



VISION 25

CONSERVATION EASEMENT AUTHORITY

STRATEGIC PLAN 2022-2025

November 2021

Author: Tyler Hinkle

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Information On CEA And Contact Info

The Conservation Easement Authority (CEA) of Shenandoah County was founded in 2008 after the adoption of Ordinance Number 2007-18, or Chapter 82: Conservation Easement Program, of Shenandoah County on November 14th, 2007. The CEA was founded in order to provide the farming and forestry community support in preserving and retaining their farmland. "The purpose of the conservation easement program is to further the goals of the County's Comprehensive Plan and provide a means to assist County landowners in protecting and preserving farm and forest land, open space, scenic vistas, historic sites, water resources, and environmentally sensitive lands as well as the County's rural character. The easement program provides for a means for the county to acquire voluntary conservation easements either through donation or through purchase if funding is available."¹

The Shenandoah County Conservation Easement Program is established under the provisions of the Virginia Conservation Easement Act, Chapter 10.1, Title 10.1 (§ 10.1-1009 et seq.), Code of Virginia; the Open Space Land Act, Chapter 17, Title 10.1 (§ 10.1-1700 et seq.), Code of Virginia; and the Public Recreational Facilities Authorities Act, Chapter 56, Title 15.2 (§ 15.2-5600 et seq.), Code of Virginia; and is available for all land in the County.

The CEA is comprised of seven members with at least one member of the Board of Supervisors, one member of the Planning Commission, and five citizen representatives. Members serve four year terms with no term limits. The current members are listed below:

Dee Hockman - CEA Chair

Josh Stephens - District 1 Board Of Supervisors CEA Representative

Debbie Keller - District 5 Planning Commission CEA Representative

Douglas French - CEA Member

Kelly Watkinson - Member

Bill Wine - Member

Vacant - Member

Tyler Hinkle - Staff

To find out more about Shenandoah County's Conservation Easement Authority, reach out to County Planner Tyler Hinkle at THinkle@ShenandoahCountyva.us, or 540-459-6204. You can also find more information at ShenandoahCountyva.us/conservation/

Acknowledgments

A special thank you for all the aid they have provided to the development of this report needs to be acknowledged. This report would not exist without the support from the individuals listed below:

Dee Hockman - CEA Chair
Josh Stephens - District 1 Board Of Supervisors CEA Representative
Debbie Keller - District 5 Planning Commission CEA Representative
Douglas French - CEA Member
Kelly Watkinson - Member
Bill Wine - Member
Evan Vass - County Administrator
Mandy Belyea - Deputy County Administrator
John Hutchinson - Executive Director Valley Conservation Council
Kim Woodwell - Alliance For The Shenandoah Valley
Bobby Clark - Virginia Tech Extension Office
Vito Gentile - Chair of the Citizen's Advisory Committee
Gary Lantz - Chair of the Planning Commission and Water Resource Advisory Committee
Mark Dodson- District 1 Planning Commission Member
Tommy Miller- District 3 Planning Commission Member
Todd Steiner - Former Planning Commission CEA Representative, District 4 Planning Commission Member
Eunice Terndrup - District 6 Planning Commission Member
Steve Baker - Chair of the Board of Supervisors
Dennis Morris - Vice Chair of the Board of Supervisors
Brad Pollack - District 3 Representative on the Board of Supervisors
Karl Roulston - District 4 Representative on the Board of Supervisors
Tim Taylor - District 6 Representative on the Board of Supervisors
Lemuel Hancock - Director Of Community Development
Brenna Menefee - Shenandoah County Zoning Administrator
David Brotman - Executive Director for the Friends of the North Fork



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A rural landscape featuring a large red barn on the left, a blue house in the center, and a green field in the foreground. The sky is filled with dramatic, dark clouds, and a utility pole is visible on the right. The overall scene is a typical rural setting in Shenandoah County.

CEA Mission Statement

“To retain the rural character, ensure agricultural sustainability, and protect historic and natural resources in Shenandoah County by promoting, holding/co-holding and purchasing Voluntary Conservation Easements.”

Background

In 2017 a Strategic Plan for the Conservation Easement Authority (CEA) of Shenandoah County was developed by former County Planner Jill Jefferson. The Strategic Plan was slated to run from 2017-2020 and provided a set of actions to be taken to achieve the goals set forth by the CEA at that time. In the year 2020 the CEA oversaw the development of a Cost of Community Services Report. This report went on to the Board of Supervisors and assisted the CEA in achieving funding through roll back taxes on February 9th, 2021. The Board of Supervisors provided for up to \$25,000 to be allocated from roll back taxes to the CEA to seek and obtain Conservation Easements in the County. On October 26th, 2021 the Board of Supervisors voted to appropriate an additional \$142,000 to the CEA to assist in a Virginia Land Conservation Fund grant which matches local funding dollar for dollar. With an upwards of \$309,000 or more funds for the CEA to utilize for securing Conservation Easements, there was a call for a plan for addressing how the funds are used and how awareness can be raised for Conservation Easements in order to determine ideal candidates for Easements.

In 2012 County Planner Patrick Felling worked on a draft for a CEA Strategic Plan. The Plan held four goals: Internal Education, Educate And Outreach, Implement Easement Program, and Cultivate, Define, And Explore Funding Opportunities. Strategies of note from this draft Plan were:

- Providing an annual report to the Board of Supervisors.
- Guest speaking at agricultural organizations such as the Farm Bureau.
- Including easement information during Agricultural And Forestall District renewal mailings.
- Workshops for appraisers, lawyers, financial planners, etc.
- Determine a method of funding for transaction costs:
 - Legal Fees, Surveys, Appraisals, Closing Costs, Stewardship, and Environmental Site Assessments.
- Review Model Easement minimum standards.

A majority of the strategies recommended in the draft Plan were completed such as developing a model easement for the County, yet some of the aspects noted above will be included in this Strategic Plan.

The CEA Strategic Plan from 2017-2020 outlined three different goal sets: Conservation, Capacity, and Education And Outreach. The strategies and goals are further outlined below:

1. Conservation Goal: Work with willing landowners to protect the land that protects the Shenandoah River and the unique natural resources that make the region special.
 - Strategy 1-1: Identify priority areas, or “Critical Conservation Areas”, that further the CEA’s mission based upon criteria to target conservation
 - Strategy 1-2: Protect land through conservation easements and acquisitions
 - Strategy 1-3: Engage in collaboration/partnerships within the County and with other non-profit organizations, government agencies, and municipalities
 - Strategy 1-4: Manage lands and easements to ensure that appropriate, identified conservation values are protected (water quality, recreation, views, habitat, etc.).
2. Capacity Goal: Strengthen the CEA’s capacity to protect lands in the Valley.
 - Strategy 2-1: Secure funding to support the needs of the CEA
 - Strategy 2-2: Develop and enhance capacity of the CEA
3. Education and Outreach Goal: Promote better understanding of the importance of the easements and the CEA’s role in protecting lands in the Shenandoah Valley.
 - Strategy 3-1: Promote environmental education programs in local schools and communities
 - Strategy 3-2: Improve the community’s awareness of CEA’s role and easements in general

All of the goals that were listed under each strategy were completed in the time since 2017 except for hosting educational sessions with students and publishing newsletters. These two goals will be included in this Plan.

Resolution On Roll Back Taxes

County of Shenandoah

BOARD OF SUPERVISORS

DISTRICT 1 – JOSH STEPHENS
DISTRICT 2 – STEVE BAKER
DISTRICT 3 – BRAD POLLACK
DISTRICT 4 – KARL ROULSTON
DISTRICT 5 – DENNIS MORRIS
DISTRICT 6 – TIM TAYLOR

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OFFICE OF COUNTY ADMINISTRATION

EVAN L. VASS
COUNTY ADMINISTRATOR
MANDY R. BELVEA
DEPUTY COUNTY ADMINISTRATOR

A Resolution by the Shenandoah County Board of Supervisors to Provide Funding for the Conservation Easement Authority and Industrial Development Authority

WHEREAS, the Comprehensive Plan of Shenandoah County establishes a vision of the County in 2025 that will be a primarily rural community that ensures its open, agricultural character; and

WHEREAS, the Comprehensive Plan also recognizes the importance of business and economic growth in areas which are consistent with the plan's vision for a primarily rural and agricultural county; and

WHEREAS, the Comprehensive Plan also sets goals of preserving rural lands and open spaces; and of encouraging the use of conservation easements (including the purchase of development rights) to permanently preserve high quality rural property; and

WHEREAS, in 2007, the Shenandoah County Board of Supervisors created the Conservation Easement Program to assist County landowners in protecting farm and forest land to preserve the County's rural character, and established the Conservation Easement Authority (CEA) to implement the easement program; and

WHEREAS, in 1973, Shenandoah County Board of Supervisors created the Industrial Development Authority (IDA) to promote industry and develop trade by inducing manufacturing, industrial, government and commercial enterprises to locate in or remain in Shenandoah County and further the use of its agricultural products and natural resources; and

WHEREAS, the County's 2019 Strategic Economic Development Plan (SEDP) establishes a vision of a comprehensive and collaborative partnership among all public and private local, regional, and statewide economic development entities to provide current and future Shenandoah County businesses an environment to thrive and grow; and to ensure current and future County residents with the opportunity to benefit from economic growth through personal gain and enhanced quality of life; and

WHEREAS, the County's 2019 SEDP encourages the County to consider capital investment to improve its asset development and readiness of marketable properties in Shenandoah County; and

WHEREAS, Federal and State purchase of development rights programs as well as economic development programs and initiatives typically require matching funds, including those derived from local governments; and

Page Two
Resolution CEA and IDA funding

WHEREAS, rural landowners who remove their land from the use value assessment program for land development purposes pay deferred taxes called 'rollback taxes'; and

WHEREAS, there is a rational nexus for rollback taxes to be used to purchase development rights when agricultural and other open lands are taken out of farming for development and to provide funding mechanism for economic development in zoning districts and future growth areas. Which are complimentary to the rural and agricultural nature of the county;

NOW, THEREFORE BE IT RESOLVED that Shenandoah County Board of Supervisors does hereby establish a policy of allocating rollback tax collections to the Conservation Easement Authority and Industrial Development Authority. Beginning in Fiscal Year 2021 and continuing in future years, rollback receipts up to \$50,000 per annum will be allocated and appropriated with 50 percent of such rollback receipts allocated and appropriated to the CEA for purposes of implementing the conservation easement program and the remaining 50 percent of such rollback tax receipts allocated and appropriated to the IDA for purposes of promoting economic and business development. Nothing herein shall alter the existing restriction that all CEA purchases of development rights require prior Board approval.

Adopted this 9th day of February 2021.

ATTEST:


Evan L. Vass, Clerk of the Board


Steve Baker, Chairman

VISION 25: 25 Actions To Complete By 2025

In order to assist the CEA in expanding its operations and capabilities while also increasing the number of acres under easement in the County, the following 25 actions will guide the CEA, County Staff, and all other partners to achieve the vision that the CEA has set out. The 25 actions are organized into five larger visions for the County for the year 2025:

VISION I: Reduce Barriers

1. Goal
2. Goal
3. Goal
4. Goal
5. Goal

VISION II: Educate & Demonstrate

6. Goal
7. Goal
8. Goal
9. Goal
10. Goal

Vision III: Network

11. Goal
12. Goal
13. Goal
14. Goal
15. Goal

VISION IV: Increase Acres

16. Goal
17. Goal
18. Goal
19. Goal
20. Goal

VISION V: Plan

21. Goal
22. Goal
23. Goal
24. Goal
25. Goal



A Vision For Conservation

This section of the Strategic Plan was developed following the creation of the Cost of Community Services report with the help of numerous community members. This report seeks to serve as a direct follow up to the Cost of Community Services report in order to provide actionable items to address the findings from the Cost of Community Services report.

The report is split into three sections:

1. A vision for conservation in Shenandoah County.
2. Background information and research to guide the vision.
3. A tool box for policy makers and local officials to ensure that the vision is realized.

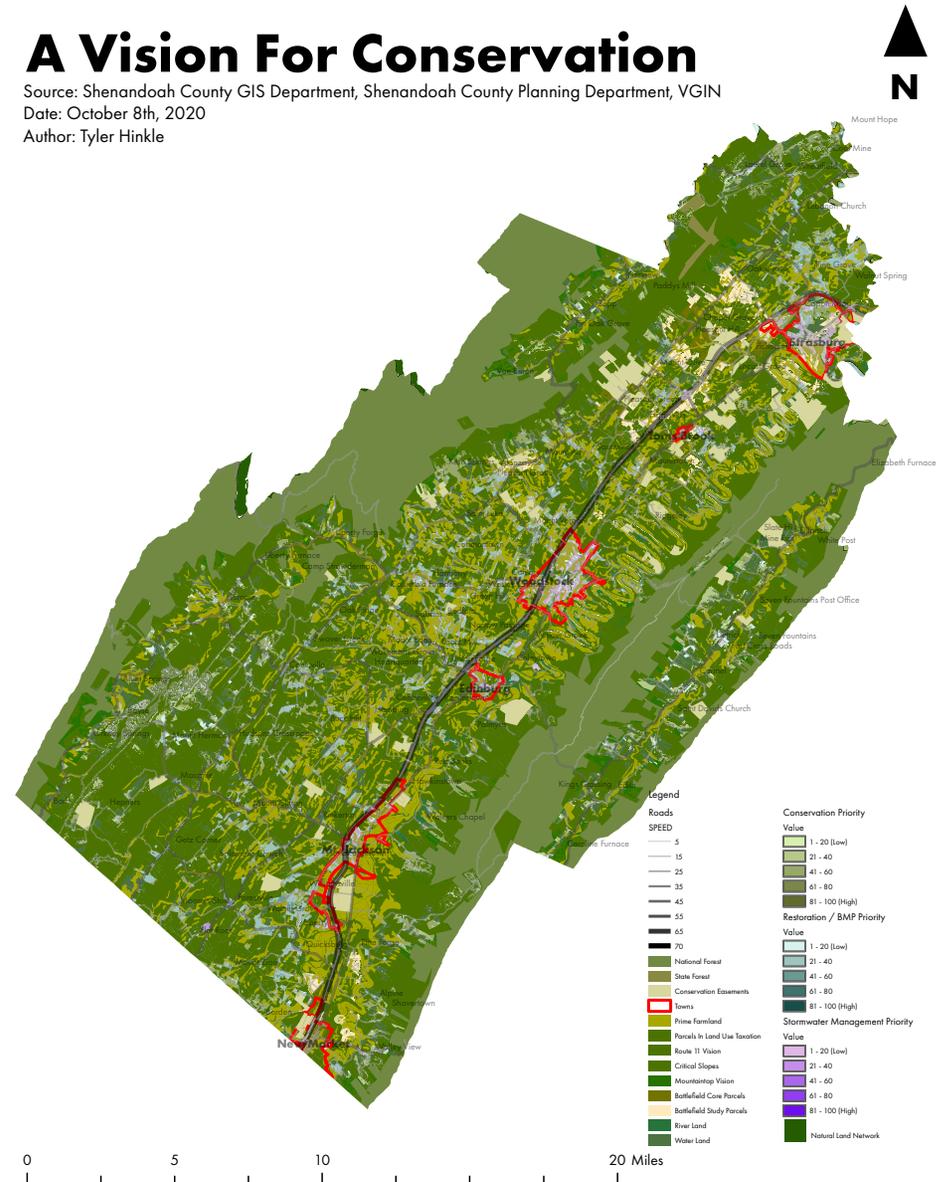
The first section seeks to provide eight different visions that tie into the overall Vision For Conservation in Shenandoah County. These individual visions include maps as well as brief descriptions of the initiatives and their connections to the current 2025 Comprehensive Plan. The second section seeks to provide information on the State's vision for conservation and how it relates to the current 2025 Comprehensive Plan, community service providers and their coverage area, and additional information to provide a more clear background on the need for conservation. The third and final section provides an actionable toolbox that includes tools that can be used at the current moment as well as additional tools which could be considered in future Comprehensive Plan updates.

Ultimately this report seeks to provide a roadmap for how key findings from the Cost of Community Services report may be addressed and how a joint focus on conservation and development can lead to a holistic and beneficial future for all individuals. It is up to the reader to take the tools, ideas, and ultimately the vision reflected in this report into their own hands in order to ensure that the findings from the Cost of Community Services report are addressed.

To the right is a map demonstrating the impact that achieving all eight visions set out in this report would have on conservation in Shenandoah County. It should be noted that all visions include a variety of conservation tools from BMP's and strategic plantings to conservation easements and new public lands for recreation. This report is merely a set of suggestions and not requested actions, but serves to be a tool to all in the community.

A Vision For Conservation

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



Map 1

The Mountaintop Vision

The word, "Mountain," appears 42 separate times in the 2025 Comprehensive Plan for Shenandoah County. Mountains serve as visual anchors to one's place in the Shenandoah Valley, both defining the metes and ends of one territory to the specific characteristics of the mountains which give each community character and distinct identities. As the Comprehensive Plan points out, "... mountains comprise approximately one-half of the County's total land area."² The Plan further explains that, "Approximately 45 percent of the County contains steep slopes ranging from 15 to 25 percent and, along the eastern and western borders, lands containing slopes of from 25 to 45 percent. The land along the eastern and western sides has severe slope limitations for both farm and non-farm uses."³

Provided that the Comprehensive Plan of Shenandoah County has identified that the mountains and steep slopes related to the mountains are key and important natural resources to the County, a vision is needed to ensure such resources are preserved for future generations. In the tenth and final chapter of the 2025 Comprehensive Plan, under the 2.3 goals listed as Economic Development and Tourism, the following action is recommended:

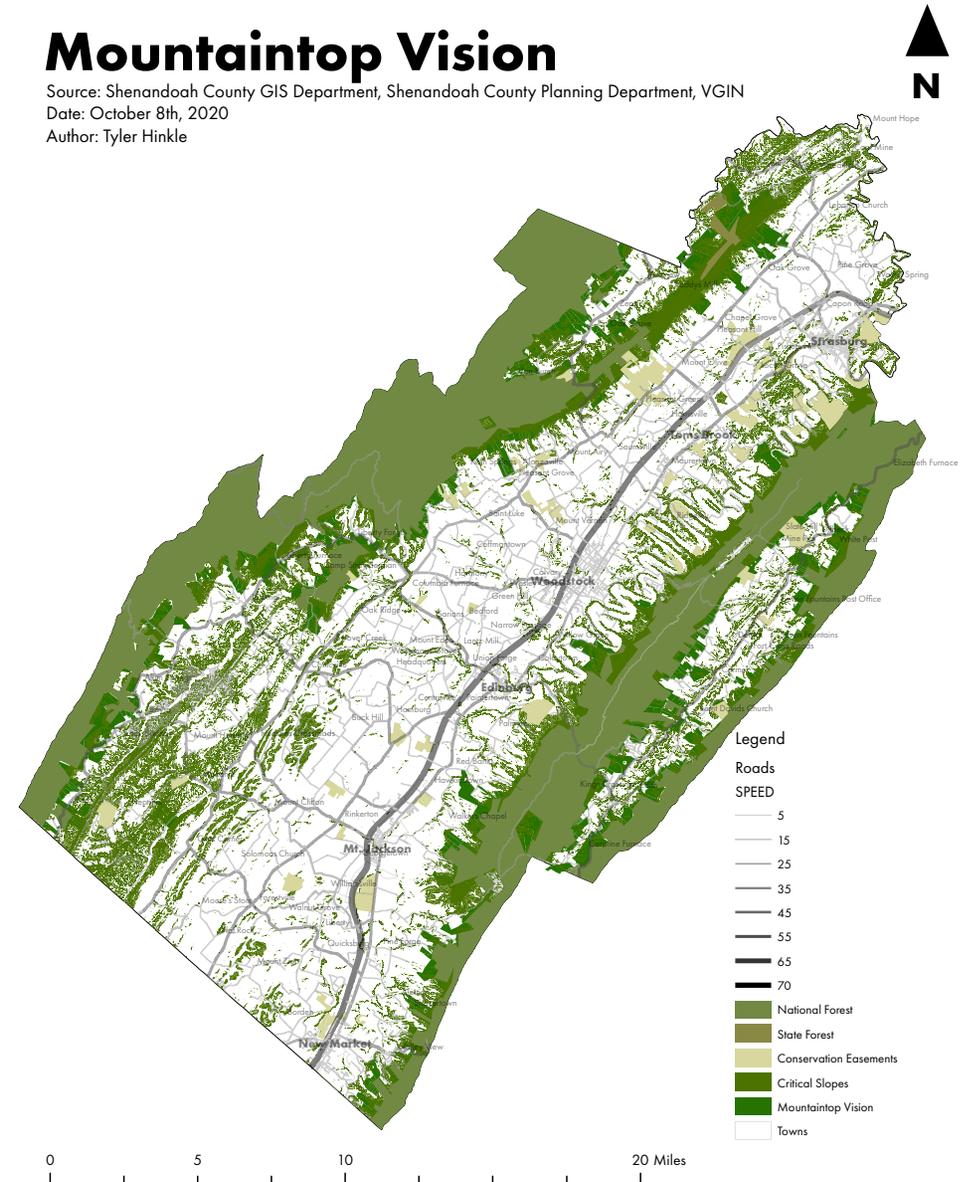
"Action: Identify specific scenic vistas throughout the county, erect appropriate roadside markers, and promote procedures for protecting, insofar as possible, those vistas from encroachment.

Responsibility: Director of Tourism, Director of Planning & Code Enforcement 2007"⁴

In order to both ensure that this recommended action can be accomplished and so that the listed important natural resources of the County are preserved, this vision presented seeks to preserve parcels which contain the tops of mountains that are not already preserved and to preserve steep slopes in the County from encroachment and disturbance. Map 2 demonstrates the land which would need to be conserved in order to achieve this vision. As the Map reveals, while a directed approach to preserving steep slopes will address the majority of the sides of mountains in the County, the tops of mountains tend to be relatively flat and do not qualify as being steep slopes. In order to both preserve mountain sides and mountain tops there will need to be a multifaceted approach which seeks to accomplish both goals simultaneously. With support, the Conservation Easement Authority can work with similar agencies to ensure this vision is realized.

Mountaintop Vision

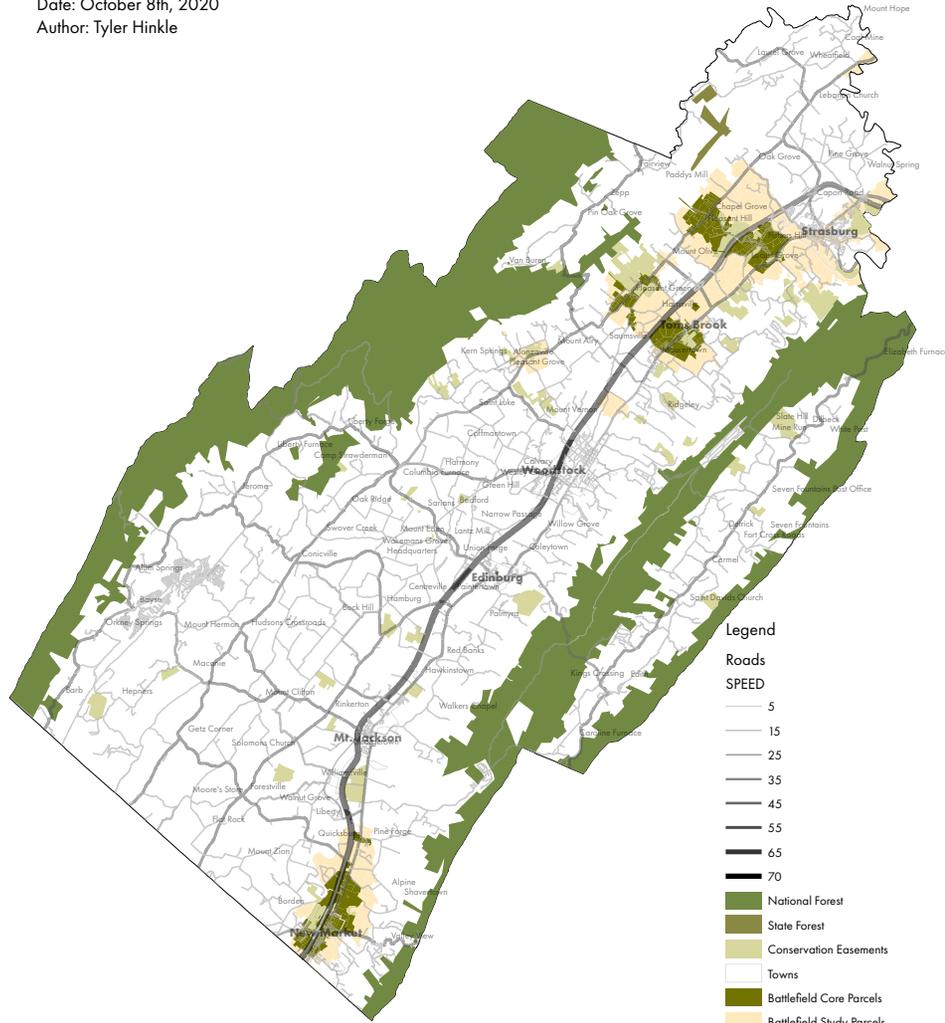
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
Date: October 8th, 2020
Author: Tyler Hinkle



The Battlefield Vision

Battlefield Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



In October 2005, Shenandoah County partnered with the Shenandoah Valley Battlefield Foundation to publish the Fisher's Hill & Tom's Brook Battlefields Preservation Plan. The Plan was developed with the assistance of a grant from the United States Department of the Interior's National Park Service's American Battlefield Protection Program. Congress established the boundaries of the Fisher's Hill and Tom's Brook Battlefields in the Shenandoah Valley Battlefields National Historic District and Commission Act of 1996.

In Shenandoah County's Comprehensive Plan for 2025 the four battlefields in the County are listed as important historical resources to the County. Battlefields and historic buildings and landscapes are listed as being vital to the tourism economy in the County as well as to growth management. Finally in chapter ten, or the final chapter of the Comprehensive Plan, the following recommended actions are listed:

"Action: Develop special ordinances/overlay districts to protect sensitive land and water resources from potential pollution and to preserve battlefields and other historic, scenic, and cultural resources.

Responsibility: Director of Planning & Code Enforcement, Zoning Administrator, 2006"⁵

"Action: Commission a professional study to develop a transportation plan through 2025, to include; Safety and volume improvements in the primary and secondary road network; An I-81 interchange north of Woodstock; Future needs for public transportation, e.g., bus service; Protection of scenic, battlefield, and historic resource; and Provisions for pedestrian and bicycle travel.

Responsibility: Director of Planning & Code Enforcement"⁶

In the spring of 2012 the Shenandoah Valley Battlefield Foundation provided an update on their work on the preservation of Fisher's Hill and Cedar Creek Battlefields. In the update a vision for an interpretive recreational trail is outlined which would connect the two battlefields together.

In order to ensure that the visions set out in the 2025 Comprehensive Plan as well as the 2005 Preservation Plan are realized, the vision on Map 3 reflects the need to preserve the battlefields in Shenandoah County with a key focus on the core areas of conflict as well as the key study areas of archaeological importance. With support, the Conservation Easement Authority can work with similar agencies to ensure this vision is realized.

Map 3

The North Fork Vision

The impairment of the North Fork of the Shenandoah River is listed as the number one concern of the 2025 Comprehensive Plan.⁷ In addition the North Fork is listed as a major natural resource to the community as well as one of the key defining natural features of the County. From the iconic Seven Bends to the numerous locations for fishing, swimming, and kayaking, the River connects the County from New Market to Strasburg. In Chapter Two, Natural Resources, the following action is recommended:

“Encourage riparian landowners to maintain streambank vegetation and minimize disturbances in riparian areas in order to protect stream habitat and water quality. Encourage landowners to apply to have riparian land placed in the Conservation Reserve Program or conservation easements.”⁸

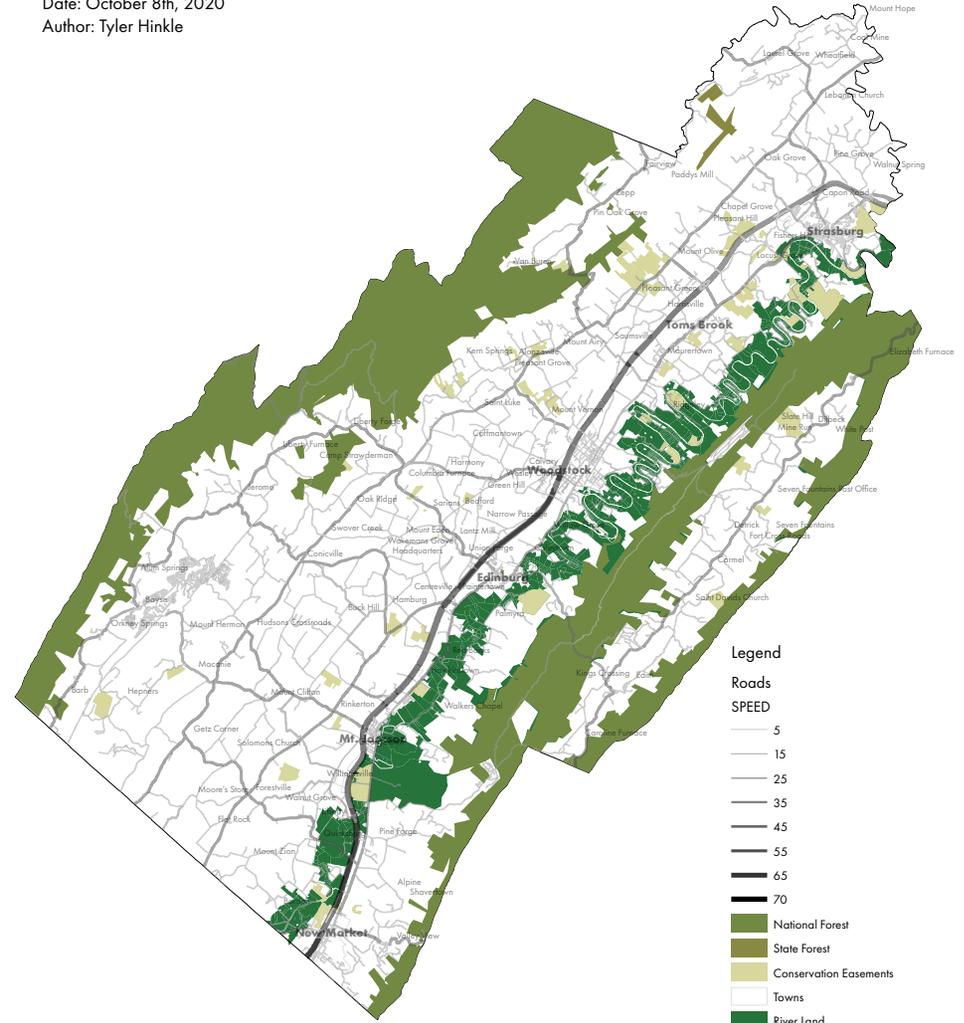
On September 1st, 1999, the Lord Fairfax Planning District Commission formed the Shenandoah River Recreational Use Management Plan Working Committee. While the Committee and its efforts eventually faded out of existence, a new Committee and vision is being formed at the current moment following the opening of the Seven Bends State Park in Woodstock.

On September 3rd, 2020, the Shenandoah County Planning Commission agreed to the creation of a Master Plan for the North Fork of the Shenandoah River. While the Master Plan is set to take a varied approach on the River and its watershed through access, quality, and infrastructure, the vision set forth will require for areas in and around the North Fork being preserved. The preservation of land along the banks of the North Fork of the Shenandoah River not only ensures that the scenic qualities of the River are maintained, but also so that the water quality of the River does not decline and is able to improve from its current standing.

The vision set forth on Map 4 demonstrates the preservation of all lands which touch the North Fork of the Shenandoah River as well as those that are within 100 feet of the banks of the River. A common practice is to provide a 100 feet natural buffer between agricultural, residential, commercial, industrial, other non-natural uses, and the River. This 100 feet of space allows for nature to purify the water that runs off the non-natural land uses to ensure that when the runoff enters the watershed, it resembles natural water runoff. While an open field of native plants can serve as the 100 feet of buffer, it is more common and more recommended that individuals use trees in the buffers as the roots will absorb more and protect the banks from erosion.

North Fork Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle

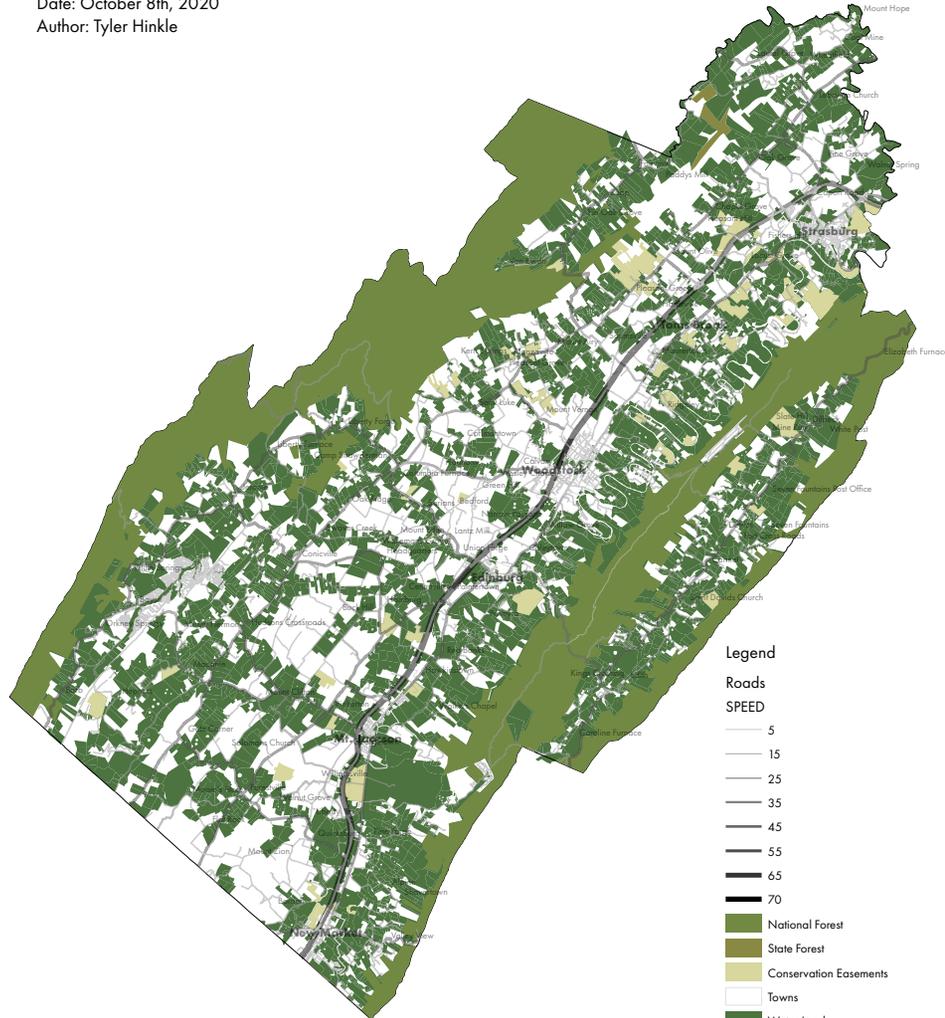


Map 4

The Greater Watershed Vision

Greater Watershed Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



0 5 10 20 Miles

As noted on page four, there is an existing movement to protect the North Fork of the Shenandoah River for numerous purposes from tourism and recreation to drinking water and the water quality for native animals and plants. While the North Fork runs south to north and connects five of the six Towns in the County, the greater watershed connects all six Towns and all 120 villages, hamlets, and smaller settlement communities in the County. One can note that the one commonality found in every community in Shenandoah County is the proximity to water. The water in our streams is the source of life itself through providing drinking water, irrigation, water for livestock and wildlife and the historic nature of how water metaphorically and quite literally propelled industry through the over 100 mills that once dotted the County.

As all of the streams in Shenandoah County ultimately empty into the North Fork of the Shenandoah River, it is vital that one considers all streams and tributaries of the North Fork in ensuring the conservation of the waterbody. The Proposal For A Master Plan For The North Fork Of The Shenandoah River points out the need to focus on the smaller waterbodies not only to ensure that one is all encompassing of all aspects of the watershed, but also because of the importance of local identity. As the report points out, individuals are more likely to take action that will directly impact the stream in their backyard rather than the river miles from where they live.

In Chapter Nine of the 2025 Comprehensive Plan the following objective for action is laid out:

“Objective 1.3: Preserve and adopt specific measures to protect the Shenandoah River, other streams, and the County’s ground water.

To achieve this the County shall regulate development in flood plains and promote landowners’ participation in hazard mitigation programs that will reduce future dangers of flooding; develop and implement a groundwater protection plan; identify priority watersheds and adopt specific measures to protect sinkholes, streams, and wetlands. The County shall also assist towns and other public water suppliers in protecting public water supplies, including wellheads and aquifer recharge areas.”⁹

Chapter Ten outlines this goal: “Action: Aggressively pursue expansion of Best Management Practices in riparian areas. Increase number of miles of stream bank protection by 10% per years, 2006-2010”¹⁰

Map 5

The Water Quality Vision

Following a drought in the early 1990's the Shenandoah County Board of Supervisors formed the Water Resources Advisory Committee in 1999 to oversee the potable water resources in the County. The term, "Water Quality," is referenced 13 separate times in the 2025 Comprehensive Plan. The Plan defines water quality as being, "the suitability of water for its intended or desired uses. Both aesthetic characteristics and safety influence water's suitability for a particular use. Water suitable for one use may not be suitable for another. For example, the water in a high quality trout stream is still not safe to drink without treatment."¹¹

County residents receive water from one of the following methods:¹²

1. The Towns of Strasburg and Woodstock draw water from the North Fork of the Shenandoah River.
2. Water for the Towns of New Market, Mount Jackson, and Edinburg as well as the Toms Brook Maurertown Sanitary District and Stoney Creek Sanitary District are drawn from drilled wells and treated in treatment plants.
3. 60 other public water systems obtain water from drilled wells and treat it as necessary.
4. The majority of County residents receive water from a private well.
5. A small amount of County residents obtain water from cisterns or from water haulers.

The Comprehensive Plan also calls for the following action:

"Action: Develop special ordinances/overlay districts to protect sensitive land and water resources from potential pollution and to preserve battlefields and other historic, scenic, and cultural resources.

Responsibility: Director of Planning & Code Enforcement, Zoning Administrator, 2006"¹³

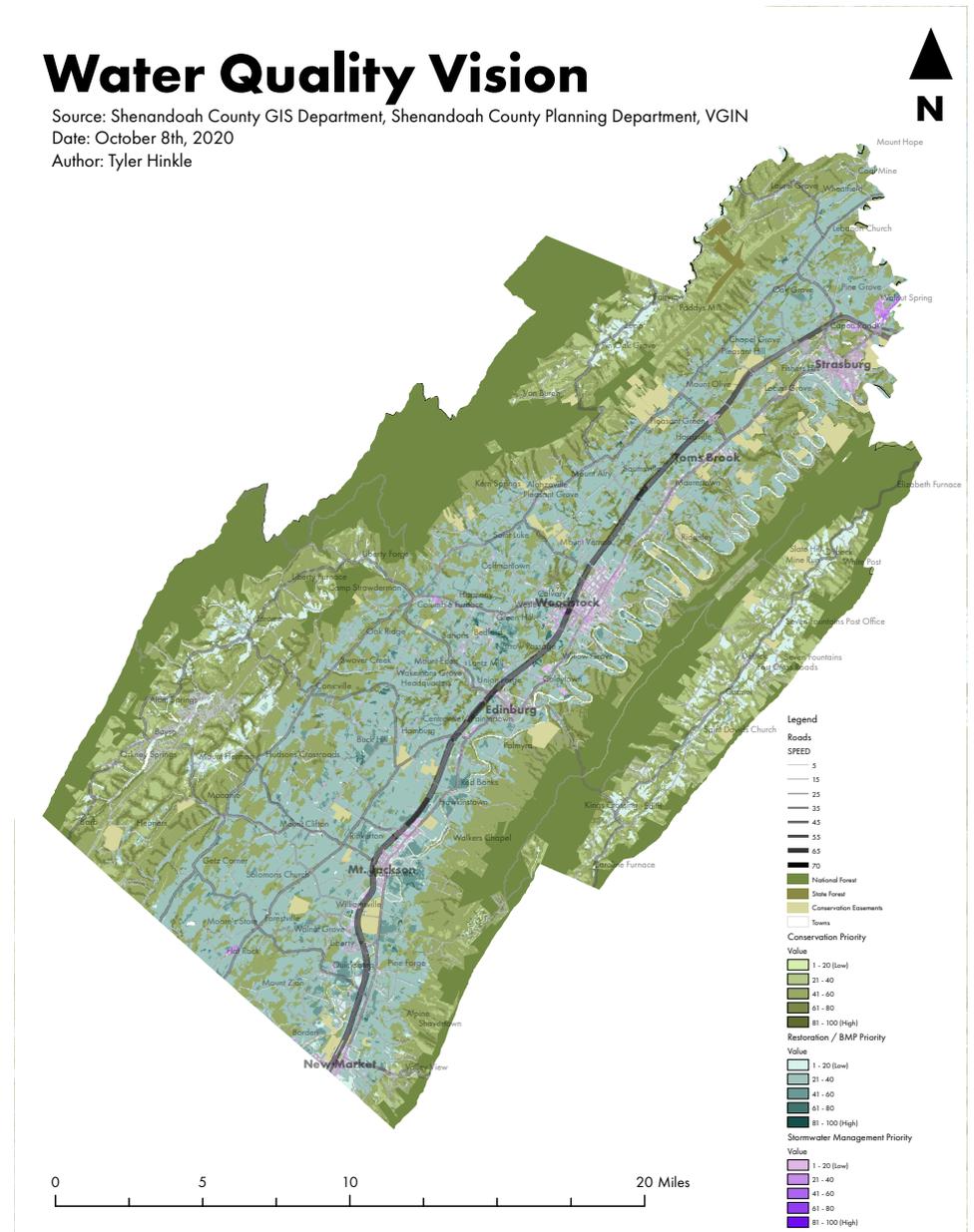
Map 6 come from the Virginia Department of Conservation and Recreation's Conserve Virginia and it demonstrates that a multifaceted approach will be needed in order to address the water quality issues faced by the surface and groundwater resources in the County. The Conservation Priority layer represents land that should be placed under conservation easement while the other two layers represent the need for BMP's and stormwater management to ensure that runoff does not pollute our water.

Water Quality Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN

Date: October 8th, 2020

Author: Tyler Hinkle

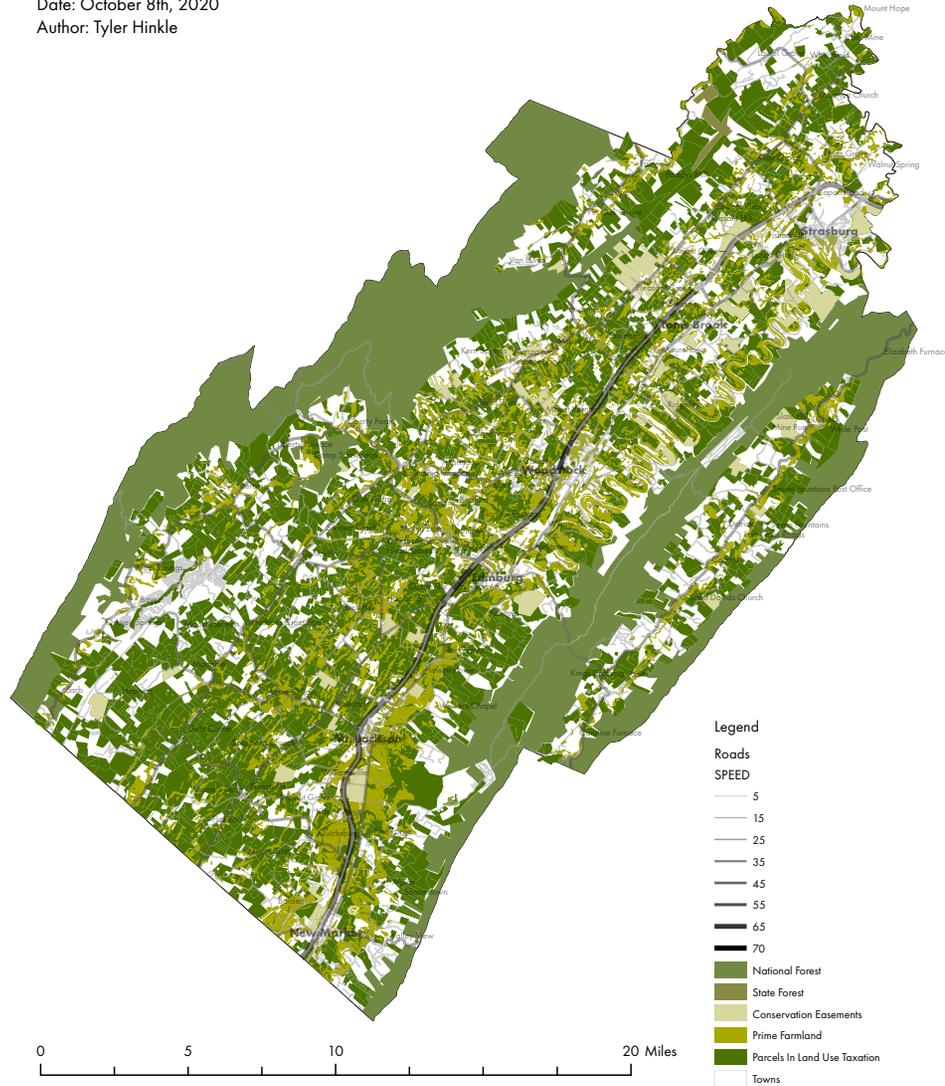


Map 6

The Agriculture Vision

Agriculture Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



The word, "Agriculture," is found 57 times in the 2025 Comprehensive Plan of Shenandoah County. The Comprehensive Plan explains the importance of agriculture in the County as in 2012 there were 980 farms comprising a total of 133,519 acres. In 2008, a Community Planning Project was led to determine the future vision of the County and a major finding from the study was the threat of large tracts of agricultural land being split into smaller parcels. The importance of agriculture is most clearly seen with this excerpt from the vision statement of Shenandoah County:

"In the year 2025 Shenandoah County will still be a primarily rural community."¹⁴

In addition the third most important goal in the Comprehensive plan is, "Promoting and protecting farming as an occupation."¹⁵ The Plan calls for the County to use as many tools as possible to ensure that agricultural lands are protected and that there are incentives for individuals and families to continue farming. A part of those efforts included the following actions in Chapter Ten:

"Action: Convene an ad hoc advisory committee to study the merits of the purchase of development rights (PDR) as a means of permanently preserving agricultural land in the county. PDR is a recognized tool for protecting rural areas but has been little used in the Commonwealth. Determining what parcels of land are worthy of this designation and how such purchases would be paid for a key issues to be addressed.

Responsibility: Board of Supervisors, 2005"¹⁶

"Action: Working with local farmers, agricultural organizations, and agriculturally related businesses, develop a set of economic development strategies in relation to agriculture.

Responsibility: Director of Economic Development, 2005-2006."¹⁷

Chapter Two of the Comprehensive Plan also outlines that there are specific types of soil which work best for agricultural production, and such soils are represented on Map 7 as Prime Farmland. In addition to Prime Farmland, Map 7 also demonstrates all of the parcels which are already in land use taxation. This means that if all of the parcels listed had their land under land use taxation added to conservation easements, then there would be no change to the current tax revenue from said parcels. Preserving farmland allows for a strong agricultural and tourism economy.

Map 7

The Shenandoah Valley Corridor Vision

As noted on page six and Map 6, the Virginia Department of Conservation and Recreation commissioned a new tool for conservation in Virginia called the Virginia Natural Heritage Data Explorer. The tool can be found at: <http://vanhde.org/content/map>

The tool is a map which contains various layers which demonstrate the importance of conserving various lands across the State as well as the reasoning for why such lands should be conserved. The full vision of the tool is presented with the Conserve Virginia layer, which is demonstrated on Map 14 later on in this report.

One of the layers of the tool is the location of key habitat cores and corridors. The importance of these amenities and how they are determined is explained in greater detail on page 14. Map 8 demonstrates the habitat corridors layer from the tool. Near the top right hand side of the map is a blue dashed circle showing a key habitat corridor in the County and State. The corridor shown in the blue circle is the only connection between the Blue Ridge Mountains and the Appalachian Mountains in the entire Shenandoah Valley, not including Rockbridge County. Without this corridor there would be no direct way for animals to be able to traverse the Valley floor for hundreds of miles.

This corridor is located near the Tuscarora Trail, which is the only trail in the County that runs from east to west. It is possible that efforts to achieve easements to preserve the habitat corridor could be married with efforts in providing more amenities to the Tuscarora Trail. The location is also ideal because it is situated near existing easements and traverses a part of the County with little existing or planned development. The corridor covers the iconic Round Hill near Toms Brook, which was a key location in the Battle of Toms Brook during the Civil War.

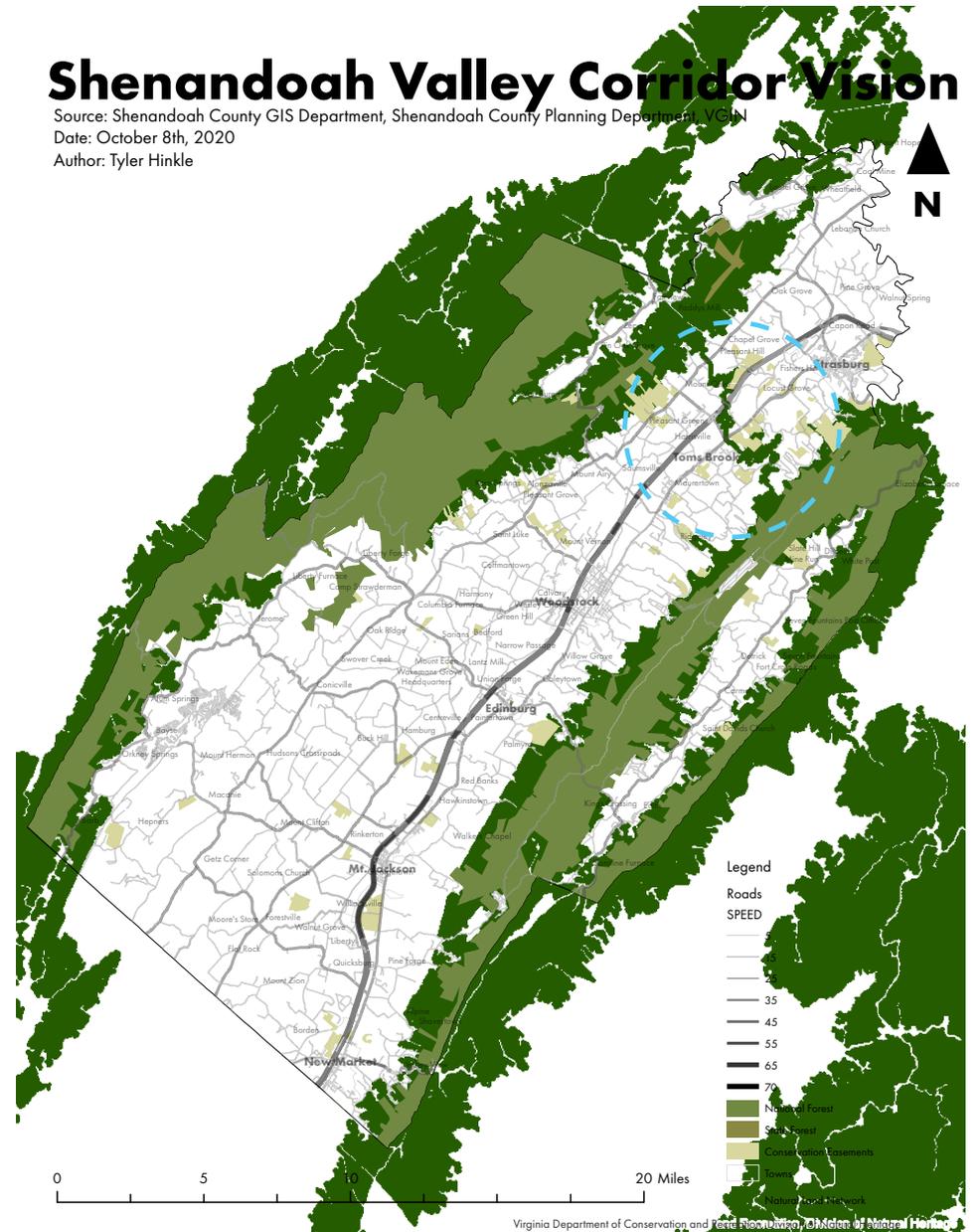
While a numerous set of tools may be used in order to achieve this vision of having a preserved corridor, which is the only one of its type, it is recommended that conservation easements are used to preserve the corridor. The other lands which have been listed as being important for preservation would also be best achieved with conservation easements to ensure that the preservation is permanent. A second important corridor is near Wheatfield and it connects Little North Mountain to Cedar Creek and the Appalachian Mountains to the north.

Shenandoah Valley Corridor Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGN

Date: October 8th, 2020

Author: Tyler Hinkle

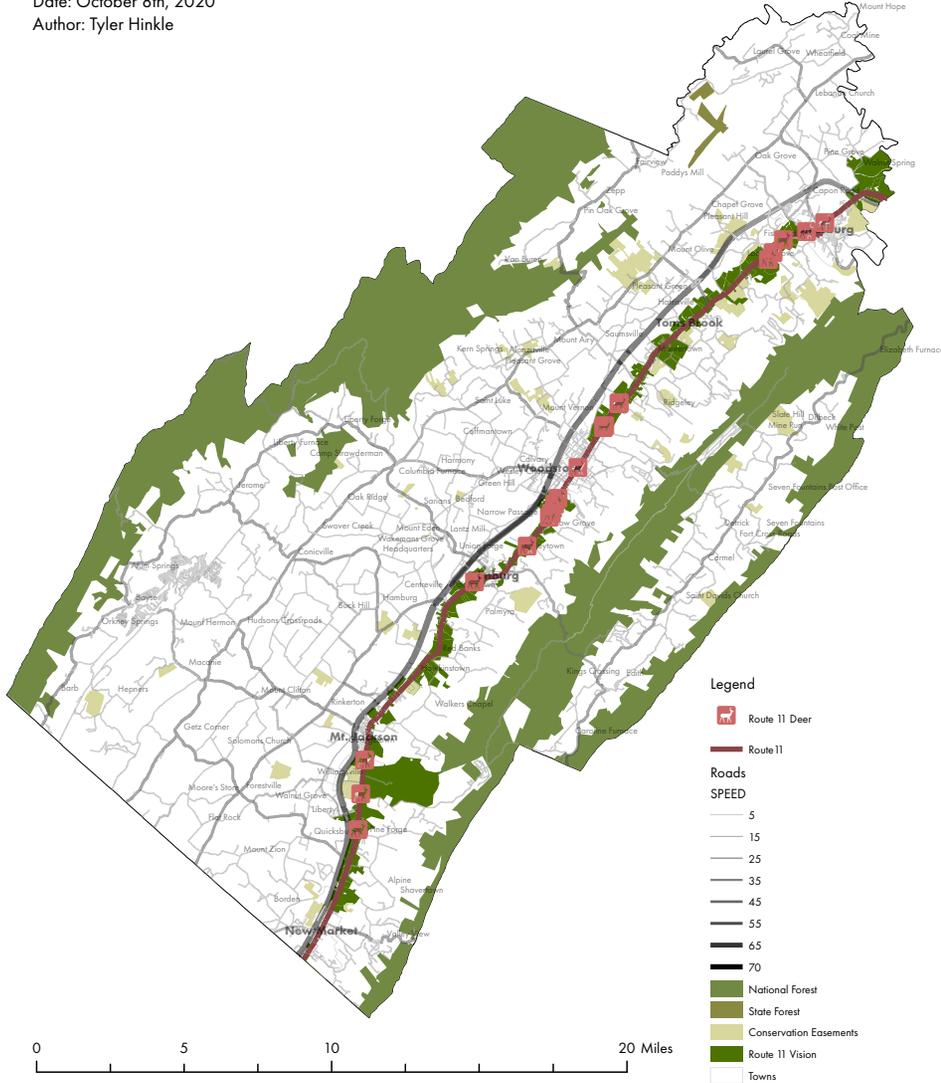


Map 8

The Route 11 Vision

Route 11 Vision

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



Route 11, formerly the Long Gray Trail, was once the foot path of Iroquois tribes who used the Valley as hunting grounds and was transformed into the Valley Turnpike by act of the Virginia General Assembly in 1834. By 1840 the road was completely macadamized and in 1859 Shenandoah County had a railroad from Strasburg to Mount Jackson. The railroad and macadamized roads aided in the development of the iron industry in Shenandoah County, and allowed for farmers to transition their crops from being transported via gondolas down the Shenandoah River, to wagon or rail. At the advent of the automobile transportation shifted from passenger and freight rail to automotive transportation, and in 1957 Interstate 81 (I-81) began construction and it allowed for an outward expansion of growth from the Northern Virginia area. Concerns within the County of Shenandoah arose in the 1970's as subdivisions began to dot the disappearing rural landscape and the first comprehensive plan, zoning ordinance, and subdivision ordinance were adopted in 1978 and focused on preventing sprawling development. Planning efforts in the early 2000's in the midst of developing the third comprehensive plan led County officials to adopt the Old Valley Pike Overlay District (OVP) in order to prevent suburban growth along the corridor. This action came from the following recommendation:

“Action: Implement the recommendations of the Old Valley Pike Corridor Plan; create a corridor overlay district; encourage VDOT to implement safety improvements at dangerous locations; and apply access management criteria along the corridor.

Responsibility: Director of Planning & Code Enforcement 2005”¹⁸

While the OVP Overlay District has aided in reducing suburban development along Route 11, it still faces the issue of not providing a permanent solution to the issue at hand. In order to address the threat of losing the rural landscape views from Route 11, efforts will need to be made to preserve lands along the corridor with numerous tools from a Transfer of Development Rights program to conservation easements. In addition to the threat on the character of the Route 11 corridor, there are also issues with wildlife traversing Route 11 and eventually Interstate 81. In order to address these issues, locations of deer collisions have been noted on Map 9 as locations to be studied for underpasses for wildlife through utilizing existing bridges and culverts as well as fencing to redirect wildlife.

Map 9

Conservation In Shenandoah County

Similar to many aspects of life, prime farming soils are not distributed equally across Shenandoah County and neither are historic forests. While it may be noted that majority of the forests that exist in Shenandoah County were at one point since the arrival of European settlers, deforested, the oldest forestal areas in the County are on the mountain ranges. The deforestation that has occurred in the past may have been from such factors as burning land to make space for farming, cutting trees for fueling the iron furnaces, intentionally or unintentionally burned during the burning during the Civil War, or other factors such as logging.

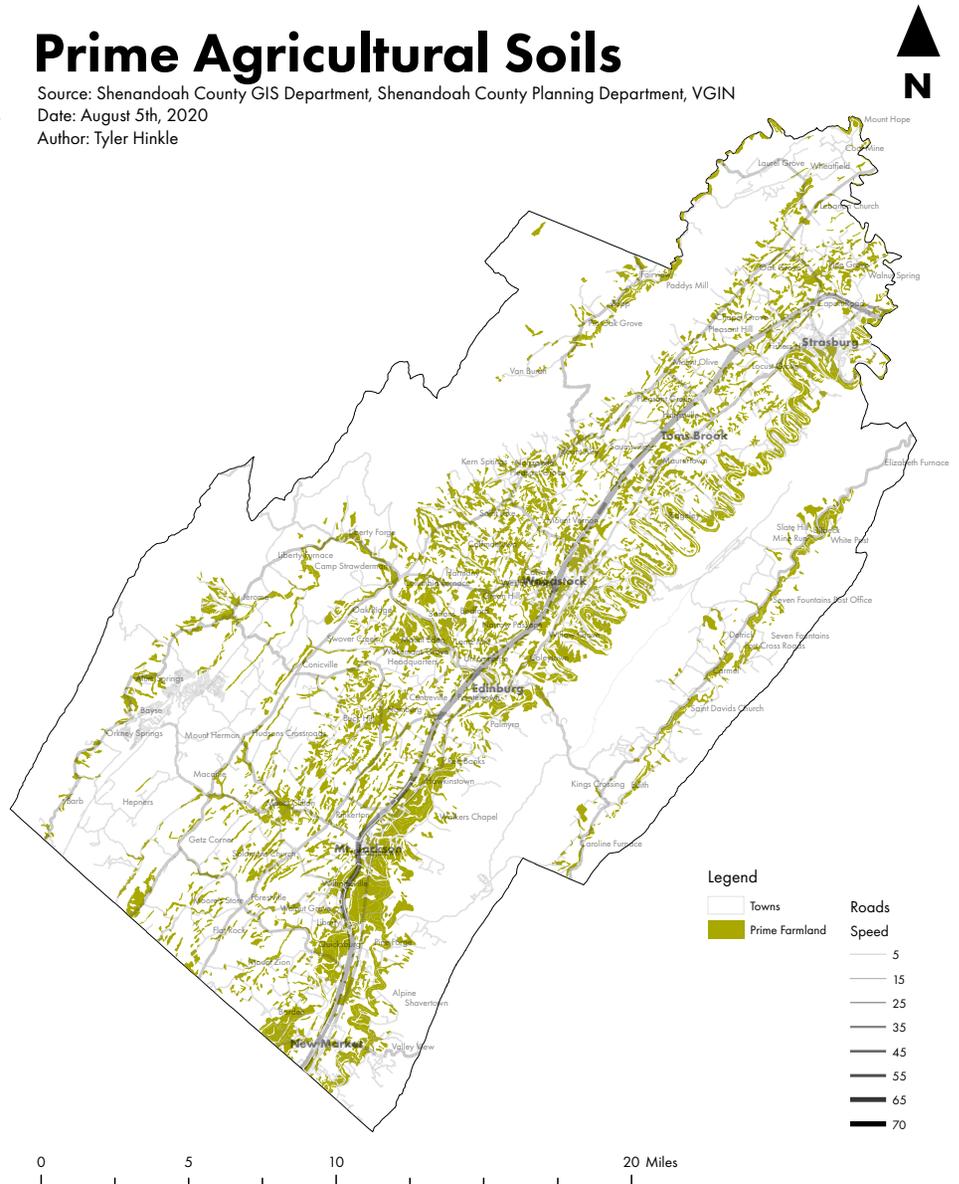
The prime soils in Shenandoah County have been identified through examining areas with soils that are well drained. These soils exist primarily along streams and major water-bodies such as the North Fork of the Shenandoah River. As can be noted with the comparison between the Prime Agricultural Soils map and the Proposed Growth Areas map taken from the 2025 Shenandoah County Comprehensive Plan, there is a conflict between prime farmland and locations where development is intended to occur. Specifically you can note large areas of prime soils in the New Market, Mount Jackson, Woodstock, and Strasburg growth areas as well as in the Toms Brook Maurertown Sanitary District.

As of the time this report is released there are 126 parcels under conservation easements in Shenandoah County, which make up for a total of 10,869.47 acres that are currently conserved in Shenandoah County other than the State and National Forests. In addition, it can be noted that the average easement size is 86.27 acres. In addition to the easements in the County there are 37,768.56 acres in Shenandoah County that are in an Agricultural and Forestal District.

The first map on the next spread of pages demonstrates the Level of Service that the County and the Towns provide to the people of Shenandoah County. As can be noted the areas with the highest levels of service, or most desirable places to live, are along Route 11 or between Edinburg and Conicville, which is where majority of the prime farmland soils are located. In addition, while the National and State forests protect some of the mountains, the Habitat Corridors map demonstrates the importance of large connected forests for wildlife. The Conserve Virginia map is an official map from Virginia's Department of Conservation and Recreation to promote conservation.

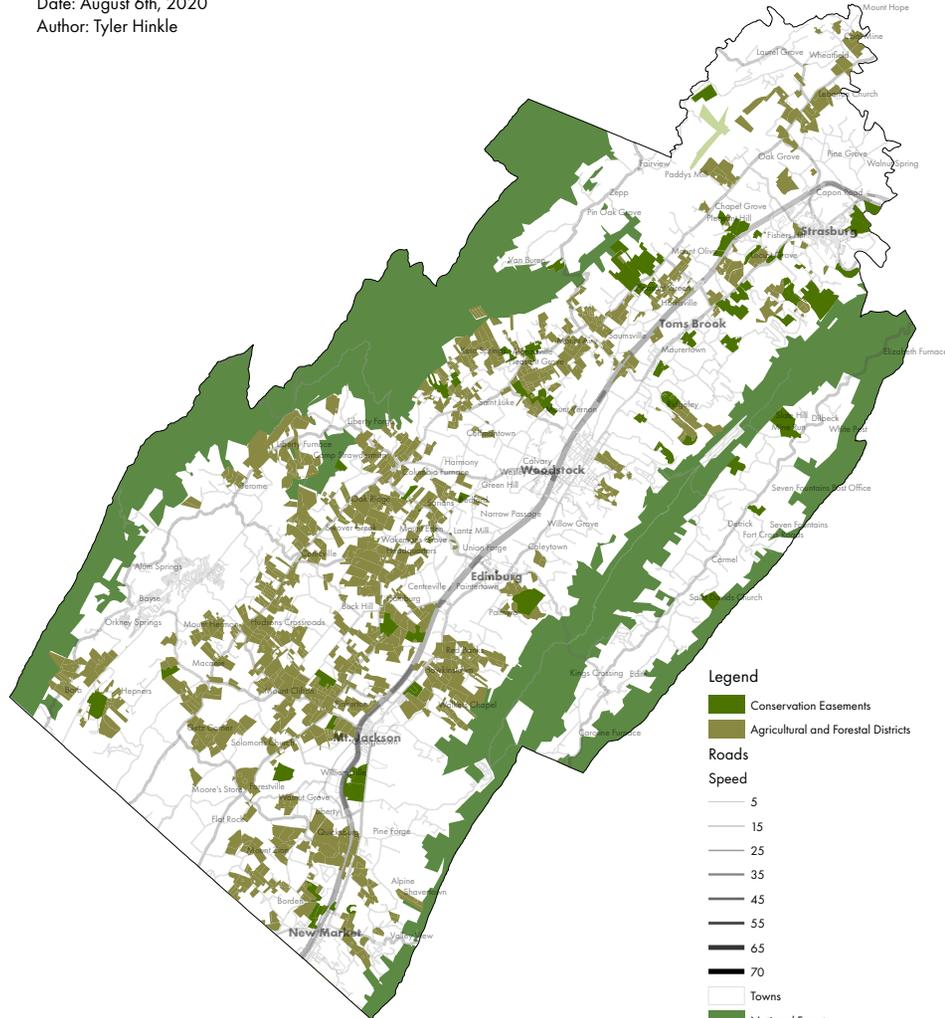
Prime Agricultural Soils

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
Date: August 5th, 2020
Author: Tyler Hinkle



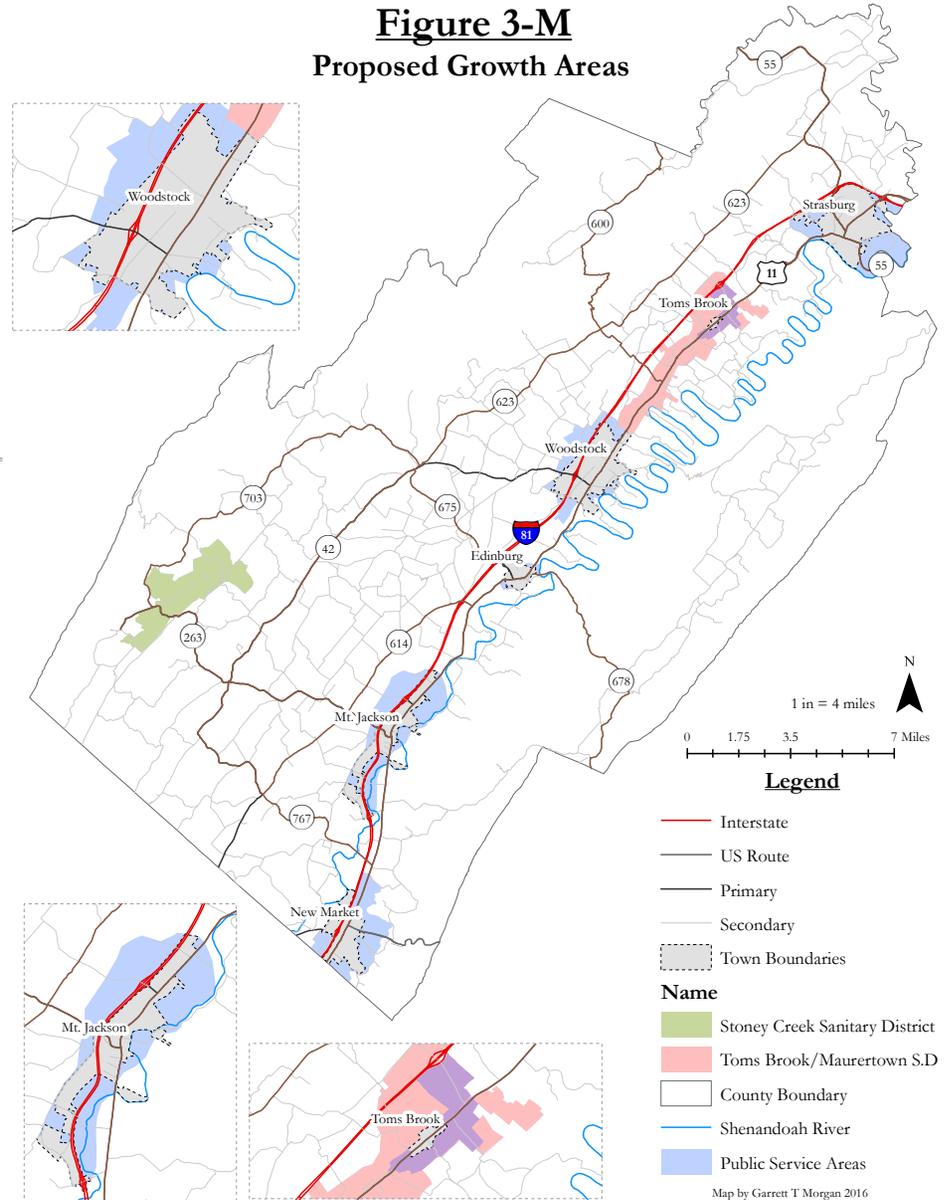
Conserved Land And AFD Parcels

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: August 6th, 2020
 Author: Tyler Hinkle



- Legend**
- Conservation Easements
 - Agricultural and Forestal Districts
- Roads**
- Speed**
- 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
- Towns
 - National Forest
 - State Forest

Figure 3-M
Proposed Growth Areas



- 1 in = 4 miles
- 0 1.75 3.5 7 Miles
- Legend**
- Interstate
 - US Route
 - Primary
 - Secondary
 - Town Boundaries
- Name**
- Stoney Creek Sanitary District
 - Toms Brook/Maurertown S.D
 - County Boundary
 - Shenandoah River
 - Public Service Areas
- Map by Garrett T Morgan 2016

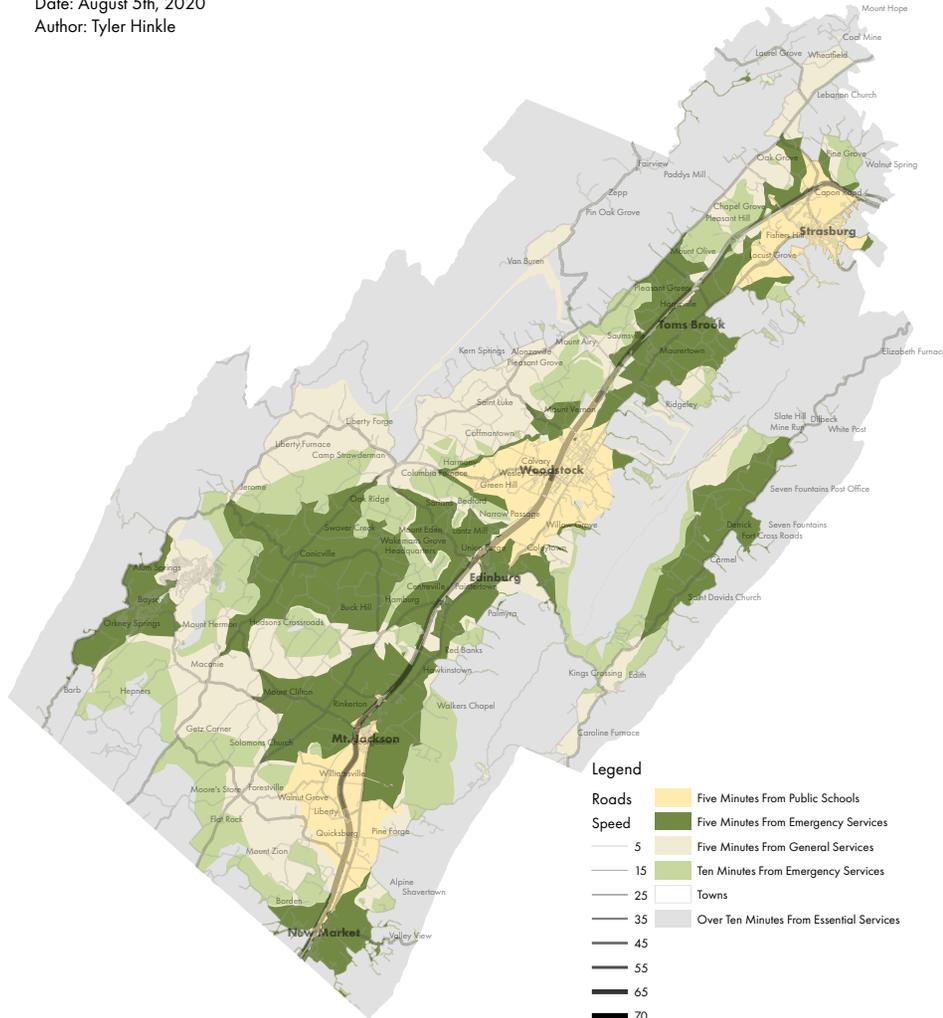
Map 11

15

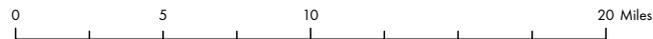
Map 12

Level Of Service

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: August 5th, 2020
 Author: Tyler Hinkle



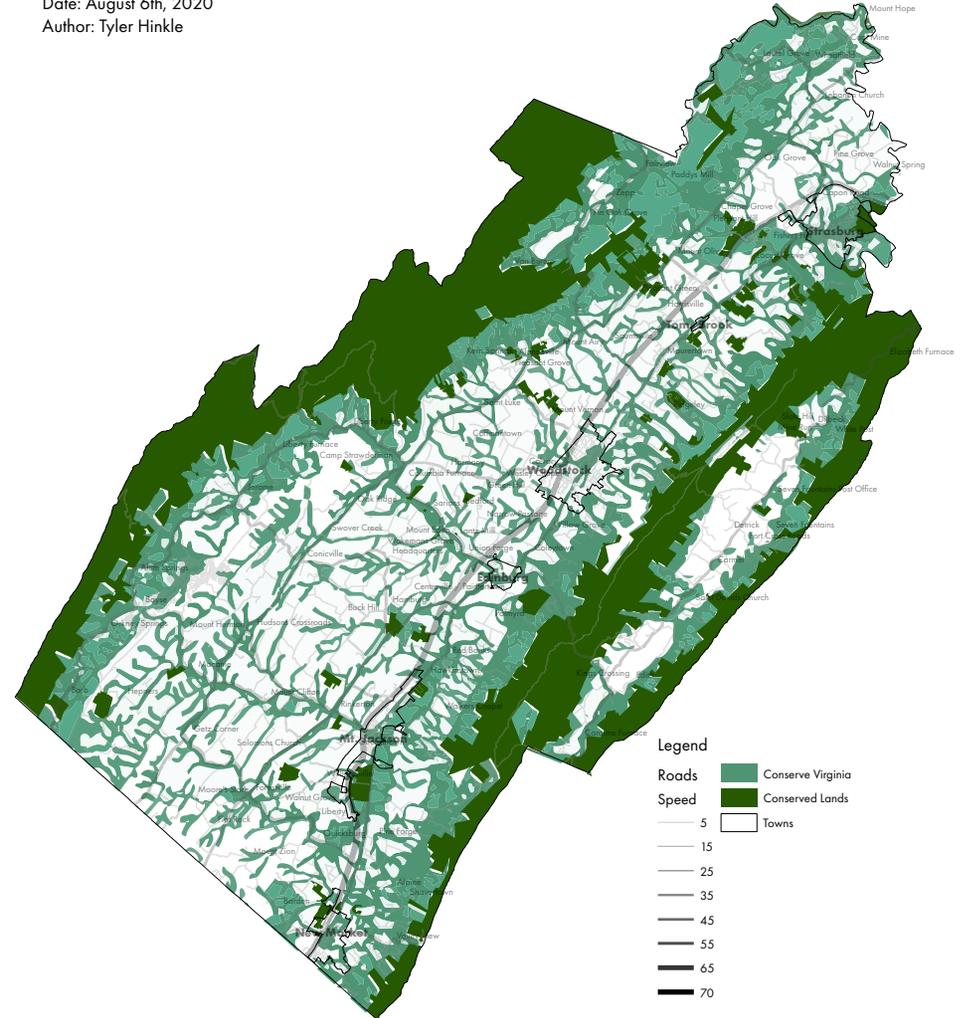
- Legend**
- Roads Five Minutes From Public Schools
 - Roads Five Minutes From Emergency Services
 - Roads Ten Minutes From Emergency Services
 - 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
 - Towns
 - Over Ten Minutes From Essential Services



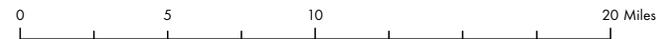
Map 13
16

Conserve Virginia

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN, DCR
 Date: August 6th, 2020
 Author: Tyler Hinkle



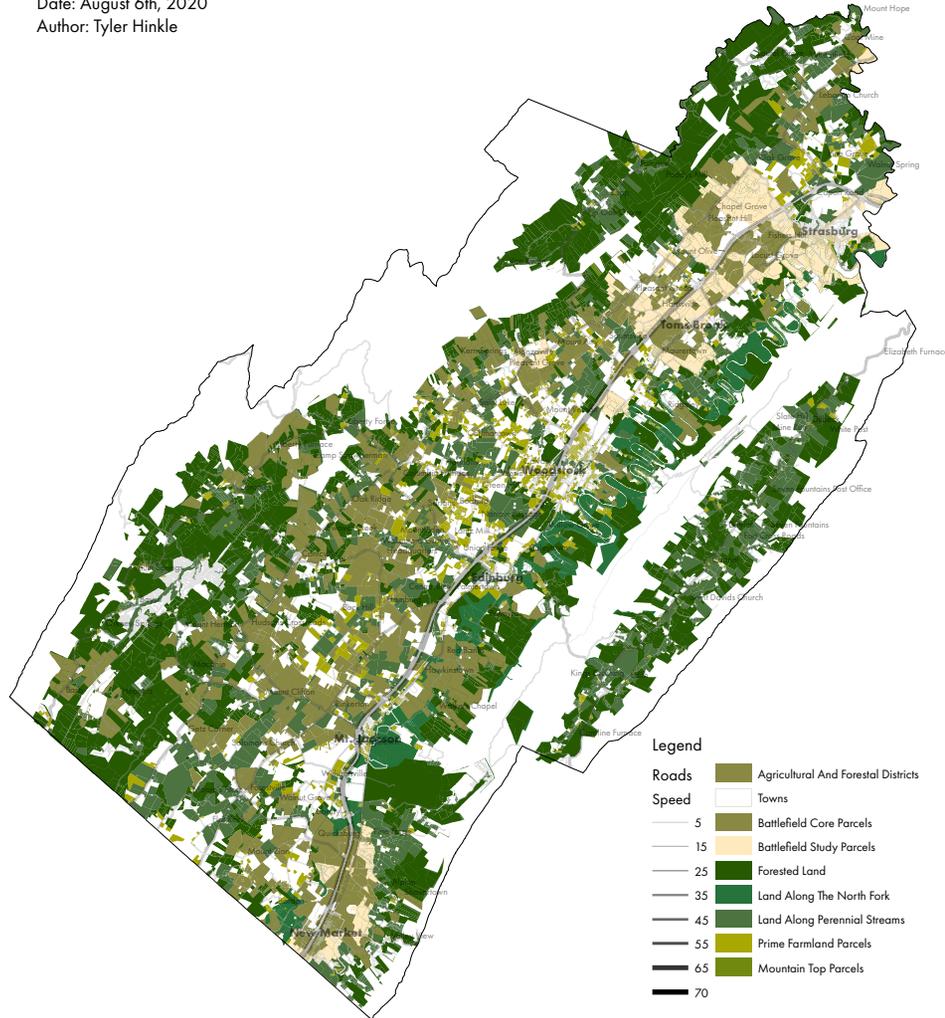
- Legend**
- Roads Conserve Virginia
 - Roads Conserved Lands
 - 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
 - Towns



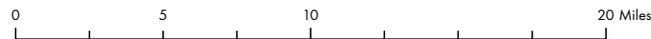
Map 14

Important Lands Not Conserved

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: August 6th, 2020
 Author: Tyler Hinkle

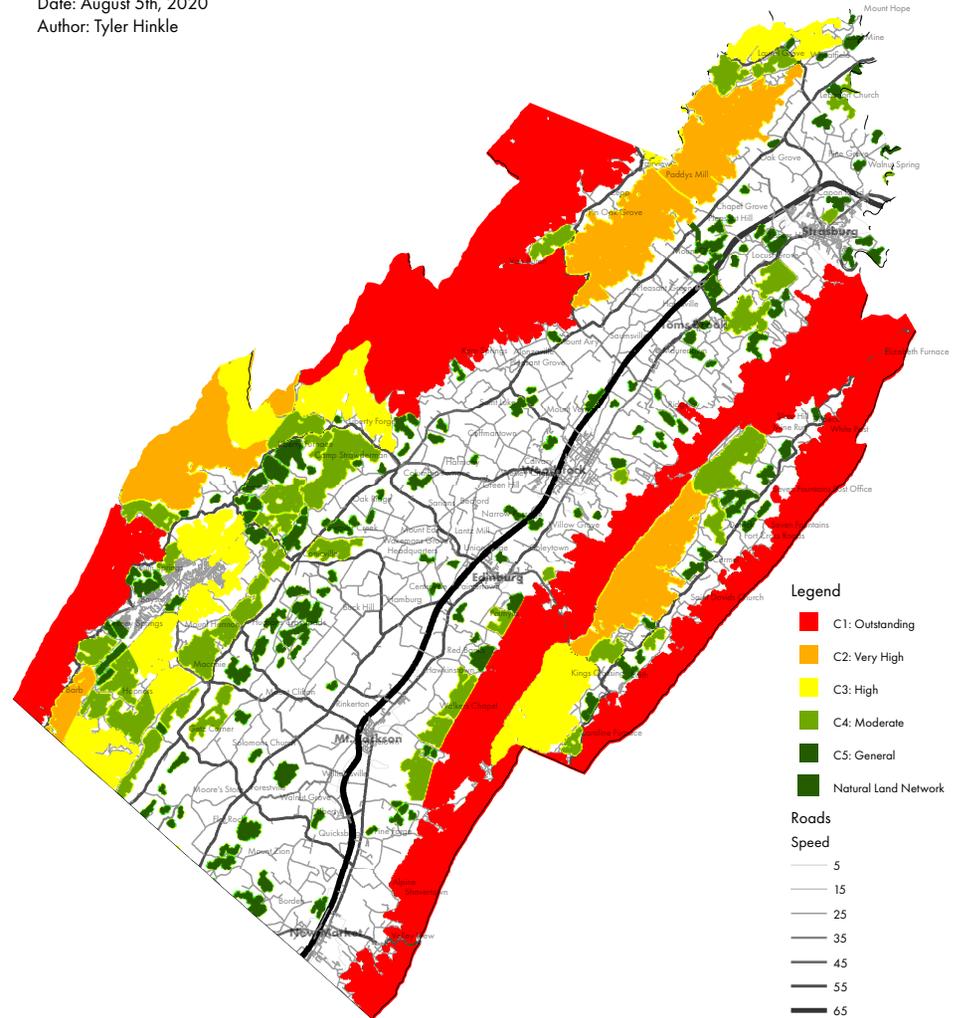


- Legend**
- Agricultural And Forestal Districts
 - Towns
 - Battlefield Core Parcels
 - Battlefield Study Parcels
 - Forested Land
 - Land Along The North Fork
 - Land Along Perennial Streams
 - Prime Farmland Parcels
 - Mountain Top Parcels
- Roads**
- 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70

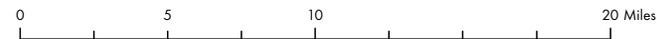


Habitat Cores And Corridors

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN, DCR
 Date: August 5th, 2020
 Author: Tyler Hinkle



- Legend**
- C1: Outstanding
 - C2: Very High
 - C3: High
 - C4: Moderate
 - C5: General
 - Natural Land Network
- Roads**
- 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
 - Towns



Map 15

17

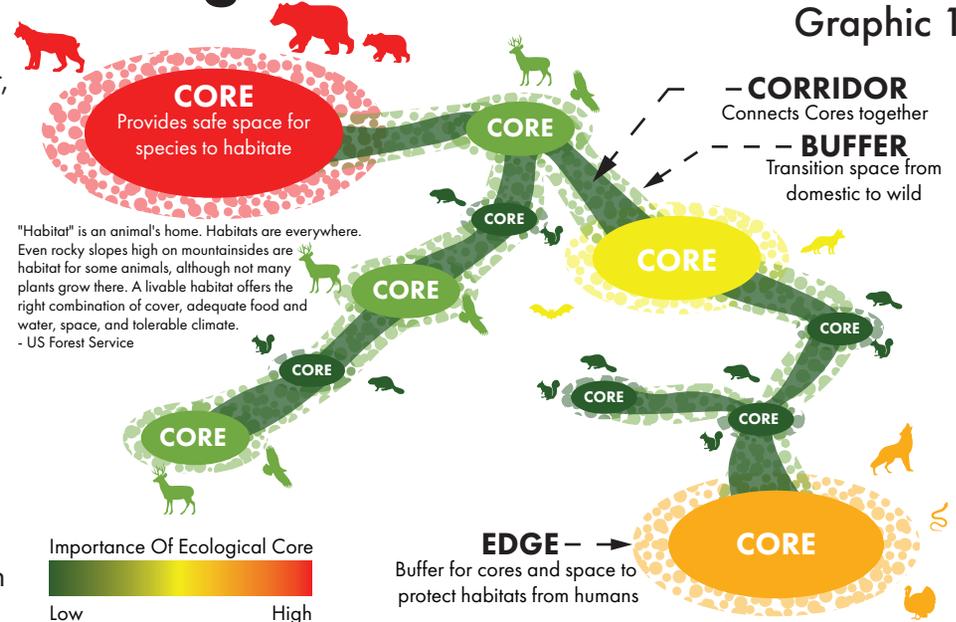
Map 16

Different species of animals, plants, and fungi need different spaces in order to thrive and reproduce so the species can continue living on generation to generation. These spaces, or habitats, vary in size species to species and provide the essential needs of all living beings: food, water, tolerable climate, compatible vegetative cover, and most importantly space. This report, as well as the Conserve Virginia mapping service called the Virginia Natural Heritage Data Explorer, call these habitats ecological cores as they serve as the core living space for various species. "A core is an area or patch of relatively intact habitat that is sufficiently large to support more than one individual of a species... the greater the diversity of habitats, the more important it is to conserve the core..."¹⁹ In addition to the cores which provide the main living space for various species, there are edges to the cores which serve the purpose of protecting species from human disturbance and development. An edge is, "The transitional boundary of a core, where the vegetation assemblage and structure differs markedly from the interior, such as forest edges."² As cores vary in size and shape and exist at different parts of the landscape, it is important to make sure that cores are connected with corridors in order to allow wildlife and flora to hop from core to core. This ability to travel between cores is extremely important if a disastrous event were to take place in one core, such as a wildfire, and the species in that core needs to relocate safely to another core of the same size. To protect species while traveling, "it is recommended that these connections be at least 300 meters wide: a central 100-meter width of interior habitat, with a 100-meter edge on either side to protect safe passage and buffer against human intrusion and invasive species. Streams are natural corridors and the width of the vegetative corridor on either side should reflect the stream order,"²: large streams need large buffers.

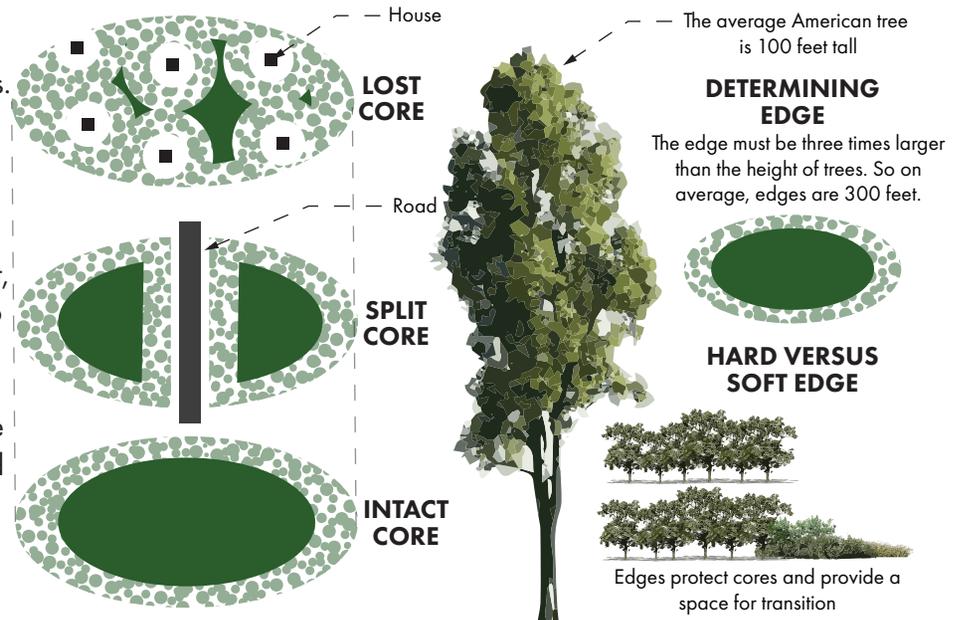
When roads and houses are developed through cores and corridors then the habitats and their connections are reduced in size. While on the outset it may seem better for a community to restrict landowners to 10 acres a lot, this can lead to a rurbanization of the land scape where the primary use is no longer nature, forestry, or agriculture but residential use with most forests left unmanaged and fields mowed and watered rather than farmed. In addition, every house and road creates a 100 meter impact zone which can defeat the purpose of existing cores and corridors. The map on the previous page called Habitat Cores And Corridors was rated based on the size of the cores and corridors while also taking into account the 100 meter impact area. On the map, there is a corridor near Round Hill. This is the only corridor in the entire Shenandoah Valley that connects the Blue Ridge to the Appalachians.

Ecological Cores & Corridors

Graphic 1

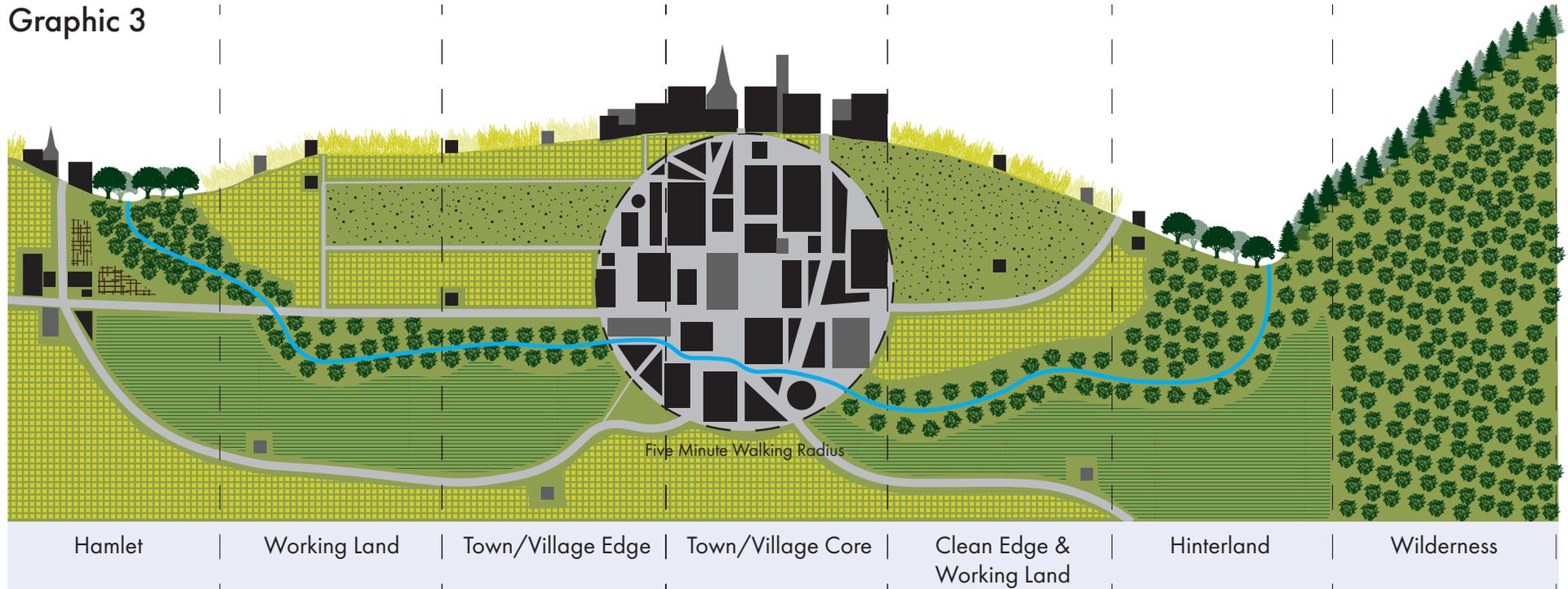


Impact Of Development



Graphic 2

Graphic 3



A New Ruralism

In 1980 Duany Plater Zyberk (DPZ) coined the phrase, “New Urbanism,” with the intent of the movement being anchored in the desire to curtail suburban sprawl and suburbanism as a form of architecture through making new developments more walkable and similar to Old Urbanism. Along with the term, DPZ also introduced the idea that human development should follow the transect of development seen in ecology where the most dense development occurs at the center while development thins into low density rural conditions on the fringes.²³ While this movement has led to developments which have been labeled as containing a more urban look and feel, it has mostly been performed on farmland or uninhabited sites rather than in places where people already live. This means that while the intent of the movement was to curtail suburbanism, it has only resulted in a new and more intense form of suburbanism which is still consuming farmland and natural habitats.

“If we see the city as an urban form, and there is a scarcity to that form and we have a huge demand for it. And the urban form comes in all sizes. From urban hamlets to big cities... (Imagine) eight houses are forming a square in the middle of a crossroad. So here we have a communication route, we have private spaces, and public spaces where we can have a meeting between inhabitants and strangers. And this meeting, is the beginning of civilization... If you go to a big city and find places that you really like, it will be places that have a local hangout and strangers together.”²⁴

While New Ruralism looks very similar to Old Ruralism, yet unlike the old versions of ruralism that are seen in places such as Tuscany or Barvaria a New Ruralism has the potential of combining the amenities of the contemporary world we reside in as well as the complexity and marrying of the landscape and architecture that is seen with Old Ruralism. The future of rural places is not transforming the countryside into exurbs or additional suburbs of sprawling cities, and neither is the future of rural places closing off all of the countryside from people. Instead, the future of rural places is reconnecting people with the natural environment by ensuring that people and nature have a symbiotic relationship, and also places with characteristics that are unique to the location.

Visualizing Change

View From The Knob

East of Mount Jackson is Seven Mile or Short Mountain and at its southern end lies the iconic landmark known as the Knob. The image shown in Graphics 8-10 was taken from on top of the Knob looking west towards and past Mount Jackson. As one will note with this spread of pages and each spread of pages in this section to follow, the arrangement displays images on the top with a plan or overhead view on the bottom. From left to right the renderings display current conditions such as in Graphic 8 and Map 11, a potential future within ten years with current regulations as in Graphic 9 and Map 12, and a planned future if conservation easements are supported across the County in Graphic 10 and Map 13. Both of the last two set of renderings, or in this case renderings on page 21, demonstrate the same number of new dwellings and businesses, the difference is that in the planned renderings the development occurs in places that are already developed and in the potential future growth continues to occur outside of developed areas.

In this spread there are a few key themes or aspects of note. The first is the impact of accessory dwelling units in the A-1 zoning district as this provision allows for up to two dwellings per parcel, which can lead to a rapid expansion of 914 primary houses and 546 accessory houses. Current regulations in the subdivision ordinance prevent parcels from being subdivided more than once every three years and prevent smaller parcels from being subdivided further due to density regulations. These provisions enable larger parcels to split and lead to a greater loss of farmland than if smaller parcels were split or development rights were sold and transferred to an already developed area. The second aspect is the lack of protection of critical slopes or forested areas. As can be seen with Graphic 9 and Map 12, the current future would allow for the eventual deforestation of much of the County, including the river and stream banks. In addition, due to existing lots on the mountainside, there is the potential for not only the forests but also the critical steep slopes of the County being disturbed, which would contaminate local water resources. A final aspect is the false guarantees provided with Agricultural and Forestal Districts as all landowners could choose to leave in 2022 during the renewal period of the District.

Current



Graphic 4



Map 17

A Potential Future With Current Conditions

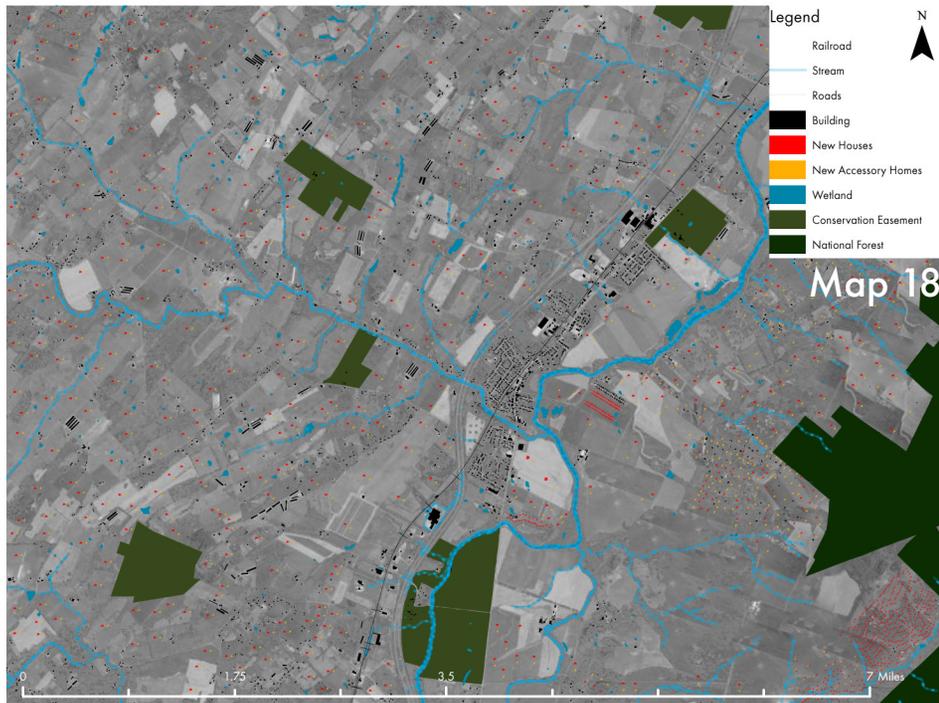
Planned Development



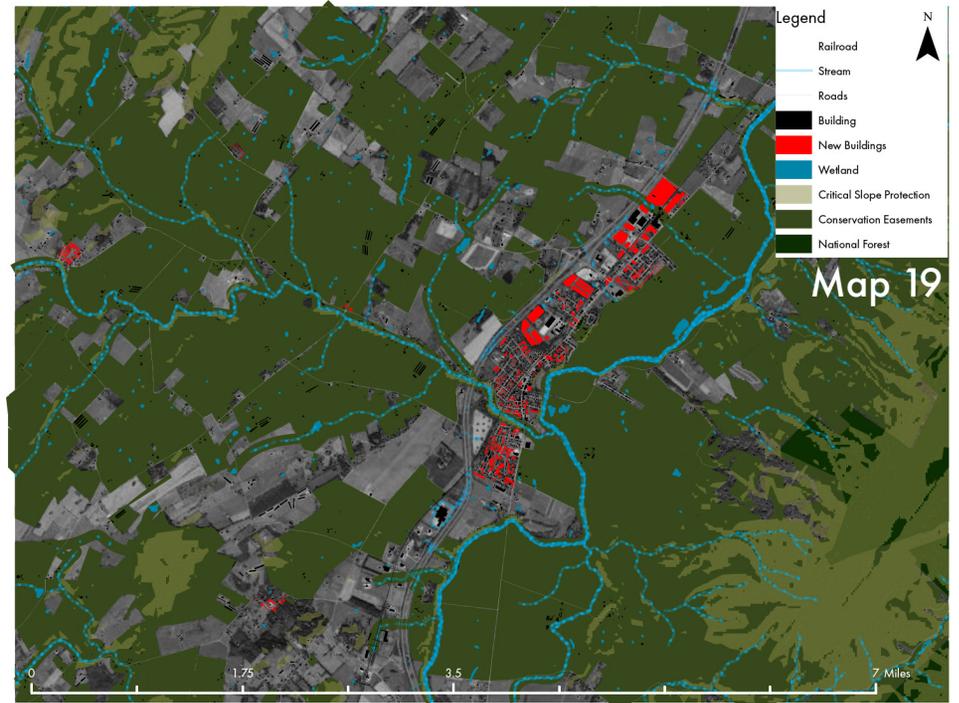
Graphic 5



Graphic 6



Map 18



Map 19

Along The Seven Bends

The iconic Seven Bends of Shenandoah County are one of the many wonders of the Shenandoah Valley. The photo depicting a portion of the Seven Bends seen in Graphics 11-13 is of courtesy of Franley Farm.

A continuing narrative that is seen in this example is the lack of protection in Shenandoah County of critical slopes as well as forested lands. As can be noted with the differences in dark gray representing tree foliage seen with Graphic 12 and Map 15, with the current regulations and conditions in place within ten years the Seven Bends could lose the trees which protect the banks of the River and development could sprawl along the River on its steep slopes. A loss of key trees and vegetation as well as degradation of critical slopes could lead to a greater risk of erosion and cause the North Fork to become further impaired, in addition to contaminating local groundwater supplies.

Another narrative that continues in this spread of renderings is the issue of unactivated subdivisions. As noted with Mount Jackson, there is an already permitted subdivision east of the Town that would greatly increase the cost of providing community services if it were to be built out to its full potential. Similarly, in this case study there is an unactivated subdivision between two mountain ranges and between the Seven Bends and Fort Valley. As can be seen with Map 15, if this was built out to its full potential then the cost of providing services in Shenandoah County would raise to levels that may cause the County to take measures to account for the new funding needed to provide such services.

Another major difference that is seen between Map 15 and Map 16 is that the former demonstrates a scatterer-shot form of development where houses and businesses are sprinkled across the landscape. In Map 16, a planned development would involve consolidating the development in order to both provide for greater public spaces and urban amenities, but also to ensure that forested lands and prime agricultural soils are protected from being either built upon, removed, or left disregarded.

Ultimately this information demonstrates the need for action in order to ensure that iconic landscapes such as the Seven Bends are not lost and so that the function of the land within their view-shed continues to support the local culture built around agriculture. While such visualizations could be created across Shenandoah County from numerous vantage points, these two case studies help to demonstrate the impact that development poses.

Current



Graphic 7



Map 20

A Potential Future With Current Conditions

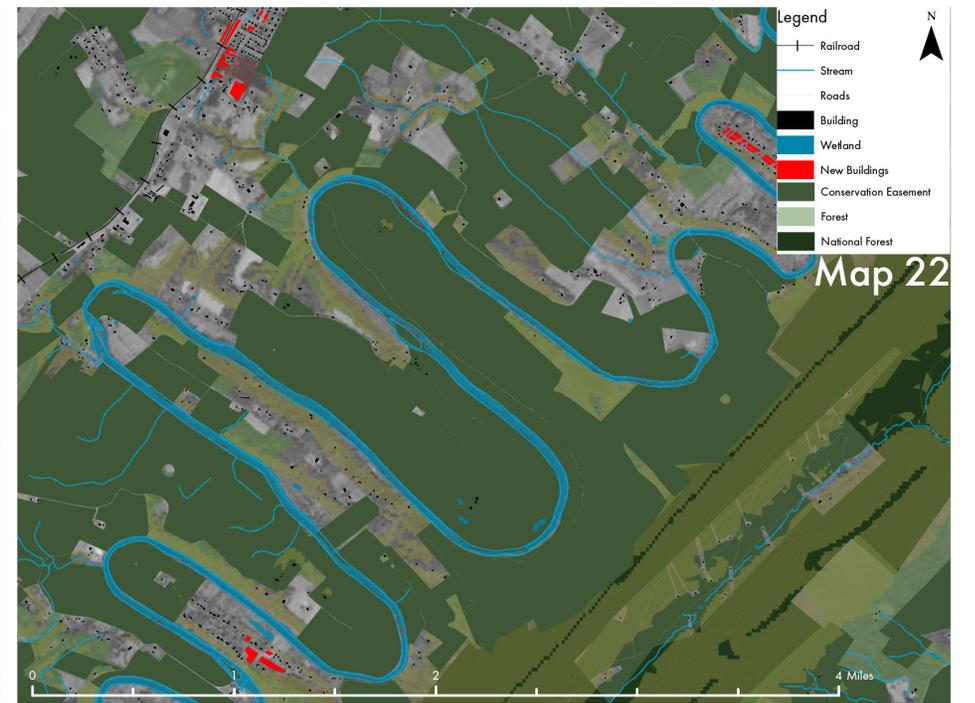
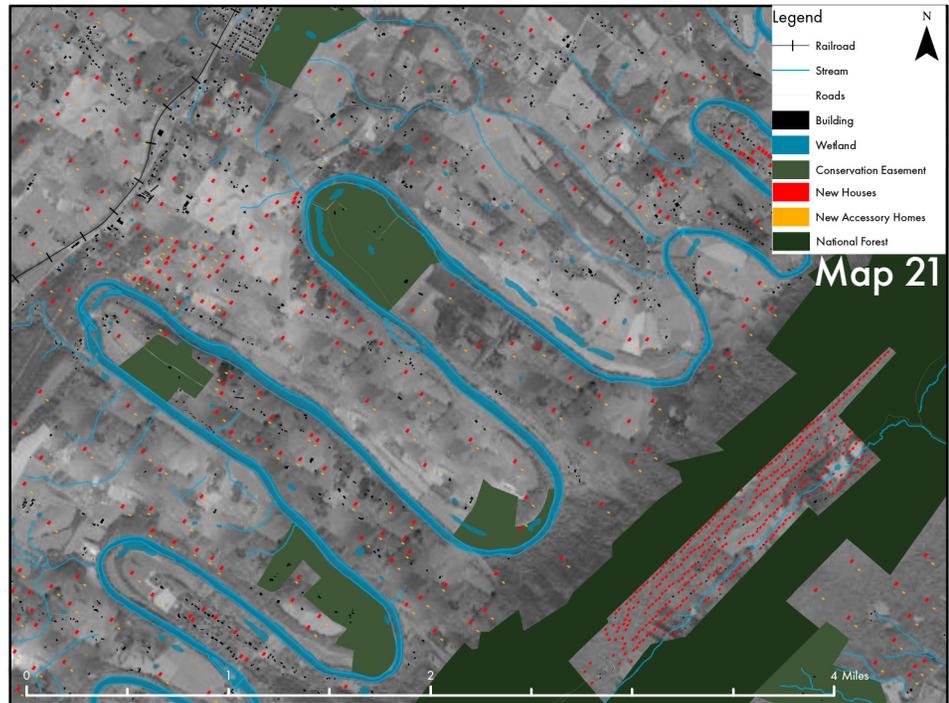


Graphic 8

Planned Development



Graphic 9



Current Service Areas

As noted previously, the map called Level of Service demonstrates the total service coverage of Shenandoah County. That map comes from the following twenty three maps which demonstrate the level of service and distance from service providers in Shenandoah County. As can be noted while areas around the Towns are the most serviced areas, the continued expansion of the Towns can lead to more prime farmland being displaced and more suburban-type development across the landscape. In a sense this information helps to demonstrate that services are best provided in compact situations, yet if one attempts to combine the compact nature of urban areas with the spread out nature of rural areas one ends up with a suburban nature which spreads individuals further away from the services and makes them reliant on the use of an automobile for all their daily needs. This term, as it commonly called, will be referred to as urban sprawl in this report.

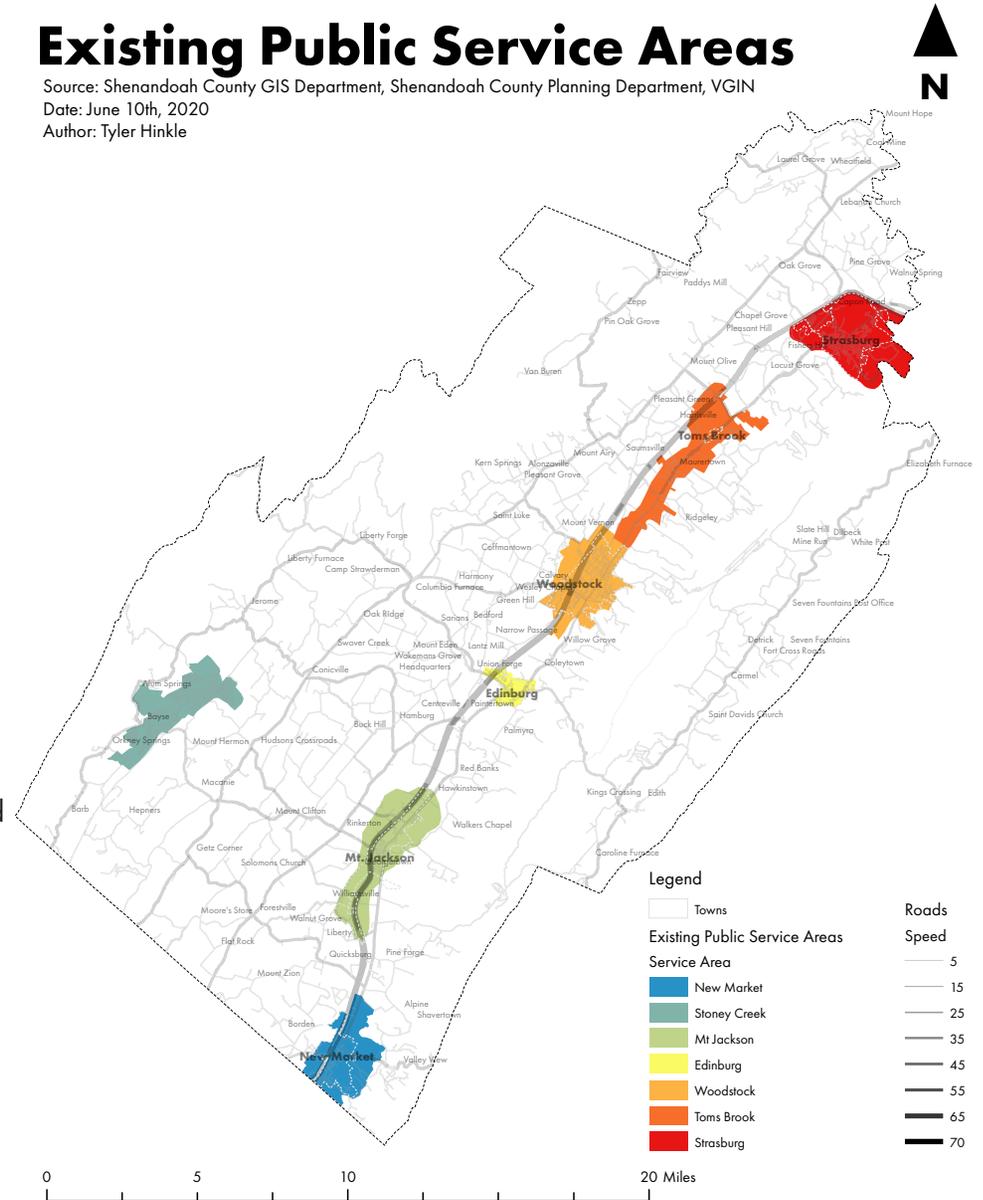
The following three maps on this spread demonstrate the existing service area boundaries in Shenandoah County, except for public schools, which can be seen on page 28. While these are the administrative borders that have been drawn, the actual service boundaries are defined by one aspect: travel time. The process of developing the following twenty maps was performed through Arcmap, a Geographical Information System (GIS), which determined the travel time along all of Shenandoah County's roads based on the speed limit set by VDOT or the Towns, stop signs, whether a road was one lane, and the slope of the road.

As one will note, the Arc GIS program identified service areas based on the closest facility, service provider, or service amenity to individuals. This means that service areas that are smaller do not mean that they are providing a lower quality of service, in actuality it may mean they are providing a higher quality of service through having all of the locations they serve closer to the service itself. On the other hand, it may be noted that the larger service areas may not exactly be providing a low quality of service as the travel time can be seen on attributing maps.

The main point from these maps is that the majority of services are around the six towns, the primary roads that come out from them, and the smaller village-type service provider locations. This means that there are areas in the County that are at a higher risk of being developed than others, yet as seen with the Habitat map, conservation is important everywhere.

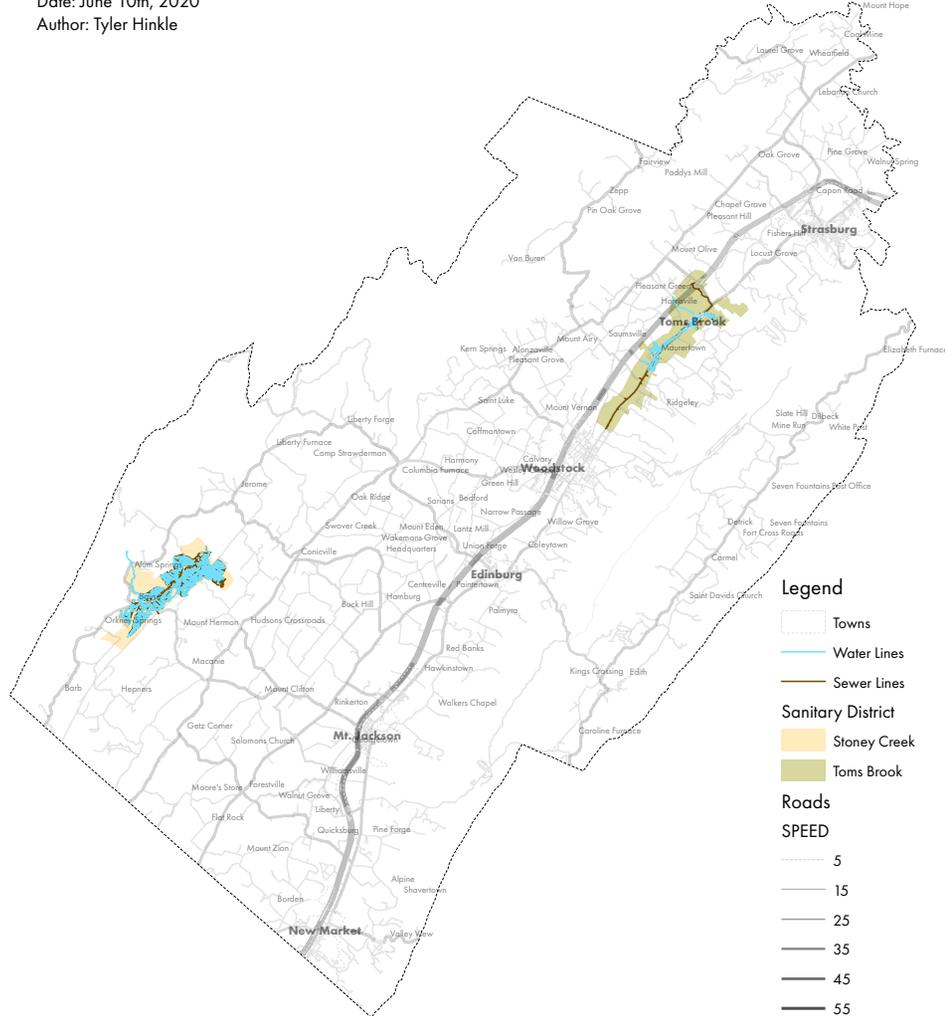
Existing Public Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Sanitary Districts

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Legend

- Towns
- Water Lines
- Sewer Lines

Sanitary District

- Stoney Creek
- Toms Brook

Roads SPEED

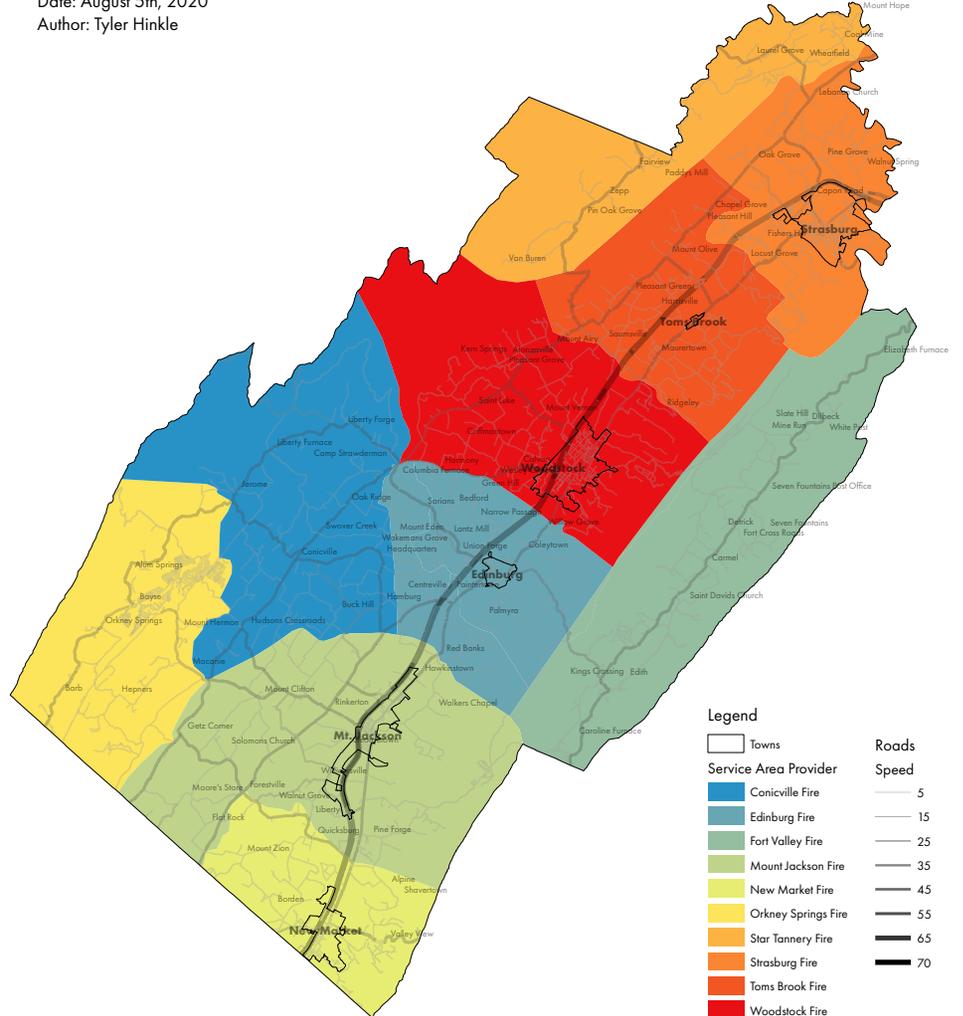
- 5
- 15
- 25
- 35
- 45
- 55
- 65
- 70



Map 25
25

Emergency Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: August 5th, 2020
 Author: Tyler Hinkle



Legend

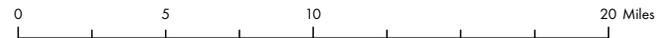
- Towns

Service Area Provider

- Conicville Fire
- Edinburg Fire
- Fort Valley Fire
- Mount Jackson Fire
- New Market Fire
- Orkney Springs Fire
- Star Tannery Fire
- Strasburg Fire
- Toms Brook Fire
- Woodstock Fire

Roads SPEED

- 5
- 15
- 25
- 35
- 45
- 55
- 65
- 70

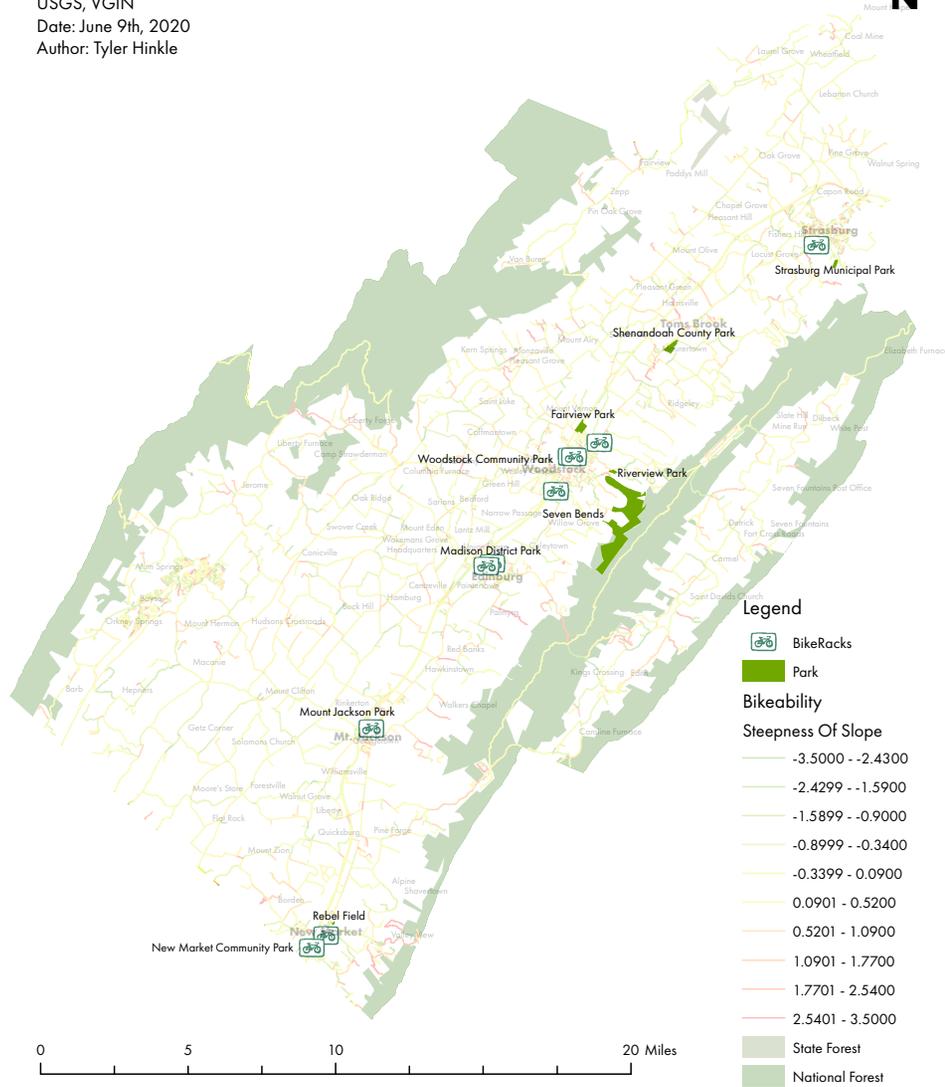


Map 26

Public Recreation

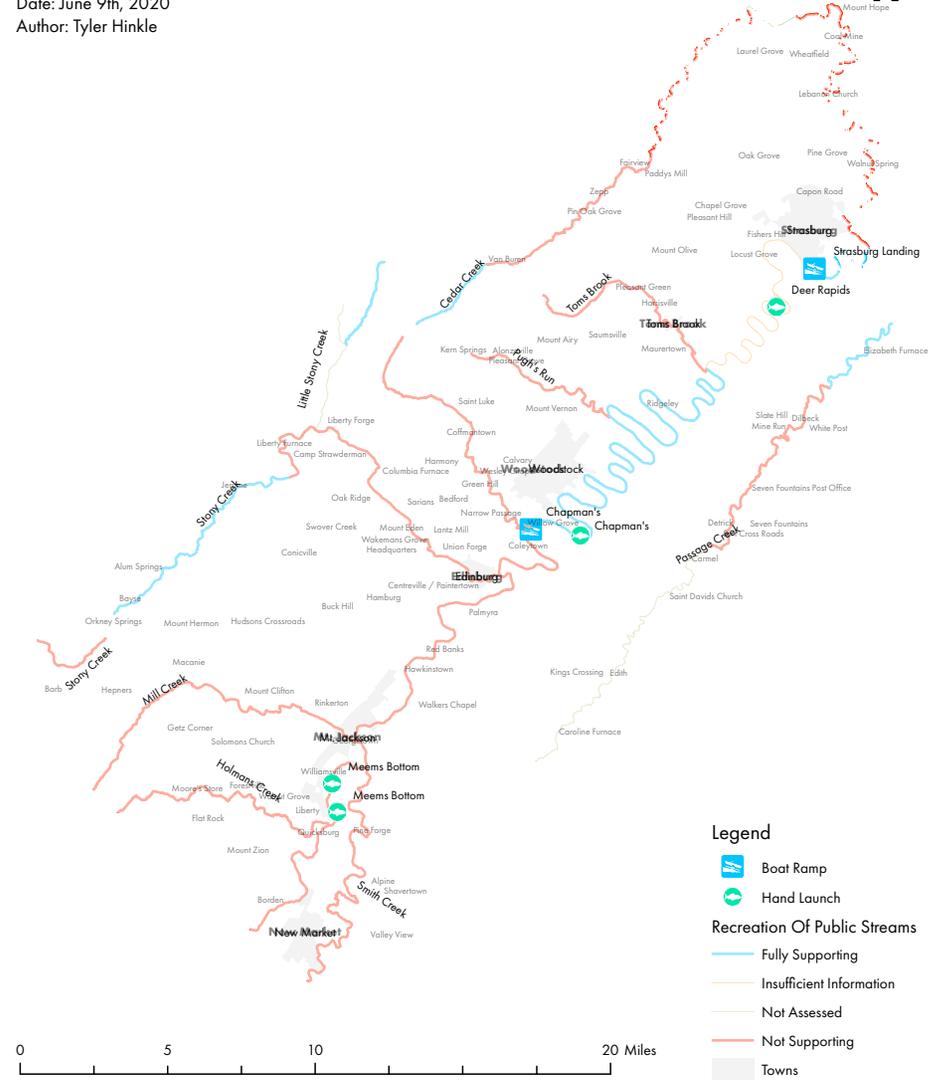
Public Recreation On Land

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, USGS, VGIN
 Date: June 9th, 2020
 Author: Tyler Hinkle



Public Recreation On Water

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, DEQ
 Date: June 9th, 2020
 Author: Tyler Hinkle

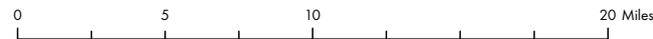
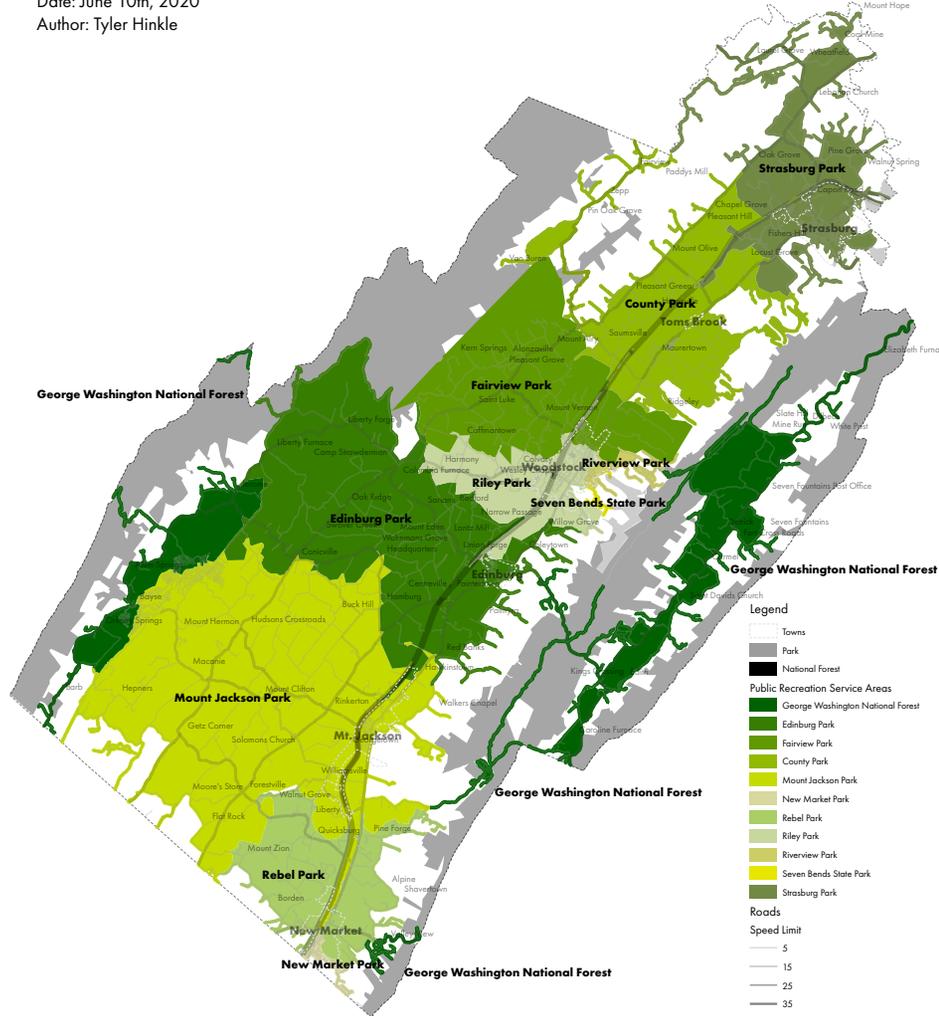


Map 27

Map 28

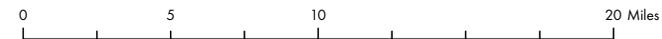
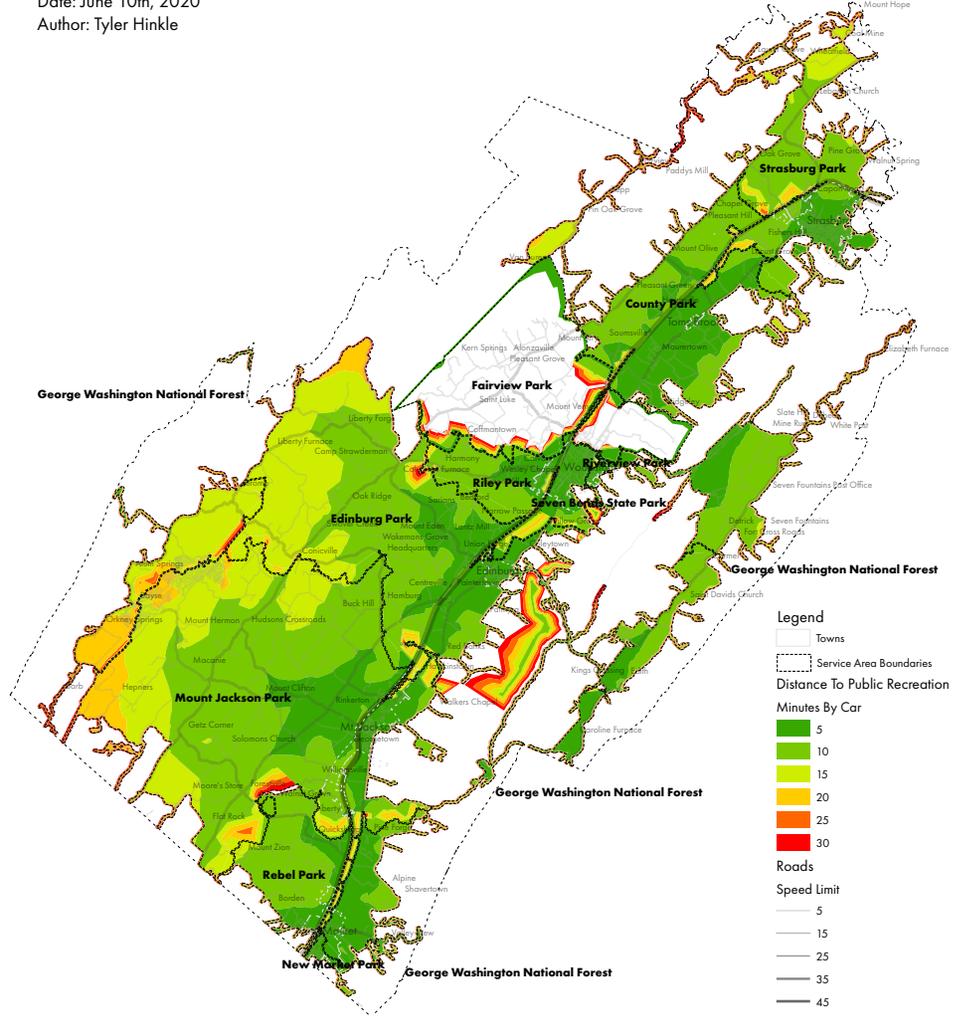
Public Recreation Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Travel Time To Public Recreation

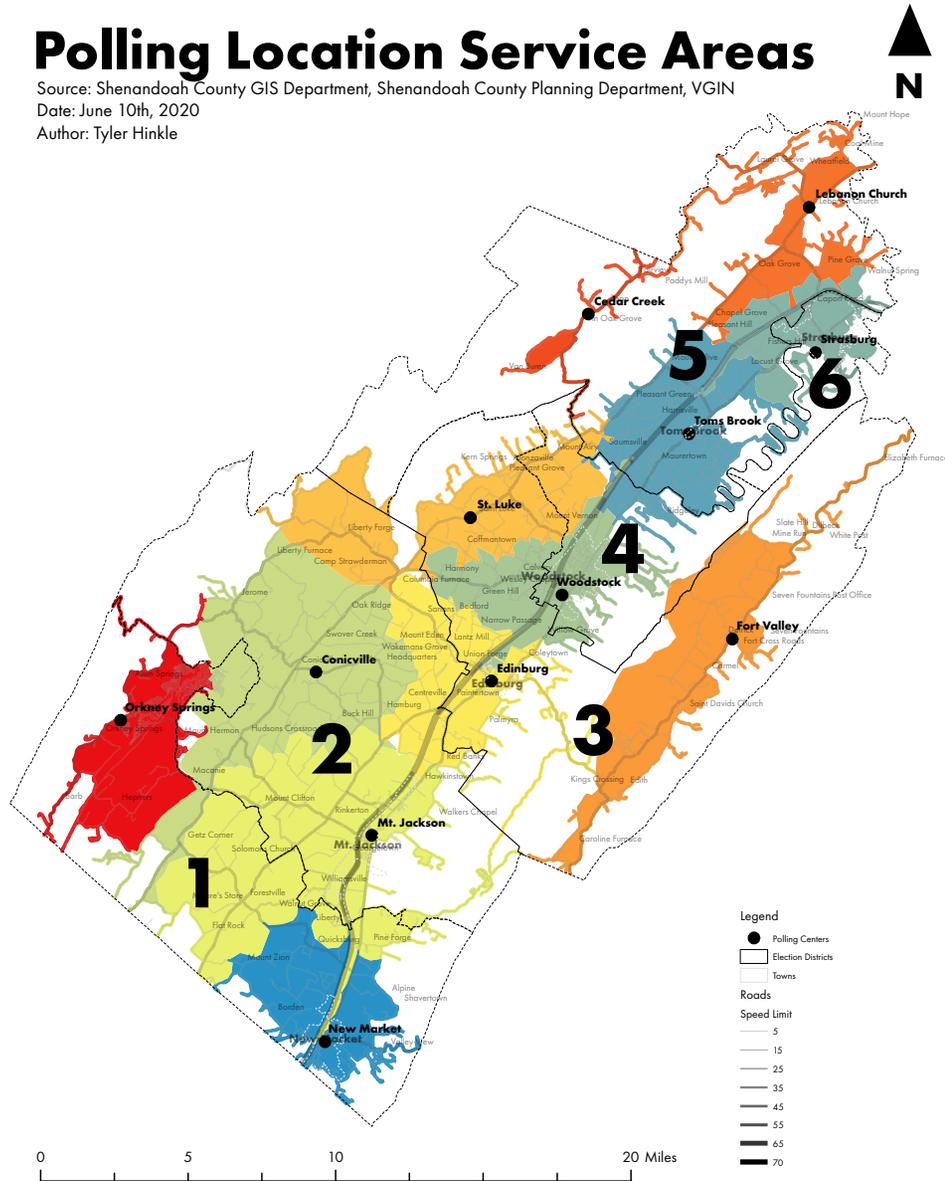
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Polling Locations

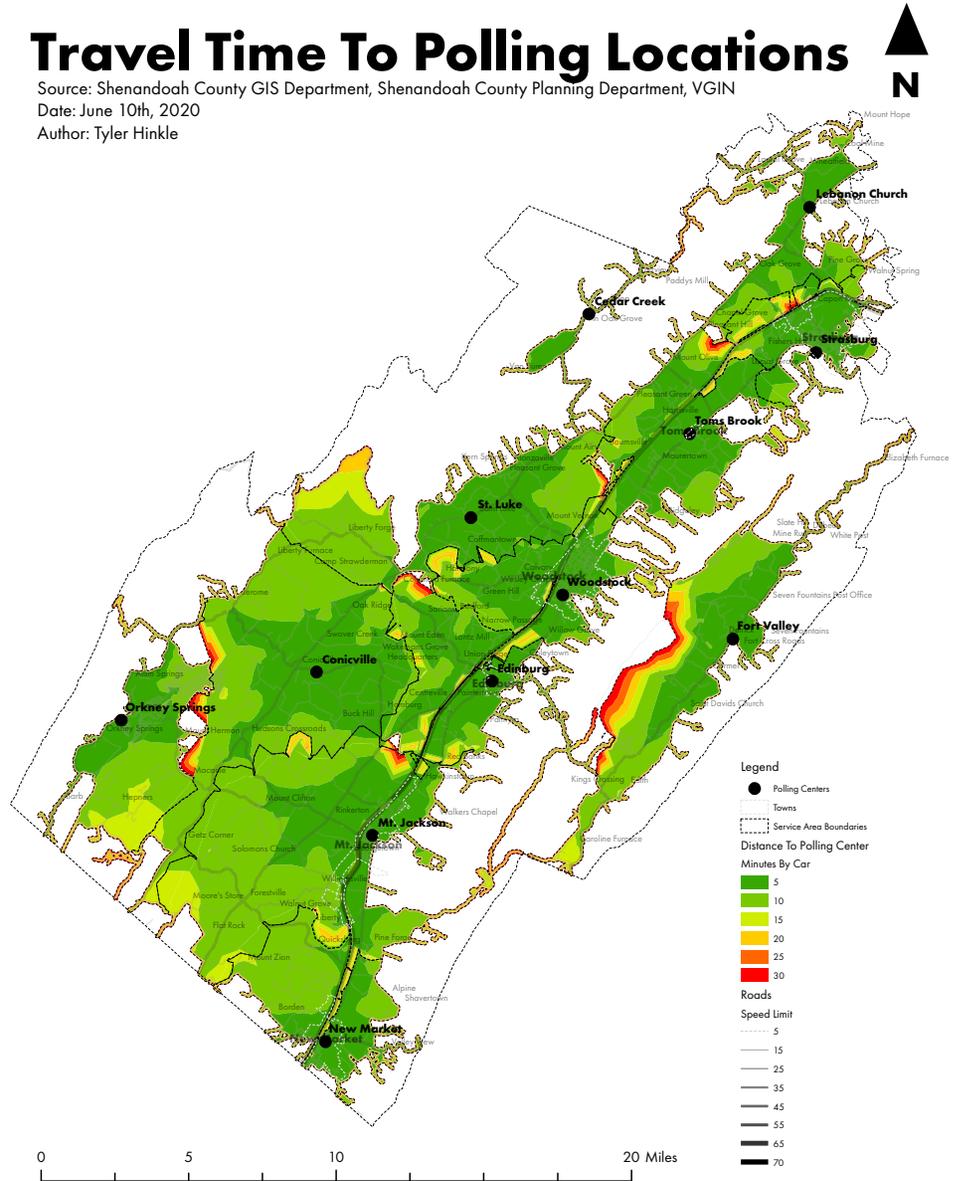
Map 31: Polling Location Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 32: Travel Time To Polling Locations

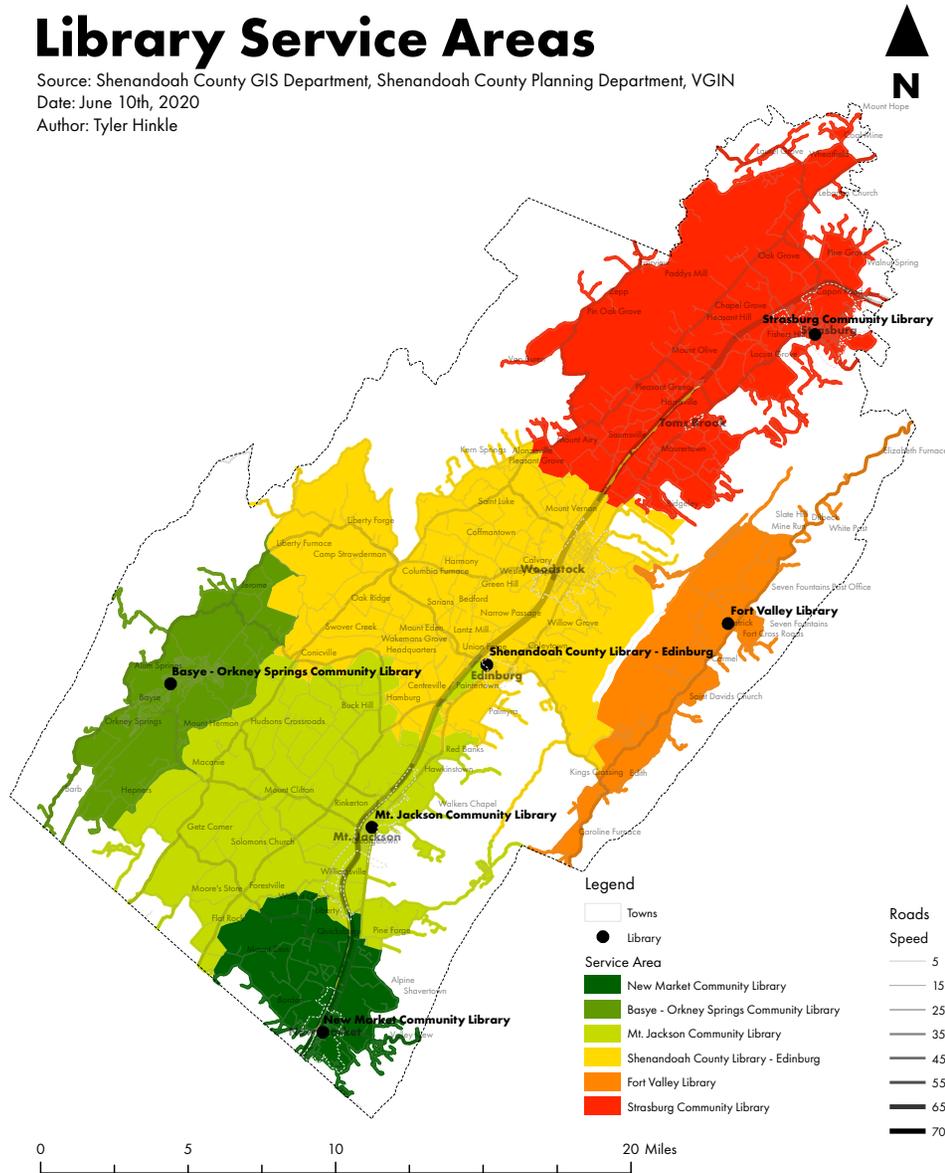
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Libraries

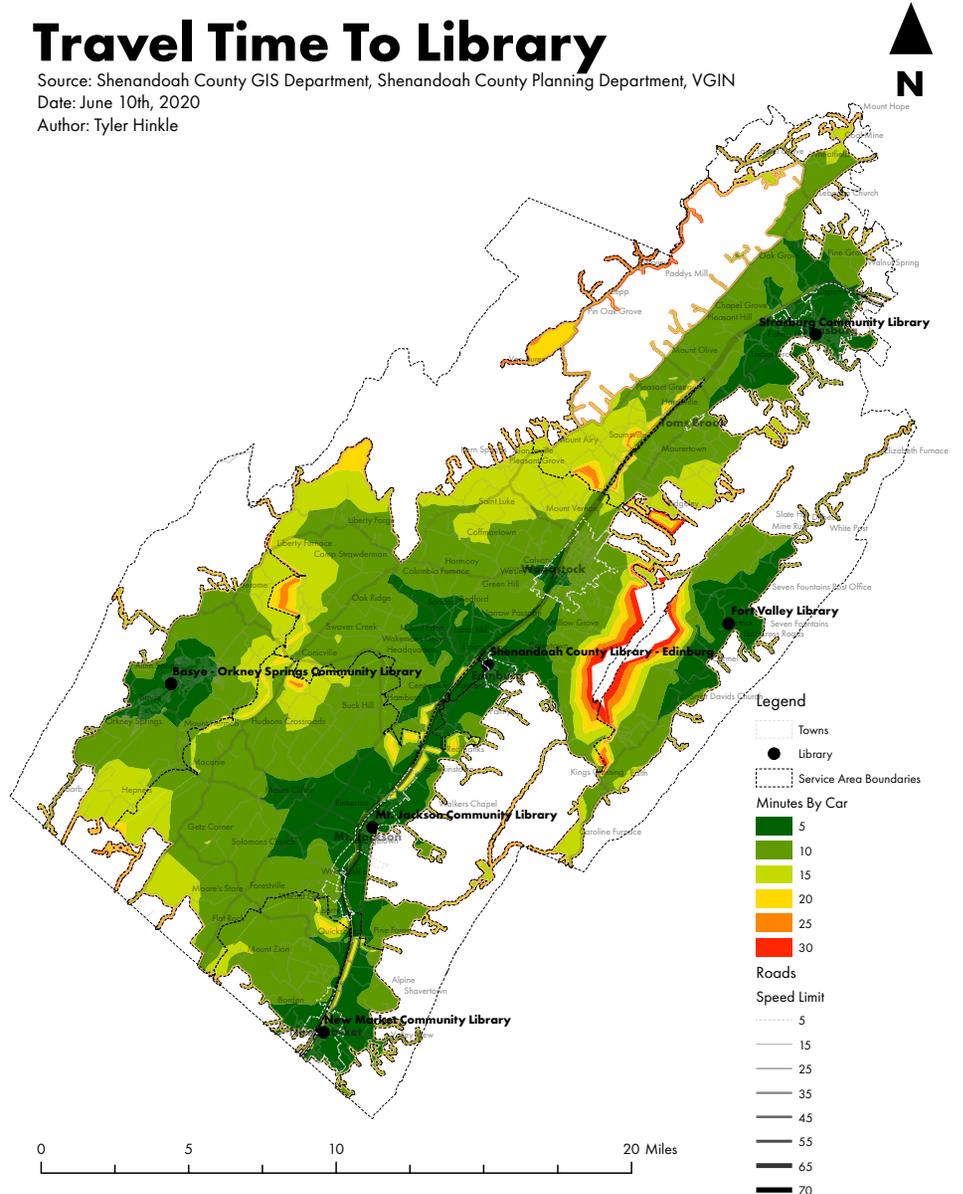
Library Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Travel Time To Library

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



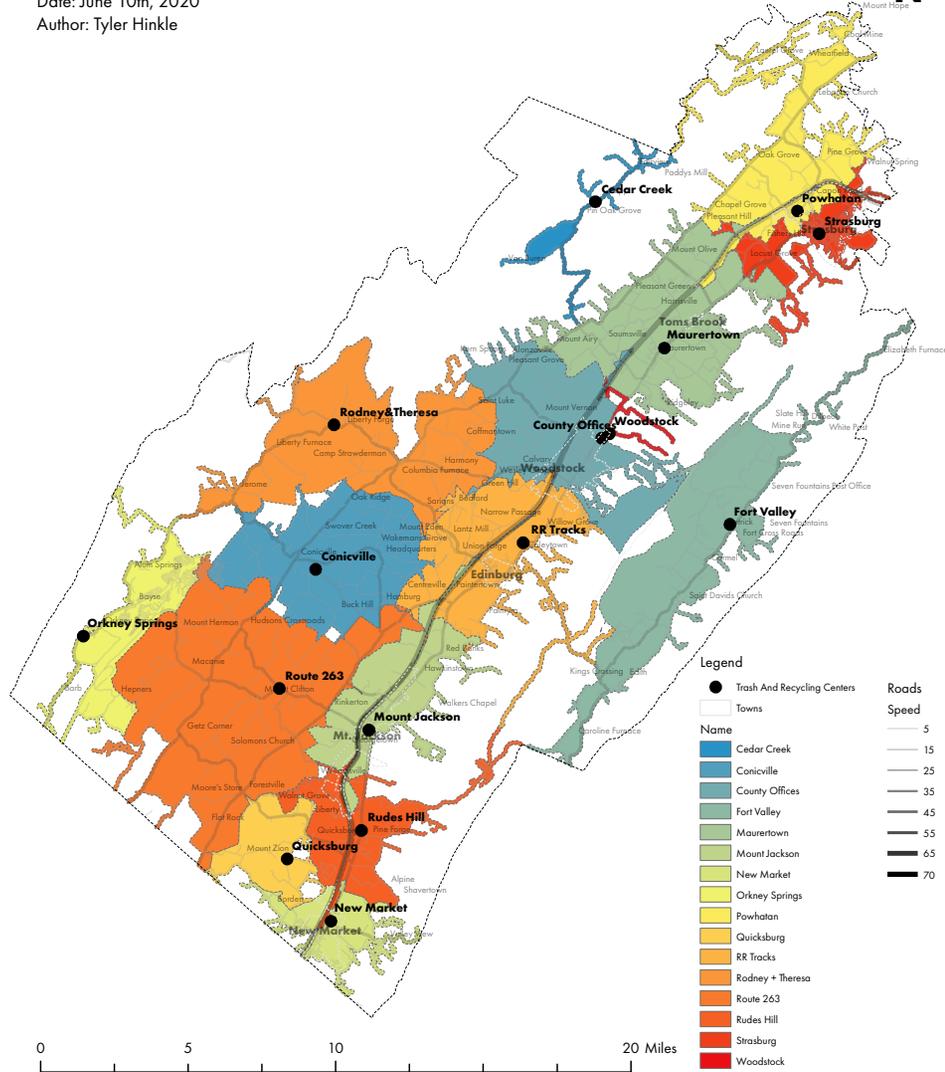
Map 33

Map 34

Trash And Recycling

Trash & Recycling Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle

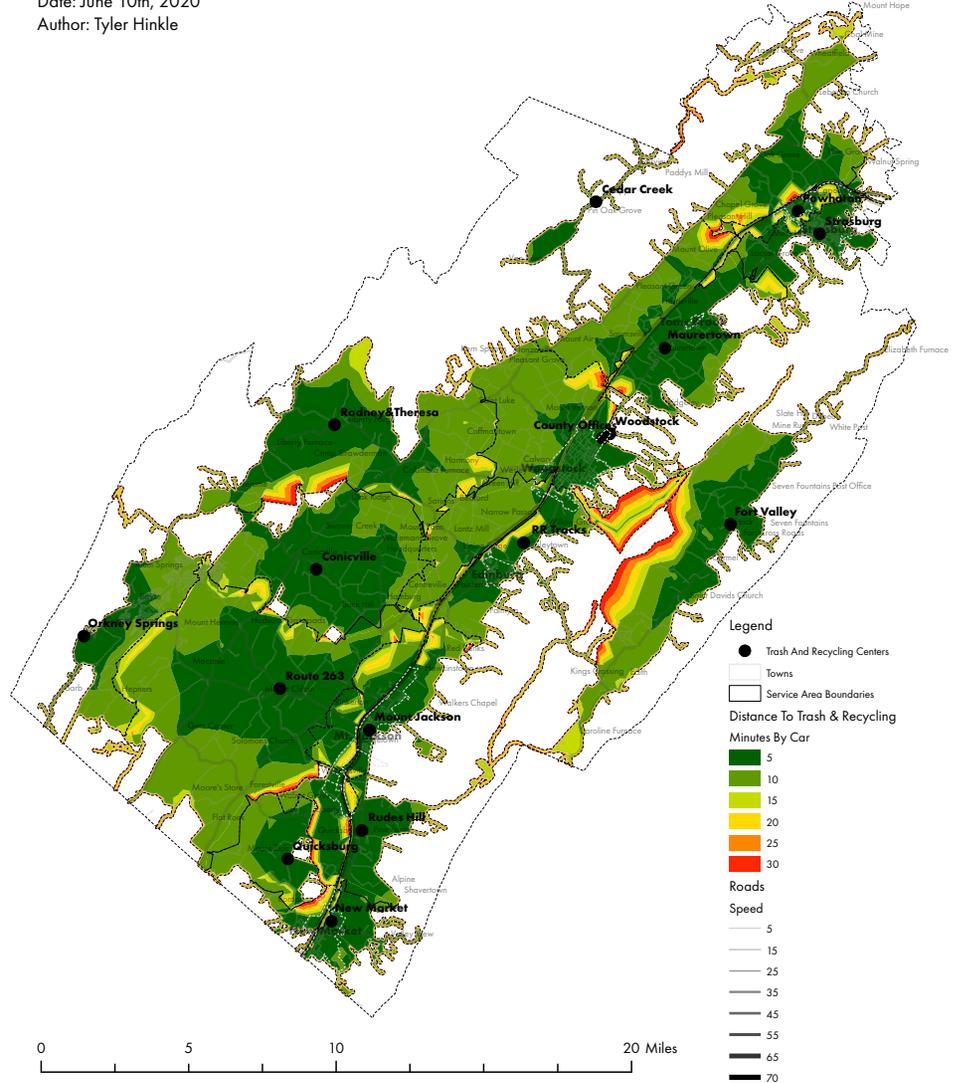


Map 35

30

Travel Time To Trash & Recycling

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



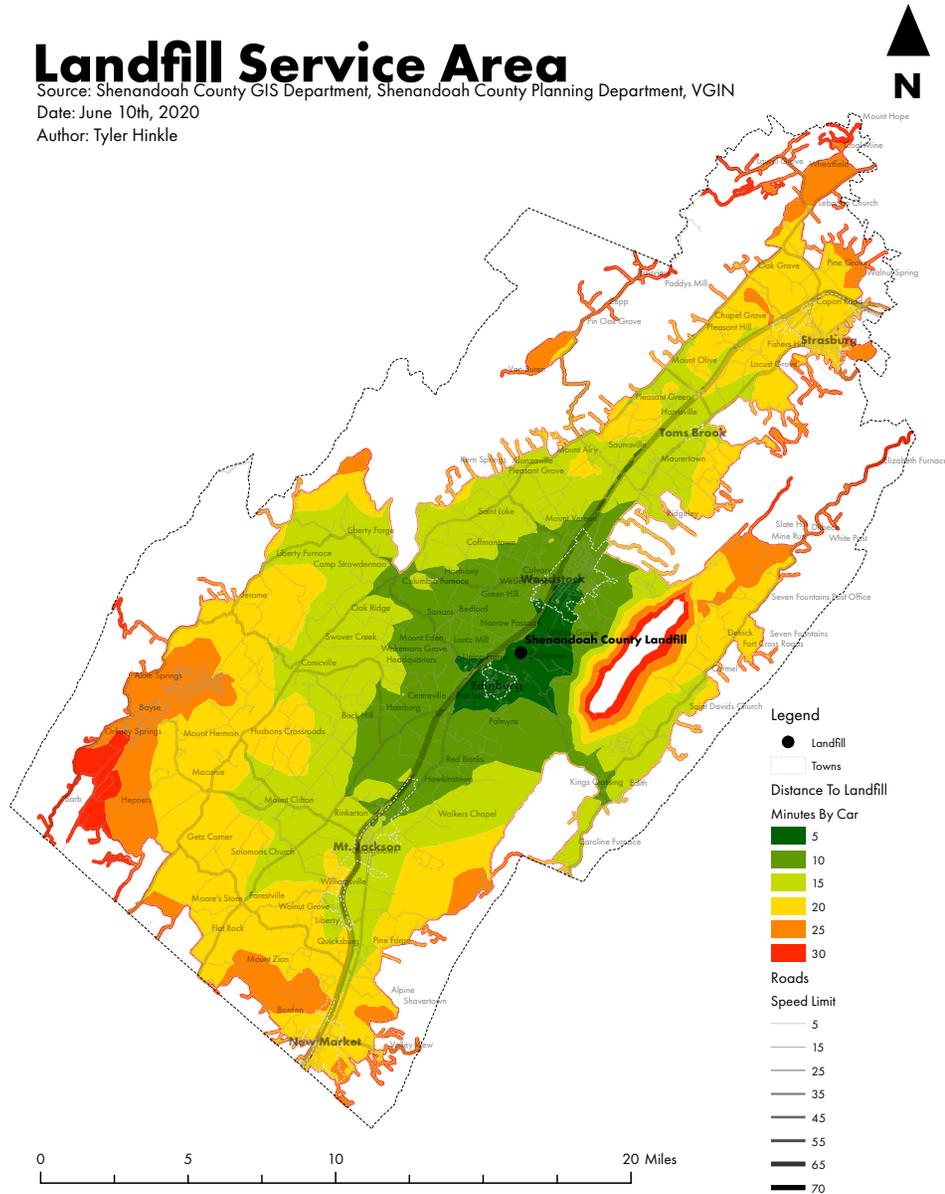
Map 36

Landfill

Animal Shelter

Landfill Service Area

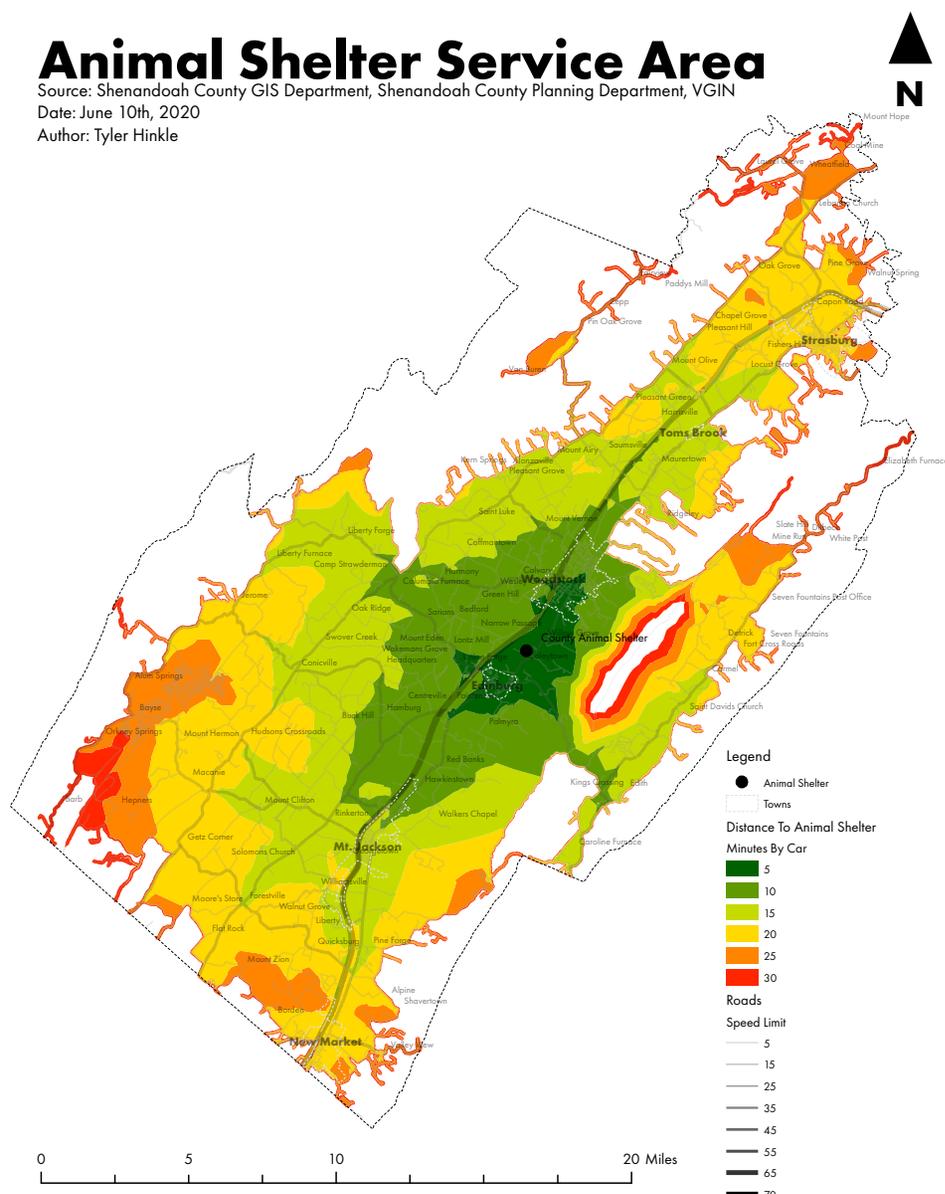
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 37
31

Animal Shelter Service Area

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle

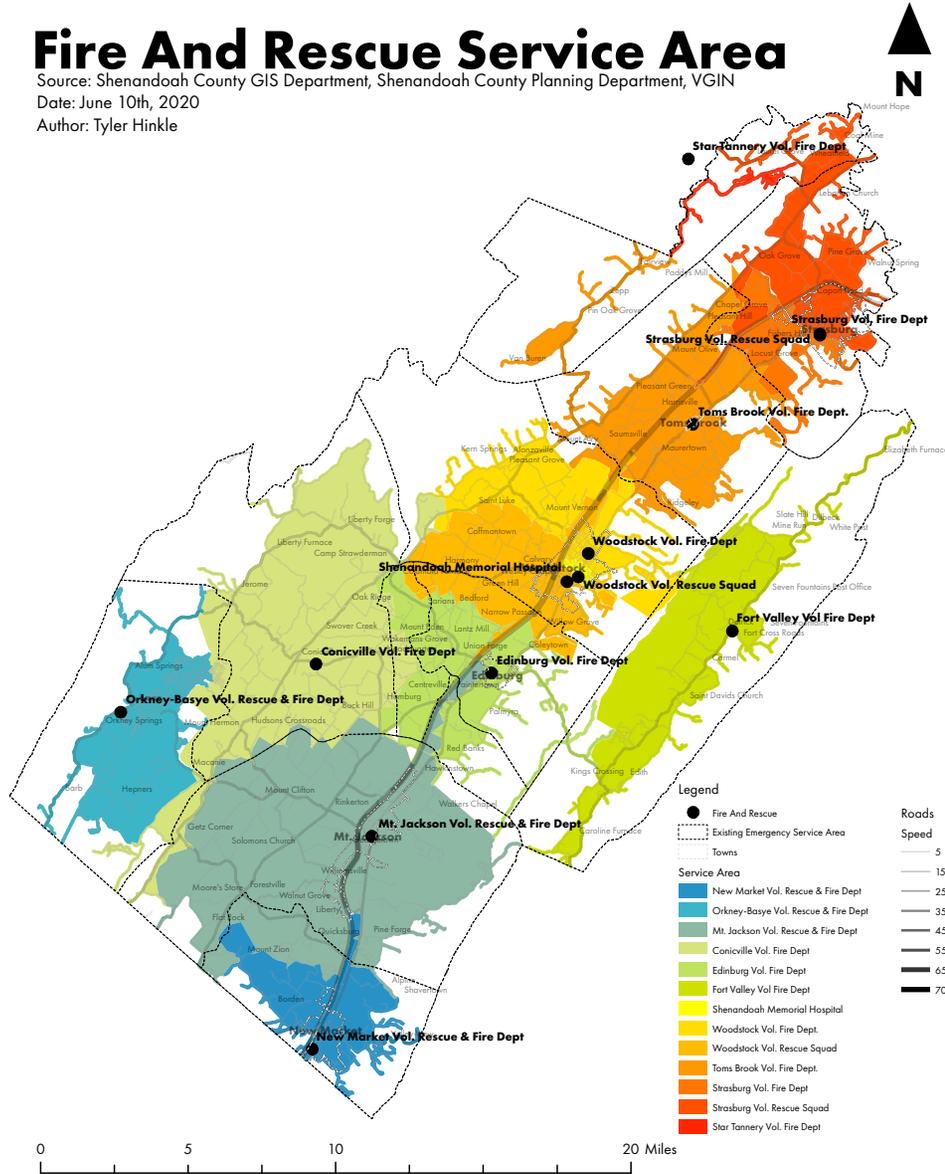


Map 38

Fire And Rescue

Fire And Rescue Service Area

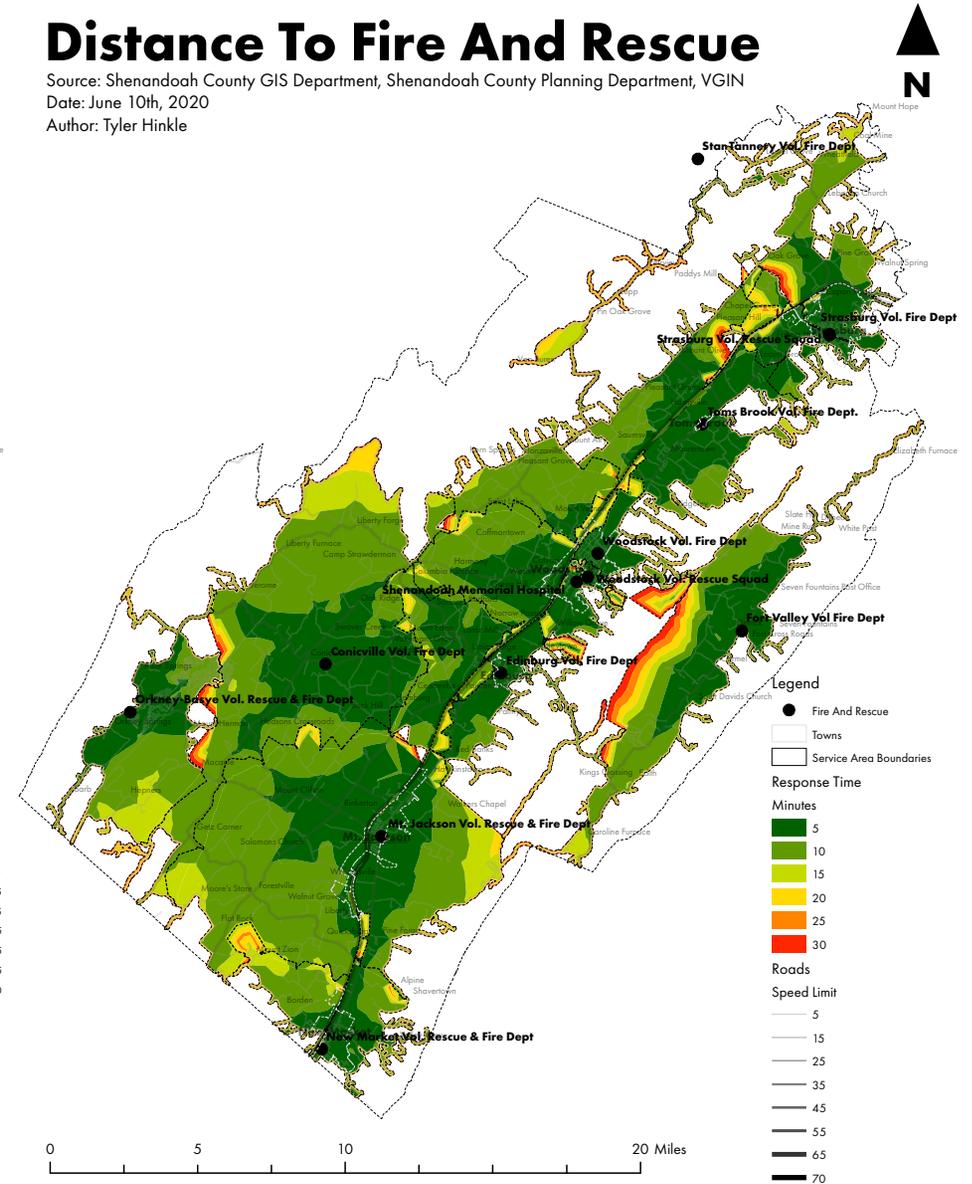
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 39

Distance To Fire And Rescue

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle

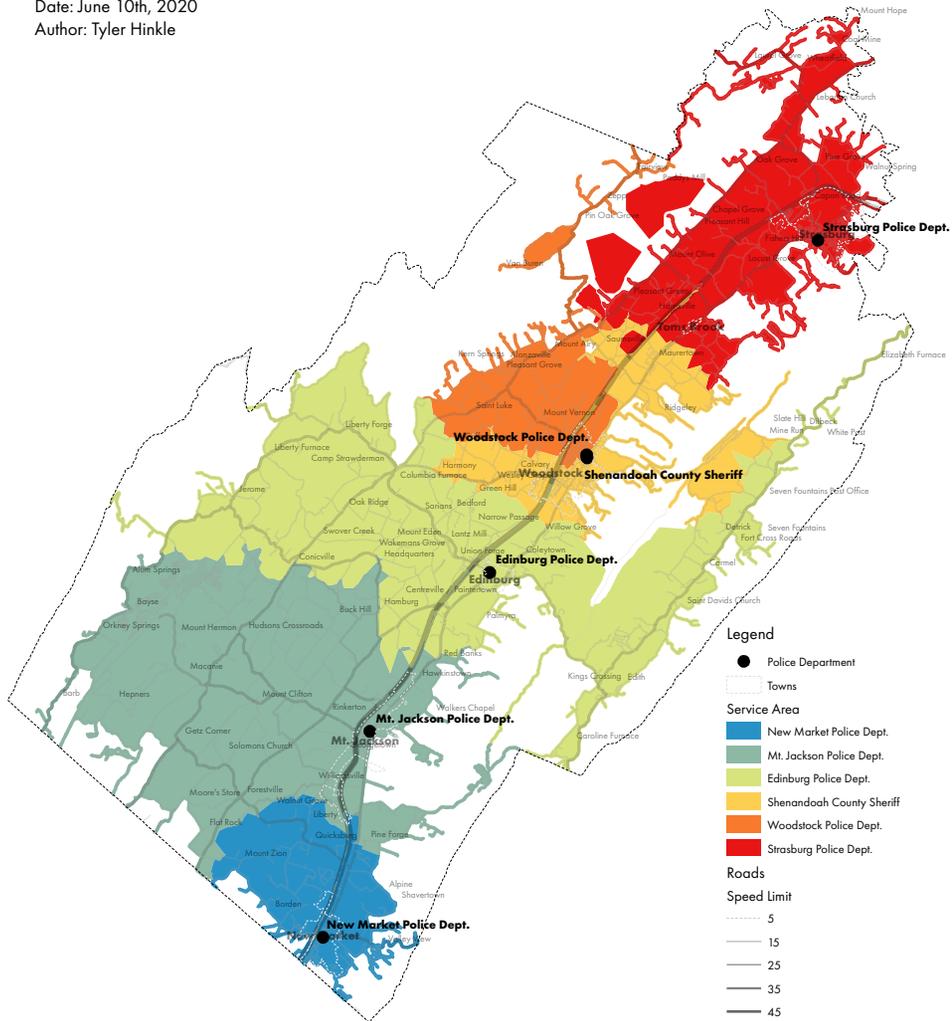


Map 40

Law Enforcement

Police Department Service Area

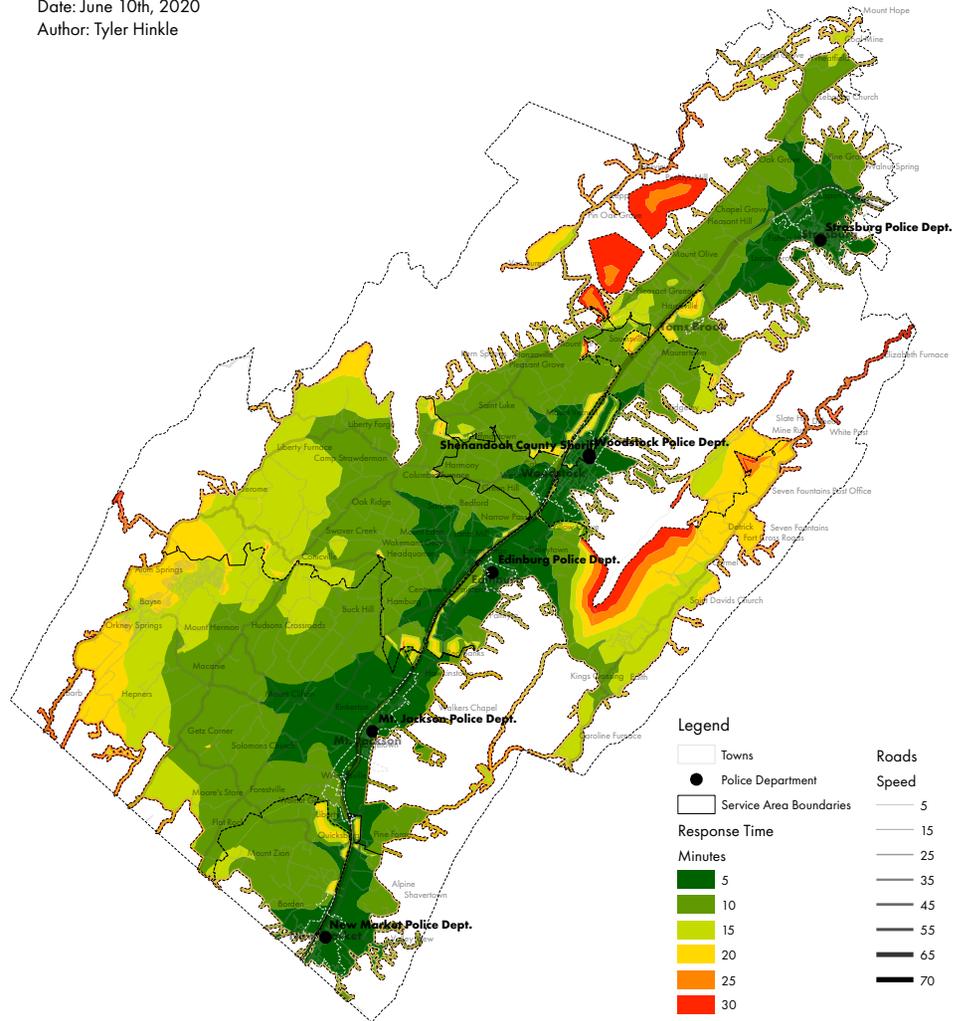
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



0 5 10 20 Miles

Distance To Police Stations

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



0 5 10 20 Miles

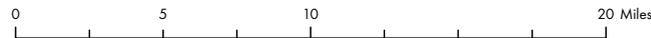
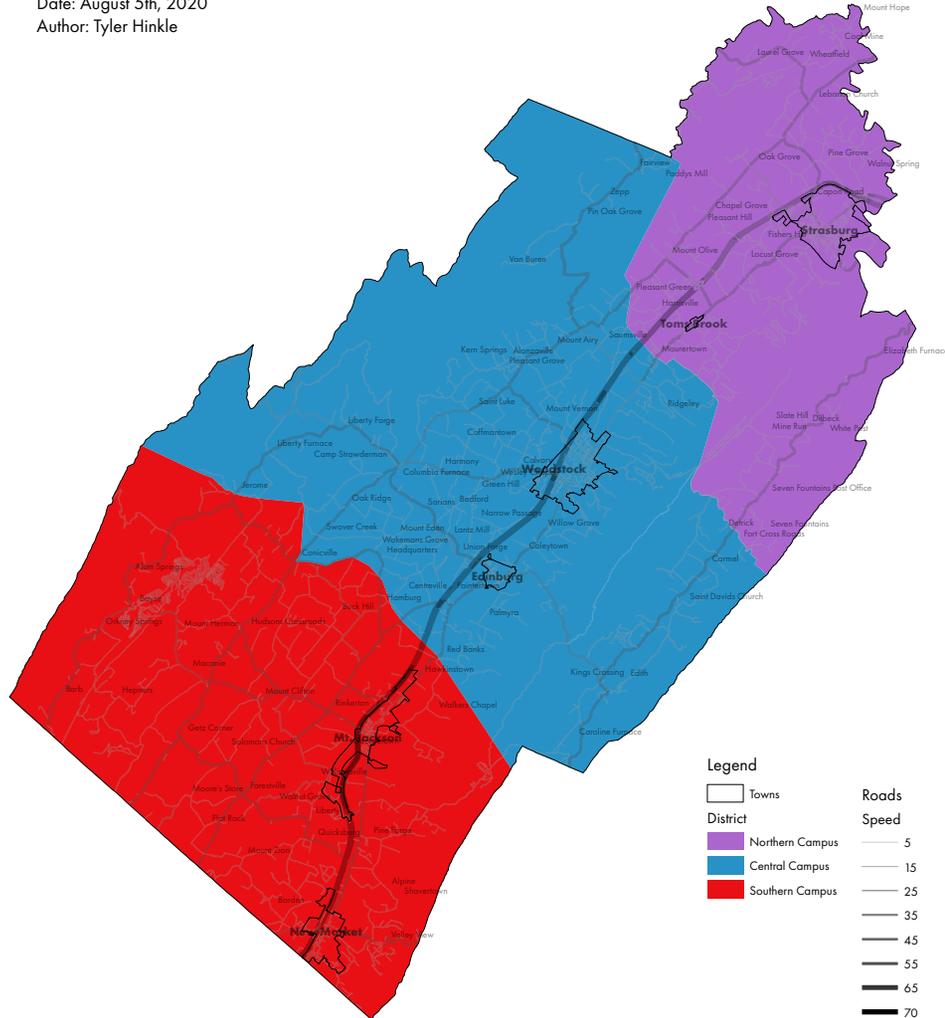
Map 41

Map 42

Education

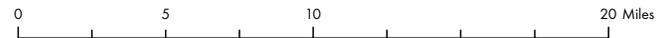
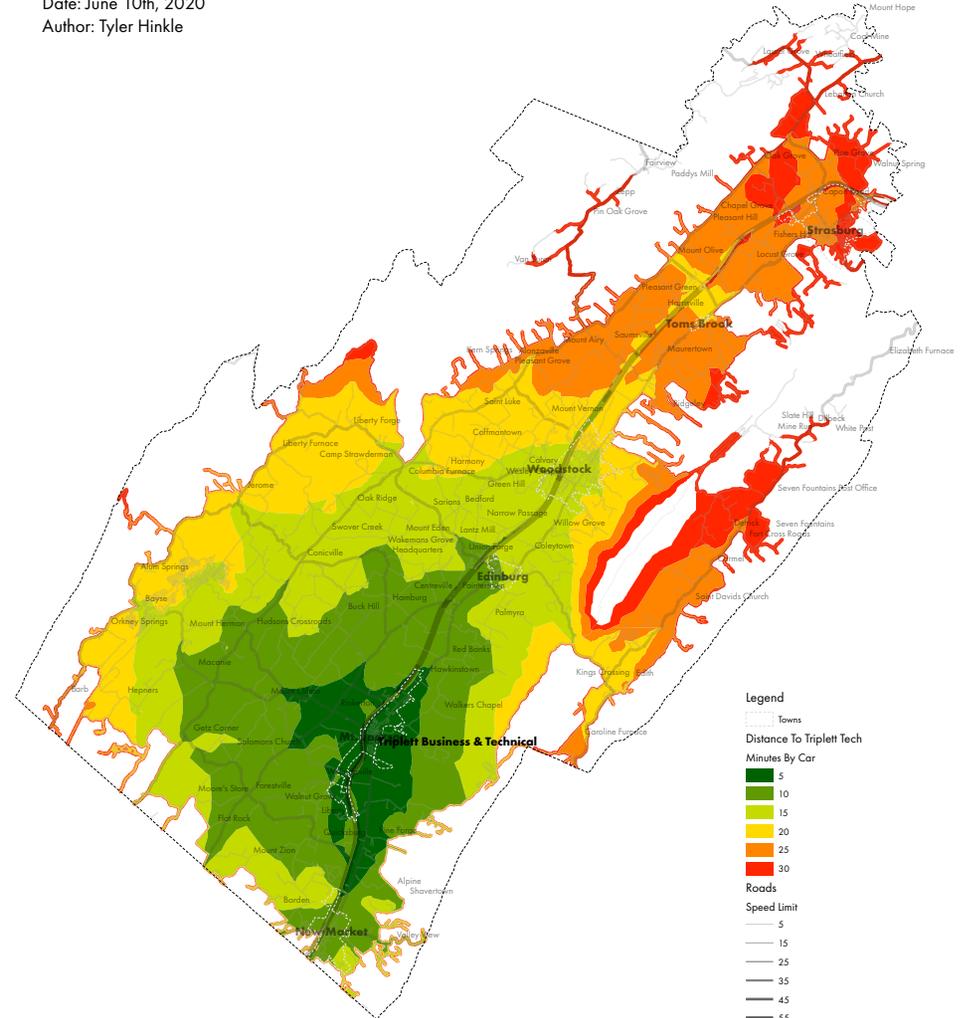
Public School Districts

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: August 5th, 2020
 Author: Tyler Hinkle



Triplett Tech Service Area

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle

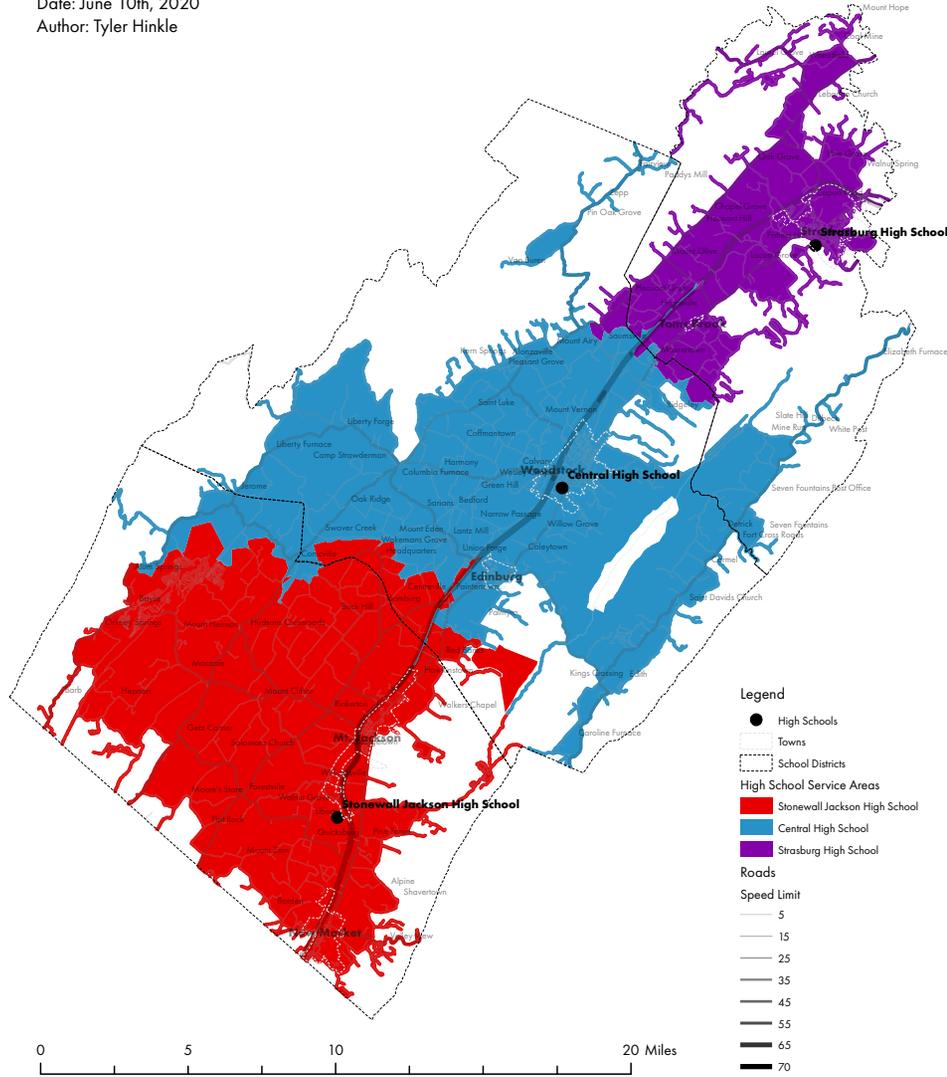


Map 43

Map 44

High School Service Areas

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle

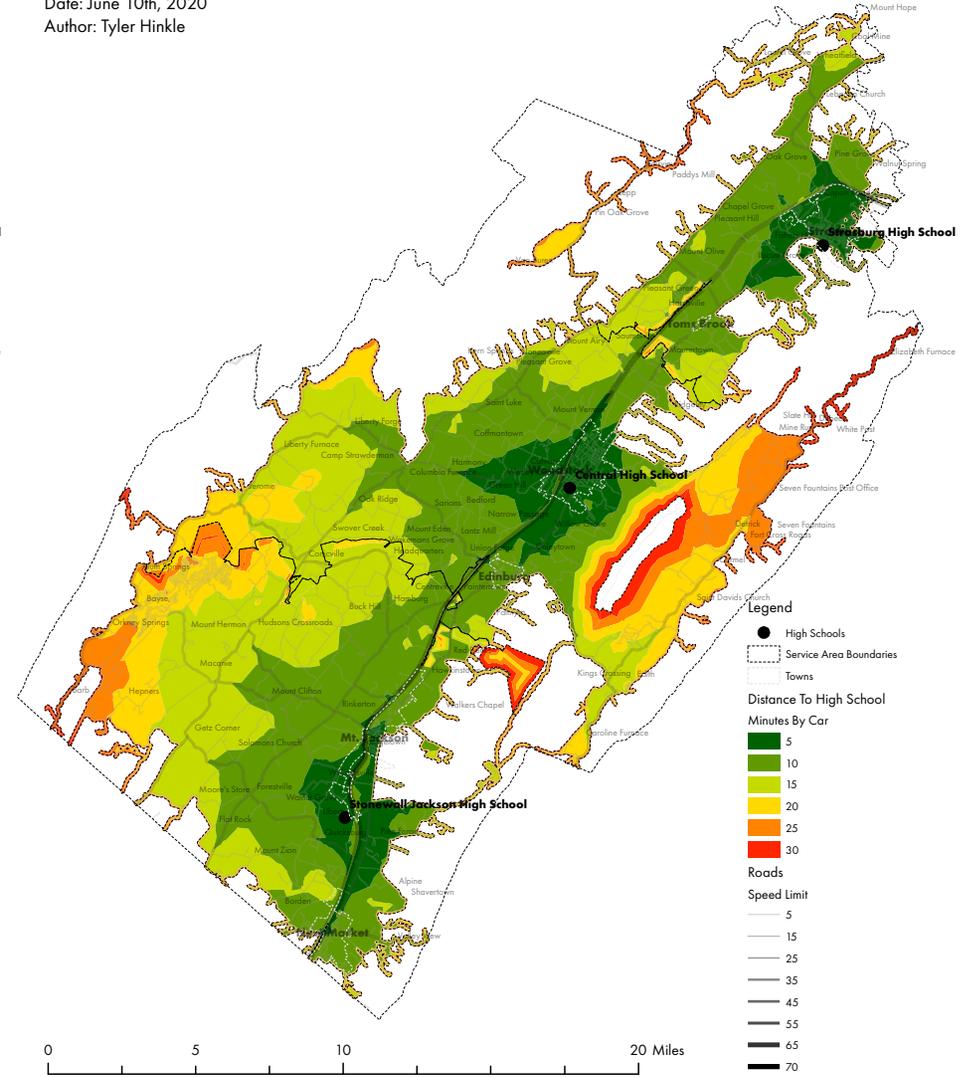


Map 45

35

Travel Time To High School

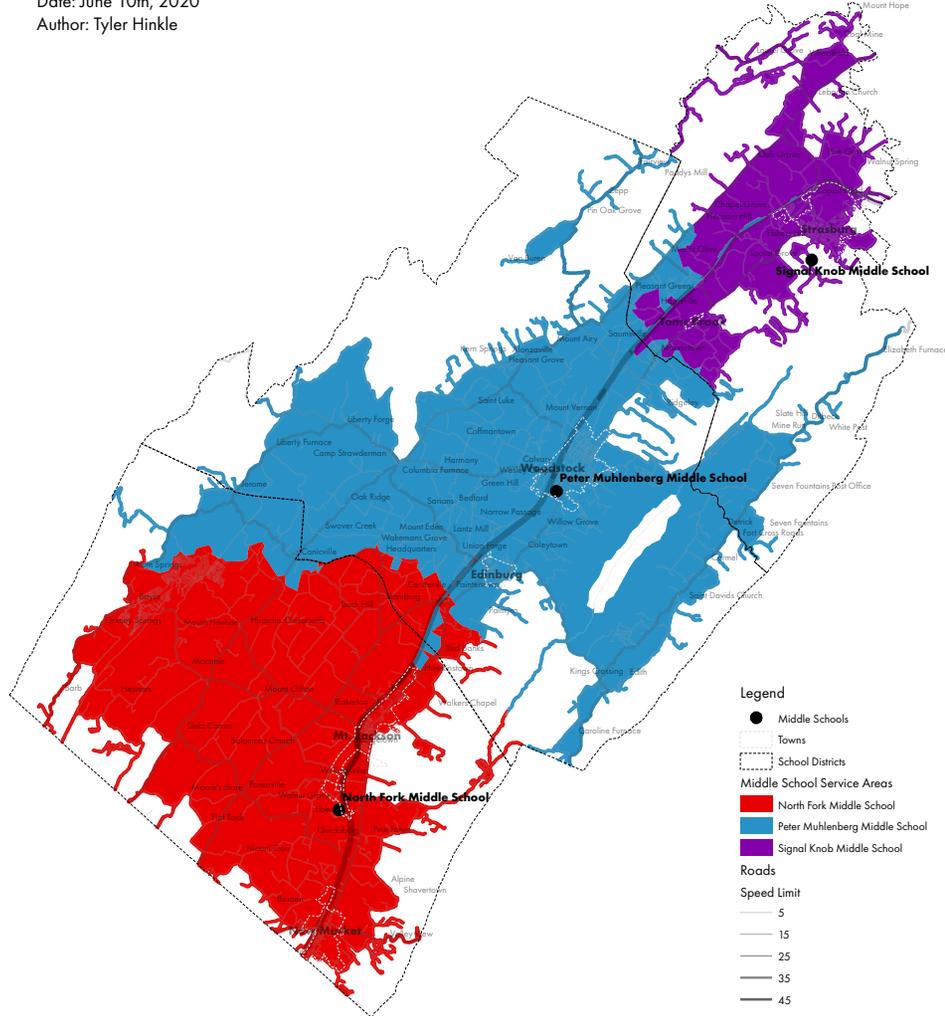
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 46

Middle School Service Areas

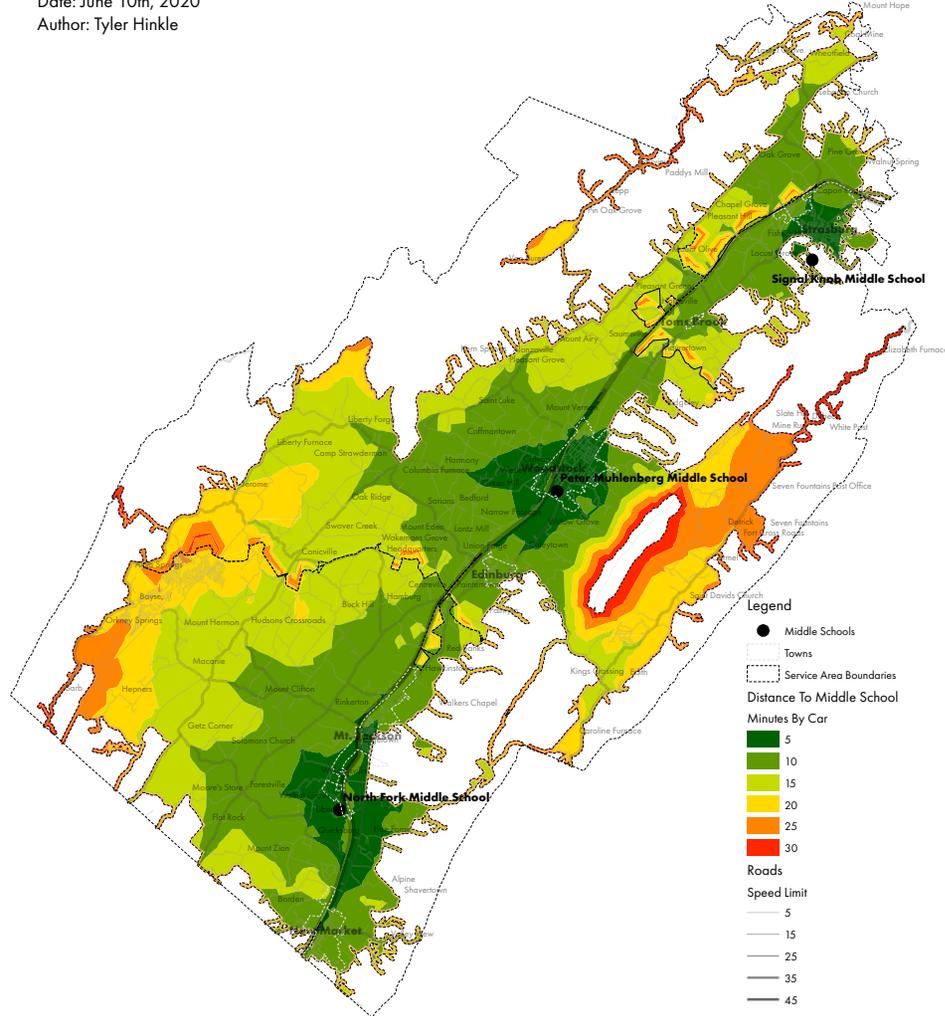
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



- Legend**
- Middle Schools
 - Towns
 - ▭ School Districts
 - Middle School Service Areas**
 - North Fork Middle School
 - Peter Muhlenberg Middle School
 - Signal Knob Middle School
 - Roads**
 - Speed Limit**
 - 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70

Travel Time To Middle School

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



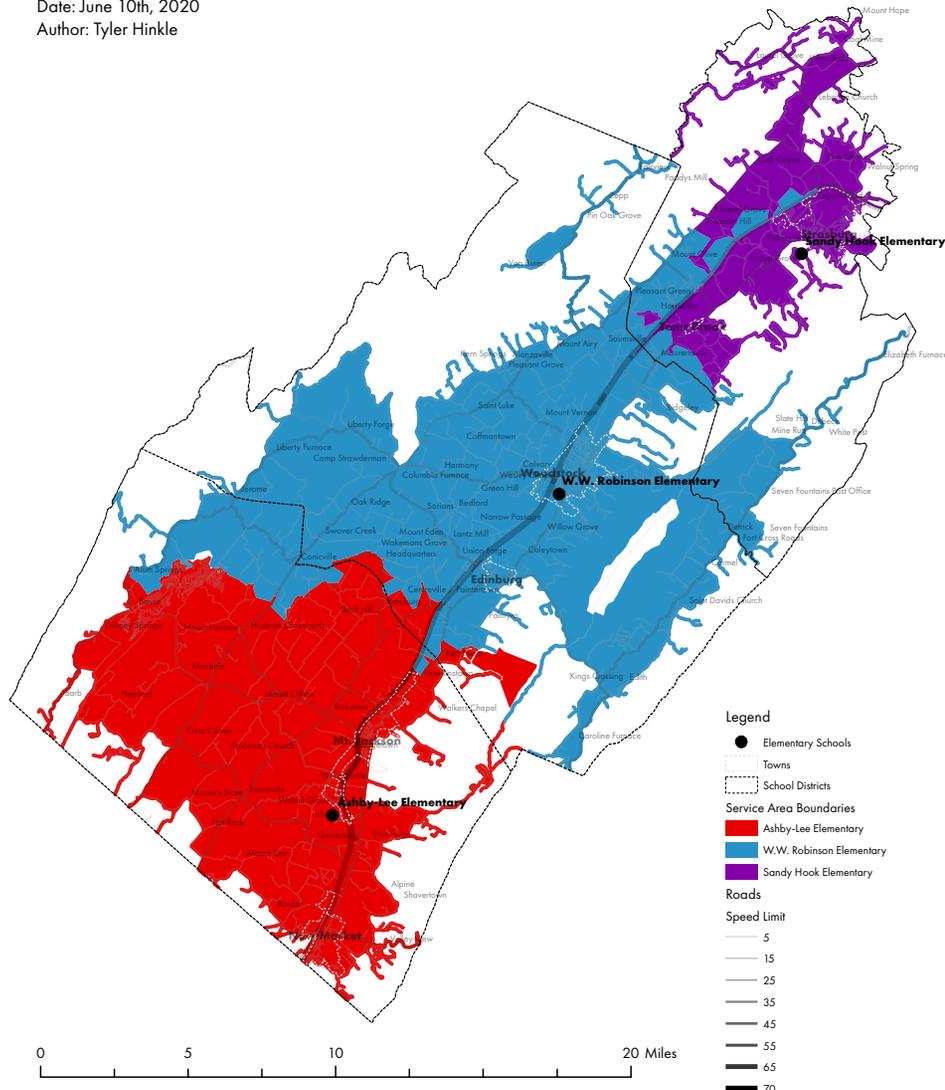
- Legend**
- Middle Schools
 - Towns
 - ▭ Service Area Boundaries
 - Distance To Middle School**
 - Minutes By Car**
 - 5
 - 10
 - 15
 - 20
 - 25
 - 30
 - Roads**
 - Speed Limit**
 - 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70

Map 47

Map 48

Elementary School Service Areas

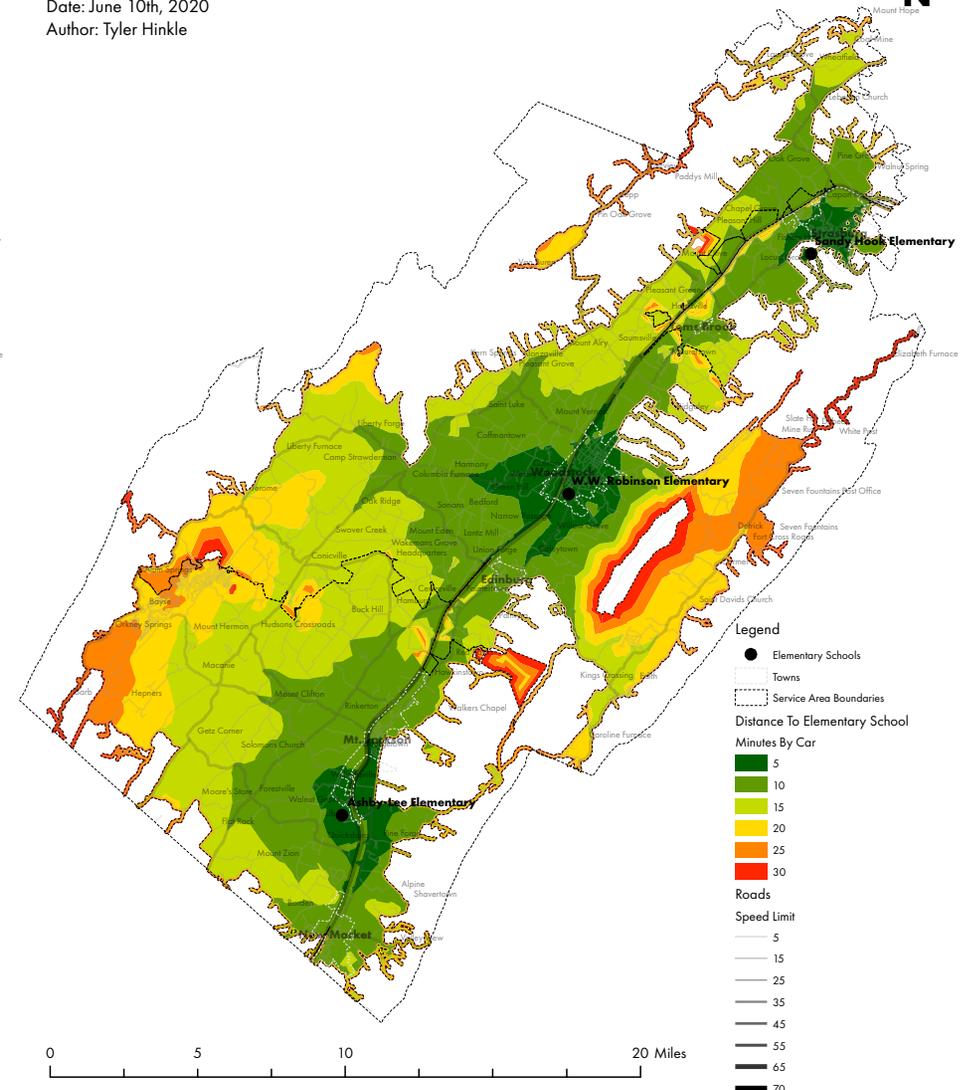
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 49

Travel Time To Elementary School

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: June 10th, 2020
 Author: Tyler Hinkle



Map 50



A Toolbox For Conservation

This final section of the report will outline six different methods or tools for promoting conservation and preservation of the rural character of Shenandoah County. Tools demonstrated in this toolbox can be used together in order to achieve the goals of a locality, or on their own for a more pointed method of action. It must be noted that while these tools can be used to aid in conservation and preservation, one must not view these tools as hammers and every issue as a nail. Careful precautions must be taken to ensure that the goals and actions that are being sought are being done in a deliberative democratic process and that the final decisions made are ultimately in line with the goals, vision, and desires of the community. Not only can one promote conservation and preservation in a manner that you also have a deliberative democratic process, but it is vital that individuals deliberate their concerns, values, and ideas over conservation and preservation in order to ensure that the process is a learning process and is generative. With this said, while one on one conversations are welcomed to promote conservation, a major recommendation from this report is that the roadshow for the 2045 Comprehensive Plan considers the siting of future conservation easements in Shenandoah County. As the roadshow is seeking to adhere to Arnstein's Ladder of Citizen Participation, it is likely that the process will ensure the discussion over conservation is a collaborative democratic process.

Land Use Taxation

This tool is currently being used in Shenandoah County. This tool involves the assessment of property based on the use of the land rather than the potential build-out or comparative value of the land. This tool has proven to be helpful in ensuring that land that is currently being farmed continues to be farmed. In addition individuals have an incentive to keep their land in agriculture, forestry, or other uses that qualify due to a provision where individuals must pay roll back taxes for the past five years when they come out of land use taxation. This report recommends that the County continues its long standing policy on land use taxation due to the results from this report as well as the Cost of Community Services report.

Best Management Practices

BMPs or Best Management Practices are a set of guidelines which are used to ensure that when rain falls from the sky it does not have the chance to drain pollutants into nearby streams and waterways. BMPs include a varied set of approaches from requiring 100 natural buffers from streams and waterways to providing trees near streets to purify stormwater before it enters the watershed and to retention ponds near large parking lots to ensure that water enters the watershed in a close to natural manner. The way that these methods work is through providing time and space for the natural environment to absorb and clean stormwater through the roots of plants. The purpose of providing for these provisions is because when it rains the stormwater will pick up various chemicals and other aspects which could wind up draining into the watershed if provisions are not made to clean said stormwater. In addition, large amounts of stormwater entering a watershed at one period of time can lead to an increased erosion of important top soil for agriculture and lead to the nearby streams and rivers being murky, which is a sign of an increase in turbidity or particles in the water. High levels of turbidity or chemicals can have disastrous impacts on local wildlife as well as human users of the waterbodies as polluted water can lead to health complications in swimmers as well as those who consume fish which has been residing in said water. High levels of turbidity can lead to higher mortality rates in aqualife as it makes it more difficult for the aqualife to have access to air as well as sunlight. The Lord Fairfax Soil And Water Conservation District serves over Shenandoah County as well as Clarke, Frederick, and Warren Counties and the City of Winchester. The District office is located in Strasburg and it helps with implementing BMPs.

Overlay Zoning Ordinances

Map 51 demonstrates the existing Old Valley Pike Overlay Zoning District that was adopted August 26th, 2008. Map 52 demonstrates the Airport Safety Overlay Zoning District that was adopted October 8th, 1991. Map 53 demonstrates the Floodplain Overlay Zoning District that was adopted May 14th, 1991. The three Maps mentioned display the only overlay zoning districts in Shenandoah County, not including the Towns and their own zoning.

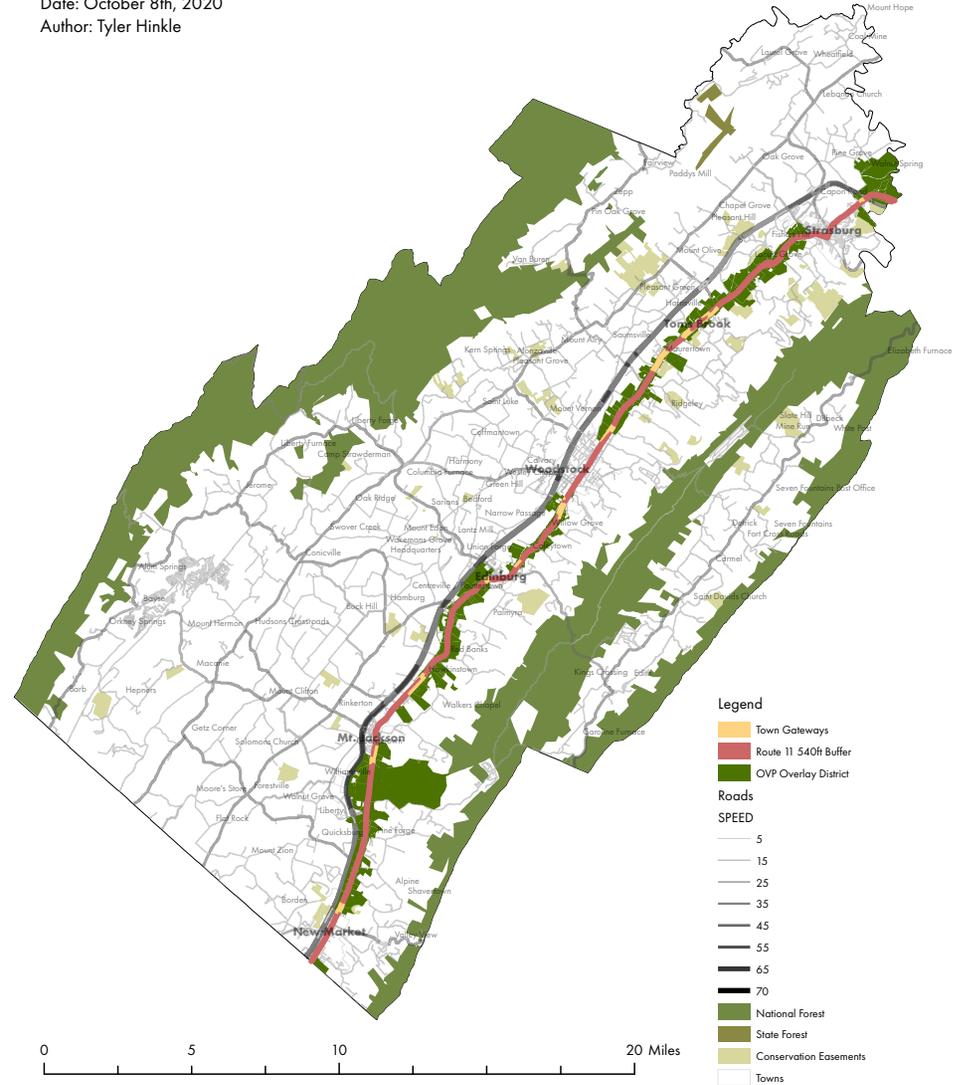
Overlay zoning districts serve as an additional layer of zoning to the existing zoning districts underneath. For example while one can build a house by right in the Agricultural Zoning District, A-1, one must apply for a Special Use Permit in order to construct a house in the A-1 District if the land is within the Floodplain Overlay Zoning District. In addition to placing additional requirements on lands under overlay zoning districts, one can also reduce restrictions in overlay zoning districts in order to provide incentives for specific forms of development in specific locations. While the former practice is already used in Shenandoah County and other rural counties, the latter is not used in Shenandoah County and is more typical in suburban counties or towns and cities.

In order to achieve the visions set forth in this report as well as to address the issues that were made clear with the Cost of Community Services Report, one may amend existing overlay zoning districts as well as add new overlay zoning districts in order to provide more provisions to ensure said visions are realized. Examples of amending existing ordinances may include requiring BMPs in the Floodplain Overlay Zoning District such as a 100 foot buffer from all streams and waterbodies, or providing incentives for conservation easements in the Old Valley Pike Overlay Zoning District.

Examples of new overlay zoning districts could include a critical slopes overlay zoning district which would address slopes greater than 15%. A critical slope ordinance alone would preserve all mountainsides and critical slopes along streams in the County. Another new overlay zoning district could involve locations of groundwater recharge, which are key areas for ensuring that aquifers are refilled for the local drinking water supply. The previous overlay district as well as one to preserve the Battlefields are recommendations in the current 2025 Comprehensive Plan. Other overlay zoning districts could cover wildfire prone areas to lands along streams.

Old Valley Pike Overlay District

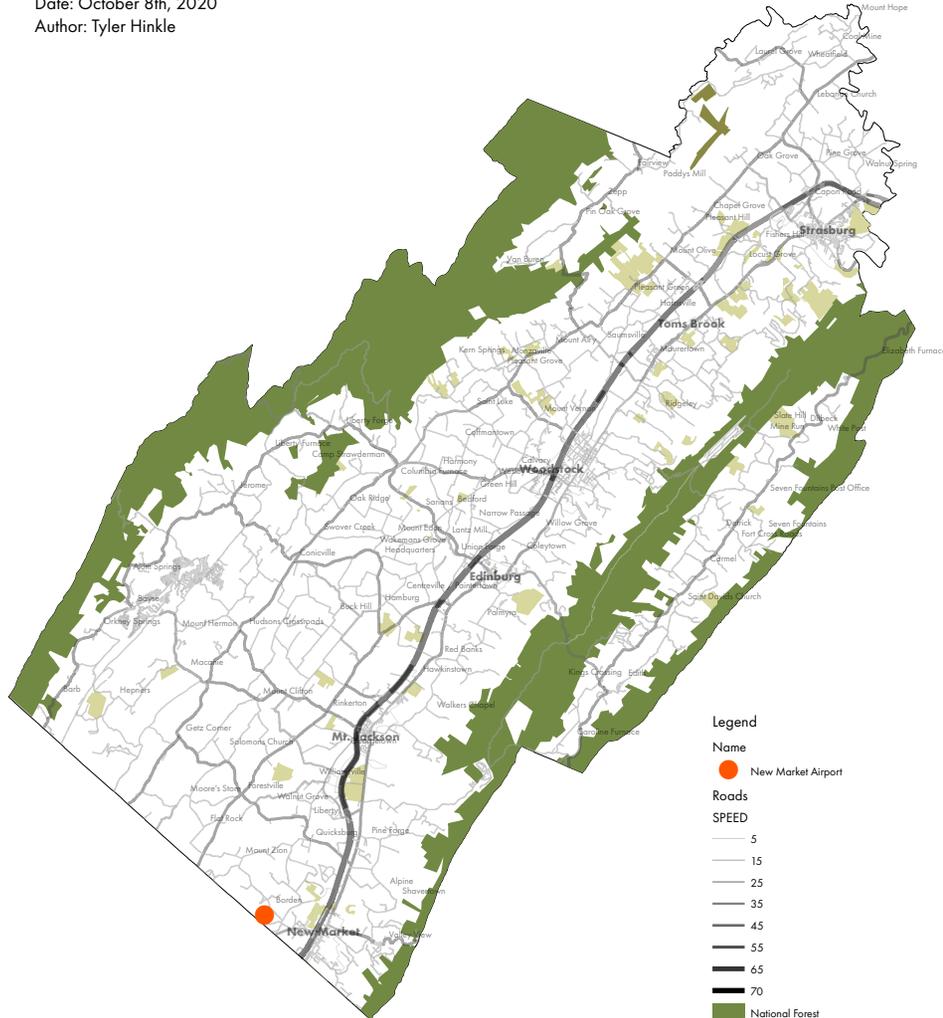
Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
Date: October 8th, 2020
Author: Tyler Hinkle



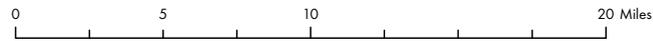
Map 51

Airport Safety Overlay District

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle

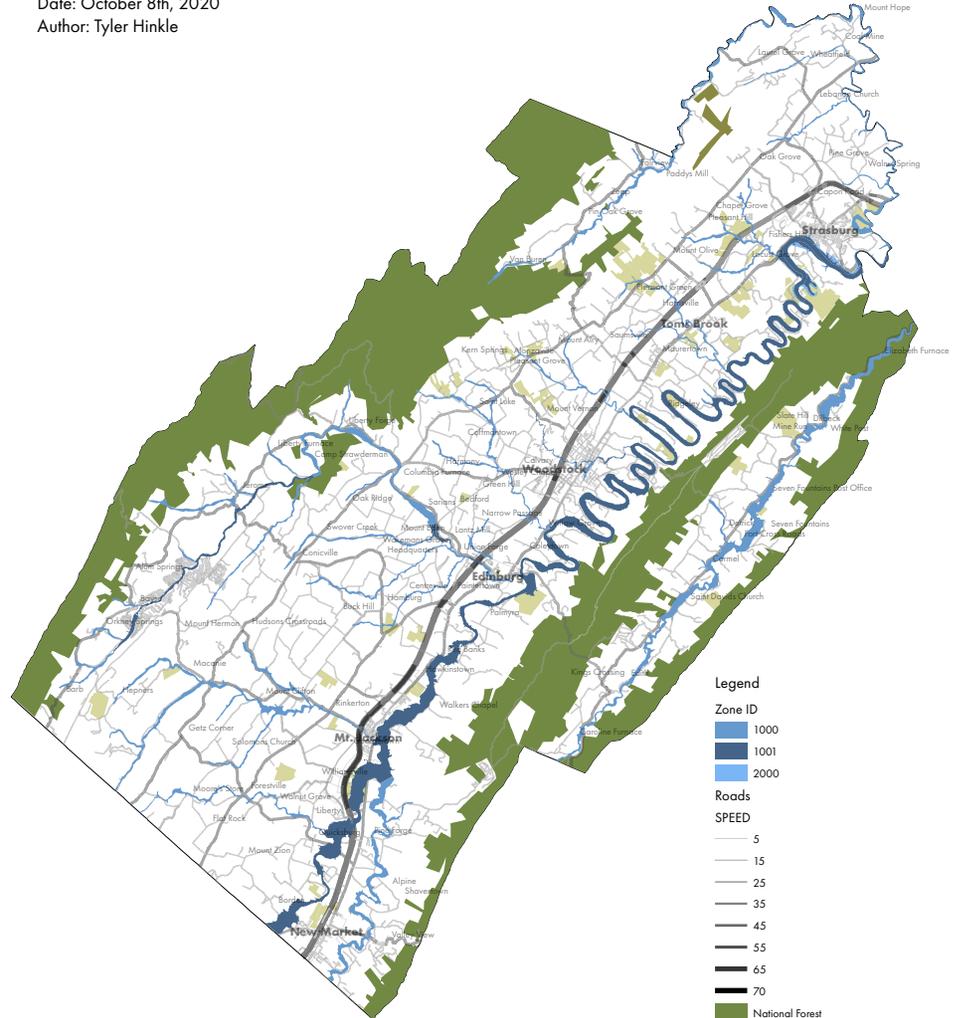


- Legend**
- Name**
- New Market Airport
- Roads**
- SPEED**
- 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
- National Forest
 - State Forest
 - Conservation Easements
 - Towns

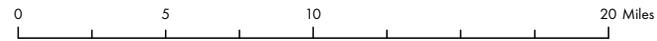


Floodplain Overlay District

Source: Shenandoah County GIS Department, Shenandoah County Planning Department, VGIN
 Date: October 8th, 2020
 Author: Tyler Hinkle



- Legend**
- Zone ID**
- 1000
 - 1001
 - 2000
- Roads**
- SPEED**
- 5
 - 15
 - 25
 - 35
 - 45
 - 55
 - 65
 - 70
- National Forest
 - State Forest
 - Conservation Easements
 - Towns



Conservation Easements

While conservation easements are only one tool in the tool box to use in order to achieve conservation or preservation efforts, it tends to be one of the largest tools in the tool box. Part of the reason that conservation easements are so widely and commonly used is because there are numerous ways that one can achieve a conservation easement and conservation easements allow for more personal agreements on how land will be used rather than blanket ordinances which treat all lands under them the same, irrespective of the issues and conditions that each and every landowner faces. This final tool that is explained in the report will cover four different methods of gaining conservation easements in Shenandoah County.

While it may be noted that Agricultural and Forestal Districts are not addressed in this report, it may be noted that Agricultural and Forestal Districts aid in preventing the subdivision of land but not the development of new dwellings and structures. Agricultural and Forestal Districts require a ten year commitment to keeping ones land as it is yet individuals may request removal at any time and can leave the district after the ten years with no repercussion. There are also no benefits to joining an Agricultural and Forestal District other than less restrictive requirements on intensive agricultural operations. While Agricultural and Forestal Districts are an excellent tool to aid in preserving agricultural and forestal lands for ten year periods, this report seeks provide solutions that are permanent.

Conservation easements can be explained by first explaining how land rights work. Every parcel of land has a bundle of rights which make up the abilities that its owners or renters are able to utilize. Such rights in the bundle of rights may include but are not limited to: farming, mining, construction of a house, fishing, the right to lawful passage, and the right to clear trees and/or vegetation. When an individual enters into a conservation easement, the individual is selling off individual sticks or parts of sticks from its bundle of rights. This means that one can sell off individual rights or parts of rights while still retaining all remaining rights. An example of this in a similar context is selling an access easement to a utility company for an underground cable. While the property owner may still be able to mow and farm the property in the utility easement, the property owner cannot build on top of the utility easement or dig into the ground. A similar situation is seen when individuals sell off certain rights for a conservation easement.

Holding And Coholding

There are three methods of gaining easements in Shenandoah County which do not involve the expenditure of public funds or for new ordinances to be adopted. The first method is to support easement agencies in and around Shenandoah County through connecting residents with such agencies as well as providing a quick process of supporting such easement agencies. While the County currently issues letters of support for easements in the County based on the Comprehensive Plan, there are no efforts being made to connect landowners with the agencies that could help them with gaining conservation easements.

The second method involves the County's Conservation Easement Authority directly working with specific agencies to jointly hold conservation easements. Such easements are donated and do not require the County to provide funds in securing such easements. The current County code section on the Conservation Easement Authority outlines that the co-holding of easements is preferred over the County being the sole holder of conservation easements. While this is a practice already being done in Shenandoah County, such efforts could be strengthened through developing more partnerships with relevant agencies, holding informational sessions for the public, as well as directly engaging landowners on the prospect of conservation easements.

The third method involves the County's Conservation Easement Authority serving as the sole holder of a conservation easement over a parcel of property. These types of easements are also donated and do not require the County to provide funds to secure such easements. While this method is not recommended, the concerns of the County's staff being tied to performing annual assessments can be addressed in the deed verbiage. This form of easements is also a practice that has been performed in the County and it can be a practice that is readopted and used more actively if the support is there for it.

While all three of these options do not require the County to provide funds or develop new ordinances to gain easements in the County, there is little leverage or incentives to such options which could lead to a rapid increase in the number of easements in the County.

Purchase Of Development Rights

“Action: Convene an ad hoc advisory committee to study the merits of the purchase of development rights (PDR) as a means of permanently preserving agricultural land in the county. PDR is a recognized tool for protecting rural areas but has been little used in the Commonwealth. Determining what parcels of land are worthy of this designation and how such purchases would be paid for a key issues to be addressed.

Responsibility: Board of Supervisors, 2005”²⁵

The above section is taken from Chapter 10 of the 2025 Comprehensive Plan and it is one of the recommended actions that the County should take to achieve the vision of the Plan. This action was acted upon and led to the formation of the Conservation Easement Authority as well as the Purchase of Development Rights program which was funded largely through the revenues from roll back taxes.

Roll back taxes occur when an individual changes their land use from a use that qualifies for land use taxation to a non-qualifying use. When this occurs the individual must pay the taxes for the year at the full assessment value as well as the taxes for the past five years. The intent of utilizing the funds from roll back taxes to fund conservation easements in Shenandoah County was that land being taken out of agriculture, forest, open space, and other natural uses would pay for keeping other lands in such uses. On February 9th, 2021. The Board of Supervisors provided for up to \$25,000 to be allocated from roll back taxes to the CEA to seek and obtain Conservation Easements in the County. On October 26th, 2021 the Board of Supervisors voted to appropriate an additional \$142,000 to the CEA to assist in a Virginia Land Conservation Fund grant which matches local funding dollar for dollar.

As discussed at the start of this Strategic Plan, the 25 Actions set forth with the VISION 25 Plan are seeking to guide the CEA with its funding for Conservation Easements and to make sure there is better community awareness of the benefits that easements pose. While the purchase of easements is not the only method to obtain easements, it is a very important tool in providing a new option for landowners who cannot afford to go through the donation process and require a guarantee of funding upfront compared to selling tax credits. With the already allocated funding and recurring funding to the CEA, the number of acres under easement will increase over time.

Transfer Of Development Rights

“Objective 3.2: Maintain the rural and open space character of areas outside of the public service areas. To achieve this objective, the County shall confine all urban forms of land development to the public service areas; maintain a low average density of dwelling units in agricultural and conservation areas by establishing a maximum number of dwelling units per 100 acres or fraction thereof. The County shall consider the cluster housing concept for subdivisions and set the open space requirement to seventy percent. The County shall encourage rural property owners to place their land in agricultural and forestall districts; consider the purchase of development rights of strategically located high quality rural property; as well as encouraging the use of conservation, scenic, and historic or other voluntary easements to permanently preserve land.

Objective 4.3: Maintain and promote the role of agriculture as part of the basic economy of the County: The County shall provide the means to preserve agricultural land through such measures as Agricultural & Forestal Districts, conservation easements, purchase of development rights, zoning laws and tax incentives. The County shall promote the health and growth of agriculture as an industry; encourage diversity in agricultural production; encourage better marketing of agricultural products; provide agricultural educational opportunities for youth.”²⁶

While the Comprehensive Plan does not directly call for the implementation of a Transfer of Development Rights (TDR) program, the goals and objectives in the Comprehensive Plan align with the benefits that a TDR program poses for the County. A TDR program would allow for private developers to purchase the development rights that a farm or other property holds in the County in order to use the development rights in a place that would make more financial sense for the developer. For example if a farmer had 100 acres and zoning allowed for two lots per acre, then a developer in Town could purchase all 200 development rights from the farmer and use them to construct a 50 room apartment complex downtown, 50 stacked townhouses on the edge of downtown for a total of 100 units, and 50 dwelling units on top of stores on commercial property in a former strip mall. At the same time the farmer would have its 100 acres placed in a conservation easement so the farmer would be guaranteed that the farm would always remain a farm. In order to implement this program, a map of sending and receiving areas must be added to the comprehensive plan.

Appendix

Appendix I: Shenandoah County Inventory Assessment

	Teachers
Ashbee Lee	30
North Fork	18
Stonewall	23
WW Robinson	43
Peter Mulenburg	23
Central	27
Sandy Hook	38
Signal Knob	20
Strasburg	20

Fire Department	People	Firefighters	2010 AV	Capacity	Space
New Market	3099	10	309.90	1667	-1432
Mount Jackson	5886	30	196.20	5000	-886
Edinburg	3762	17	221.29	2833	-929
Woodstock	5429	42	129.26	7000	1571
Toms Brook	3259	15	217.27	2500	-759
Strasburg	9068	54	167.93	9000	-68
Fort Valley	1987	5	397.40	833	-1154
Star Tannery	2598	5	519.60	833	-1765
Conicville	1076	8	134.50	1333	257
Orkney Springs	2380	8	297.50	1333	-1047
Shenandoah County	43497	2	21748.50	1111	-42386

Police Department	People	Police	2018 AV	Capacity	Space
New Market	2248	6	374.67	3947	1699
Mount Jackson	2107	6	351.17	3947	1840
Woodstock	5245	18	291.39	11842	6597
Strasburg	6658	21	317.05	13816	7158
Shenandoah County	27239	75	363.19	64655	37416

Endnotes

Endnotes

- 1 Shenandoah County. 2014. "Boards and Commissions Shenandoah County Board of Supervisors A Community Guide." Shenandoah County, Virginia. ShenandoahCountyva.us
- 2 Page 2-1 Comprehensive Plan Natural Resources Chapter
- 3 Page 2-1 Comprehensive Plan Natural Resources Chapter
- 4 Page 10-4 Comprehensive Plan Actions Chapter
- 5 Page 10-2 Comprehensive Plan Actions Chapter
- 6 Page 10-5 Comprehensive Plan Actions Chapter
- 7 Page 0-8 Comprehensive Plan Introduction Chapter
- 8 Page 2-21 Comprehensive Plan Natural Resources Chapter
- 9 Page 9-4 Comprehensive Plan Growth Management Chapter
- 10 Page 10-1 Comprehensive Plan Actions Chapter
- 11 Page 2-13 Comprehensive Plan Natural Resources Chapter
- 12 Page 2-13 Comprehensive Plan Natural Resources Chapter
- 13 Page 10-2 Comprehensive Plan Actions Chapter
- 14 Page 0-8 Comprehensive Plan Introduction Chapter
- 15 Page 0-8 Comprehensive Plan Introduction Chapter
- 16 Page 10-2 Comprehensive Plan Actions Chapter
- 17 Page 10-3 Comprehensive Plan Actions Chapter
- 18 Page 10-4 Comprehensive Plan Actions Chapter
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