to the County all records necessary to confirm the accurate payment of franchise fees. The Franchisee shall maintain such records for five (5) years. The County's audit expenses shall be borne by the County unless the audit determines the payment to the County should be increased by more than five percent (5%) in the audited period, in which case the reasonable costs of the audit, up to ten thousand dollars (\$10,000) shall be paid by the Franchisee to the County within thirty (30) days from the date the parties agree upon the "Final Settlement Amount." If recomputation results in additional revenue to be paid by Franchisee to the County, such amount shall be subject to an interest charge of the Prime rate. If the audit determines that there has been an overpayment by the Franchisee, the Franchisee may credit any overpayment against its next quarterly payment. The auditor shall not be compensated on a success based formula, e.g., payment based on a percentage of any underpayment, if any. Once the parties agree upon a Final Settlement Amount and such amount is paid by the Franchisee, the County shall have no further rights to audit or challenge the payment for that period.

12.6.4 The audit provisions set forth in this subsection shall similarly apply to the PEG capital support payments specified in Section 6 of this Franchise.

SECTION 13 – Enforcement

13.1 The Franchisee shall at all times during the term of this Franchise Agreement maintain at its own expense a performance bond running to the County in the amount of Fifty Thousand Dollars (\$50,000). Such performance bond shall be conditioned on the Franchisee's observation, fulfillment and performance of each term and condition of this Agreement. In case of any breach of such condition, the amount of the performance bond shall be available to the County as compensation for all damages and costs, including reasonable attorneys' and experts' fees and other reasonable expenses of enforcement of litigation, whether direct or indirect, resulting from the failure of the Franchisee to observe, fulfill and perform any provision of this Agreement. The scope of such performance bond shall include, in addition to ascertainable damages and costs, payment of any fines or penalties for non-performance, liquidated damages as provided in Section 13.2, and compensation to the County for damage to County property or for loss of revenue due to any failure of the Franchisee to observe, fulfill or perform any provision of this Agreement. The Franchisee shall pay all premiums chargeable for such performance bond and shall keep the same in force and effect at all times that the Franchisee operates its system within the Franchise Area. The performance bond shall not be terminated or otherwise allowed to expire prior to thirty (30) days after written notice to that effect is given to the County. The County shall give Franchisee twenty (20) business days' notice of its intent to draw any amount owed from the performance bond. If the Franchisee has filed a lawsuit or an appeal to the Board of Supervisors as to an alleged default or amount owed, the County's ability to draw on the bond related to the facts and circumstances in dispute shall be stayed pending final resolution of the dispute.

13.2 Because the Franchisee's failure to comply with provisions of this Franchise Agreement may result in injury to the County, and because it may be difficult to quantify the extent of such injury, the County and the Franchisee agree that, subject to the procedures in Section 13.5, liquidated damages may be assessable against the Franchisee for certain material violations of provisions of this Franchise Agreement and that such liquidated damages may be chargeable against the Franchisee's performance bond in the event of non-payment by the Franchisee. The Franchisee hereby agrees that the liquidated damages specified herein are reasonable and do not constitute a penalty or fine. The liquidated damages shall only apply from the date of notice being provided to the Franchisee. The following amounts shall constitute liquidated damages for the specified injuries:

13.2.1 For failure to supply information, reports, or filings lawfully required under this Franchise Agreement: \$50 per day for each day the violation continues;

13.2.2 For failure to comply with any provision of this Franchise Agreement pertaining to customer service: \$100 per day for each day the violation continues;

13.2.3 For failure to pay franchise fees when due: \$50 per day for each day the violation continues, in addition to the outstanding amount of the unpaid franchise fees;

13.2.4 For failure to comply with any requirement pertaining to support for the provision of PEG access programming including, without limitation, the provisions of Section 6: \$100 per day for each day the violation continues.

13.3 The County may reduce or waive any of the above-listed liquidated damages if the Board determines that such waiver is in the best interests of the County. In no event shall liquidated damages be assessed for a time period exceeding one hundred and twenty (120) days per violation. Nothing in this subsection is intended to preclude the County from exercising any other right or remedy, including but not limited to commencing revocation proceedings and/or initiating action in law or equity in a court of competent jurisdiction, with respect to a breach that continues past the time the County stops assessing liquidated damages for such breach.

13.4 In the event the County believes that the Franchisee has not complied with the material terms of the Franchise, it shall notify the Franchisee in writing with specific details regarding the exact nature of the alleged non-compliance or default. The Franchisee shall have thirty (30) days from the receipt of the County's written notice: (i) to respond to the County, contesting the assertion of non-compliance or default; or (ii) to cure such default; or (iii) in the event that, by nature of the default, such default cannot be cured within the thirty (30) day period, initiate commercially reasonable steps to diligently remedy such default and notify the County of the steps being taken and the projected date that the cure will be completed. In the event the Franchisee fails to respond to the County's notice or in the event that the alleged default is not remedied within thirty (30) days or the date projected by the Franchisee, the County shall schedule a public hearing to investigate the default. Such public hearing shall be held at the next regularly scheduled meeting of the Board of Supervisors that allows the County to comply with advertising requirements for public hearings. In no event may such public hearing be held less than ten (10) business days following Comcast's failure to cure. The County shall notify the Franchisee in advance, in writing of the time and place of such meeting and provide the Franchisee with a reasonable opportunity to be heard.

13.5 If after notice and opportunity to cure under Section 13.4, the County concludes that the Franchisee is in default of any provision listed under Section 13.2, and the County has suffered an injury, the County may assess liquidated damages in accordance with Section 13.2. The County shall, by certified mail, provide a notice of intention to assess liquidated damages to Franchisee ten (10) days prior to assessment. The notice shall set forth the basis of the assessment, and shall inform the Franchisee that liquidated damages will be assessed from the date of the notice unless the assessment notice is appealed for hearing before the Board of Supervisors and the Board rules (1) that the violation has been corrected, or (2) that an extension of the time or other relief should be granted, or (3) the Board of Supervisors disagrees with the findings of non-compliance or default. If the Franchisee desires a hearing before the Board of Supervisors, it shall send a written notice of appeal, by certified mail, to the County Administrator within ten (10) days of the date on which the County sent the notice of intention to assess liquidated damages. After the hearing, if the Board of Supervisors

sustains, in whole or in part, the assessment of liquidated damages, the County Administrator may at any time thereafter draw upon the performance bond for the amount reviewed by the Board of Supervisors after providing the Franchisee thirty (30) days to pay said amount. Unless the Board of Supervisors indicates to the contrary, said liquidated damages shall be assessed beginning with the date on which the County sent the notice of intention to assess liquidated damages and continuing thereafter until such time as the violation ceases, as determined by the County.

13.6 The amount of liquidated damages per annum shall not exceed fifteen thousand dollars (\$15,000) in the aggregate. With respect to liquidated damages assessed herein, all similar violations or failures occurring at the same time and from the same factual events affecting multiple subscribers shall be assessed as a single violation, and a violation or a failure may only be assessed under any one (1) of the above-referenced categories. Nothing herein is intended to allow duplicative recovery from or duplicative payments by Franchisee or its surety(s).

SECTION 14 – Indemnification and Insurance

14.1 Franchisee shall save the County harmless from all loss sustained by the County on account of any suit, judgment, execution, claim or demand whatsoever resulting from negligence on the part of the Franchisee in the construction, operation or maintenance of its Cable System in the County, provided that the County shall give the Franchisee timely written notice of its obligation to indemnify and defend the County within thirty (30) days of receipt of a claim or action pursuant to this Section. The County agrees that it will take all necessary action to avoid a default judgment and not prejudice the Franchisee's ability to defend the claim or action.

14.2 The Franchisee shall maintain throughout the term of this Agreement, Commercial General Liability Insurance insuring the Franchisee. Such policy or policies shall be in the minimum amount of Five Million Dollars (\$5,000,000.00) per occurrence for bodily injury or property damage. In addition, the Franchisee shall provide workers' compensation coverage in accordance with applicable law and coverage for copyright infringement. All liability insurance shall include an endorsement in a specific form which names as joint and several insureds the County and the County's officials and employees, with respect to all claims arising out of the operation and maintenance of the Franchisee's cable system in the County.

14.2.1 The inclusion of more than one (1) insured shall not operate to increase the limit of the Franchisee's liability, and the insurer waives any right of contribution with insurance which may be available to the County.

14.2.2 All policies of insurance required by this Section shall be placed with companies which are qualified to write insurance in the Commonwealth of Virginia, and which maintain throughout the policy term a General Rating of "A-"

or better and a Financial Size Category of "VII" or better as determined by Best Insurance Rating Services.

14.2.3 Certificates of insurance obtained by the Franchisee shall be in compliance with this section, and copies shall be provided to the County. The Franchisee shall immediately advise the County Attorney of any litigation that may develop that would affect this insurance.

14.2.4 Should the County find an insurance document to be in non-compliance, then it shall notify the Franchisee, and the Franchisee shall be obligated to cure the defect.

14.2.5 Neither the provisions of this section, nor any damages recovered by the County thereunder, shall be construed to nor limit the liability of the Franchisee under this Agreement or for damages.

14.2.6 The insurance policies provided for herein shall name the County, its officers, and employees and agents as additional insureds, and shall be primary to any insurance or self-insurance carried by the County. The insurance policies required by this section shall be carried and maintained by the Franchisee throughout the term of this Agreement and such other period of time during which the Franchisee operates or is engaged in the removal of its Cable System. Franchisee shall not cancel, or not renew, any policy hereunder, until thirty (30) days after receipt by the County, by certified mail, of written notice of such intention to cancel or not to renew.

SECTION 15 – Delegation of Powers

15.1 The County shall not be precluded from delegating any power or authority contained within this Franchise Agreement to any agency, employee or department within the political subdivision which comprises the County.

15.2 Franchisee shall not sell or transfer its Cable System to another person, nor transfer any rights under its franchise to another person, without County approval. No such sale or transfer shall thereafter be effective until the vendee, assignee or lessee has filed in the County an instrument, duly executed, reciting the fact of such sale, assignment or lease, accepting and agreeing to be bound by the provisions of the Franchise Agreement and Cable Ordinance. No approval shall be required, however, for: (i) a transfer in trust, by mortgage, hypothecation, or by assignment of any rights, title, or interest of the Franchisee in the Franchise Agreement or in the Cable System in order to secure indebtedness, (ii) a transfer to an entity directly or indirectly owned or controlled by Comcast Corporation, or (iii) the sale, conveyance, transfer, exchange or release of fifty percent (50%) or less of its equitable ownership.

SECTION 16 – Franchise Revocation

16.1 Subject to applicable federal and state law, following the notice and cure procedures in Section 13.4, if the Franchisee fails to comply with any of the material terms of this Franchise Agreement, or practices any fraud or deceit upon the County or its subscribers, or fails to pay franchise fees, PEG support, or the communications tax when due, or if the Franchisee becomes insolvent, as adjudged by a court of competent jurisdiction, or is unwilling to pay its uncontested debts, or is adjudged bankrupt, or seeks relief under the bankruptcy laws, then the franchise may be revoked.

16.2 In the event the County believes that grounds for revocation exist or have existed, the County may notify the Franchisee, in writing, setting forth the facts and nature of such noncompliance. If, within forty five (45) days following such written notification, the Franchisee has not furnished reasonable satisfactory evidence that corrective action has been taken or is being actively and expeditiously pursued, or that the alleged violations did not occur, or that the alleged violations, except those involving financial matters were beyond the Franchisee's control, the County may hold and give notice of a public hearing to consider revocation of the franchise. The Franchisee shall receive at least thirty (30) days written notice of the date and time of any such hearing. At the designated public hearing, the County shall give the Franchisee an opportunity to fully present its position on the matter and rebut any presentations or assertions made, after which the County, through its Board of Supervisors, shall determine whether or not the Franchise shall be revoked. The public hearing shall be recorded and made available to the Franchisee within fifteen (15) business days. The decision of the County shall be in writing and shall be delivered to the Franchisee by certified mail. If the County, following such hearing, shall find that grounds for revocation exist, it may thereupon by ordinance duly adopted revoke this Agreement and the franchise granted hereunder. Franchisee shall have the right to appeal such decision to a court or appropriate jurisdiction.

16.3 The termination of the Franchisee's rights under this Agreement shall in no way affect any other rights the County may have under any provision of law or ordinance.

16.4 Franchisee shall not be required to remove its Cable System or to sell the Cable System, or any portion thereof as a result of revocation, denial of renewal, or any other lawful action to forbid or disallow Franchisee from providing Cable Service, if the Cable System is actively being used to facilitate any other services not governed by the Cable Act, or any portion thereof [47 U.S.C. §541(b)].

SECTION 17 – Books and Records and Related Documents

17.1 Upon written request, all books and records of the Franchisee reasonably necessary to monitor the Franchisee's compliance with the provisions of this franchise shall be made available for inspection and audit by the County or its designee at the Franchisee's local office or at a location mutually agreed to by the County and the

Franchisee, provided that the Franchisee must make necessary arrangements for copying documents selected by the County after the review. Such books and records shall be made available by Franchisee within thirty (30) days after any request for such inspection or audit shall be made. All such documents that may be the subject of an inspection by the County shall be retained by the Franchisee for a minimum period of twenty-four (24) months.

17.2 Copies of all rules, regulations, terms and conditions established by the Franchisee regarding delivery of Cable Service to its subscribers shall be made available to the County Administrator or his designee at the office of the County Administrator within thirty (30) days after the request for inspection thereof.

17.3 Upon written request, specifically identifying the documents in question, the Franchisee shall timely provide to the County copies of any requested correspondence, petitions, reports, applications and other documents of a non-routine or non-repetitive nature pertaining to the operation and maintenance of the Cable System in the County, filed by the Franchisee with any federal or state agency or received by the Franchisee from any such agency.

17.4 Upon written request, the Franchisee shall submit to the County copies of all applicable performance and signal quality tests required by the FCC's rules and regulations. This section shall satisfy the reporting requirements of Section 61-5 of the Cable Ordinance.

17.5 *Confidentiality:*

17.5.1 Franchisee shall not be required to submit information to the County that it reasonably deems to be proprietary or confidential in nature, except as provided herein, nor submit to the County any of its or an affiliate's books and records not relating to the provision of Cable Service in the Franchise Area. Such confidential information shall be identified with specificity upon submission to the County, and shall be subject to the following:

17.5.1.1 If the parties agree that an exemption under the Virginia Freedom of Information Act permits the County to maintain the confidentiality of submitted information and the Franchisee submits such information to the County, the Franchisee shall provide the information and, except as otherwise may be provided by court order, the County shall maintain the confidentiality of such information and not disclose it to any public request, provided that the Franchisee, if required by applicable law, upon submission of confidential information to the County (i) invokes the applicable exemption in writing for the data or other materials for which protection from disclosure is sought, (ii) identifies the data or other materials for which protection is sought, and (iii) states the reason why protection is necessary;

17.5.1.2 If the parties do not agree that an exemption under the Virginia Freedom of Information Act permits the County to maintain confidentiality of information requested by the County, Franchisee may, in its discretion, withhold any documents containing such information, provided that the Franchisee permits the County or its agents to examine all such documents after providing the following documentation to the County: (i) a specific identification of the information; (ii) a statement attesting to the reason(s) the Franchisee believes the information is confidential; and (iii) a statement that the documents are available at the Franchisee's designated offices for inspection by the County.

17.5.2 At all times, subject to the County's obligations under the Virginia Freedom of Information Act, the County shall take reasonable steps to protect the proprietary and confidential nature of any books, records, maps, plans or other County-requested documents that are provided pursuant to this Agreement to the extent they are designated as such by the Franchisee. Nothing in this Section shall be read to require the Franchisee to violate federal or state law protecting Subscriber privacy.

SECTION 18 – Notices

All notices, payments, reports or other information required by this Franchise Agreement shall be sent prepaid registered, certified mail, or as allowed by FCC regulation or the Cable Act, unless alternative means are specifically agreed to by the parties, as follows:

To the County:

Office of County Administrator
107 North Kent Street
Winchester, VA 22601

To the Franchisee:

Comcast of California/Maryland/Pennsylvania/Virginia/West
Virginia, LLC
55 Construction Lane
Fishersville, VA 22939
Attn: Government Affairs Department

With a copy to:

Comcast Cable
7850 Walker Drive, 2nd Floor
Greenbelt, MD 20770

Attn: Government Affairs Department

And to:

Comcast Cable Northeast Division
676 Island Pond Road
Manchester, NH 03109
Attn: Government Affairs Department

SECTION 19 – Governing Law

This Agreement shall be construed and enforced in accordance with the laws of the Commonwealth of Virginia. The courts of Frederick County, Virginia, or the Federal court with jurisdiction over Frederick County, shall be the proper fora for any disputes arising hereunder.

SECTION 20 – Miscellaneous Provisions

20.1 *Force Majeure*: The Franchisee shall not be held in default under, or in non-compliance with, the provisions of the Franchise, nor suffer any enforcement or penalty relating to noncompliance or default (including termination, cancellation or revocation of the Franchise), where such non-compliance or alleged defaults occurred or were caused by lightning strike, earthquake, flood, tidal wave, unusually severe rain, ice or snow storm, hurricane, tornado, or other catastrophic act of nature; riot, war, labor disputes, environmental restrictions, failure of utility service or the failure of equipment or facilities not belonging to Franchisee, denial of access to facilities or rights-of-way essential to serving the Franchise Area necessary to operate the Cable System, governmental, administrative or judicial order or regulation or other event that is reasonably beyond the Franchisee's ability to anticipate or control. This provision also covers work delays caused by waiting for utility providers to service or monitor their own utility poles on which the Franchisee's cable or equipment is attached, as well as unavailability of materials or qualified labor to perform the work necessary.

20.1.2 The County agrees that it is not its intention to subject the Franchisee to penalties, fines, forfeitures or revocation of the Franchise for so-called "technical" breach(es) or violation(s) of the Franchise, which shall include, but not be limited, to the following:

20.1.2.1 in instances or for matters where a violation or a breach of the Franchise by the Franchisee was good faith error that resulted in no or minimal negative impact on the Subscribers within the Franchise Area; or

20.1.2.2 where there existed circumstances reasonably beyond the control of the Franchisee and which precipitated a violation by the

Franchisee of the Franchise, or which were deemed to have prevented the Franchisee from complying with a term or condition of the Franchise.

20.2 *Entire Agreement:* This Franchise Agreement and any exhibits or addendums hereto constitute the entire agreement between the County and the Franchisee and supersedes all prior or contemporaneous agreements, ordinances, representations, or understandings, whether written or oral, of the parties regarding the subject matter hereof. Any agreements, ordinances, representations, promises or understandings or parts of such measures that are in conflict with or otherwise impose obligations different from the provisions of this Franchise Agreement are superseded by this Franchise Agreement.

20.3 *Severability:* If any section, subsection, sentence, clause, phrase, or other portion of this Franchise Agreement is, for any reason, declared invalid, in whole or in part, by any court, agency, commission, legislative body, or other authority of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent portion. Such declaration shall not affect the validity of the remaining portions hereof, which other portions shall continue in full force and effect.

20.4 *Modification:* No provision of this Franchise Agreement shall be amended or otherwise modified, in whole or in part, except by an instrument, in writing, duly executed by the County and the Franchisee, which amendment shall be authorized on behalf of the County through the adoption of an appropriate resolution or order by the County, as required by applicable law.

20.5 *No Third-Party Beneficiaries:* Nothing in this Franchise Agreement is or was intended to confer third-party beneficiary status on any member of the public to enforce the terms of this Franchise Agreement.

20.6 *Incorporation by Reference:*

20.6.1 All presently and hereafter applicable conditions and requirements of federal, State and generally applicable local laws, including but not limited to the County's Cable Ordinance, the rules and regulations of the FCC and the State where the Franchise Area is located, as they may be amended from time to time, are incorporated herein by reference to the extent not enumerated herein. However, no such generally applicable local laws, rules, regulations and codes, as amended, may alter the obligations, interpretation and performance of this Franchise Agreement to the extent that any provision of this Franchise Agreement conflicts with or is inconsistent with such laws, rules or regulations.

20.6.2 Should the State, the federal government or the FCC require Franchisee to perform or refrain from performing any act the performance or non-performance of which is inconsistent with any provisions herein, the County and Franchisee will thereupon, if they determine that a material provision herein is affected, modify any of the provisions herein to reflect such government action.

In WITNESS WHEREOF, the County, by the signatures of its duly authorized officers as set forth immediately below, causes this Agreement to be executed as of the date and year indicated below. Acceptance of this Agreement shall be indicated by signature of the Franchisee' s duly authorized officer or agent.

Frederick County, Virginia

By: _____
County Administrator

Date: _____

Approved as to form: _____
County Attorney

_____ Date.

ACCEPTANCE:

**COMCAST OF CALIFORNIA/MARYLAND/PENNSYLVANIA/VIRGINIA/
WEST VIRGINIA, LLC**, as evidenced by the signature below of its duly authorized representative, hereby **ACCEPTS** the offered franchise to operate a Cable System, and certifies that it has carefully read the terms and conditions of this Franchise Agreement, and accepts unequivocally, and agrees to abide by all the terms and conditions imposed by this Franchise Agreement.

**COMCAST OF CALIFORNIA/MARYLAND/PENNSYLVANIA/VIRGINIA/WEST
VIRGINIA, LLC**

By: _____
Mary McLaughlin, Regional Senior Vice President

Attest: _____ Date: _____

EXHIBIT A

Service to Schools and County Buildings

Schools

Apple Pie Ridge Elementary
Armel Elementary
Bass-Hoover Elementary
Evendale Elementary
Gainesboro Elementary
Greenwood Mill Elementary
Indian Hollow Elementary
Middletown Elementary
Orchard View Elementary
New Elementary School (Snowden Bridge)
Redbud Run Elementary
Senseny Road School
Stonewall Elementary
Admiral Richard E. Byrd Middle School
Frederick County Middle School
James Wood Middle School
Robert E. Aylor Middle School
James Wood High School
Millbrook High School
Sherando High School
FCPS Transportation Department
Northwestern Regional Educational Program
Dowell J. Howard
FCPS Maintenance Department
FCPS Administration Building
FCPS Records Management Center
Support Facility West

County Buildings

County Administration Building
Public Safety Building
Animal Shelter
Shawneeland Public Works Office
Economic Development Authority

Fire and Rescue Stations

Clearbrook
Gore
Gainesboro
Greenwood
Millwood Station

Middletown
North Mountain
Reynolds Store
Round Hill
Star Tannery
Stephens City

Parks

Sherando Park
Clearbrook Park

Miscellaneous Regional Facilities

Bowman Library
Regional Landfill
Regional Jail
Airport

EXHIBIT B

Service Area Map

M



COUNTY of FREDERICK

Office of the County Administrator

Tel: 540.665.6382

Fax: 540.667.0370

MEMORANDUM

To: Frederick County Board of Supervisors
From: Ann W. Phillips, Deputy Clerk
Date: June 7, 2019
Re: Frederick County Code – Noise Ordinance – draft revisions

=====

To refresh the Board on this item, the County adopted its current noise ordinance in 1993. The ordinance uses, as its standard for whether noise is unlawful, whether a person is “annoyed, disturbed or vexed by unnecessary and unreasonable noise.” The Virginia Supreme Court, in the Tanner case, held that a noise ordinance containing similar “unreasonableness” language was unconstitutionally vague and therefore unenforceable. In light of the decision in Tanner, the County’s prohibitions against noise may be subject to similar challenge.

At its meeting on April 10, 2019, the Board of Supervisors asked the Code & Ordinance Committee to consider again the proposed revisions to Chapter 118 of the County Code that the Committee forwarded to the Board last year, for the Committee again to make a recommendation to the Board. The revisions are intended to aid in restoring the enforceability of the noise ordinance, in light of the Supreme Court of Virginia’s 2009 decision in Tanner vs. City of Virginia Beach, 277 Va. 432.

The Code & Ordinance Committee at its meeting on May 9, 2019, agreed to put forth the attached draft revisions to the ordinance. Following the public hearing, staff is seeking a Board decision regarding the draft revision of the noise ordinance.



ORDINANCE _____, 2019

The Board of Supervisors of Frederick County, Virginia hereby ordains that Sections 118-1 (Unreasonable noise unlawful) and 118-2 (Enforcement) and new Sections 118-4 (Specific prohibitions) and 118-5 (Exceptions) of Chapter 118 (Noise) of the Code of Frederick County, Virginia be, and the same hereby are, amended by enacting amended Sections 118-1 (Specified noise unlawful) and 118-2 (Enforcement) and new Sections 118-4 (Specific prohibitions) and 118-5 (Exceptions) of Chapter 118 (Noise) of the Code of Frederick County, Virginia, as follows (deletions are shown in **strikethrough** and additions are shown in **underline**):

CHAPTER 118 NOISE

§ 118-1 Unreasonable Specified noise unlawful.

A. ~~It shall be unlawful, after complaint from any person annoyed, disturbed or vexed by unnecessary and unreasonable noise and after notice by the Sheriff to the person creating such noise or to the owner, custodian or person in control or possession of the property from which such noise emanates or arises, for such person to suffer or allow such unnecessary and unreasonable noise to continue.~~ **At certain levels, noise can be detrimental to the health, safety, welfare, and quality of life of inhabitants of the county, and, in the public interest, such noise should be restricted. It is, therefore, the policy of the County to reduce, and eliminate where possible, excessive noise and related adverse conditions in the community, and to prohibit unnecessary, excessive, harmful, and annoying noises from all sources.**

B. This chapter shall be applicable from 9:00 p.m. to 6:00 a.m., inclusive, each day, to **noise emanating from property located within** the following zoning ~~classifications~~ **districts** as indicated on the Frederick County Zoning Map:

| | |
|-----|---|
| RP | Residential Performance District |
| R4 | Residential Planned Community District |
| R5 | Residential Recreational Community District |
| MH1 | Mobile Home Community District |

C. No person shall be charged with a violation of this section unless that person has received verbal, electronic, or written notice from a law enforcement officer of Frederick County that he is violating or has violated the provisions of this chapter and has thereafter had the opportunity to abate the noise disturbance.

§ 118-2 Enforcement.

Enforcement of this chapter shall be by the Sheriff of Frederick County **or his designee.**

§ 118-3 Violations and penalties. [Ed. note: No change is proposed to this section]

A violation of this chapter shall be punishable by a fine of not more than \$100 for the first offense and a fine of not more than \$1,000 for each subsequent offense. Each such occurrence shall constitute a separate offense.

§ 118-4 Specific prohibitions.

The following acts are declared to be noise disturbances in violation of this chapter, provided that this list shall not be deemed to be an exclusive enumeration of those acts which may constitute noise disturbances and that an act not listed below may nevertheless constitute a violation of this chapter:

- A. Prohibited Noise Generally. Operating, playing or permitting the operation or playing of any radio, television, computer, recording, musical instrument, amplifier, or similar device, or yelling, shouting, whistling, or singing, or operating or permitting the operation of any mechanical equipment in such a manner as to be plainly audible or exceeding 60 decibels as heard:**
- 1. Across a residential real property boundary or through partitions common to two or more (2) dwelling units within a building; or**
 - 2. At a distance of fifty (50) feet or more from the building in which it is located, provided that the sound is audible on another's property; or**
 - 3. At a distance of fifty (50) feet or more from its source, provided that the sound is audible on another's property.**
- B. Schools, public buildings, places of worship, and hospitals. The creation of any noise on or near the grounds of any school, court, public building, place of worship, or hospital in a manner that is plainly audible within such school, court, public building, place of worship, or hospital, and which noise interferes with the operation of the institution.**

- C. The term “plainly audible” shall mean any sound that can be heard clearly by a person using his or her unaided hearing faculties. When music is involved, the detection of rhythmic bass tones shall be sufficient to be considered plainly audible sound.

§ 118-5 Exceptions.

This chapter shall have no application to any sound generated by any of the following:

- A. Sound which is necessary for the protection or preservation of property or the health, safety, life, or limb of any person.
- B. Public speaking and public assembly activities conducted on any public right-of-way or public property.
- C. Radios, sirens, horns, and bells on police, fire, or other emergency response vehicles.
- D. Parades, lawful fireworks displays, school-related activities, and other such public special events or public activities.
- E. Activities on or in municipal, county, state, United States, or school athletic facilities, or on or in publicly owned property and facilities.
- F. Fire alarms and burglar alarms, prior to the giving of notice and a reasonable opportunity for the owner or person in possession of the premises served by any such alarm to turn off the alarm.
- G. Religious services, religious events, or religious activities or expressions, including, but not limited to music, singing, bells, chimes, and organs which are a part of such service, event, activity, or expression.
- H. Locomotives and other railroad equipment, and aircraft.
- I. The striking of clocks.
- J. Military activities of the Commonwealth of Virginia or of the United States of America.
- K. Agricultural activities.

Enacted this ____ day of ____, 2019.

Charles S. DeHaven, Jr., Chairman

Gary A. Lofton

J. Douglas McCarthy

Robert W. Wells

Blaine P. Dunn

Shannon G. Trout

Judith McCann-Slaughter

A COPY ATTEST

Kris C. Tierney
Frederick County Administrator

N



COUNTY of FREDERICK

Office of the County Administrator

Tel: 540.665.6382

Fax: 540.667.0370

MEMORANDUM

To: Frederick County Board of Supervisors
From: Ann W. Phillips, Deputy Clerk
Date: June 7, 2019
Re: Frederick County Code – Dogs running at large – draft ordinance revisions

=====

At its recently completed Session, the General Assembly enacted revisions to Virginia Code § 3.2-6538, effective July 1, 2019. Therefore, it is recommended that County Code § 48-3 be amended to reflect changes to the Code of Virginia. The revisions, proposed to be effective July 1, 2019, are as follows:

- Inclusion in subsection A of a definition, drawn from the state code provision, of what constitutes running at large.
- Clarification in subsection A that the prohibition applies to any person permitting “a dog” to run at large, instead of saying “his dog”, which in the current version could suggest the prohibition would apply only to the owner of the dog, as opposed to the owner or a custodian of the dog.
- Clarification in subsection A as to the punishment for violating the prohibition. The reference for punishment is to County Code § 48-10, which makes a violation punishable as a Class 4 misdemeanor. The maximum penalty for a Class 4 misdemeanor is a \$250 fine.
- Inclusion of a new subsection B, to comply with the new mandates of § 3.2-6538 regarding any dog(s) running at large in a pack.
- Re-designation of the last sentence of current subsection A as a standalone subsection C.
- Re-designation of former subsection B as subsection D.
- Inclusion of a new subsection E, to comply with the new mandates of § 3.2-6538.

The Code & Ordinance Committee at its meeting on May 9, 2019, agreed to put forth the attached draft revisions to County Code § 48-3. Following the public hearing, staff is seeking a Board decision regarding the draft revisions.



ORDINANCE

— —, 2019

The Board of Supervisors of Frederick County, Virginia hereby ordains that, effective July 1, 2019, Section 48-3 (Dogs running at large unlawful) of Article I (Dog Licensing; Rabies Control) of Chapter 48 (Animals and Fowl) of the Code of Frederick County, Virginia be, and the same hereby is, amended by enacting an amended Section 48-3 (Dogs running at large unlawful) of Article I (Dog Licensing; Rabies Control) of Chapter 48 (Animals and Fowl) of the Code of Frederick County, Virginia, as follows (deletion is shown in ~~strikethrough~~ and addition is shown in **bold underline**):

CHAPTER 48 ANIMALS AND FOWL

Article I Dog Licensing; Rabies Control

§ 48-3 Dogs running at large unlawful.

- A. It shall be unlawful to permit any dog to run at large within the County at any time during the year. **For the purposes of this subsection, a dog shall be deemed to be running at large while roaming or running of the property of its owner or custodian and not under its owner's or custodian's immediate control. Except as provided in subsection B, Any any** person who permits ~~his~~ **a** dog to run at large or remain unconfined, unrestricted or not penned up shall be deemed to have violated the provisions of this subsection **and be subject to punishment as provided in Section 48-10.**
- B. **It shall also be unlawful to permit any dog to run at large in a pack within the County at any time during the year. For the purposes of this subsection, a dog shall be deemed to be running at large in a pack if it is running at large in the company of one or more other dogs that are also running at large. Any person who permits a dog to run at large in a pack shall be deemed to have violated the provisions of this subsection and, in addition to the punishment as provided in Section 48-10, be subject to a civil penalty not to exceed \$100 per dog so found. Any civil penalty collected pursuant to this subsection shall be deposited by the Treasurer pursuant to the provisions of § 3.2-6534 of the**

Code of Virginia (1950, as amended).

C. It shall be the duty of the Animal Control Officer and Deputy Animal Control Officers to cause all dogs found running at large in violation of this section to be caught and penned up in the County dog pound.

B.D. It shall be unlawful to permit any vicious or destructive dog to run at large within the County, and any person owning, having control or harboring any such dog is hereby required to keep the same confined within his premises.

E. The provisions of this section shall not apply with respect to dogs used for hunting.

Enacted this ____ day of ____, 2019.

| | | | |
|-----------------------------------|-------|------------------|-------|
| Charles S. DeHaven, Jr., Chairman | _____ | Gary A. Lofton | _____ |
| J. Douglas McCarthy | _____ | Robert W. Wells | _____ |
| Blaine P. Dunn | _____ | Shannon G. Trout | _____ |
| Judith McCann-Slaughter | _____ | | |

A COPY ATTEST

Kris C. Tierney
Frederick County Administrator