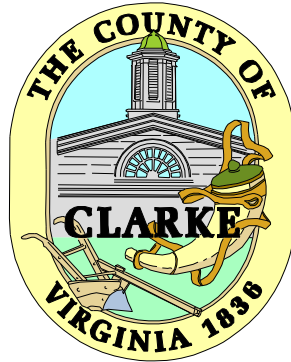


# Board of Supervisors Committee Meetings



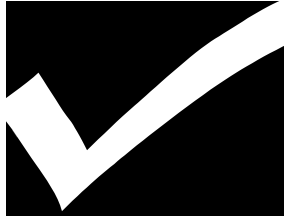
**Monday, September 8, 2014**

**Pages**

**Personnel Committee: Canceled**

**Work Session: 10:00 am 2 - 85**

**Finance Committee: Canceled**



**Board of Supervisors Special Work Session Agenda  
September 8, 2014 10:00 am  
Berryville/Clarke County Government Center, 2<sup>nd</sup> Floor  
101 Chalmers Court, Berryville, Virginia 22611**

<i>Item No.</i>	<i>Description</i>
A.	<b>Access Independence Presentation by Donald Price</b>
B.	<b>White Post Dairy Update</b>
C.	<b>Virginia Pollutant Discharge Elimination System (VPDES) Permit Modification Request -- Mt. Weather Emergency Operations Center</b>
D.	<b>2014 Town of Berryville and Clarke County Bicycle &amp; Pedestrian Plan</b>
E.	<b>Clarke County General Government Pay and Classification Study Update</b>
F.	<b>Personnel Policy Review Establish Dates and Times for Committee of the Whole</b>
G.	<b>Northwestern Regional Adult Detention Center Request for Funding</b>
H.	<b>Transfer budget from Sheriff to Communications</b>
I.	<b>Cover special payment from Building Inspections from personnel contingency</b>
J.	<b>Closed Session pursuant to §2.2-3711-A1 specific employees or appointees of the Board and Personnel Pay Issues</b>

## Housing that's user-friendly

Universal Design is all about *universal appeal*. The consumer is looking for a product that is safe, comfortable, easily useable, and visitable by friends and family, all regardless of age or physical ability. Isn't that the kind of product you want to offer? Don't hesitate to get on board with a movement for housing design that's spreading universally!



Some of the information in this brochure comes from *Shared Solutions America*™

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Fax: 540-662-4474

VA Relay # 7-1-1

[www.accessindependence.org](http://www.accessindependence.org)



This brochure may be made available in alternative formats upon request.

# UNIVERSAL DESIGN

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***Gain an edge in the housing market***

***Reach a broader range of homebuyers***

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# basics of UNIVERSAL DESIGN in housing

## 7 Principles of Universal Design

- Equitable use
- Tolerance for error
- Flexibility in use
- Low physical effort
- Simple & intuitive
- Size & space for approach & use
- Perceptible info

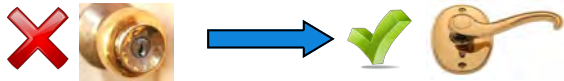
## A Few Starting Tips

Instead of:

Install:

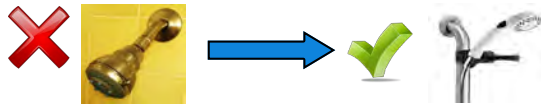
Door knobs

Lever handles



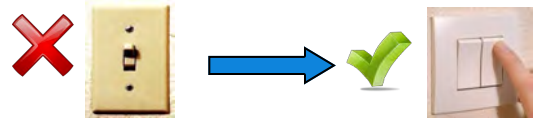
Fixed shower head

Hand-held



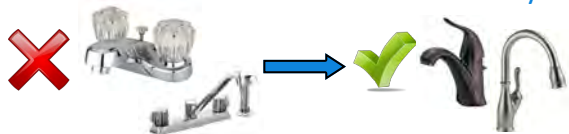
Traditional light switches

Rocker style



Twist knobs on sinks

Lever style



Make doorways 2 in. wider with offset hinges



To reach the widest range of homebuyers in the market, you need to offer a product that accommodates the widest range of needs. Here's where Universal Design comes in. A Universal Design house takes into consideration all ages, abilities, shapes, and sizes.

The most prominent element to a Universal Design house is the:

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### Some of the Other Exterior Features

- ◆ 36"-wide path to doorway
- ◆ 36"-wide front door
- ◆ Max 1/2" high threshold, with beveled edges
- ◆ Covered overhang at entranceway
- ◆ 5'x 5' level clear space outside & inside of main entry
- ◆ Secure handrails where needed

### Some Interior Features

- ◆ Multi-story homes: consider placing a bedroom & bathroom on main floor
- ◆ A roll-in shower in at least 1 bathroom
- ◆ All doors to rooms & closets 34"-36" min. width; Door handles at 36" height
- ◆ Hallways with 42"-48" min. clear width
- ◆ Light switches & thermostat mounted at 48" max. height from finished floor to center of the control; Outlets at 15" min. height
- ◆ Light fixtures/window treatments with glare-free lighting
- ◆ Kitchens with a 5' diameter of clear open space; Bathrooms with a 5' diameter clear space or T-shaped 3'x5' with 2'x5' T-shape
- ◆ Cook top & kitchen (as well a bathroom) sink lower cabinets to have an open space underneath approx. 30" wide x 27" high x 19" deep



## Core Services

- Individual and System Change Advocacy
- Peer-to-Peer Mentoring
- Independent Living Skills
- Information and Referral

## Additional Services

- Community Awareness
- Community Education
- Accessible Housing
- ADA and Universal Design
- Elderly Directed/Consumer Directed—Medicaid Waiver
- Assistive Technology
  - Ramp Installation
  - Lift Installation
- Community Living vs. Long Term Care

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promoting  
independent  
living





## ANNUAL EVENTS

- **disAbility Awareness Week**
  - 5K Run, Walk, and Roll
  - Ice Cream Social
  - Barrier Breakers Awards
- **Roll-Your-Own**
- **Deaf Awareness Week**
- **Career Day**
- **Thanksgiving Luncheon**
  - Recognition Awards

For dates and more, visit us at  
[www.accessindependence.org](http://www.accessindependence.org)

*We are people with disabilities,  
empowering people with disabilities.*

## ABOUT US

- ◆ Ai is a Center for Independent Living, often referred to as a CIL.
- ◆ Ai is a non profit organization founded in 1985.
- ◆ Ai serves as an organization that promotes independent living for Virginia's Northern Shenandoah Valley.
- ◆ Ai is a consumer controlled, community based, cross disability, nonresidential, private nonprofit organization that is designed and operated within our local region by individuals with disabilities.



## MISSION STATEMENT

Our **mission** is to **promote independent living** by providing services that enhance the quality of life for people with disabilities living in Virginia's Northern Shenandoah Valley.

## VISION STATEMENT

Our **vision** is a barrier-free community for all individuals to achieve their greatest potential.

## VALUE STATEMENT

- We live our values
- We are people with disabilities empowering people with disabilities
- We believe in being ethical and having integrity
- We believe in treating people with respect and dignity
- We believe people should live in a community without physical and social barriers
- We believe in the principles of equal rights, access, and opportunities



MEMORANDUM

TO: Board of Supervisors, David Ash  
FROM: Alison Teetor  
DATE: September 3, 2014  
SUBJECT: Update White Post Dairy

An update as to the activities at the White Post Dairy was last presented to the Board after a manure spill occurred in March 2014. The response from DEQ was issuance of a Notice of Violation for not reporting the spill within 24 hours of the occurrence. The Board spoke with Karen Hensley, Enforcement Senior Specialist, DEQ who stated that a consent order would be drafted to address the compliance issues.

Staff contacted Bob Peer in August to provide an update of the current situation at the Dairy. Mr. Peer reported that an inspection was conducted July 15<sup>th</sup>, 2014, at that time the Dairy had started construction on a road that would divert stormwater away from monitoring well #1, where high levels of nitrates had been detected. In addition a spill way was constructed in the concrete manure separator to prevent future overflows similar to those that occurred in 2013 and 2014. See attached inspection pictures.

An analysis of the March water quality sampling of the monitoring wells, by Laura Stuart, DEQ, stated that MW#4 had high levels of nitrates (27.7 ppm) her conclusions are as follows:

*Based on a review of the results and me discussion above, I have the following conclusions:*

- 1) Nitrate exceeded the groundwater standards in MW-4 during the 1<sup>st</sup> quarter sampling event. The groundwater result could be related to shallow depth of the well which is influenced by increased surface water infiltration from sediment erosion control activities. This increased infiltration can contribute to unrepresentative groundwater data. Verification samples (within 30 days of the date of the laboratory report are recommended to confirm any future exceedances. If the data is confirmed, the facility should evaluate site conditions and activities may influence the results and take actions to reduce surface infiltration.*
- 2) Weather conditions, rainfall occurrence and amounts, and any site activities adjacent to the wells should be recorded for two weeks prior to groundwater sampling event in order to demonstrate that surface infiltration may affect the groundwater results.*
- 3) The facility should also install deeper groundwater wells that would not only assist in Characterizing the extent of nitrate in groundwater but also provide information demonstrating whether the deeper groundwater zone would provide a more accurate representation of groundwater. Deeper wells would likely be less susceptible to rapid surface infiltration*
- 4) If the facility has not already done so, the comments related to well MW-1 from the Review memo dated August 8, 2013, should be addressed.*

Mr. Peer stated that the Dairy has made significant improvements since the March 2014 spill by diverting stormwater and constructing the spillway.

An additional request for information pertaining to the Nutrient Management Plan (NMP) was requested by Conrad Wyrick, Agricultural Program Specialist, DEQ, staff requested the results but has not received any data as of this date.

Outstanding information not yet received from DEQ:

- 1) Inspection report from 7/15/14 – have photos only
- 2) NMP data
- 3) WQ data analysis from July
- 4) Verification data and other recommendations requested by Laura Stuart
- 5) Signed Consent agreement from March 2014 spill



# White Post Dairy-site visit 7/15/14



access road to manure storage pits  
graded – silt fence to be installed  
(arrow)to direct stormwater away from  
monitoring well #1



swale to be installed (blue arrow)to  
direct stormwater from access road  
away from monitoring well #1 (red  
arrow)

# White Post Dairy-site visit 7/15/14



Concrete added to area between compost building and old sand trap



Spill way from reception pit to settling basin

# White Post Dairy-site visit 7/15/14



Pump house for pumping flush water  
To flush tanks from manure pit #1  
Also, the manure storage pit is at  
capacity -18 inch freeboard



Second manure storage pit - 18 inch  
free board



**Clarke County Planning Department**  
**101 Chalmers Court, Suite B**  
**Berryville, Virginia 22611**  
**(540) 955-5132**

**TO: Board of Supervisors**

**FROM: Brandon Stidham, Planning Director**  
**Alison Teetor, Natural Resources Planner**

**RE: VPDES Modification Request – Mt. Weather**

**DATE: September 2, 2014**

Mt. Weather Emergency Operations Center (FEMA) is requesting a modification to an existing Virginia Pollutant Discharge Elimination System Permit (VPDES) issued by DEQ. A notification letter was sent to Chairman Hobert, August 8, 2014 seeking public comment. Attached is the notification and analysis of the discharge.

Staff spoke with Anna Westernnik of DEQ to discuss the modification. The permit addresses discharges to both the east and west sides of Blue Ridge. On the west side (Clarke) the discharge is treated wastewater and stormwater from the water treatment facility. There are no toxic wastes eliminated from this source. The outfalls in Clarke are identified as Outfall 001 and 101. Based on the information provided, there appears to be no significant pollutant discharge from the water treatment facility at this time.

The permit is scheduled for renewal in 2016, Ms. Westernnik recommends that the Board request that a complete scan of priority pollutants for both stormwater and internal discharge be completed prior to reissuance.



AUG 11 11 REC'D

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

www.deq.virginia.gov

Molly Joseph Ward  
Secretary of Natural Resources

David K. Paylor  
Director

Thomas A. Faha  
Regional Director

August 8, 2014

J. Michael Hobert, Chair  
Clarke County Board of Supervisors  
P.O. Box 588  
Berryville, VA 22611

Re: VPDES Permit No. VA0091464, Modification  
Mt. Weather Emergency Operations Center, Mount Weather, VA

Dear Chairman Hobert:

Section 62.1-44.15:01 of the Code of Virginia requires DEQ to notify localities particularly affected when a permit action is pending. This letter transmits one copy of the public notice for the proposed permit action for your review. Public notice of this proposed action is also being published in a local newspaper. That publication will establish a 30 day public comment period for this proposal. If you wish to comment on this proposed action, please respond to:

Anna Westernik  
Virginia Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193-1453  
Fax: (703)583-3821  
Anna.Westernik@deq.virginia.gov

Please contact me at (703) 583-3837 or Anna.Westernik @deq.virginia.gov if you have questions. If no response is received within the 30 day public notice period, it will be assumed that you have no objections to the proposed action.

Sincerely,

Name  
Environmental Specialist Senior II

cc: Permit Reissuance File (VA0091464)

Enc.: Public Notice

## Public Notice – Environmental Permit

**PURPOSE OF NOTICE:** To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater/storm water into water bodies in Loudoun/Clarke Counties, Virginia.

**PUBLIC COMMENT PERIOD:** August 13, 2014 to September 12, 2014

**PERMIT NAME:** Virginia Pollutant Discharge Elimination System Permit – Wastewater/Storm Water issued by DEQ, under the authority of the State Water Control Board

**APPLICANT NAME, ADDRESS AND PERMIT NUMBER:** Federal Emergency Management Agency, Mount Weather Emergency Operations Center, P.O. Box 129, Mount Weather, VA 22611; VA0091464

**NAME AND ADDRESS OF FACILITY:** Mount Weather Emergency Operations Center, 19844 Blue Ridge Mountain Road, Mt. Weather, VA 20135

**PROJECT DESCRIPTION:** The Federal Emergency Management Agency has applied for modification of a permit for the Federal industrial discharges at the Mount Weather Emergency Operations Center. The modification of the process would allow an additional internal industrial wastewater outfall and storm water outfall to discharge to the eastern side of the facility. The applicant proposes to release industrial wastewater and storm water from a Federal facility at variable rates of flow into an unnamed tributary of Jefferies Branch in Loudoun County and into an unnamed tributary of Reservoir Hollow in Clarke County; both tributaries are located in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, total suspended solids, total residual chlorine, total petroleum hydrocarbons, temperature, and whole effluent toxicity. The permit will monitor the following pollutants: total Kjeldahl nitrogen, nitrate and nitrite, total nitrogen, total phosphorus, total recoverable chromium, total recoverable copper, cyanide, total recoverable nickel, total recoverable zinc, and total hardness.

**HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:** DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

**CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:** The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Anna T. Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3837 E-mail: [anna.westernik@deq.virginia.gov](mailto:anna.westernik@deq.virginia.gov) Fax: (703) 583-3821



## MEMORANDUM

### Northern Regional Office

**TO:** File

**FROM:** Anna Westernik, Water Permit Writer

**DATE:** May 19, 2014

**SUBJECT:** 2014 VPDES Permit Modification for FEMA Industrial (VA0091464)

---

FEMA is a Federal government facility located on a mountain ridge on Route 601 near Bluemont, Virginia that has been in operation since the early 1900s. The facility encompasses administrative programs, training and housing facilities, and emergency and disaster relief support.

The VPDES permit for industrial storm water discharge was originally issued by the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) in 2006. The 2006 permit and the subsequent 2011 reissuance monitored two storm water outfalls and two industrial discharge internal outfalls. These outfalls are named 001, 101, 002, and 201. Outfalls 001 and 101 are on the west side of the FEMA property whereas Outfalls 002 and 201 are on the east side of the FEMA property.

In 2012, FEMA constructed a new storm water outfall on the east side of the property. The newly constructed storm water outfall is directly south of the present Outfall 002 on the east side of the FEMA property. Flow to this outfall drains through a new manhole, enters a small pond, and then a large pond for sediment capture. Both ponds are unlined. In the event the large pond does overflow, approximately 50 to 75 feet of riprap is installed outside the fence boundary to slow down flow and hence, protect the slope from further erosion. Sampling from this outfall shall occur at the discharge point after the pond.

The newly constructed outfall at the exit of the pond will be named Outfall 003 and the internal process water outfall discharging to the pond will be named Outfall 301. Listed below is a description of the industrial outfalls on the east side of the property.

#### Outfall 002

Outfall 002 receives sump and storm water from Outfall 201 and localized sheet runoff from a contiguous wooded area before discharge to an unnamed tributary of Jeffries Branch. Before the construction of the new outfalls and upgrading of the storm water discharge route, this outfall received the majority of the storm water discharges from the east side of the facility.

### Outfall 201

Outfall 201 receives sump water from office buildings and storm water from office buildings areas and paved surfaces (roads and parking lots) on a small section of the east side of the facility. This discharge enters a series of two ponds for treatment by aeration and sedimentation. Additional treatment is provided by two weirs in the ponds that collect oil. Siphons remove the collected oil and grease for disposal. Used liquid oil is recycled and non-liquid oil products are disposed of as hazardous waste. The volume of storm water and sump discharges from this outfall has also been reduced due to the construction of the new outfalls and the upgrading of the storm water discharge route.

### Outfall 003

Outfall 003, which discharges to an unnamed tributary of Jeffries Branch where it exits the FEMA property, receives drainage from the eastern side of the property and sump and cooling water discharge. Discharge from Outfall 301 and storm water from the eastern portion of the facility travel through this outfall. This is a new wet weather discharge outfall on the eastern side of Mt. Weather.

### Outfall 301 (Sump Discharge, Cooling Water Discharge, Storm Water)

Outfall 301 receives sump pump discharges, condensate from air conditioning towers, cooling water discharge during the cleaning of the cooling tower, and storm water from the main complex of buildings on the eastern side of the property. These discharges enter a storm water conveyance system from the top eastern portion of the facility and are piped down the hill for treatment through entering a small basin that discharges into a larger basin providing sedimentation prior to the Outfall 003 discharge. During periods of non precipitation, the flow to this outfall is minimal; discharge does not occur unless a cooling tower is cleaned and water released.

In addition to the outfalls located on the east side of the facility, FEMA has an internal outfall for water treatment plant discharge and a storm water outfall on the west side of the facility that discharge to an unnamed tributary of Reservoir Hollow (see **Attachment 1**, 2011 Fact Sheet and Table 1 of this memorandum).

See **Attachment 2** – NPDES Permit Industrial Rating Worksheets  
(Score Outfall 001, West Side of Facility = 70, Minor)  
(Score Outfall 002, East Side of Facility = 25, Minor)  
(Score Outfall 003, East Side of Facility = 15, Minor)

See **Attachment 3** -- Facility schematic.

### Permit Action

The permit action in this modification will consist of re-evaluating the copper limits for Internal Outfalls 101 and 201, re-evaluating the storm water benchmark monitoring concentration values for Outfalls 001 and 002, evaluating the batch cooling water discharge from Internal Outfall 301, and determining storm water benchmark monitoring endpoints for Outfall 003. Additionally, nutrient monitoring is added at Outfall 002 in this modification in accordance with the sediment TMDL for the Goose Creek Watershed. Table 1 below provides a summary of the discharges present at the FEMA facility.



**TABLE 1 – Description of Outfalls**

<b>OUTFALL NO.</b>	<b>LATITUDE AND LONGITUDE</b>	<b>DISCHARGE SOURCES AND FREQUENCY</b>	<b>TREATMENT</b>	<b>FLOWS</b>
Outfall 001 Storm Water Discharge (Western Side of Facility) 225 Acres Drained 12 Acres of Impervious Surface	39° 03' 58.7" 77° 54' 08.5"	Runoff from paved roads, construction activities, oil storage areas (covered tank), hazardous waste storage areas (covered metal buildings), and road salt storage (covered area). WTP plant discharge and sump pump discharge.  Intermittent storm water discharge.	Overland Flow	Variable
Outfall 101 (Water Treatment Plant)	39° 03' 57.3" 77° 53' 58.9"	Discharge from a lagoon receiving WTP wastewater and storm water.  Outfall discharges approximately two times per month for two to three hours to discharge backwash wastewater. Outfall discharges overnight twice per year to discharge basin cleanout wastewater.	Sedimentation	Variable
Outfall 002 Storm Water Discharge (Eastern Side of Facility) 6 Acres Drained 3 Acres of Impervious Surface	39° 03' 29.4" 77° 53' 06.0"	A storm water collection system captures overflow from the potable water system, sumps, drainage from vehicle maintenance and fueling area, and a warehouse loading/unloading area.  Sheet flow from parking lots, satellite dish/radio tower area, and paved and gravel roads from construction activity.  Intermittent storm water discharge.	Storm water runoff and sump discharge is captured in a series of three small ponds that treat by aeration and sedimentation. A weir in the pond assists in containing oil from parking lots, vehicles, etc. Some treatment by overland flow.	Variable
Outfall 201	39° 03' 33.3" 77° 53' 04.2"	Discharge from a spring water sump and storm water.  Sump discharge is continuous. Storm water discharge is intermittent.	Discharge in a series of three small ponds that treat by aeration and sedimentation. Oil collected using a weir in the pond.	Variable
Outfall 003 Storm Water Discharge (Eastern Side of Facility) 143 Acres Drained 29 Acres of Impervious Surface	39° 03' 31" 77° 53' 06"	Intermittent storm water discharge. A storm water collection system captures overflow from the potable water system, sumps, drainage from vehicle maintenance and fueling area, and a warehouse loading/unloading area.  Sheet flow from parking lots, satellite dish/radio tower area, and paved and gravel roads from construction activity.	Storm water piped to sedimentation basins prior to discharge.	Variable
Outfall 301 Batch Cooling Water Discharge (Eastern Side of Facility)	39° 03' 33" 77° 53' 07"	Discharge from a spring water sump, air conditioning condensate, and storm water.  Sump discharge is continuous. Storm water and cooling water discharge is intermittent. The process flow is normally too low in volume to measure. Process flow from cooling water is discharged and monitored as a batch discharge.	None	Variable

**Attachment 4** – January 2013 Site Visit Memorandum.

**Attachment 5** -- Topographic map 216C (Ashby Gap) shows outfall locations for Outfall 301 and 003.

Effluent Screening

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

Internal Outfall 101 – Copper effluent data obtained from the Discharge Monitoring Reports (DMRs) from the first quarter of 2012 through the first quarter of 2014 have been reviewed and determined to be suitable for evaluation.

Internal Outfall 201 – Copper effluent data obtained from the Discharge Monitoring Reports (DMRs) from the first quarter of 2012 through the first quarter of 2014 have been reviewed and determined to be suitable for evaluation.

Internal Outfall 301 – FEMA personnel collected a forced batch discharge of cooling water on April 9, 2014. This data has been reviewed, entered into the permit record, and determined to be suitable for evaluation.

Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [ Q_e + ( f ) ( Q_s ) ] - [ ( C_s ) ( f ) ( Q_s ) ]}{Q_e}$$

- Where: WLA = Wasteload allocation
- C<sub>o</sub> = In-stream water quality criteria
- Q<sub>e</sub> = Design flow
- Q<sub>s</sub> = Critical receiving stream flow  
(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C<sub>s</sub> = Mean background concentration of parameter in the receiving stream.

The water segments receiving discharge via Internal Outfalls 101, 201, and 301 are considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there are no mixing zones and the WLAs are equal to the C<sub>o</sub>.

Effluent Limitations Toxic Pollutants, Internal Outfalls 101, 201, 301:

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for municipal discharges and monthly average and daily maximum limitations be imposed for industrial discharges.

Hardness summaries for Outfalls 101 and 201 and criteria determinations and effluent limit evaluations for Outfalls 101, 201, and 301 are provided in **Attachment 6**. Since the flow from all internal outfalls is intermittent, toxic limits were evaluated using acute wasteload allocations only.

Metals:

Of the parameters found from the sampling of Internal Outfall 301 during a forced batch discharge of cooling water, only copper has designated acute criteria in the Virginia Water Quality Standards. Limits were calculated for copper and it was determined that a limit of 50 µg/L is warranted. However, due to the infrequent nature of the discharge and evaluation for limits using only one data point of 105 µg/L, only copper monitoring shall be required during this permit cycle.

Copper was not detected in the effluent discharge from Outfall 101 from the first quarter of 2012 through the first quarter of 2014. Therefore, monitoring for copper and hardness was removed from the permit for this outfall. Using DMR data from the first quarter of 2012 through the first quarter of 2014, it was determined that copper limits are not needed at Outfall 201. Therefore, copper and hardness limits are removed from Outfall 201. Additionally, the compliance schedule for copper is removed from this permit.

Temperature:

A temperature limit has been placed on Outfall 003 due to the influence of heated waste streams within the drainage area (e.g., non-contact cooling water). This limit has been removed from Outfall 002 since it is no longer receiving the cooling water.

Nutrients:

In order to assess the effect of nutrient discharge on a local benthic impairment, this facility shall perform quarterly nutrient monitoring for total nitrogen and total phosphorus at Outfalls 002 and 003. Section 4 of the Planning Statement dated May 16, 2014 requests that the facility monitor nutrients at Outfall 003 to support the development of a benthic TMDL for Jeffries Branch. Since Outfall 002 discharges in an adjacent location, nutrient monitoring has also been added as a requirement for this outfall also. Section 4 of the Planning Statement discusses the following:

“In support of the development of a benthic TMDL for Jeffries Branch in the near future, DEQ staff requests that this facility monitor quarterly nutrient monitoring (total phosphorus, nitrate, nitrite and TKN) at this outfall. Nutrient monitoring is requested of facilities that are located within a distance of 5 miles upstream of a benthic impairment.”

See **Attachment 7** for the complete Planning Statement.

Effluent Limitations, Outfalls 001 and 002 – Storm Water Only Pollutants

The requirement to monitor copper, cyanide, and zinc at Outfall 001 and copper and zinc at Outfall 002 has been removed from this permit since these parameters were all found to be below detection level during 2012 and 2013 monitoring. The other benchmark parameters remain in Outfall 001 and 002 monitoring.

TABLE 2 -- Outfall 001 Storm Water Benchmark Monitoring Concentration Values	
Parameter	Maximum Limitation
Total Suspended Solids (TSS)	100 (mg/L)

TABLE 3 -- Outfall 002 Storm Water Benchmark Monitoring Concentration Values	
Parameter	Maximum Limitation
Total Suspended Solids (TSS)	70 (mg/L)

Effluent Limitations, Outfall 003– Storm Water Only Pollutants.

These storm water discharges are considered intermittent and as such, the primary concern would be acute water quality impacts. The duration of this discharge is not expected to occur for four or more consecutive days (96 hours). Water Quality Criteria for human health (and chronic toxicity to a lesser degree) are based upon long term, continuous exposure to pollutants from effluents, and storm water discharges are short term and intermittent. Therefore, it is believed that acute criteria should be used to derive the screening criteria.

Screening (i.e., decision) values expressed as monitoring end-points have been established at two times the acute water quality criterion established in the Virginia Water Quality Standards (9VAC25-260 et.seq.). There two primary reasons the end-points are established at two times the criterion. First, the acute criteria is defined as one-half of the final acute value (FAV) for a specific toxic pollutant. The FAV is determined from exposure of the specific toxicant to a variety of aquatic species, and is based on the level of a chemical or mixture of chemicals that does not allow the mortality, or other specified response, of aquatic organisms. These criteria represent maximum pollutant concentration values, which when exceeded, would cause acute effects on aquatic life in a short time period.

Second, if it is raining a sufficient amount to generate a discharge of storm water, it is assumed that the receiving stream flow will be greater than the critical flows of zero million gallons per day for intermittent streams due to storm water runoff within the stream's drainage area. In recognition of the FAV and the dilution caused by the rainfall, the monitoring end points were calculated by multiplying the acute Water Quality Criteria by two (2). The criteria for all pollutants can be found in **Attachment 6**.

These monitoring end-point screening values are applied solely to identify those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP). Storm water outfall data (pollutant specific) submitted by the permittee that are above the established monitoring end-point levels requires monitoring in Part I.A. of the permit for that specific outfall and pollutant. Should storm water outfall monitoring data exceed the established monitoring end point, the permittee shall reexamine the effectiveness of the SWPPP and BMPs in use and modify as necessary to address any deficiencies that caused the exceedances.

Since direct sampling at Outfall 003 (after the sedimentation pond) could not be conducted, monitoring from Outfall 301 was conducted to represent Outfall -003. Chromium, copper, nickel, zinc, and cyanide were detected at Outfall 301 during storm water sampling events on January 16, 2013 and February 26, 2013 (monitoring information found in the permit file of record). Therefore, storm water benchmark monitoring shall be required for these parameters at Outfall 003 based on acute criteria and a hardness value of 120 mg/L at Outfall 301 during the storm water monitoring event. See Table 4 below.

TABLE 4 -- Outfall 003 Storm Water Benchmark Monitoring Concentration Values	
Parameter	Maximum Limitation
Total Suspended Solids (TSS)	70 (mg/L)
Chromium	32 µg/L*
Copper	32 µg/L
Cyanide	44 µg/L
Nickel	420 µg/L
Zinc	280 µg/L

\*Measured as Chromium 6

**TABLE 5 -- Effluent Limitations/Monitoring Requirements for Outfall 001<sup>a, b</sup>  
(Western Portion of Facility)**

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/Q <sup>c</sup>	Estimate
pH (Standard Units)	1	NA	NA	6.5	9.5	1/Q <sup>c</sup>	Grab
TSS (mg/L)	3	NA	NA	NA	NL <sup>d</sup>	1/Q <sup>c</sup>	Grab

**TABLE 6 -- Effluent Limitations/Monitoring Requirements for Outfall 101<sup>a, e</sup>  
Water Treatment Plant Wastewater**

Flow from this industrial outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
TSS (mg/L)	1, 2	30	60	NA	NA	1/M	5G/8HC
pH (Standard Units)	1	NA	NA	6.5	9.5	1/M	Grab
Total Residual Chlorine (mg/L)	1, 2	0.011	0.011	NA	NA	1/M	Grab
Acute Toxicity -- <i>C. dubia</i> (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I.C)	Grab
Acute Toxicity -- <i>P. promelas</i> (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I.C)	Grab

**TABLE 7 -- Effluent Limitations/Monitoring Requirements for Outfall 002<sup>a, b</sup>  
(Drainage from Eastern Portion of Facility)**

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/Q <sup>c</sup>	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Q <sup>c</sup>	Grab
TSS (mg/L)	3, 4	NA	NA	NA	NL <sup>d</sup>	1/Q <sup>c</sup>	Grab
Total Kjeldahl Nitrogen (TKN) (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab
Nitrate+Nitrite, as N (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab
Total Nitrogen <sup>f</sup> (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Calculated
Total Phosphorus (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab

**TABLE 8 – Effluent Limitations/Monitoring Requirements for Outfall 201<sup>a, e</sup>  
(Sump Water)**

Flow from this storm water and industrial wastewater outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/M	Grab
TPH (mg/L) <sup>g</sup>	3, 5	NA	NA	NA	15	1/M	Grab
Acute Toxicity <i>C. dubia</i> (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I. C)	Grab
Acute Toxicity <i>P. promelas</i> (NOAEC)	NA	NA	NA	NA	NL	Per Permit (Part I.C)	Grab

**TABLE 9 -- Effluent Limitations/Monitoring Requirements for Outfall 003<sup>a, b</sup>**  
**(Drainage from Eastern Portion of Facility)**

Flow from this storm water outfall is variable.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	1/Q <sup>c</sup>	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Q <sup>c</sup>	Grab
Temperature (degrees Celsius)	1	NA	NA	NA	31	1/Q <sup>c</sup>	Immersion Stabilization
TSS (mg/L, kg/mo) <sup>d</sup>	3, 4	NA	NA	NA	NL <sup>d</sup>	1/Q <sup>c</sup>	Grab
Total Recoverable Chromium (µg/L) <sup>d</sup>	1	NA	NA	NA	NL <sup>d</sup>	1/Y <sup>h</sup>	Grab
Total Recoverable Copper (µg/L) <sup>d</sup>	1	NA	NA	NA	NL <sup>d</sup>	1/Y <sup>h</sup>	Grab
Cyanide (µg/L) <sup>d</sup>	1	NA	NA	NA	NL <sup>d</sup>	1/Y <sup>h</sup>	Grab
Total Recoverable Nickel (µg/L) <sup>d</sup>	1	NA	NA	NA	NL <sup>d</sup>	1/Y <sup>h</sup>	Grab
Total Recoverable Zinc (µg/L) <sup>d</sup>	1	NA	NA	NA	NL <sup>d</sup>	1/Y <sup>h</sup>	Grab
Total Kjeldahl Nitrogen (TKN) (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab
Nitrate+Nitrite, as N (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab
Total Nitrogen <sup>f</sup> (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Calculated
Total Phosphorus (mg/L)	4	NA	NA	NA	NL	1/Q <sup>c</sup>	Grab

**TABLE 10 – Effluent Limitations/Monitoring Requirements for Outfall 301<sup>a, c</sup>**  
**(Cooling Water)**

Flow from this industrial wastewater outfall is variable and is dependent upon the volume of cooling water released.

Effective Dates: During the period beginning with the permit effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NA	NA	NL	2/DIS	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	2/DIS	Grab
Total Recoverable Copper (µg/L)	1	NA	NA	NA	NL	2/DIS	Grab
Total Hardness (mg/L)	3	NA	NA	NA	NL	2/DIS	Grab

**\*BASIS FOR LIMITS KEY**

1. Virginia Water Quality Standards (1/06/2011).
2. General Permit for Potable Water Treatment Plants (9 VAC 25-860)
3. Best Professional Judgment.
4. Sediment TMDL for the Goose Creek Watershed
5. 9VAC25-120.

NL - No limitation, Monitoring required

NA - Not Applicable

1/Q – Once per quarter

1/M – Once per month

1/Y – Once per year.

2/DIS – Two samples per discharge

Estimate - Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab - An individual sample collected in less than 15 minutes.

5G/8H-C Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

Immersion Stabilization - A calibrated device is immersed in the effluent stream until the temperature reading is stabilized.

- a. All effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- b. All samples from Outfalls 001, 002, and 003 shall be collected from the discharge resulting from a storm event.
- c. The quarterly monitoring periods shall be January through March, April through June, July through September, and October through December. The DMR shall be submitted no later than the 10<sup>th</sup> day of the month following the monitoring period.
- d. See Part I.E.7 of the permit for monitoring end-points.
- e. All samples from Internal Outfalls 101 and 201 shall be collected during “dry periods” (at least 72 hours after a measurable storm event). Samples collected from Internal Outfall 301 shall be collected during a batch discharge event of cooling water.
- f. Total Nitrogen = Sum of TKN and NO<sub>2</sub>+NO<sub>3</sub> N and shall be calculated from the results of those tests.
- g. Total Petroleum Hydrocarbons (TPH) is the sum of individual gasoline range organics and diesel range organics or TPH-GRO and TPH-DRO to be measured by EPA SW 846 Method 8015C (2007) for gasoline and diesel range organics, or by EPA SW 846 Methods 8260B and 8270D. If the combination of Methods 8260B and 8270D is used, the lab must report the total of gasoline range organics, diesel range organics and polynuclear aromatic hydrocarbons.
- h. The annual monitoring period shall be January 1 – December 31. The DMR shall be submitted no later than the 10<sup>th</sup> day of the month following the monitoring period (January 10).



Anti-Backsliding

The removal of the copper limits from Internal Outfalls 101 and 201 does not constitute backsliding because the limits are not in effect. The temperature limit is not being removed; it is being transferred from Internal Outfall 201 to 301.

Public Notice Information

First Public Notice Date: 8/13/2014

Second Public Notice Date: 8/20/2014

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: Northern DEQ Regional Office, 13901 Crown Court, Woodbridge, VA 22193, telephone No. (703) 583-3837, [anna.westernik@deq.virginia.gov](mailto:anna.westernik@deq.virginia.gov). See **Attachment 8** for a copy of the public notice document, and the public notice period.

Persons may comment in writing or by e-mail to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

## Attachments

Attachment 1	2011 Fact Sheet
Attachment 2	NPDES Permit Industrial Rating Worksheets
Attachment 3	Facility Schematic
Attachment 4	January 2013 Site Visit Memorandum
Attachment 5	Topographic Map 216C (Ashby Gap)
Attachment 6	Hardness Summaries for Outfalls 101 and 201, Criteria Determinations, Effluent Limit Evaluations
Attachment 7	Planning Statement Dated May 16, 2014
Attachment 8	Public Notice



**Clarke County Planning Department**  
**101 Chalmers Court, Suite B**  
**Berryville, Virginia 22611**  
**(540) 955-5132**

**TO: Board of Supervisors**

**FROM: Brandon Stidham, Planning Director**

**RE: 2014 Town of Berryville and Clarke County Bicycle & Pedestrian Plan**

**DATE: September 2, 2014**

Enclosed for your review and consideration is the final draft of the 2014 Town of Berryville & Clarke County Bicycle & Pedestrian Plan. This item was originally brought to the Board in March as an informational item. As you may recall, NSVRC staff worked conjunction with Town and County Planning staffs, Jon Turkel (Planning Commission), and Virginia Department of Transportation (VDOT) staff to develop the Plan as part of the NSVRC's Rural Transportation FY2014 Work Program. Tyler Klein attended the Board's April 7 work session to present the Board with the initial draft Plan and to provide information on how public input would be gathered in developing a final draft Plan for consideration by the Town and County. Mr. Klein made a similar presentation to Town Council also in April.

Since the April 7 work session, NSVRC staff gathered and processed comments received from Board members and Town Council members, conducted a public input meeting on May 15 at the Government Center, and solicited online comments via the NSVRC website. The resultant input was incorporated into the final Draft document before you for consideration. Changes made from the initial draft are as follows:

- Added language recommending maintaining existing 10-foot wide travel lanes in absence of on-street parking. This was included to address specific concerns in the Millwood area and along secondary roads that the Plan recommended widening of roads to accommodate bicycle traffic. Citizens were specifically concerned that road widening would add to the cost of transportation improvements, increase vehicular traffic and speed, and adversely impact adjacent properties.
- Regarding the Millwood community, added language recommending/noting the following:
  - Preserve the existing 10' wide travel lanes
  - Note the absence of sidewalks and the need for crosswalk maintenance
  - Emphasize the history of the long-standing residential community and its historic resources
- Added language to clarify that paved shoulders are only recommended on primary roads.
- Expanded the description of how the Plan's recommendations could be used to develop improvement projects:
  - By implementing improvements in conjunction with current programmed projects (e.g., installation of sidewalks, shoulders, and striping)

- By pursuing projects as standalone capital projects to be funded through the Commonwealth Transportation Board or other funding sources.
- Added new section regarding recreational walking at locations including the Berryville Historic District, Chet Hobert Park, Appalachian Trail, Shenandoah University River Campus, and Blandy Experimental Farm.
- Added a summary list of the comments received in the spring from Town Council and the Board of Supervisors.
- Added list of comments received at the May 15 public input session.
- Added a new Appendix C containing best practices for bicycle event management. This section was added to address numerous comments that many of the concerns about cyclists involve large bicycling events.

Also enclosed for your consideration is a letter of support for the draft Plan provided by the Planning Commission's Recreation Plan Subcommittee. The Subcommittee voted to send a letter of support for the Plan at their meeting on August 20.

If the final Draft addresses the Board's outstanding questions or concerns, Staff recommends that the Board accept the Northern Shenandoah Valley Regional Commission's final Draft Bicycle & Pedestrian Plan, and that the Plan be forwarded to the Planning Commission for use in updating the Comprehensive Plan and applicable implementing component plans. Town Staff will be taking the final Draft Plan to Town Council this month for similar consideration.

Please do not hesitate to contact me if you have questions or concerns in advance of the meeting.

September 2, 2014

Mr. Michael Hobert  
Chair, Clarke County Board of Supervisors  
101 Chalmers Ct.  
Berryville, VA 22611

RE: Letter of Support 2014 Town of Berryville & Clarke County Bicycle & Pedestrian

Dear Mr. Hobert:

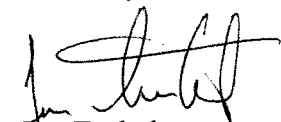
The Recreation Plan Committee wishes to express our enthusiastic support for the 2014 Town of Berryville & Clarke County Bicycle & Pedestrian Plan. The Recreation Plan Committee has been working since June to develop the County's first Recreation Plan, an implementing component of the County's Comprehensive Plan. One of the major recreational resources in the Community is access to multiple cycling opportunities on the rural roads throughout the County. The proposed plan provides a well thought out strategy to provide a safer cycling experience while respecting vehicular traffic and private property rights.

In addition, the plan highlights the pedestrian opportunities within the Town of Berryville as well as the County Park, Blandy, and newly established Shehandoah University River campus.

The proposed plan compliments the Recreation Plan Committees efforts to describe, promote and protect the County's recreational resources. Therefore, we encourage the Board to accept the Northern Shenandoah Valley Regional Commission's final Draft Bicycle & Pedestrian Plan, and that the Plan is forwarded to the Planning Commission for use in updating the Comprehensive Plan and applicable implementing component plans.

If I can provide any additional information please don't hesitate to contact me.

Sincerely,



Jon Turkel  
Planning Commission Liaison  
Recreation Plan Committee

2014

# Town of Berryville & Clarke County Bicycle & Pedestrian Plan



**Prepared By:**

Northern Shenandoah Valley Regional Commission

**Prepared For:**



## **Steering Committee Members**

Brandon Stidham, Clarke County Planning Director

Alison Teetor, Clarke County Natural Resource Planner

Jon Turkel, Clarke County Planning Commissioner

Christy Dunkle, Town of Berryville Planning Director

W. Neal White, Town of Berryville Chief of Police

## **Virginia Department of Transportation**

Terry Short, Jr., Staunton District

Gerald Gatobu, Staunton District

## **Northern Shenandoah Valley Regional Commission**

John Madera, AICP, Principal Planner

M. Tyler Klein AICP, Senior Planner

David Cooper, GIS Manager

*The Town of Berryville & Clarke County Bicycle & Pedestrian Plan was completed under the Northern Shenandoah Valley Regional Commission (NSVRC) Fiscal Year 2014 Rural Transportation Work Program.*

*All recommendations are subject to approval by the Berryville Town Council and Clarke County Board of Supervisors and should be consistent with Virginia Department of Transportation (VDOT) design standards and policies.*

*Cost estimates should be regarded as planning level and preliminary in nature. Variations from actual project costs will/may result from additional factors such as design exceptions, value engineering, utility relocation, and environmental impacts. As projects move forward in the project development process, emerging details will support the refinement of these costs.*

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## Executive Summary

Bicycle and pedestrian links are vital to a community's overall health, safety and welfare. There are numerous economic development benefits in the intersection between bicycling, walkability and tourism. Bicycling and walking are an important mode of transportation, whether used separately or with other modes of transportation. Since 1991, the federal government has recognized the role of bicycle and pedestrian modes and their importance as part of an overall balanced transportation system.

The *Town of Berryville & Clarke County Bicycle and Pedestrian Plan* was prepared in response to a joint request from the Town of Berryville and Clarke County under the Northern Shenandoah Valley Regional Commission (NSVRC) Rural Transportation Work Program at no cost to either locality. The Plan provides a comprehensive overview of the existing transportation network and outlines recommendations for bicycle and pedestrian enhancements in each locality to better serve transportation, recreation and economic development objectives. Existing routes in the Town and County were identified through review of local bicycling club routes/rides (Winchester Wheelmen, Potomac Pedalers and Panhandle Pedalers) and VA bicycling guidebooks. A full summary of these materials is provided in the Appendix section of this Plan. Berryville and Clarke County identified the following priorities for developing this Plan:

- Emphasis on economic development and bicycle tourism;
- Generating a site-specific improvement program, rather than a policy plan; link with existing initiative (Safe Routes to School);
- Connectivity to local area attractions;
- Emphasis on improvements to roadway segments to link existing bicycle network;
- Identify best practices for bicycle facilities, use and promotion;

In preparation for analyzing current bicycle and pedestrian facilities applicable planning documents that were developed state-wide, regionally and locally were explored and provide the framework for future planning and prioritization efforts in Berryville and Clarke County. Challenges to bicycling in Berryville and Clarke County include the following:

- Continuity of low-volume routes broken by primary system segments without shoulders;
- Motor vehicle and bicyclist conflicts; concerns for safety of all road users;
- Need for increased coordination among local Town/County departments and club/bicycle event promoters for event planning and management; and
- Need for more multi-use trails (or shared-use paths) in local urban areas (Berryville).

The Town of Berryville cited the following as contributing factors to the overall efficiency of the pedestrian network in and around the Town:

- Relative connectivity of sidewalks to and from the downtown business district and park;
- A detailed School Travel Plan to encourage walking and biking to school; and

- Connectivity requirements of existing (and future) subdivisions to include pedestrian accommodations.

Impediments identified in the planning process to efficient pedestrian movement in the Berryville area include:

- Need for sidewalks to meet Americans with Disabilities Act (ADA) guidance;
- Lack of sidewalks in older neighborhoods (at least on one side of the street); and
- Need for a comprehensive inventory of existing sidewalk conditions.

Recommended facility improvements should be consistent with VDOT design standards and policies and Manual of Uniform Traffic Control Devices (MUTCD) Chapter 9: *Traffic Control for Bicycle Facilities*. Where feasible, roadway improvements should be made in conjunction with VDOT's existing project and paving schedule and the minimum paved shoulder width should be used depending on roadway functional classification. Additionally, coordination among staff should be undertaken where projects link with adjacent localities (City of Winchester; Frederick, Loudoun & Warren counties).

In general the following bicycle facility treatments are recommended by roadway type in Berryville and Clarke County:

#### Local/Urban

- Narrow travel lanes to reduce speed of motor vehicles (Berryville & Millwood); maintain existing narrow (10 ft.) lanes in the absence of on-street parking.
- Intersection crossing markings;
- Share the Road, Wayfinding signs;
- Multi-Use Trails

#### Rural

- Where feasible add paved shoulders (Width: 2 feet minimum; 4 feet recommended) on primary roads (US routes 17/50, 340 and 522; VA Route 7);
- Share the Road, Wayfinding signs;

Pedestrian recommendations identified in the planning process include:

- Planning for pedestrian accommodations and links to the broader network with all new development;
- Develop a sidewalk retrofit/maintenance program;
- Identify crosswalks on primary system in need of improvement (signs, pavement markings, signals);
- Adopt pedestrian-friendly street design standards for new development; require connectivity in new developments to downtown and public institutions; and

- Adopt a complete streets ordinance/resolution to ensure that pedestrian needs are considered in the design of VDOT projects and meet ADA accessibility requirements. The Virginia Department of Rail and Public Transportation (DRPT) have published “Multimodal System Design Guidelines,” appended in 2014 to the VDOT Design Manual, as a statewide Complete Streets policy.

The bicycle and pedestrian facilities recommended in this plan may be implemented incidental to existing programmed highway construction and maintenance projects, or they may be pursued as stand-alone capital projects submitted to the Commonwealth Transportation Board (CTB) for inclusion in the state Six-Year Improvement Program (SYIP). Retrofits involving re-striping alone can be done incidental to resurfacing and reconstruction projects. Shoulders and sidewalks could be added as part of a roadway widening or reconstruction. Paved shoulders benefit motorists and taxpayers as well as bicyclists; they provide a margin of safety for all road users, and extend the life of the pavement. .

The following recommendations should be considered next steps for both the Town and County leadership and staff in planning and implementing strategies for improving bicycle and pedestrian accommodations. This includes:

- Incorporation of the preceding bicycle and pedestrian accommodations into updates to local comprehensive and transportation plans;
- Working with NSVRC and VDOT staff to incorporate bicycle and pedestrian accommodation projects identified in Tables 1 and 2 into the Virginia’s Six-Year Improvement Plan and VDOT maintenance program.
- Directing local and NSVRC staff to pursue funding opportunities for additional planning, design/engineering and construction of facilities improvements identified in Tables 1 and 2;
- Coordination with local economic development entities and regional tourism websites (i.e. Bike the Valley) to promote bicycle tourism opportunities; and
- Continued coordination with local law enforcement, public schools and local clubs to provide continued bicycle and pedestrian safety and awareness training opportunities.

The Town of Berryville and Clarke County consider bicycling and pedestrian amenities to be a key component of sustainable community and economic growth while connecting the localities to the broader region.

## Introduction

### Project Purpose

Bicycle and pedestrian links are vital to a community's overall health, safety and welfare. There are numerous economic development benefits in the intersection between bicycling, walkability and tourism. Bicycling and walking are an important mode of transportation, whether used separately or with other modes of transportation. Since 1991, the federal government has recognized the role of bicycle and pedestrian modes and their importance as part of an overall balanced transportation system. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) placed increased importance on the use of the bicycle from a transportation standpoint and called on each state Department of Transportation to encourage its use. With the passage of the Transportation Equity Act for the 21st Century (TEA-21) and its successor, SAFETEA-LU, the federal government reaffirmed its commitment to bicycling. In Virginia, the Department of Transportation (VDOT), the Department of Rail and Public Transportation (DRPT), planning districts and localities have recognized the need for a comprehensive approach to bicycle and pedestrian planning. Thus this plan seeks to integrate previous planning efforts and identify priorities for future implementation.

The *Town of Berryville & Clarke County Bicycle and Pedestrian Plan* was prepared in response to a joint request from the Town of Berryville and Clarke County under the Northern Shenandoah Valley Regional Commission (NSVRC) Rural Transportation Work Program at no cost to either locality. The Plan provides a comprehensive overview of the existing transportation network and outlines recommendations for bicycle and pedestrian enhancements in each locality to better serve transportation, recreation and economic development objectives. This Plan will serve to inform future planning efforts by Berryville and Clarke County, including the *Parks & Recreation Plan* element of the Clarke County Comprehensive Plan update (2013) and tourism and marketing initiatives.

Finally, this Plan also provides an overview of outdoor recreational opportunities in Berryville and Clarke County and an analysis of the interconnectivity among on-street bicycle accommodations, pedestrian facilities, trails, parks, and other points of interest or tourist destinations.

### The Planning Process

The planning process consisted of a series of facilitated project steering committee meetings held October 2013 to March 2014; the development and analysis of bicycle and pedestrian related data, trends and projections; development and implementation of stakeholder outreach through a public input session and public outreach website; and a capital improvements project priorities list of bicycle and pedestrian enhancements. Berryville and Clarke County identified the following items to be prioritized when developing this Plan:

- Emphasis on economic development and bicycle tourism;
- Using the 2004 Walking and Wheeling Plan as a basis for the current planning efforts;
- Generating a site-specific improvement program, rather than a policy plan;

- Planning/coordination with US Bicycle Route 11 development including support of routing through the Town of Berryville (see USBR 11 Draft Route Map in Appendix B);
- Link existing route network with City of Winchester (Green Circle Trail) and with the Washington & Old Dominion (W&OD) Trail across the mountain in Purcellville to create regional bicycle tourism opportunities;
- Connectivity to local area attractions (see Map 2, page 13);
- Emphasis on improvements to roadway segments to link existing bicycle network;
- Intensive treatments within town's such as shared lane markings or bike lanes where feasible;
- Identify bicycle rally/ride event management best practices;
- Identify future funding opportunities; tie project priorities to VDOT Six-Year Improvement Plan projects; and
- Link with Safe Routes to School initiatives (Berryville).

In preparation for analyzing current bicycle and pedestrian facilities applicable planning documents that were developed state-wide, regionally and locally were explored and provide the framework for future planning and prioritization efforts in Berryville and Clarke County. Documents reviewed provide policy implications for bicycle and pedestrian planning, and long-, mid-, and short-term priorities as previously identified. The following plans were reviewed and are summarized in Appendix A:

- Virginia Department of Transportation (VDOT) State Bicycle Policy Plan (2011);
- VDOT Policy for Integrating Bicycle and Pedestrian Accommodations (2004);
- VDOT Community Trail Development Guide (2012);
- VDOT Route 340 Context Sensitive Solutions (CSS) Study (2012);
- Walking & Wheeling the Northern Shenandoah Valley (2004);
- Northern Shenandoah Valley Rural Long Range Transportation Plan (RLRTP, 2011);
- Town of Berryville Comprehensive Plan ;
- Berryville Area Plan;
- Clarke County Comprehensive Plan (2013); and
- US Bicycle Route Corridor Plan (2012).

The final outcome of this planning process is the delivery of a physical document which outlines the methodology of the study, summarizes data analysis and presents policy and implementation recommendations.

## Economic Benefits of Bicyclists & Pedestrians

### A. Bicycling

The Town of Berryville and Clarke County are an existing regional magnet for recreational cycling, with riders from Virginia, Maryland, West Virginia and Washington DC utilizing the existing network of routes. Gentle topography, relatively low traffic volume, miles of designated VA Scenic Byways, attractive scenery, historic villages and a variety of historic/destination sites make these communities attractive to a variety of bicycling enthusiasts. Driving this economic development and tourism opportunity are local and regional cycling guidebooks that showcase routes in Berryville and Clarke County, and the annual Back Roads Century, billed as one of the premier cycling events in the mid-Atlantic region. This event attracts more than 2,000 visitors, many of whom book local accommodations and later return to explore the area on their own..

As bicycling continues to grow in popularity for health, fitness, recreational and tourism reasons, Berryville and Clarke County are poised to continue to attract existing and new riders. Careful planning will ensure that the community captures the dollars generated by this activity.

Like other tourists who visit the area, pedestrians and bicyclists represent additional (and new) potential customers who can bring revenue into the Berryville and Clarke County community by patronizing local businesses that meet their needs and contribute to their overall desired experience. And when a particular bicycling destination is so appealing to bicyclists that they will come from some distance away to enjoy it, the dollars they bring with them can be significant.

Key characteristics of bicycle tourists that make them an important demographic for expanding tourism and economic development opportunities in Berryville and Clarke County are (per a U.S. Cultural & Heritage Tourism Marketing Council 2009 survey):

- Generally have a higher income than their motorist counterparts;
- Travel in small to medium sized groups;
- Are interested in learning about communities they travel through and what makes it unique, and in participating in what they have to offer (dining, museums, shops);
- Spend money; many bicyclists who tour independently carry a minimum of equipment and pay for lodging in facilities ranging from bed and breakfasts to camping to hotels and eat meals in restaurants as they go;



Source: Google Images, 2014

- Are low-impact visitors; bicyclists generally do not: contribute to traffic on local streets, occupy limited parking spaces, add significant wear and tear on infrastructure, or bring the noise and air pollution associated with motor vehicles; and
- Bicyclists provide an incentive for preserving a community's unique character, historic heritage and natural features. Because of their interest in exploring and learning about the places they visit, they are likely to spend more money in communities that have preserved and interpreted elements of their past and their natural setting.

In a survey of heritage travelers, of which bicycle tourists are widely considered a large sub-group, conducted for the U.S. Cultural & Heritage Tourism Marketing Council, 65% stated that bicycle tourists seek travel experiences where the "destination, its buildings and surroundings have retained their historic character." Additionally, according to the study, bicycle tourists spend an estimated \$100 per day (average) compared to \$13 per day for automobile visitors.

The Berryville and Clarke County community is well-suited to capture this emerging tourist sector because of their community's rich history, amenities and natural scenery. This Plan will provide recommendations in subsequent sections to make bicycling and walking more convenient for residents and tourists alike. Outlined below are best practices for making communities "bicycle friendly" as identified by the League of American Bicyclists.

#### Best Practices for "Bicycle Friendly" Communities

Below is a summary of fundamental elements (from [www.AmericanTrails.org](http://www.AmericanTrails.org)) for communities to consider in becoming more bicycle friendly and capitalizing on emerging tourism and economic development opportunities for bicycling.

- Shift the perspective: Grasp the needs of traveling bicyclists. Key questions: Can bicyclists find amenities easily? Do they feel safe? What barriers do they encounter?
- Welcome bicyclists: Offer the services and facilities they need. Start with some simple signs: "Welcome to the Community"; "Bicyclists Welcome" at businesses, attractions, parks, etc.
- Give them information: Information about where they are or soon will be and where they can find what they need is critical.
- Help them find the community: Develop signage and gateways to attract riders.
- Provide safe access: Be sure that the roads bicyclists will use to get into the community are bicycle-friendly.

- Bicycle parking: Bicycles need protection from theft and, if possible, weather. Provide convenient and secure bicycle parking facilities (i.e. bike racks)
- Highlight the amenities: Make water and public restrooms easy to find. If public facilities aren't available, work with businesses to have restrooms available. Rest and shelter are important to bicyclists, too; chairs, benches and covered porches or pavilions in parks are great. Compile a list of places where showers are available (e.g., health clubs, the YMCA/YWCA, a welcome or visitor center, nearby state parks).

Becoming more bicycle-friendly will directly benefit all residents of Berryville and Clarke County as much as it does bicycling visitors. By broadening options for transportation, recreation and physical activity, bicycling will contribute to improved health, a cleaner environment and an enhanced quality of life.

#### B. Walking

Several advantages accrue to places that are walkable: livelier business districts, healthier populations, and stronger real estate markets. Walkable places allow residents to incorporate exercise into their daily routines. Walking to school helps schoolchildren maintain a healthy weight, thus reducing obesity-related illness; and improves their focus in class. Residents and visitors alike (bicyclists included) value a safe and attractive walking environment.

Clarke County has not experienced the types of auto-oriented sprawl development which discourages walking with many secondary roads providing a pleasant walking experience. Berryville, the County's locus of residential and commercial development, is rated as "very walkable" by the popular website Walkscore.com, for essential goods and services within walking distance for many residents. Berryville's compactness, numerous and varied Main Street retail businesses, interconnected street grid and interesting historic streetscapes lend themselves to walking.

To realize Berryville's full potential as a pedestrian-friendly town, attention must be paid to: sidewalks and crosswalks. Many local streets lack sidewalks; and most crosswalks on the primary system (Route 340 and Business Route 7) lack signage and markings which warn motorists to watch for pedestrians. This is addressed in subsequent sections of this Plan.

#### C. Recreation Walking/Hiking

Berryville and Clarke County offer a number of recreational walking neighborhoods and venues.

**Berryville Historic District** – Historic downtown Berryville allows for easy pedestrian access to restaurants and businesses and connectivity to historic areas of the Town. A multi-use trail along West Main Street connects Berryville with Chet Hobert Park. A walking tour has been developed by Berryville Main Street and is available at their office on East Main Street.

**Chet Hobert Park** – Located west of Berryville off Route 7 Business at 225 Al Smith Circle, 102-acre Chet Hobert Park offers a number of amenities including an outdoor swimming pool, lighted outdoor tennis



courts, six ball fields, numerous soccer fields, a Recreation Center, senior center, four picnic shelters, and two playgrounds. Approximately two miles of fitness trail around the perimeter of the Park is used by walkers, runners, and cyclists. The trail features wooded areas, wildlife and rock formations and is accessible to all ages and fitness levels.

**Appalachian Trail** – Approximately 10 miles of the 2,184-mile Appalachian Trail, one of the longest continuous footpaths in the world, is located in eastern Clarke County. Accessed from Blue Ridge Mountain Road, Bears Den Trail Center is a hiker facility which includes a hostel and campground. In addition to providing overnight lodging and facilities for A.T. hikers, Bears Den also offers nature trails, picnic areas, and welcomes hikers and nearby residents with educational programs, live music and other events. Built in 1933, the lodge features native stone and was originally home to a Washington, D.C. physician and his wife. The property is included in the recently designated Bears Den Rural Historic District in Virginia which has been nominated for inclusion in the National Register of Historic Places.

**Shenandoah University River Campus at Cool Spring Battlefield** – Offering over five miles of paved trails for walking, running and biking, the SU River Campus is open to the public and offers a variety of spectacular views of the Shenandoah River and the surrounding farmland of Clarke County.

**Blandy Experimental Farm | State Arboretum of Virginia** – Located on Route 50, Blandy Experimental Farm | State Arboretum of Virginia offers beautiful natural setting with a number of amenities including four trails ranging from three-quarters of a mile to two miles on its 700 acre site. Paved and gravel paths allow visitors to stroll the grounds and walk through the chestnut grove and community garden and viewing Lake Arnold. A bridle trail is also featured on the premises.



## Documentation of Existing Conditions

As part of the inventory of the existing bicycle and pedestrian network in Berryville and Clarke County, a comprehensive assessment of the bicycle and pedestrian networks was conducted.

### A. Bicycle Network

This assessment investigated the locations of existing routes, and sought to identify historic, cultural, and amenities resources along those routes. The following series of maps illustrates these findings, showing bicycle connections between features such as the Appalachian Trail, Civil War battlefields, public/cultural destinations, and the Shenandoah River. Proximity and linkages to these sites are vital to creating a tourist destination and complementary economic development opportunities for the Town and County.

The following sources were used to identify existing bicycle routes/networks:

- Walking & Wheeling the Shenandoah Valley Plan (2004);
- Virginia Outdoors Plan (2013);
- Virginia Bicycling Guide;
- Winchester Wheelmen Bicycle Club;
- Potomac Pedalers Touring Club; and
- Panhandle Pedalers Cycling Club

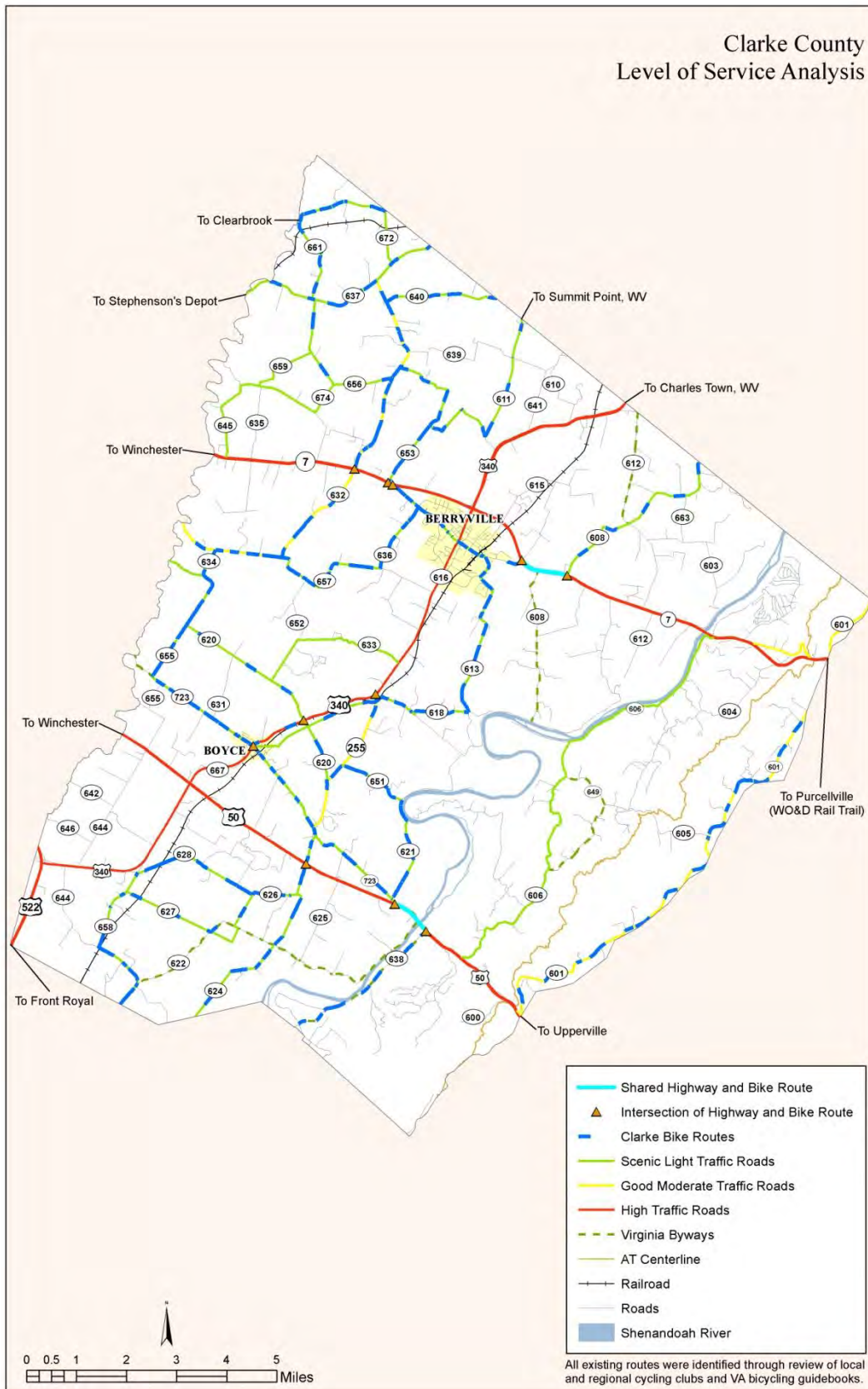
Also included is a Level of Service (LOS) analysis updated from the Walking & Wheeling the Shenandoah Valley Plan. See maps 1 (page 13) and 2 (page 14) for analysis. Full route maps for all available rides are included in the Appendix B section of this Plan.

As discussed in earlier sections, the steering committee identified the Town of Berryville and Clarke County as a regional magnet for bicycle tourism.

Challenges to bicycling to Berryville and Clarke County include the following:

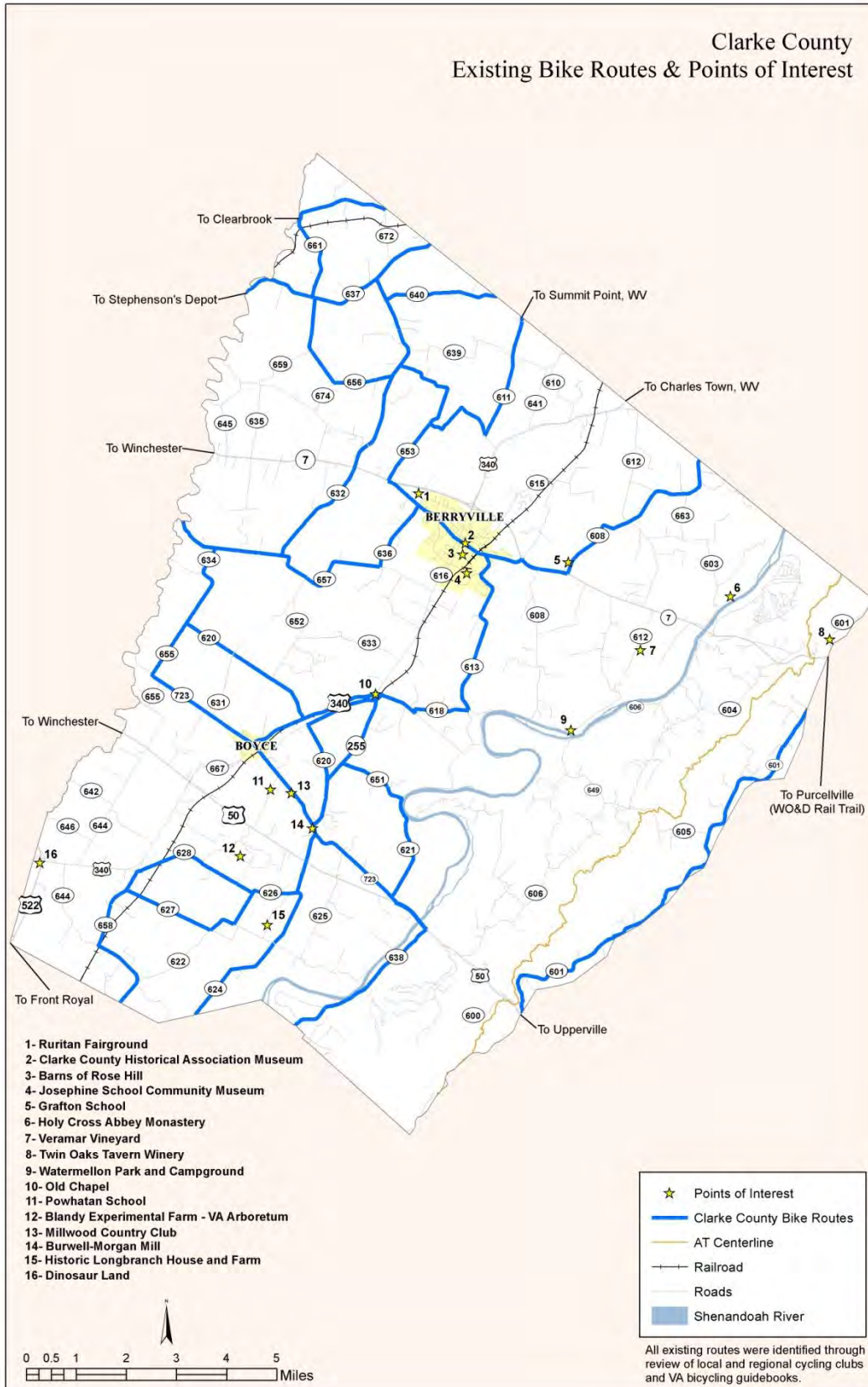
- Continuity of low-volume routes broken by primary system segments without shoulders;
- Lack of bike parking in downtown Berryville and major destinations/points of interest;
- Primary system in Berryville could be more welcoming of bicyclists;
- Motor vehicle and bicyclist conflicts; concerns for safety of all road users;
- Need for increased coordination among local Town/County departments and club/bicycle event promoters for event planning and management;
- Lack of a cohesive strategy for monetizing bike tourism;
- No safe route/link to Washington & Old Dominion (W & OD) Trail (Purcellville, VA);
- Lack of long-distance linear corridors (railroad abandonments, greenways, floodplains) suitable for the development of multi-use trails; and
- Need for more multi-use trails (or shared-use paths) in local urban areas (Berryville).

Map 1



# Map 2

## Clarke County Existing Bike Routes & Points of Interest



B. Pedestrian Network

Additionally, an assessment of the pedestrian network, primarily in the Town of Berryville, is summarized below and in Map 3 (page 15). Pedestrian accommodations are vital to small, compact communities, especially to encourage use of the downtown business district and provide safe access to community amenities (schools, libraries, parks).

*Zoning Ordinance Requirements for Sidewalks; Subdivision Requirements for Sidewalks/Trails*

Zoning and subdivision requirements are critical to ensuring that new development is well connected within the existing pedestrian network and meets the minimum standards for facility design and construction. Below is a summary of the applicable Town of Berryville requirements for the pedestrian realm.

*Sidewalks, paths, and/or walkways shall be provided to enable the public to walk safely and conveniently from one building to another on the site, to and from adjacent sites, and to and from sidewalks in the public right-of-way. The construction material to be used must meet the approval of the Administrative Body or the Agent. Sidewalks must be a minimum of four (4) feet wide.*

*In residential subdivisions, sidewalks shall be required on both sides of all public streets within the subdivision and along the side of each public street, except Virginia Route 7 Bypass, which borders the subdivision. According to code,*

- *Sidewalks shall be constructed, at no cost to the Town, as required by the Berryville Zoning Ordinance. All sidewalks shall be constructed in accordance with Virginia Department of Transportation standards.*
- *The subdivider shall provide all improvements necessary to sidewalks in the subdivision in conformity with Section 15.2-381 of the Code of Virginia, as amended, requiring curb ramps for the handicapped.*
- *The subdivider shall construct trails or walkways in accordance with the general location shown on the adopted Berryville Area Plan, together with such other connecting trails or walkways within the limits of the subdivision plan.*

The Town of Berryville cited the following as contributing factors to the overall efficiency of the pedestrian network in and around the Town:

- Relative connectivity of sidewalks to and from the downtown business district and park;
- A detailed School Travel Plan to encourage walking and biking to school (Johnson-Williams Middle School); and
- Connectivity requirements of existing (and future) subdivisions to include pedestrian accommodations.

Impediments to efficient pedestrian accommodations in the Berryville area include:

- Need for sidewalks to meet Americans with Disabilities Act (ADA) standards (i.e. minimum of 36" width) for mobility for all persons regardless of abilities;
- Lack of sidewalks in older neighborhoods (at least on one side of the street); and
- Need for a comprehensive inventory of existing sidewalk conditions.

### *Millwood Village*

At the crossroads of two Virginia Scenic Byways and as the focus of a rural historic district, the village of Millwood epitomizes the charm and character that draw residents and visitors to Clarke County. The village experiences very high volumes of bicyclist and general tourist traffic. The grounds of the historic Burwell-Morgan Mill serves as a rest stop serving hundreds of bicyclists during the annual Back Roads Century ride, and also hosts weddings, plays, concerts and picnics. Directly across the street, Locke Store is a popular destination. Millwood is also a long-standing residential community.

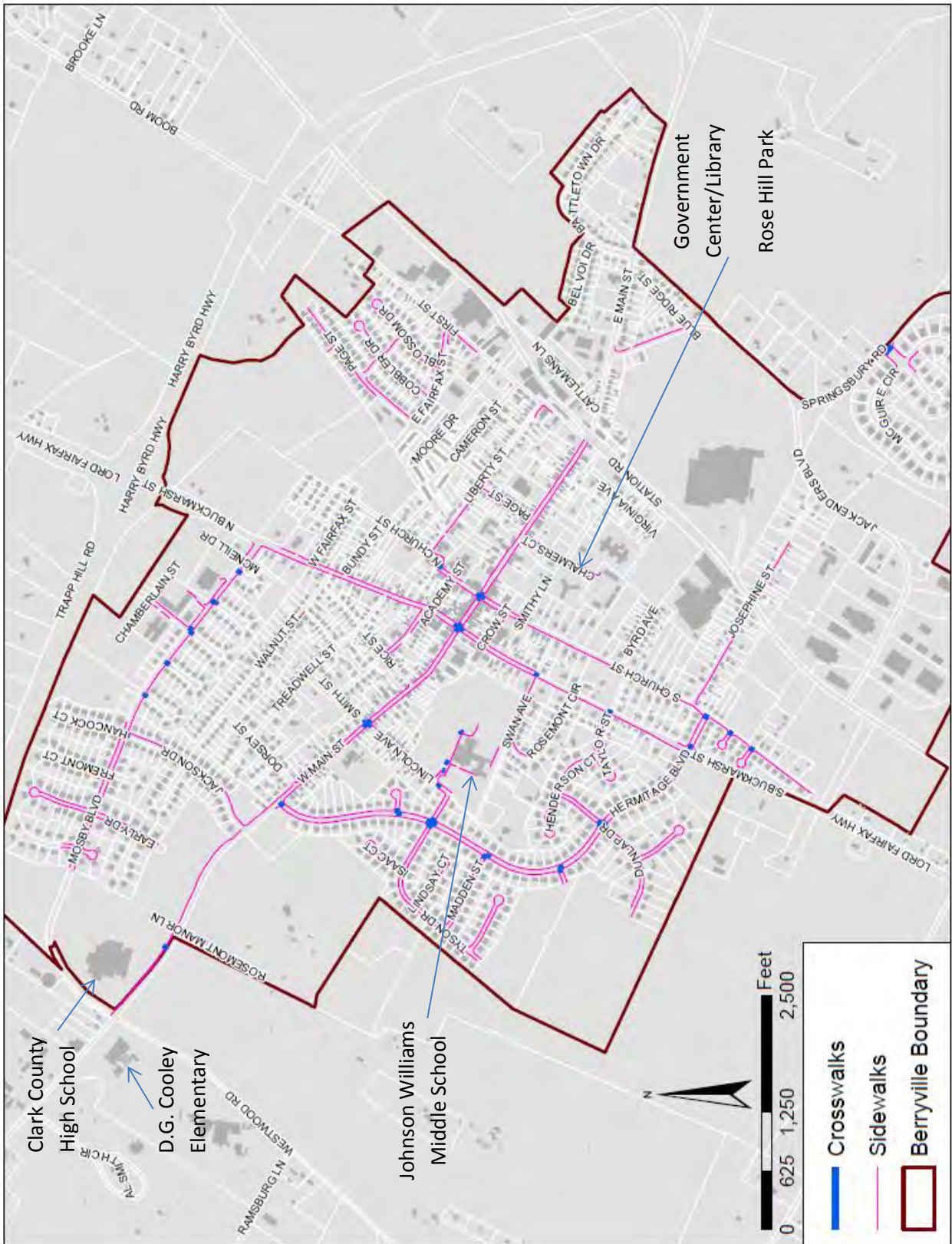
Roadway widths (10' travel lanes) and alignment, closely spaced intersections, a modest amount of roadside parking and traffic congestion and a sense of place all serve to calm traffic in the village. Pedestrians, however, must share the road with motor vehicles as sidewalks are absent. Crosswalks are delineated across Millwood Road (Route 255/723) between the Mill and Locke Store, and across two of the three legs of the Bishop Meade Road/Millwood Road intersection; the latter are in need of maintenance.

Millwood area residents through the Millwood Community Association (MCA) have a record of advocating for pedestrian improvements. The MCA has coordinated with local law enforcement, local government and VDOT to slow motor vehicle traffic, improve the pedestrian environment and enforce traffic and parking regulations.



Burwell-Morgan Mill. Source: NSVRC, 2013

Map 3



## Prioritization for Implementation

### A. Bicycle Accommodations

The lists of roadways for bicycle accommodation were developed based on geographic information systems (GIS) analysis of roadway data, review of the 2004 Walking & Wheeling priorities, and VDOT, local staff and citizen input. Accessibility and connectivity between activity centers and tourism/outdoor recreation opportunities were also considered in developing these priorities for facility enhancement. As previously referenced, the 2004 VDOT Policy for Integrating Bicycle and Pedestrian Accommodations improved the ability of a county to use its secondary roads allocation to plan, design, and construct bicycle facilities. It should be noted that all VDOT maintained roads in the respective localities, in addition to the recommended corridors, are covered under the framework of the VDOT Policy for Integrating Bicycle and Pedestrian Accommodations. Maps and a table showing recommended corridors for bicycle enhanced accommodation are included in the following pages.

Specific bicycle accommodations are not included for corridors listed on the tables. For the purposes of this Plan, all types of bicycle accommodations are considered as possible means to improve bicycling conditions in the localities. Any treatment designed to better accommodate bicyclists should be applied based on location-specific analyses of roadway characteristics, geometric and operational design parameters, and other considerations.

All facility improvements should be consistent with VDOT design standards and policies and Manual of Uniform Traffic Control Devices (MUTCD) Chapter 9: *Traffic Control for Bicycle Facilities*. Where feasible, roadway improvements should be made in conjunction with VDOT's existing project and paving schedule and the minimum paved shoulder width should be used depending on roadway functional classification. All costs discussed are estimates and subject to further revision. Additionally, coordination among staff should be undertaken where projects link with adjacent localities (City of Winchester, Frederick, Loudoun & Warren Counties).

In general the following treatments are recommended by roadway type in Berryville and Clarke County. Details of the best practices listed above for bicycle facility design are included in subsequent parts of this section

#### Local/Urban

- Narrow travel lanes to reduce speed of motor vehicles (Berryville & Millwood);
- Intersection crossing markings; and
- Share the Road, Wayfinding signs; and
- Multi-Use Trails

#### Rural

- Where feasible add paved shoulders (Recommended minimum width 4 feet);
- Share the Road signs; and
- Wayfinding signs

The overall goal of these recommended treatments is to make the existing bicycle network safer and more efficient for existing users (motorist, bicyclist and businesses).

Table 1 (page 17) and Map 4 (page 18) depicts road segment priorities as identified by the project steering committee. These priorities represent vital bicycling links between existing routes identified in the previous section (and Appendix), and should be placed along shared facilities.



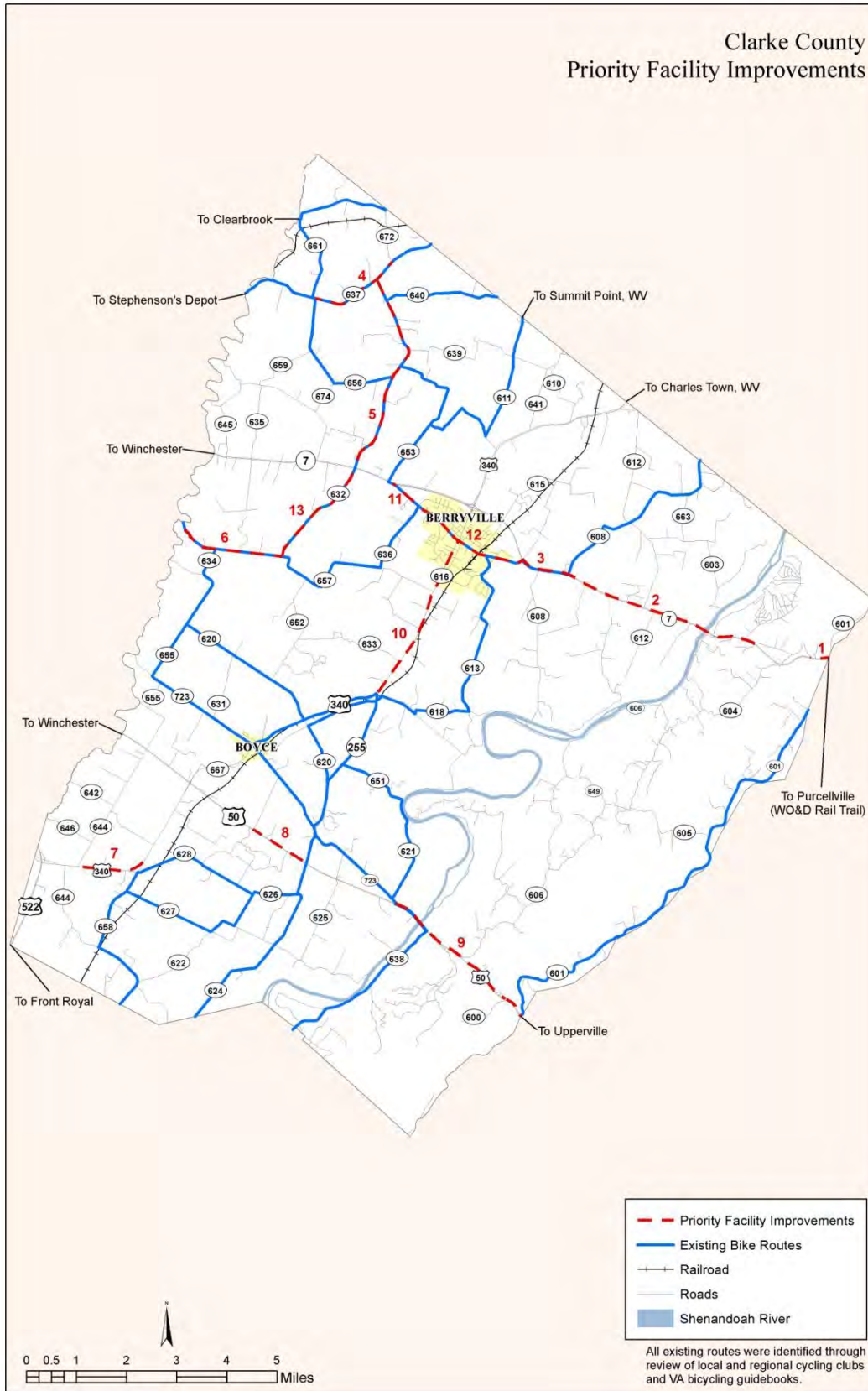
**Table 1: Proposed Bicycle Accommodations**

Map ID	Road Name	Description	Segment Length (Miles)	Short-Term Recommendations	Long-Term Recommendations	Short-Term Recommendations Cost Estimates	Long-Term Recommendations Cost Estimates
1	HARRY BYRD HWY (7)	Between Pine Grove Rd. (679) and Loudoun County Line	0.27	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$75,600
2	HARRY BYRD HWY (7)	Between Wickliffe Road (608) and Pine Grove Road (679)	4.02	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$1,125,600
3	HARRY BYRD HWY (7)	Between Berryville Town Boundary and Wickliffe Road (608)	0.98	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$274,400
4	OLD CHARLES TOWN RD	Between Wadesville Road (661) and Swinney Road (672)	1.88	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$526,400
5	CRUMS CHURCH RD (632)	Between Old Charles Town Pike (657) and Harry Byrd Hwy (7)	6.56	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$1,836,800
6	SENSENY RD	Frederick County Line to Crums Church Road (632)	2.26	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$632,800
7	LORD FAIRFAX HWY	Between Featherbed Road (644) and White Post	1.38	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$386,400
8	JOHN MOSBY HWY (50)	Between Blandy Farm Lane (750) and Bishop Meade Rd (255)	1.26	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$352,800
9	JOHN MOSBY HWY (50)	Between Tilhammer Mill Road (621) and Loudoun County Line	3.40	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$952,000
10	LORD FAIRFAX HWY	Between Bishop Meade Rd (255) and Main Street (Business Route 7)	3.49	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$877,200
11	W MAIN ST	Between Route 7 and Berryville Town Boundary	3.14	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$679,200
12	MAIN ST	Main Street through Berryville (Business Route 7)	3.14	Share the Road Signage; Shared Lane Markers (Sharrows); Intersection Crossing Markings	Protected Bike Lanes	\$200 per sign (including the cost of installation) plus \$20,000 for Intersection Crossing Markings plus the cost of Lane Markers (Sharrows)	\$200 per sign (including the cost of installation) plus \$20,000 for Intersection Crossing Markings plus the cost of Lane Markers
13	TRIPLE J RD (632)	Between Harry Byrd Hwy (7) and Senseny Rd (657)	2.34	Share the Road Signage	2-4 # Paved Shoulders	\$200 per sign (including the cost of installation)	\$655,200
<b>Total</b>			<b>31.78</b>				<b>\$8,694,400</b>

Source: NSVRC, Geographic Information Systems (GIS), 2014. Notes: These cost estimates should be regarded as planning level and preliminary in nature. Variations from actual project costs will may result from additional factors such as design exceptions, value engineering, utility relocation, and environmental impacts. As projects move forward in the project development process, emerging details will support the refinement of these costs. All recommendations are subject to approval by the Berryville Town Council and Clarke County Board of Supervisors and should be consistent with Virginia Department of Transportation (VDOT) design standards and policies. For Long-Term Recommendations Cost Estimates, costs are based on the construction of a 2ft paved shoulder. To get the cost of an 4ft paved shoulder multiply the cost provided by 2.

Map 4

Clarke County  
Priority Facility Improvements



### Best Practices for Bicycle Facility Design

Bicycle facilities should be designed to maximize consistency for bicyclists and minimize conflicts with other roadway users (cars & trucks). Whenever possible, bicycle facilities should be constructed that connect bicyclists to destinations or connect the larger bicycle or pedestrian network. Isolated, short bicycle facilities that begin and end abruptly without connecting to a destination should be avoided unless they are part of a planned, phased approach to bikeway development (e.g., as development occurs on a designated corridor). Below is a summary of best practices in facility design and less-intensive treatment options that may be appropriate for implementation in Berryville and Clarke County. These best practices are also consistent with VDOT's Policy for Integrating Bicycle and Pedestrian Accommodations (summarized above).

#### *Shared Lane Markings (“Sharrows”)*

Sharrows are white pavement markings consisting of a bicycle icon below a chevron pointing in the direction of travel. Placed in the center of the travel lane on low-speed streets without bike lanes or having insufficient width for lane sharing, they indicate to bicyclists the proper lateral roadway position, while reminding motorists that it is lawful and appropriate for bicyclists to “take the lane” to avoid the parking lane “door zone,” to increase bicyclist conspicuity, and to deter unsafe motorist overtaking.

#### *Narrow Travel Lanes*

Restriping to reduce travel lane widths can help free pavement width to accommodate bicycle facilities without widening the roadway or acquiring additional right-of-way. On freight, heavy traffic volume, and emergency response routes, inside travel lanes may be narrowed, but 12’ outside lanes should be maintained, where possible, to prevent larger vehicles from encroaching upon bicycle facilities.

#### *Narrow or Remove Center Turn Lane*

On roadways with low left-turn volumes or excess turn lane capacity, the center turn lane may be narrowed or removed and the roadway restriped to accommodate bicycle facilities. Intersection geometry and potential safety implications (e.g., increases in rear end crashes) should be considered when assessing potential turn lane changes.

#### *Paved Shoulders*

In areas where other roadway modifications are not feasible and adequate right-of-way is available, additional pavement width may be constructed to accommodate bicycle facilities (as compatible with VDOT design standards). Additional pavement width for bicycle facilities should not detract from adjacent sidewalk width or pedestrian. Shoulder pavement width can vary from 2 feet to 10 feet depending on roadway type.



Source: FHWA, 2014

#### *Protected Bike Lanes*

A protected bike lane (or “cycle track”) is an exclusive bike facility that has elements of a separated path and on-road bike lane. A protected bike lane, while still within the roadway, is physically separated from motor traffic and is distinct from the sidewalk.

### Other Treatments

Treatments are less intensive facility design options for bicyclists. The treatments identified below would be considered the most appropriate for modifications within the Town of Berryville and/or shared facilities at major intersections throughout the Town and County.

Intersection Crossing Markings: Intersection crossing markings are pavement markings through intersections that delineate the path that bicyclists should take through an intersection or across a driveway or ramp. Different marking strategies, including colored bike lanes or chevrons are used throughout the country. Crossing markings are not currently addressed under VDOT facility standards.

- Establish expected bicycle travel paths and increase the visibility of cyclists
- Define and raise awareness of potential conflict zones
- Increase bicyclist level of comfort by delineating route through Intersections

Wayfinding/Share the Road Signs: Wayfinding signs are typically placed at key locations leading to and along bicycle routes, including where multiple routes intersect and at key bicyclist “decision points.” Wayfinding signs displaying destinations, distances and “riding time” can dispel common misperceptions about time and distance while increasing users’ comfort and accessibility to key destinations. ‘Bike Route’ signage is currently allowed under VDOT facility standards; more detailed bikeway signage is included in the 2009 MUTCD. All signage on state-maintained roads should be reviewed by VDOT prior to installation.

- A cost-effective yet highly-visible treatment that can improve the riding environment

### Best Practices for Bicycle Events

Bicycling events are becoming larger and more frequent in the Berryville and Clarke County communities. Recently, the localities have experienced conflict between event participants and the local non-bicycling community over crowds, safety and sharing the roadways. Although these events can provide a large economic boost for the community, they can also be viewed as a nuisance by local residents. As part of the Berryville/Clarke County Bicycle and Pedestrian Plan, the management team sought to identify best practices in planning, hosting and managing large cycling events. These best practices are summarized in Appendix C.



### B. Pedestrian Accommodations

The lists of proposed pedestrian accommodations were developed based on geographic information systems (GIS) analysis of aerial data, review of the 2004 *Walking & Wheeling the Shenandoah Valley* priorities, *SRTS Comprehensive School Travel Plan* and VDOT, local staff and citizen input. Accessibility and connectivity between activity centers (schools) and tourism/outdoor recreation opportunities were also considered in developing these priorities for pedestrian facility enhancement. Since the majority of these facilities are confined to the Town of Berryville, recommendations are tailored to the more urban environment.

Site specific recommendations (from *SRTS Comprehensive School Travel Plan*) include:

- A. Replace/repair sidewalk along Swan Ave (along the property line of Johnson Williams Middle School);
- B. Install radar speed displays that flash when vehicles are exceeding the speed limit on South Buckmarsh Street; and
- C. Maintain/enhance crosswalks at intersections of Crow Street/South Buckmarsh Street and West Main Street/South Buckmarsh Street.

See Table 2 (page 22) and Map 5 (page 23) for the complete list of site specific recommendations for pedestrian improvements.

Other non-site specific recommendations include:

- Include pedestrian accommodations and links to the broader network with all new development;
- Develop a sidewalk retrofit/maintenance program;
- Identify crosswalks on primary system in need of improvement (signs, pavement markings, signals);
- Adopt pedestrian-friendly street design standards for new development; require connectivity in new developments to downtown and public institutions; and
- Adopt a complete streets ordinance/resolution to ensure that pedestrian needs are considered in the design of VDOT projects and meet ADA accessibility requirements.<sup>1</sup>

*Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and bus riders of all ages and abilities are able to safely move along and across a complete street.*



Source: National Complete Streets Coalition, 2014

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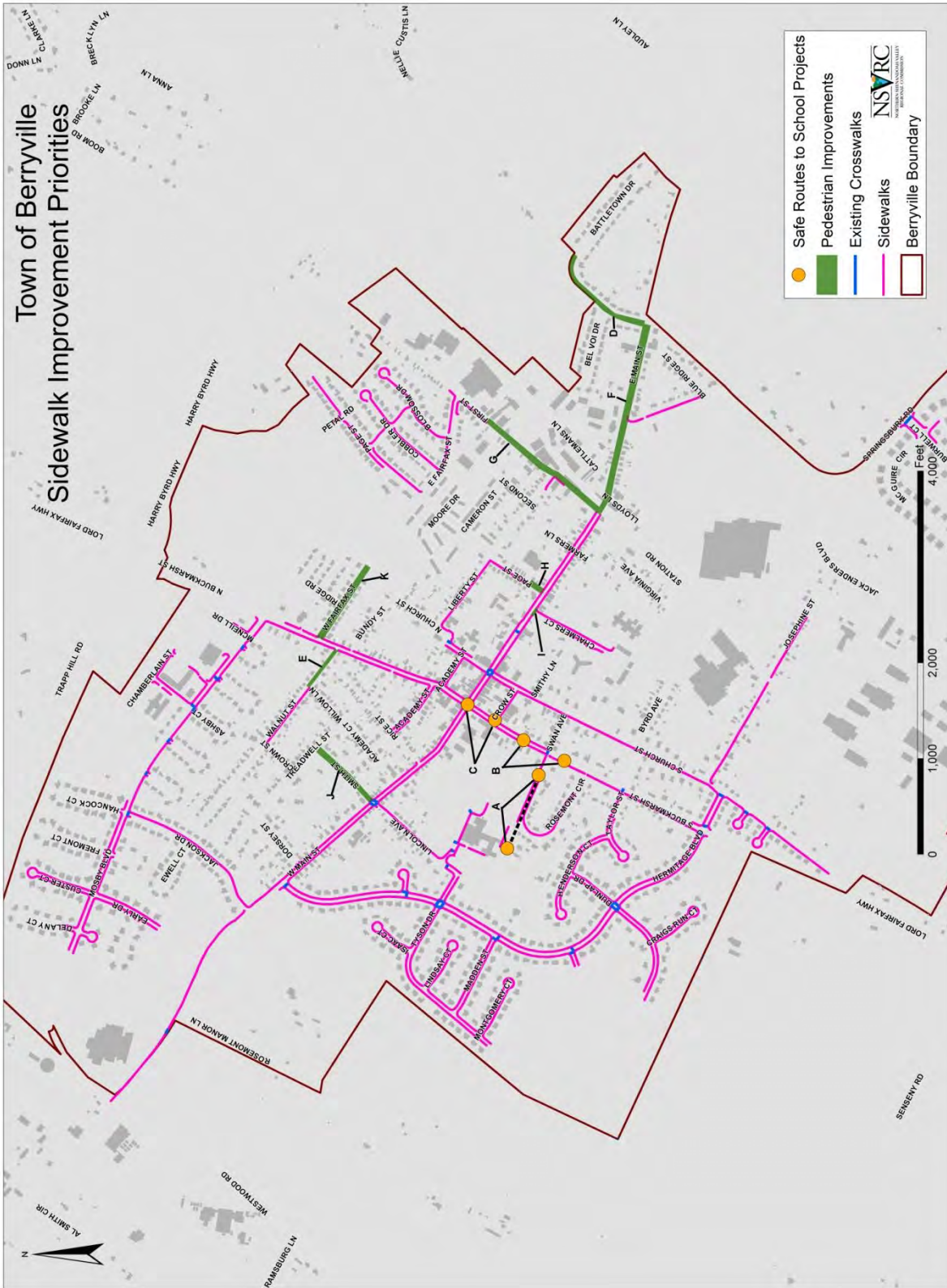
<sup>1</sup> The Virginia Department of Rail and Public Transportation (DRPT) have published "Multimodal System Design Guidelines," appended in 2014, to the VDOT Design Manual, as a statewide Complete Streets policy.

**Table 2: Proposed Pedestrian Accommodations**

Map ID	Road Name	Description	Segment Length (Feet)	Short-Term Recommendations	Safe Routes to School Project? (Y or N)	Short-Term Recommendations Cost Estimates
A	Swan Ave	Along property line of Johnson-Williams Middle School	840	Replace sidewalk (base & stormwater facilities)	Y	\$44,800
B	South Buckmarsh Street	Between Crow Street and Rosemont Circle	0	Install lit speed signs	Y	\$50,000
C	South Buckmarsh Street	AT Crow Street and West Main Street	0	Maintain crosswalks at intersection	Y	\$20,000
D	Battletown Drive	Between East Main Street and property line of Friar property	1,150	Extend sidewalk to connect to larger network	N	\$61,040
E	Walnut Street	Between Willow Lane and North Buckmarsh Street	500	Extend sidewalk to connect to larger network	N	\$26,600
F	East Main Street	Between First Street and Town Boundary	2,050	Extend sidewalk and/or create a shared-use path	N	\$108,640
G	First Street	Between East Main Street and East Fairfax Street	1,475	Extend sidewalk to connect to larger network	N	\$78,400
H	Page Street	To East Main Street	165	Complete sidewalk along Page Street to East Main Street	N	\$8,750
I	Chalmers Court	Intersection of Chalmers Court and East Main Street	80	New crosswalk	N	\$20,000
J	Smith Street	Between West Main Street and Treadwell Street	770	Extend sidewalk to connect to larger network	N	\$40,880
K	Fairfax Street	From North Buckmarsh Street to end of street	900	Extend sidewalk to connect to larger network	N	\$47,740
<b>Total</b>			<b>7,930</b>			<b>\$506,850</b>

Source: NSVRC, Geographic Information Systems (GIS), 2014. Notes: These cost estimates should be regarded as planning level and preliminary in nature. Variations from actual project costs will may result from additional factors such as design exceptions, value engineering, utility relocation, and environmental impacts. As projects move forward in the project development process, emerging details will support the refinement of these costs. All recommendations are subject to approval by the Berryville Town Council and Clarke County Board of Supervisors and should be consistent with Virginia Department of Transportation (VDOT) design standards and policies.

Map 5



## Funding & Implementation Resources

Below is a summary of potential funding resources that could be used to implement strategies identified above. Typically the grant funding cycle is February through June of each year.

### *Transportation Alternatives Program (TAP)*

The Transportation Alternatives Program (TAP) was authorized in the most recent federal transportation bill Moving Ahead for Progress in the 21st Century, also known as MAP-21 (July 1, 2012). The Transportation Alternatives Program redefines the former Transportation Enhancement (TE) Program and consolidates these eligibilities with the Safe Routes to School and Recreational Trails programs. Fiscal Year allocations vary year-to-year. Qualifying activities under TAP include:

- Construction of on-road and off-road trail facilities for pedestrians, bicycles and other non-motorized transportation users
- Construction of infrastructure related projects and systems that will provide safe routes for non-drivers to access daily needs
- Conversion and use of abandoned railroad corridors for pedestrians, bicycles and other non-motorized transportation users

### *Sunrise Project Grants*

Grants up to \$5,000 will be offered for activities that promote and enhance bicycle accommodations in Virginia localities. Grant funded activities can include but are not limited to:

- Installation of biking related equipment such as racks or crosswalks.
- Educational/encouragement programs to get people active.
- Starting a foundation or non-profit organization to improve biking in your area.
- Conducting a “Share the Road” campaign in your community.
- Seed funding to support a new Open Streets, or Sunday Streets event.
- Develop a website, web content or social media campaign.
- Grow an existing program.



### *Virginia Recreational Trails Program (RTP)*

The Recreational Trails Program (RTP) is a matching reimbursement grant program that provides for the creation and maintenance of trails and trail facilities. The program is funded through the Federal Highway Administration (FHWA) and administered by the Virginia Department of Conservation and Recreation (DCR).

### *Bikes Belong Foundation*

This organization is funded by the bicycle industry, whose mission is, “Putting more people on bikes more often.” “Bikes Belong” awards grants of up to \$10,000 each to projects that seek federal funding for bicycle





facilities. Because each State differs in what it allows to qualify for local match of a project, one must check with the state TEA Transportation Enhancements (TE) coordinator before applying. Bikes Belong grants have been used for concept plans, cartography, design, outreach, and preliminary engineering, as well as contributions to the local match.

*Virginia: Safe Routes to School Mini-Grants*

Bike-Walk Virginia is making available \$1,500 for Walk to School programs. Any school, school district, public agency, or non-profit is eligible to apply. These grants are intended to supplement primary funding from your local community for new or existing Safe Routes to School programs. The funds may be used for local programs as a part of International Walk to School Day. Applicants can request any amount up to \$1,500.

*Kodak American Greenways Grant*

The Kodak American Greenways Awards Program, a partnership project of the Eastman Kodak Company, The Conservation Fund, and the National Geographic Society, provides small grants to stimulate the planning and design of greenways in communities throughout America.

Due to limitations of grant and private funding, where applicable, projects should be included in local capital budgeting and regional priorities including those provided to the Commonwealth's Transportation Board Six-Year Improvement Plan (SYIP) and VDOT maintenance programming. Revenue-sharing is also a viable option as investment in bicycle and pedestrian facilities will have a positive impact on economic development and tourism related revenue.

## Next Steps

Based on the preceding sections, the following recommendations should be considered next steps for both the Town and County leadership and staff in planning and implementing strategies for improving bicycle and pedestrian accommodations. This includes:

- Incorporation of the preceding bicycle and pedestrian accommodations into updates to local comprehensive and transportation plans;
- Working with NSVRC and VDOT staff to incorporate bicycle and pedestrian accommodation projects identified in Tables 1 and 2 into the Virginia's Six-Year Improvement Plan and VDOT maintenance program.
- Directing local and NSVRC staff to pursue funding opportunities for additional planning, design/engineering and construction of facilities improvements identified in Tables 1 and 2;
- Coordination with local economic development entities and regional tourism pages (i.e. Bike the Valley) to promote bicycle tourism opportunities; and
- Continued coordination among local Town/County departments and club/bicycle event promoters for event planning and management; A summary of bicycle safety tips is provided in Appendix D.
- Participation in regional planning efforts for US Bike Route 11 and Shenandoah Valley Bicycle Plan.

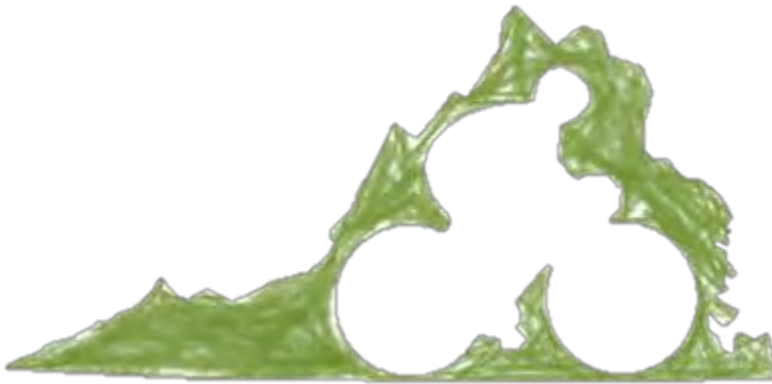


Source: [www.bikethevalley.org](http://www.bikethevalley.org), 2014

## Conclusion

The Town of Berryville and Clarke County consider bicycling and pedestrian amenities to be a key component of sustainable community and economic growth while connecting the localities to the broader region. The Town of Berryville and Clarke County are regional magnets for recreational cycling and tourism. Improvements to the bicycle and pedestrian networks will be critical to future economic development and tourism opportunities.

Bicycle and pedestrian links are vital to community and economic health and well-being. Bicycling is an important mode of transportation, whether used separately or with other modes. The *Town of Berryville & Clarke County Bicycle and Pedestrian Plan* was prepared in response to a joint-request from the Town of Berryville and Clarke County under the Northern Shenandoah Valley Regional Commission (NSVRC) Rural Transportation Work Program. The Plan summarizes key regional and local planning efforts, provides a comprehensive overview of the existing transportation network and outlines corridor-specific recommendations for bicycle and pedestrian enhancements in each locality to better serve transportation, recreation and economic development objectives. This Plan will serve to inform future planning efforts by Berryville and Clarke County staffs.



## References

2013 Bicycle Facilities Design Guidelines, AASHTO

2011, *Bicycle Facility Design Toolkit*, Washington County, Oregon, available from: [www.co.washington.or.us](http://www.co.washington.or.us)

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2013, Virginia Department of Rail and Public Transportation (DRPT) Multimodal System Design Guidelines

2004, Virginia Department of Transportation (VDOT) State Bicycle Policy Plan, available from: [www.virginiadot.org/programs/bk-default.asp](http://www.virginiadot.org/programs/bk-default.asp)

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2012, Virginia Department of Transportation (VDOT) Community Trail Development Guide

2012, Virginia Department of Transportation (VDOT) Route 340 Context Sensitive Solutions (CSS) Study

2013, Virginia Safe Routes to School Program, Virginia Department of Transportation

2004, *Walking & Wheeling the Northern Shenandoah Valley*, Northern Shenandoah Valley Regional Commission

2012, Watson & Muellerweiss, *Virginia Road Biking*



# Appendices

*Appendix A: Summary of Key Planning Documents & Public Input*

*Appendix B: Existing Bike Routes Maps; Draft US Bicycle Route 11 Map*

*Appendix C: Best Practices for Bicycle Event Management*

*Appendix D: Bicycle Safety Tips*

## Appendix A: Summary of Key Planning Documents & Public Input

The purpose of this section is to outline current bicycle and pedestrian planning documents developed state-wide, regionally and locally and explore them as an applicable framework for future planning and prioritization efforts in Berryville and Clarke County. Documents reviewed in this section provide policy implications for bicycle and pedestrian planning, and long-, mid-, and short-term priorities as previously identified. The following plans were analyzed and summarized in the section below:

- Virginia Department of Transportation (VDOT) State Bicycle Policy Plan (2011);
- VDOT Policy for Integrating Bicycle and Pedestrian Accommodations (2004);
- VDOT Community Trail Development Guide (2012);
- VDOT Route 340 Context Sensitive Solutions (CSS) Study (2012);
- Walking & Wheeling the Northern Shenandoah Valley (2004);
- Northern Shenandoah Valley Rural Long Range Transportation Plan (RLRTP, 2011);
- Town of Berryville Comprehensive Plan ;
- Berryville Area Plan (2009);
- Clarke County Comprehensive Plan (2013); and
- US Bicycle Route Corridor Plan (2012).

### Virginia Department of Transportation (VDOT) State Bicycle Policy Plan (2011)

The purpose of the State Bicycle Policy Plan is to establish a vision and policy recommendations for bicycle planning activities throughout the Commonwealth of Virginia. Although this plan does not outline specific recommendations for Berryville or Clarke County, the recommendations outlined in the implementation section should be further explored for their applicability in the local setting. This includes:

- *Considering walking and bicycling as equals with other transportation modes;*
- *Ensuring there are transportation choices for people of all ages and abilities, especially children;*
- *Going beyond minimum design standards;*
- *Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges;*
- *Collecting data on walking and biking trips;*
- *Setting mode share targets for walking and bicycling and tracking them over time;*
- *Removing snow from sidewalks and shared-use paths; and*
- *Improving non-motorized facilities during maintenance projects.*



Additionally, the State Bicycle Policy Plan provides references to other VDOT and federal policy documents that should be consulted when evaluating bicycle conditions and planning for improved facilities locally and provides a list of potential resources for implementation. Under “Current Programs and Policies,” a general overview of all applicable legislation, plans and acts that affect bicycle and pedestrian planning is included.

Finally, specific design recommendations should be consistent with the AASHTO Guide for Development of Bicycle Facilities. This guide should also be considered when developing locality specific implementation.

The State Bicycle Policy Plan should serve as the policy framework for any to-be-developed bicycle and pedestrian planning efforts by a locality. The plan is invaluable for the one-stop-shop of state and federal policy for bicycle planning and provides broader goals that should serve as the foundation for local strategies. This plan will help jurisdictions remain consistent with state-wide efforts which would make implementation more likely.

#### VDOT Policy for Integrating Bicycle and Pedestrian Accommodations (2004)

This policy guide provides the framework through which the Virginia Department of Transportation will accommodate bicyclists and pedestrians, including pedestrians with disabilities, along with motorized transportation modes in the planning, funding, design, construction, operation, and maintenance of Virginia's transportation network to achieve a safe, effective, and balanced multimodal transportation system. Specifically, this policy recognizes that:

- *Bicycling and walking are fundamental travel modes and integral components of an efficient transportation network.*
- *Appropriate bicycle and pedestrian accommodations provide the public, including the disabled community, with access to the transportation network; connectivity with other modes of transportation; and independent mobility regardless of age, physical constraints, or income.*
- *Effective bicycle and pedestrian accommodations enhance the quality of life and health, strengthen communities, increase safety for all highway users, reduce congestion, and can benefit the environment.*
- *Bicycling and walking are successfully accommodated when travel by these modes is efficient, safe, and comfortable for the public.*
- *A strategic approach will consistently incorporate the consideration and provision of bicycling and walking accommodations into the decision-making process for Virginia's transportation network.*

The Virginia Department of Transportation (VDOT) states that it will initiate highway construction projects with *the presumption that the projects shall accommodate bicycling and walking*. Factors that support the need to provide bicycle and pedestrian accommodations include, but are not limited to, the following:

- *Project is identified in an adopted transportation or related plan;*
- *Project accommodates existing and future bicycle and pedestrian use;*
- *Project improves or maintains safety for all users;*
- *Project provides a connection to public transportation services and facilities;*
- *Project serves areas or population groups with limited transportation options;*
- *Project provides a connection to bicycling and walking trip generators such as employment, education, retail, recreation, and residential centers and public facilities;*
- *Project is identified in a Safe Routes to School program or provides a connection to a school ;*
- *Project provides a regional connection or is of regional or state significance;*
- *Project provides a link to other bicycle and pedestrian accommodations;*
- *Project provides a connection to traverse natural or man-made barriers; and*
- *Project provides a tourism or economic development opportunity*

VDOT will work with localities to select and design accommodations, taking into consideration community needs, safety, and unique environmental and aesthetic characteristics as they relate to specific projects.



VDOT Community Trail Development Guide (2012)

This Community Trail Development Guide was published to aid communities in developing processes for grassroots trail planning efforts. Specifically, the guide identifies the following processes:

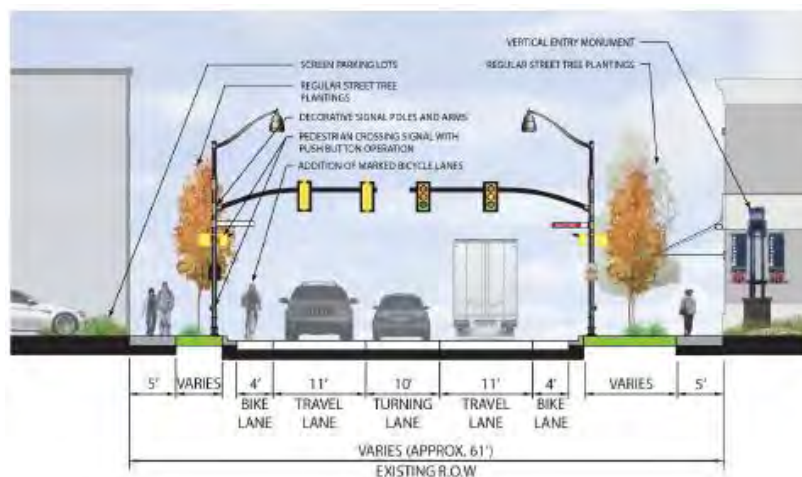
- Create community support and empower local communities early in the process;
- Identify funding options including public-private partnerships;
- Balance state, local, and community perspectives;
- Encourage a broad planning process that includes all stakeholders and community representatives; and
- Identify various trail options.

Should Clarke County and/or Berryville choose to pursue a community based trail development program, this guide should serve as a framework for public participation, plan formulation and implementation.

VDOT Route 340 Context Sensitive Solutions (CSS) Study (2012)

This purpose of this project, the *Shenandoah Valley Transportation Context Study: An evaluation of Context Sensitive Solutions along Route 340* is a pilot study to further evaluate the application of Context Sensitive Solutions (CSS) procedures, policies and concepts in transportation planning projects along the Route 340 Corridor. Context Sensitive Solutions encompasses many elements and has many definitions, but all focus on improving the balance of safety, mobility, community, and environmental considerations in future projects.

CSS improvements carefully consider *the possible impacts to the natural/scenic environment, the historic resources in the area, and the economic development along the corridor*. This project was initiated by the Virginia Department of Transportation (VDOT), in partnership with the Department of Historic Resources (DHR), in an effort to further the land-use planning projects, transportation planning projects, and the development of entrance corridors and gateways to urban areas along Route 340. The process of applying CSS in future projects is something that VDOT is committed to doing.



Source: VDOT Context Sensitive Solutions Study, Cross-Section View: Main Street & Route 340-Berryville, 2012

Considerations of CSS on multimodal use of the proposed Berryville and Clarke County bicycle and pedestrian facilities should be considered when developing performance and design standards for roadway improvements.

Walking & Wheeling the Northern Shenandoah Valley (2004)

General principles and goals that can serve to form a foundation for bicycle and pedestrian planning efforts in Berryville and Clarke County as identified in the Walking & Wheeling the Northern Shenandoah Valley Plan include:

- *Improving overall safety of pedestrians and non-motorized vehicle users;*
- *Increasing the availability and accessibility of alternative transportation;*
- *Conserving the region's resources; and*
- *Encouraging economic vitality.*

The Walking & Wheeling the Northern Shenandoah Valley Plan identifies several key categories for addressing bicycle and pedestrian project goals. This includes:

- *Inventory and Assessment of existing facilities and/or infrastructure related to the goals of the project;*
- *Conceptual Framework to guide planning and prioritization of potential projects;*
- *Design Models to serve as examples of how various types of projects could be addressed; and*
- *Implementation outlining methods of implementing the various projects that may arise out of this study.*



Existing projects identified in the 2004 plan for non-motorized mobility in Berryville and Clarke County includes:

- *The Town and County have completed a bicycle-pedestrian (multimodal) path from on West Main Street, Business Route 7, identified in the 2004 Plan. This Plan serves to connect to the county park and recreation facilities, high school, primary school and fairgrounds.*

The Walking & Wheeling the Northern Shenandoah Valley Plan proposes a “Conceptual Framework” for addressing bicycle and pedestrian planning through: facility design strategies (roadways, sidewalks, bike lanes, etc.), regional projects, town-to-town/town-to-county connections, and local and regional projects.

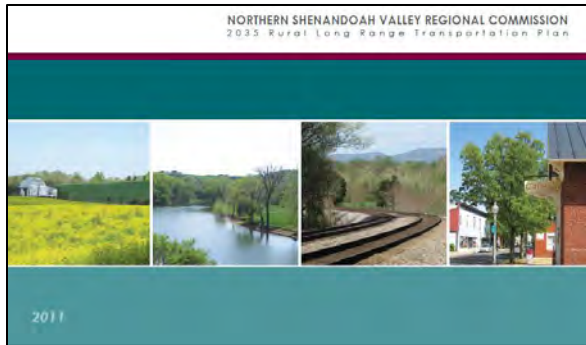
Specific objectives prescribed for Berryville and Clarke County are:

- *Pedestrian and Bicycle improvements;*
- *Route 340 Corridor;*
  - *Addition of wide shoulder for cyclists and other safety improvements*
  - *Identification of historic locations (along and spurring off of Route 340)*

- *Route 7 and Senseny Road Inter-County-Connector Corridor; and*
  - *Addition of wide shoulder for cyclists and other safety improvements*
  - *Identification of historic locations (along and spurring off of Route 7)*
- *Gateway to Northern Virginia/DC Cyclists; connections to W&OD trail system.*

The Walking & Wheeling Plan also provides a specific route analysis by roadway segment. It should be noted that most of the bike routes identified in Berryville and Clarke County are defined as “scenic roads” with “relatively light traffic” or “good roads” with “moderate traffic.” These routes are primarily confined to secondary roadways and avoid primary roads that have higher speeds and traffic volumes (Route 17, Route 50, Route 340, and Route 7). However, this level of analysis does not present a defined bike network with connections between routes. The management team has chosen to use this level-of-service analysis as the basis for planning efforts in 2014.

Northern Shenandoah Valley Rural Long Range Transportation Plan (RLRTP, 2011)



The regional Rural Long Range Transportation Plan (RLRTP) outlines very generally the existing bicycle and pedestrian facilities in the Northern Shenandoah Valley jurisdictions, including Berryville and Clarke County. Under “Goals and Objectives,” the RLRTP states future planning should *encourage the use of alternate modes of transportation to that of single occupancy vehicle for routine trips such as walking, bicycling.* The “Bicycle and Pedestrian Facilities”

section of the plan references the Walking & Wheeling the Northern Shenandoah Valley Plan and notes that *within all of the jurisdictions, bicycle and pedestrian facilities are being encouraged as part of the construction of new roadways, and while updating existing roadways.* This is consistent with VDOT’s Policy for Integrating Bicycle and Pedestrian Accommodations (see summary above).

While addressing bicycle and pedestrian planning, the RLRTP should be utilized to assess project specific sites in existing/proposed roadways. The RLRTP outlines specific recommendations at various sites (intersections, roadway segments) in Clarke County and Berryville.

Town of Berryville Comprehensive Plan (2006)

The Berryville Comprehensive Plan was last updated in 2006 and highlights a number of challenges and recommendations to improve bicycle and pedestrian connectivity in the Town. This includes recognition of significant physical constraints to improve vehicle, bicycle and pedestrian safety in the Town:

*A visual survey of Berryville indicates that several streets in the State and Town systems are too narrow to handle much additional traffic. There is also a lack of definition between the paved portion of many roadways and their shoulders. Hazards are created by the inadequate separation of vehicles and pedestrians. The fact that the paved roadway areas are not well defined may lead to maintenance*

*problems, including erosion of shoulders. In some parts of Town, possible problems are created by the location of buildings very close to the street. These small setbacks, though they help to define the distinctive small-town character of Berryville, can also pose an obstacle if it becomes necessary to widen roads and add sidewalks.*

The Berryville Comprehensive Plan also recommends a bicycle/pedestrian path to the west of Town connecting community assets such as schools, parks and the fairgrounds. This pathway has since been completed and is actively used by residents. The Plan also recommends the extension of a multi-use path along Mosby Boulevard connecting residences to the Clarke County High School campus. An efficient bicycle and pedestrian network is critical to larger community goals such as downtown revitalization and future residential and commercial development (land-use decisions).

### Safe Routes to School Program (Berryville)

The Town of Berryville has received Safe Routes to School Program (SRTS) funds for project implementation through the Transportation Alternatives (TA) program (2013). Priorities identified in the *Comprehensive School Travel Plan* should inform recommendations for bicycle and pedestrian improvements within the Town of Berryville; especially those linkages to and from Johnson-Williams Middle School. Key corridors identified in the *Comprehensive School Travel Plan* include: Lincoln Ave, West Main Street, South Buckmarsh Street and Swan Avenue.

SRTS is a federally-funded program created under Section 1404 of the 2005 Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). As written into the SAFETEA-LU legislation, the purpose of the SRTS program is to:

- *Enable and encourage children, including those with disabilities, to walk and bicycle to school;*
- *Make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and*
- *Facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools*



In Virginia, the SRTS Program is administered through the Virginia Department of Transportation (VDOT) but implemented locally.

### Berryville Area Plan (1992, currently under revision)

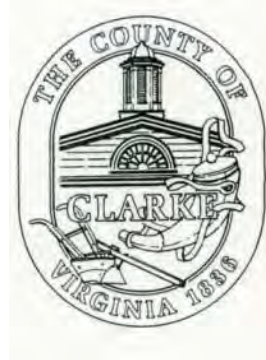
The Berryville Area Plan is an ongoing joint planning effort between the Town of Berryville and Clarke County. The purpose of the Berryville Area Plan is to be a guide for the physical long-term growth of the annexation area of the Town of Berryville. The primary focus of the Plan is Annexation Area B, or approximately 880 acres surrounding the 843 acres located in the Town after January 1, 1989 Annexation Agreement. The Berryville Area Plan seeks to encourage development of a *safe, healthful, and distinctive living environment* while maintaining the unique historical features of the community and ensuring preservation and conservation efforts. The timing of development is integral to the growth management

processes outlined in the Berryville Area Plan. The Plan also identifies many factors that could affect the Berryville Area, and this plan specifically focuses on those areas in which the County and Town can have a positive impact through joint planning effort. Specific goals and objects outlined in the plan that pertains to bicycle and pedestrian facilities include:

- *Develop an overall bicycle and pedestrian plan to guide future improvements to such facilities; and*
- *As additional segments are added to the network, consideration should be given to providing additional rights-of-way and/or facilities for bicycles and trails. The design for pedestrians and bicycles shall be incorporated into the design of collector and arterial roadways and intersections.*

Recommendations outlined in the Berryville Area Plan are consistent with recommendations identified in regional planning documents for bicycle and pedestrian facilities.

#### Clarke County Comprehensive Plan (2013)



Clarke County is nearing completion on the 2013 update to the Comprehensive Plan. Like the Town of Berryville Comprehensive Plan and the Berryville Area Plan, the County's Comprehensive Plan identifies long-term planning priorities of the community. Specifically, the plan includes a significant transportation component which stipulates:

*Provision of a safe and efficient transportation network is critical to any community but it is also important to ensure that the community's transportation needs are compatible and coordinated with the land use philosophy. These needs are not limited to public roads but also extend to bicycle, pedestrian, and commuter networks. The Transportation Plan provides a clear statement of how the County's land use philosophy is coordinated with its transportation policies. The Transportation Plan also contains the County's current list of improvement projects along with planning level cost estimates and statistical information to support the need for each project.*

Under the Goals and Objectives section, the County identifies the following objective for bicycle and pedestrian implementation:

- *Ensure that the County's transportation system provides safe and efficient means for all modes of travel for citizens and visitors through coordinated land use decision-making and judicious use of limited fiscal resources; and*
- *Develop and maintain a County bicycle and pedestrian plan.*

Like Berryville, Clarke County has included provisions for the necessity of bicycle and pedestrian amenities as a component of future development decisions.

#### US Bicycle Route Corridor Plan (2012)

The US Bicycle Route System (USBRS) is rapidly developing through partnerships with local, state and regional efforts carried out by governments, volunteers, non-profits and Departments of Transportation

(DOT). This network will be the official US Bicycle Network. The US Bicycle Route Corridor Plan was updated in 2012 with an additional corridor, US Bicycle Route (USBR) 11. USBR 11 will connect five (5) National Parks into a regional bicycle network including: the Chesapeake & Ohio Canal Towpath (C&O Canal), the Bryon Goodloe Bridge (part of the Appalachian Trail), Harpers Ferry National Park, Shenandoah National Park, Skyline Drive and the Blue Ridge Parkway (scenic byways). The proposed USBR 11 will stretch approximately 475 miles from Maryland, through West Virginia, Virginia and terminate in North Carolina. The route is still classified as under development. See USBR 11 Draft Route Map in Appendix B.



This to-be-developed route could serve as a significant tourism and economic development attraction for the Town and County. Berryville and Clarke County staff should closely monitor and/or actively participate in route development.

### Summary of Public Input

Meaningful opportunities for the public to share ideas, voice concerns and have questions answered is critical to effective planning efforts. Public input on the proposed *Berryville & Clarke County Bicycle & Pedestrian Plan* was gathered through two (2) opportunities: an online discussion forum hosted at [www.NSVinfo.org](http://www.NSVinfo.org) and an open house. Public comment was taken between April and May 2014. Below is a summary of public input.

*Please note names have been redacted and comments summarized.*

### **April 2014 Clarke County Board of Supervisors Work Session, Clarke County Planning Commission and Berryville Town Council meetings**

*Staff presented on the draft Plan to the various elected/appointed officials of the Town and County in April 2014.*

- Description of “intersection crossing markings”?
- Purpose of wayfinding signs?
- Clarify reasoning for not including more “off-road” bicycle facilities;
- Look at improvements to Salem Church Road and “T” intersection with Senseny Road;
- Clarify recommendation for “narrow travel lane;”
- Citizen awareness/promotion critical to “acceptance” of bicycle users;
- Clarify everyday rider usage versus larger bicycle events (rallies, etc.); expand bicycle event management section(s);
- Volunteer management for bicycle events; who provides/who coordinates;

- Concern regarding adding paved shoulders and interference with historic stone walls and private property rights;
- Visual “pollution” of more signs (reference to Share the Road signs);
- Clarify that riders are confined to public roads; right of anyone to use the roadway network (motor vehicles, bikes, pedestrians); emphasis on safe use of roads;
- Expanded sections on education/awareness campaigns; rules of the road for cyclist and enforcement of rules by local law enforcement;
- Concerns regarding farm trucks/machinery on the road versus cyclists;
- Bike-App for Clarke County (information and resources);
- Clarify VDOT requirements for signs (Share the Road and/or wayfinding): placement, maintenance, costs;
- Clarify requirements for paved shoulder (2-4 or 2-8 feet);
- Clarify inclusion of cost estimates (not a bill to Town/County to make improvements):
- Promotion of bicycle network as economic development tool; and
- General praise for comprehensive nature of Plan
- Road widening & speed of vehicles?

### Online Public Forum

*An online public forum was available from May 1 to May 31, 2014 for members of the public to review plan documents and maps and leave comment. Fourteen (14) comments were received.*

- *This really seems like a colossal waste of money. As it is, in just the past year we have seen our personal property taxes increase for additional transportation spending, as well as our real estate taxes increased for the School Board's budget. Surely the money required to create bike paths could be better spent elsewhere.*
- *8 million dollars? Are you serious? My gosh, this is a terrible idea. I have lived in CC most of my life and have never heard a friend or neighbor say "gee I wish we had a bike path". Most of my friends and neighbors wish the bikers would migrate to some other county.*
- *Good Work*
- *I think the county is heading in the right direction. Look at what is being done in Page County - they hold multiple bike races a year, that bring in hundreds of cyclists from out of town, eating meals and staying at hotels. Cyclists are drawn to beautiful areas to ride, and a map showing good, safe roads to ride on will help draw people. Having places to go during or after a day's ride will help folks with ride planning. And specifically, providing a good route to get to Purcellville and the W&OD trail*

would be great way to lure cyclists into Clarke from Loudon and points east (you already have a built in pipeline with the W&OD).

- *I do not want my tax money being spent on projects like this. We already have problems in this area with traffic and the last thing we need in this area is more of it, whatever kind it is. I live in Clarke County because I want a slower pace of life and I don't like or want more traffic. For those people that like these type of activities let them move to the counties that already support this type of activity. I am disgusted that people are willing to waste my hard earned money to pay for an activity that less than 1% of the population will use.*
- *Where are the days when we as the citizens of this country used our money wisely? If the county wants to spend our hard earned tax dollars on transportation improvements, than we suggest something of a higher priority such as patching potholes. If people want to come to this county to ride bikes then let them ride our scenic byways on the county roads, freeing up our tax dollars for better use.*
- *I am a Berryville resident with small children (5 & 9) who would like to see improvements to the sidewalks in town. Sometimes we are forced to walk on the side of the road when a sidewalk ends. Creating new sidewalks to prevent walking on the road side would be a great improvement to the community. I am also for having good paths to and from the schools. I also believe that bicyclists contribute to the community in a positive way. I am a former amateur bicycle racer and I own cars, pay taxes and continue to exercise by riding a bicycle. In fact, our entire family rides here in Clarke County. It's healthy and clean fun for us. I also would like it to be safe so that I don't have to worry or stress about getting hit by a car. I've ridden in many communities in Virginia, South Carolina and Hawaii. The last two mentioned states have very good bicycle lanes, in fact South Carolina builds bicycle lanes into new roads and on improved road projects as well. Please keep in mind that not all the proposed improvements here are from tax dollars but also come from various grants.*

*I also love riding through areas like Millwood and do not want to see trees cut, but I'd rather cut trees than loose a life. I rode my bicycle from Berryville to Blue Ridge Mountain Road via Route 7 and there are some areas that do not have enough room for a bicycle to ride on the side of the road such as just before and after the Shenandoah River going East.*

*It is my understanding that tax money is already set aside for normal road repairs and that this proposal is not that dramatic in terms of monies spent. Wouldn't you rather see the safe promotion of healthy ways to travel and exercise for our community? We can make this a great area to leave for our children as well.*

*We have children and neighbors with children on bicycles riding almost every day. I ride myself for health. The Winchester Wheelmen ride in Clarke County every summer at least once a week. There are grants to supplement the proposed projects. I, for one, would like to see that our roads are safe for bicyclist and pedestrian.*

*I would like to see a bicycle rack or two in downtown Berryville. Also, the Bicycle rodeo is good for educating children. Perhaps more than one event during the year, near the beginning of summer*



*when most children will be out riding, walking, and playing. Do we have a town/community bulletin board to advertise these type of events? I never heard about the bicycle rodeo from last year?*

- *As a lifelong Clarke County resident, I'd rather not see more bicycles riding down the road causing traffic issues. They ride down the most dangerous back roads in Clarke County and it drives me insane. Go to Purcellville if you want to ride your bike; they actually have a bike trail! Actually, go back to Loudoun County while your at it!*

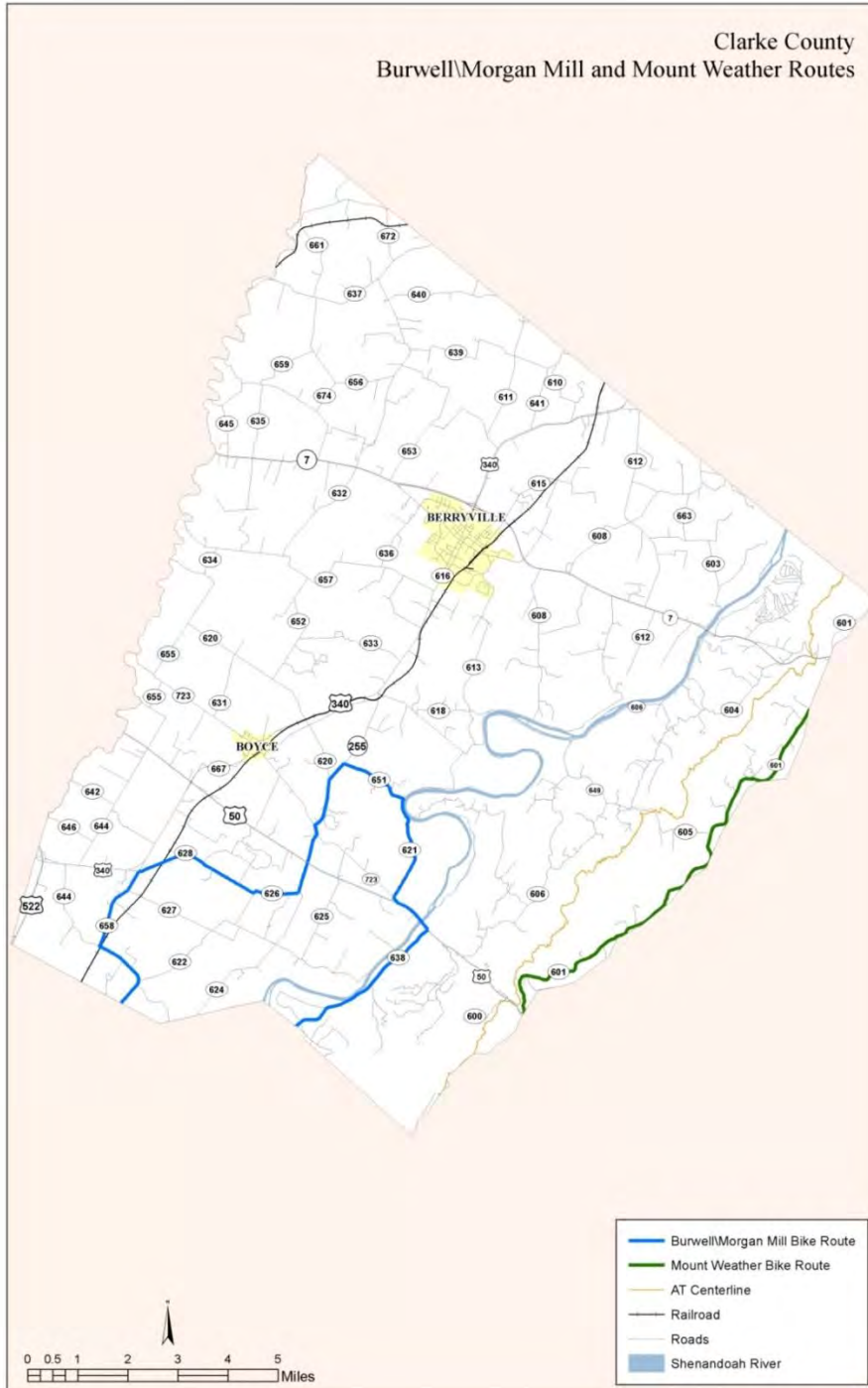
## **Public Input Meeting**

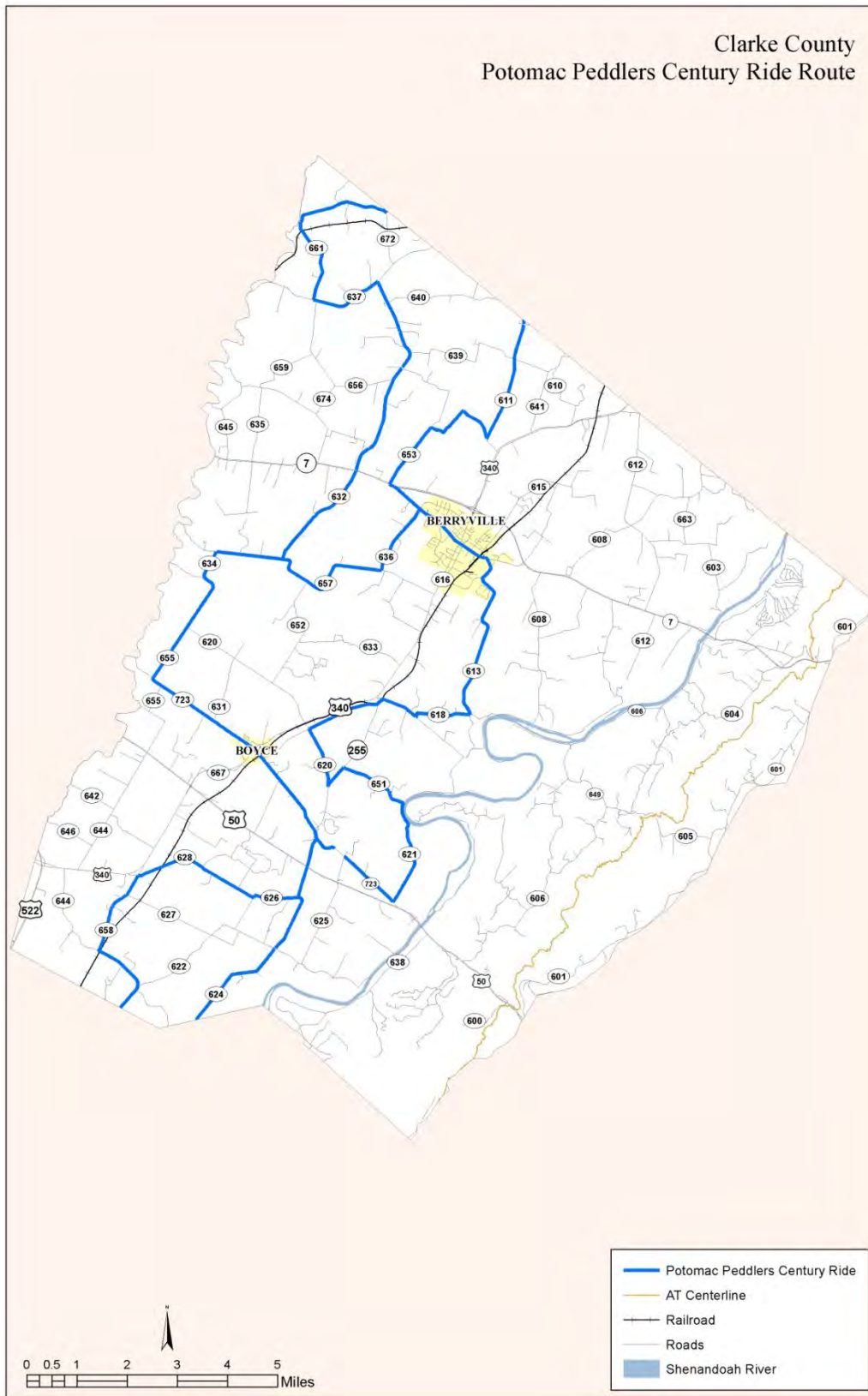
*A public input meeting was held May 15, 2014 at the Clarke County/Berryville Government Center. 16 persons attended.*

- Include numbers of economic benefits of bicycle tourism for Clarke County and Berryville; quantity economic multiplier effect (as applicable);
- Many benefits to bicycle events and tours; word of mouth to bike in Clarke County; international ridership;
- Bikers need to know the “rules” of the road better;
- Bike Virginia is good exposure for County; leads to smaller group rides/return ridership;
- Additional improvement to include: Berryville to Blue Ridge Road along Route 7; ease on/off on shared use trail at Jackson Road;
- Bike racks around Town; centralized bike parking area downtown;
- Clarify paved shoulders and “shoulder wedge;” benefits of paved shoulders to motorists
- Clarify information regarding costs (VDOT Maintenance Program vs. Town/County costs);
- Maintain Town/County character; improvements should be mindful of landscape; natural features and private property
- Clarify impact of recommendation in Millwood village; see specific comments from Millwood Community Association (written comments submitted);
- No changes to historic dirt roads; Plan is great!

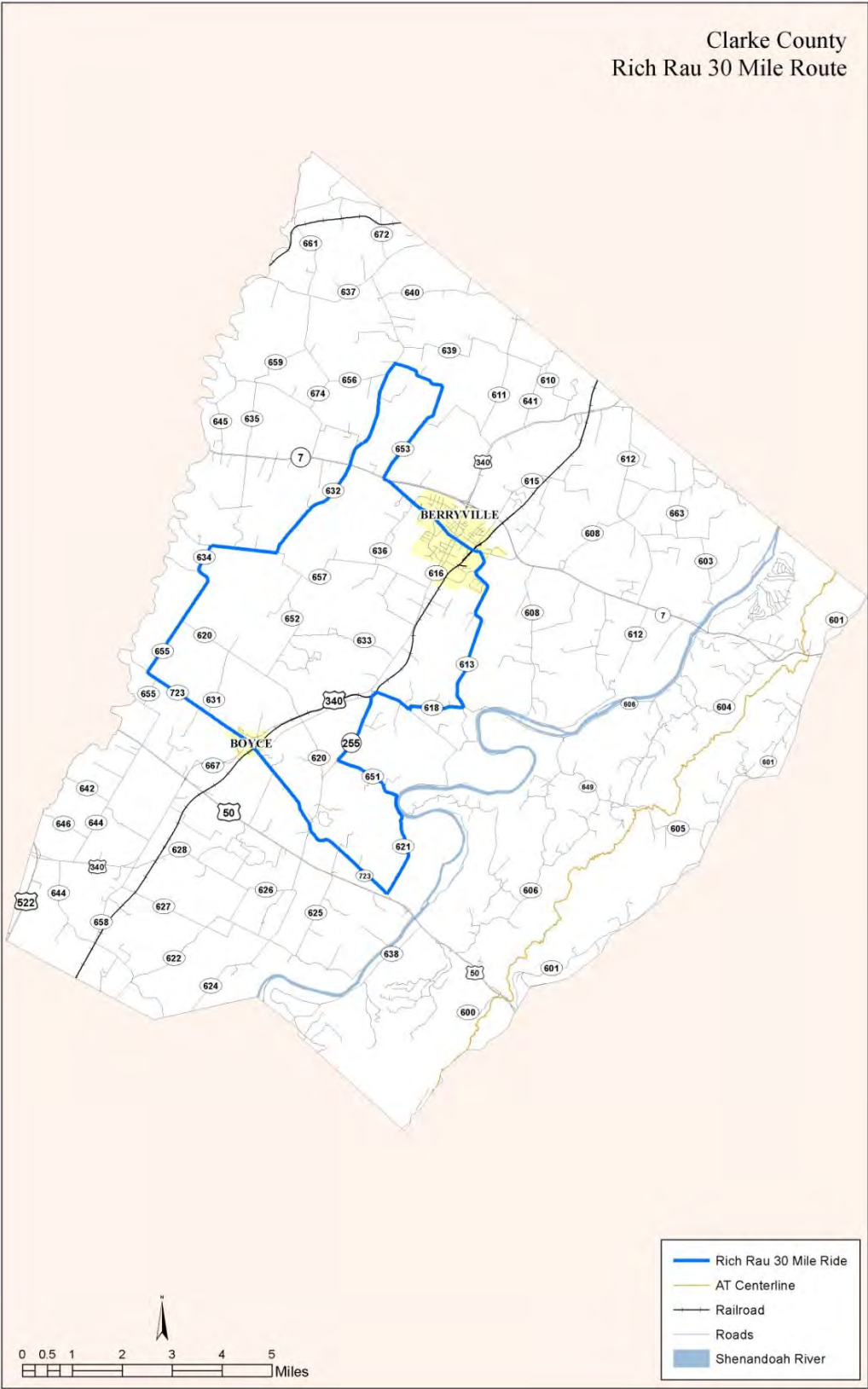
*Appendix B: Existing Bike Routes Maps*

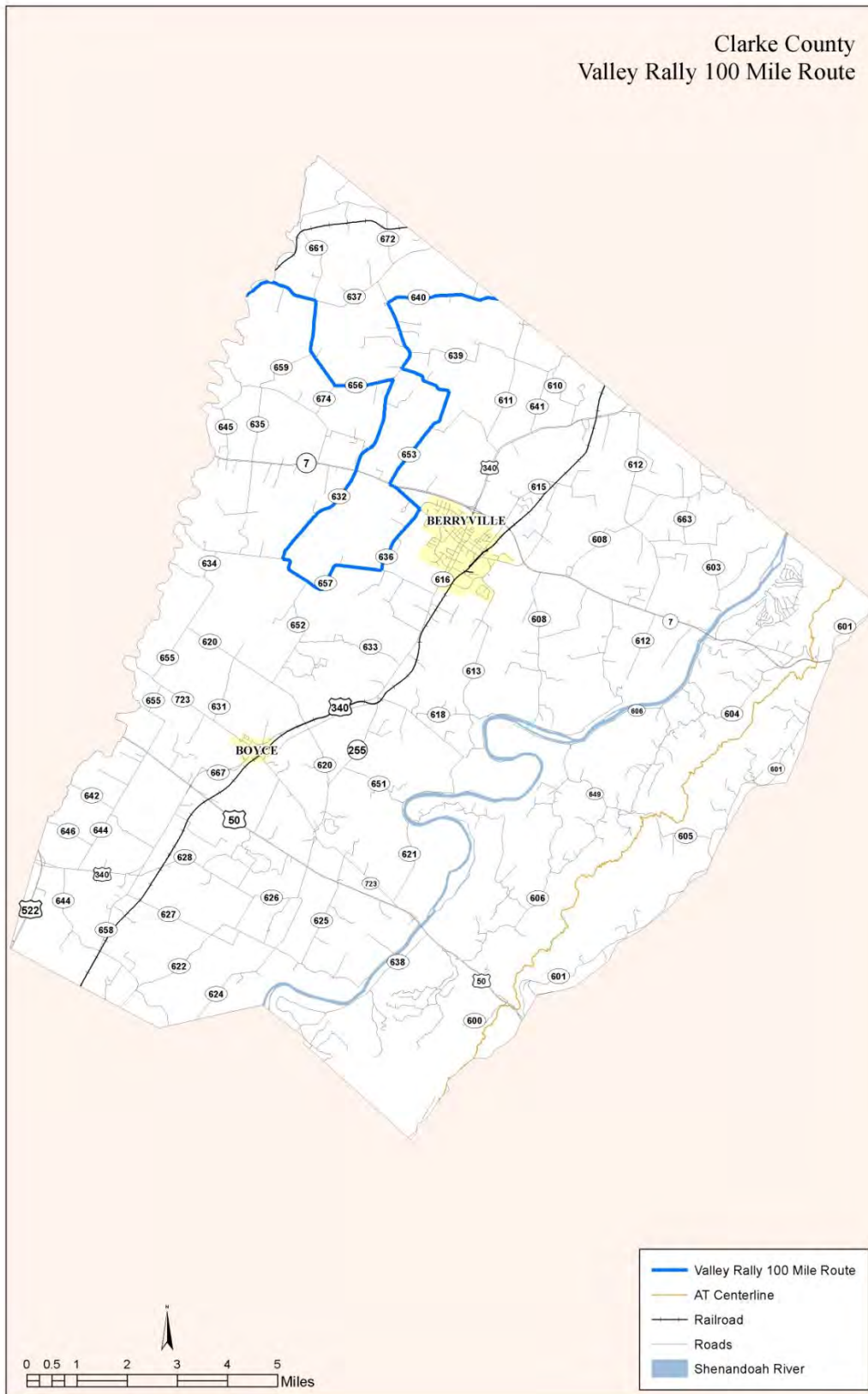
Note: Existing routes in the Town and County were identified through review of local bicycling club routes/rides (Winchester Wheelmen, Potomac Pedalers and Panhandle Pedalers) and VA bicycling guidebooks.





Clarke County  
Rich Rau 30 Mile Route

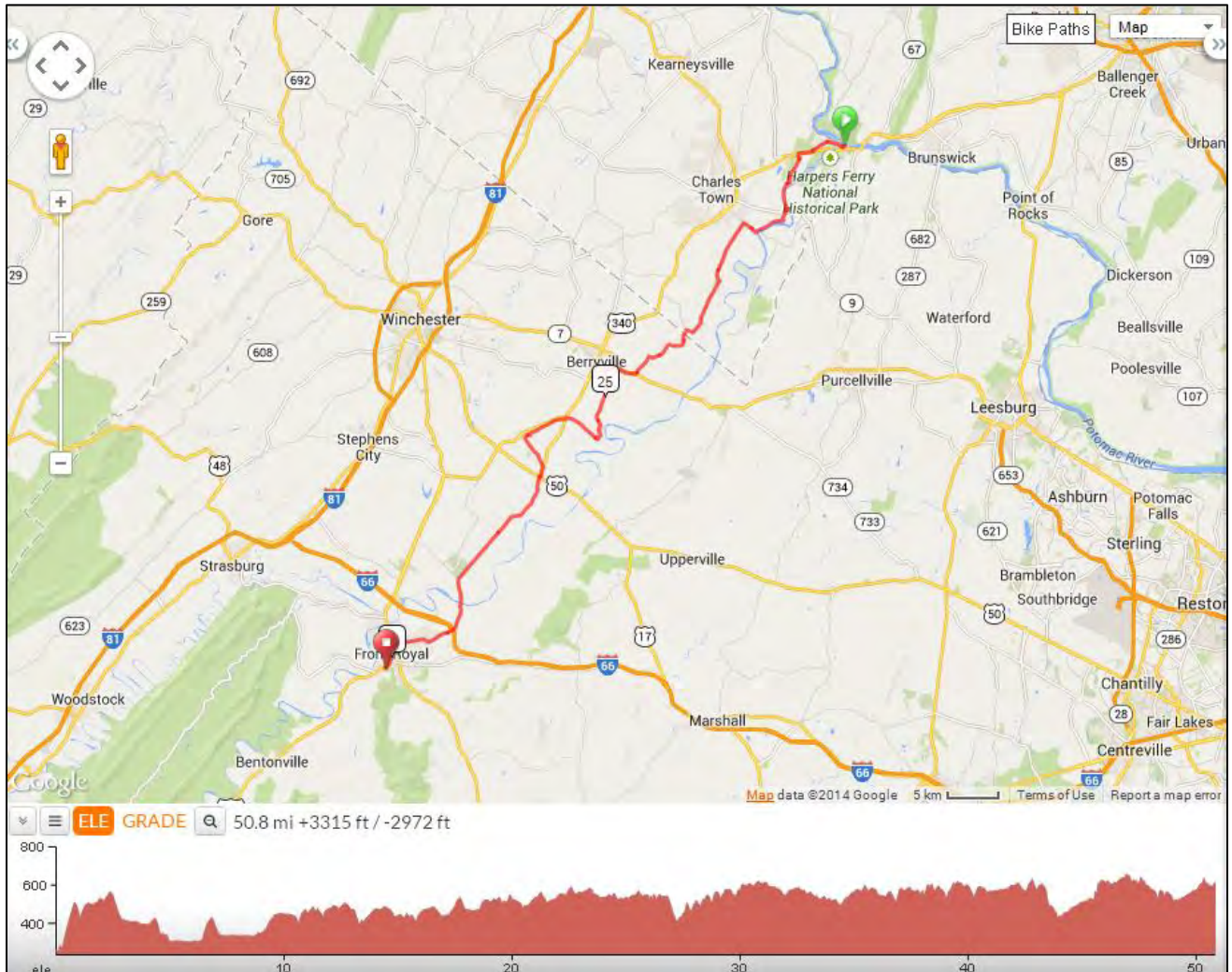




Clarke County  
Winchester Wheelmen Routes



### US Bicycle Route 11-Draft Route (2014)



Source: US Bicycle Route 11 Draft Route, American Bicycling Federation; available from: [www.ridewithgps.com](http://www.ridewithgps.com), 2014

## Appendix C: Best Practices for Bicycle Event Management

Not all bicycling events are alike. Bicycling events may be organized for recreation, competition, or both; and may vary widely in number and skill of participants, and in duration.

Organized **group recreational rides** are run on routes which typically remain open to motor vehicle traffic. Such rides include

- small **weekly club rides** often with fewer than a dozen participants and no advance registration (such as those organized by the Winchester Wheelmen bicycle club). Such informal rides typically assemble at a public or private parking lot at a pre-determined time (often evenings and weekends) and follow a pre-planned route.
- **multi-day tours** run by private tour operators with support vehicles, where participants book a tour package well in advance. Such groups are relatively small, and stay in commercial lodging (motels and bed and breakfasts).
- **cycling weekends** organized typically by bicycle clubs which may reserve a block of motel rooms for a weekend; registrants participate in their choice of daily planned local loop rides. Riders typically number in the dozens, and generally are of more advanced cycling ability. Example: Potomac Pedalers Touring Club's Shenandoah Bike Weekend held in June.
- single or multi-day **charity rides**. Such rides may attract thousands of participants with a wide range of ages and cycling skills and abilities. Typically run by large charitable organizations, these events are intended to raise funds from participants for a cause, most typically for medical research and patient support services. Charity rides require a large starting/ending area with plenty of parking; and will also include rest stops providing food and drink, and toilet facilities. Examples: Bike MS Ride the Riverside (Washington DC area) and Ride Virginia (Richmond to Williamsburg and back).
- **large single-day club rides**. Organized by bicycle clubs, these are typically scheduled well in advance (up to a year), and are annual events requiring pre-registration. They are longer – up to 100 miles or more – and frequently include several shorter options. As with most recreational rides, riders follow a “cue sheet” of turn-by-turn directions; routes are also often marked with small, inconspicuous symbols painted on the roadway. Attracting hundreds and sometimes thousands of cycling enthusiasts, these rides require a large staging area with plenty of parking; and will also include rest stops providing food and drink, and toilet facilities. Clarke County hosts the Potomac Pedalers Touring Club's annual Back Roads Century ride (<http://www.backroadscentury.org>) in late September. For the past several years this event, billed as “one of the premier cycling events in the mid-Atlantic region, and is also considered one of the most beautiful rides in America,” has sold to capacity, 2,300 riders and volunteers.
- the **Bike Virginia Tour**, an annual six-day cycling “festival” in its 27<sup>th</sup> year, attracting more than a thousand riders, organized by the non-profit Bike Virginia to promote bicycling and tourism in the state. The tour varies in location from year to year, and offers riders a variety of route options. Riders must pre-register.
- **Open Streets** events, sometimes called “ciclovias,” are increasingly popular day-long events during which a route or street (typically in a downtown area) is closed to traffic to allow recreational activity in the street, including walking, running, skating and bicycling, by the public with no registration required. Ciclovias are usually run by local government.



**Competitive events** are races involving amateur or professional athletes. Races may be run on a short loop with many laps (called a “criterium” race) or on longer routes with many riders on the road at once, often in a large pack (a “peloton”) and sometimes spread out over a considerable distance; or one rider on the course at a time, racing against the clock (called a “time trial”). These events are intended to draw spectators along the route, which in all instances is closed to general traffic for the duration of the race (rider/team support vehicles may be allowed on the route during the race). Races are typically scheduled and run by USA Cycling (the sport’s governing body) and are sometimes promoted by local governments to generate tourism by attracting spectators.

“**Grand Fondos**” are large, one-day long distance events similar to large club rides except that times are recorded for riders, encouraging some to view it as a race, although the majority of participants may not be competitive athletes. Routes remain open to motor vehicle traffic. No Grand Fondo events are currently scheduled for Clarke County.

Few localities explicitly regulate large bicycling events, and there are no known ordinances or statutes requiring permits for the use of public roads by bicycling events of any size, so long as the route is not closed to traffic. Bike Virginia, operating one of the state’s largest multi-day events for 27 years, has never been required by VDOT or a locality to apply for permits for the riding portion of the event. Required permits are those associated with the use of public facilities such as schools and parks as venues for rest stops, meals, and camping, which also typically requires permits from the health district (Email correspondence with Dr. Kim Perry, Executive Director, Bike Virginia, 7/16/14).

Only one ordinance was discovered in an on-line search. Iowa County, Wisconsin, recently enacted an ordinance regulating bike rides with 100 or more participants. Organizers must apply for a permit addressing event duration, parking and access, sanitary facilities, rest stations, refuse removal, severe weather notification, notification of highway department offices, identification of participants, security, barricades, signage, traffic control, course markings, flagging personnel, compliance with other code provisions, compliance with regulations on all levels and extra-ordinary services (requiring such services to be paid for by ride organizers). Drafted with input from the Wisconsin Bicycle Federation, the ordinance will automatically expire on March 1<sup>st</sup>, 2015, allowing the county and stakeholders to assess its effectiveness ([www.channel3000.com/news/ordinance-in-iowa-county-may-impact-bike-events/25003154](http://www.channel3000.com/news/ordinance-in-iowa-county-may-impact-bike-events/25003154) accessed 7/14/14).

The League of American Bicyclists provides an on-line clearinghouse for its member clubs to post their group ride management practices and safety materials; and provides group liability insurance coverage for clubs. However, there is no standard “best practices” guidance for ride organizers.

The minimization of adverse local impacts by large bicycling events relies largely upon voluntary cooperation and coordination between ride organizers and local officials. Bike Virginia, for example, voluntarily submits its route plans to VDOT (which reviews it for potential conflicts such as planned construction activity) and to local law enforcement and EMS; and has paid to rent VDOT signage and for law enforcement personnel to work at hazardous intersections (Email correspondence with Dr. Kim Perry, Executive Director, Bike Virginia, 7/16/14).

To keep riders on course, Bike Virginia posts temporary directional signs which are promptly removed at the end of the day. Volunteer “route monitors” warn riders of dangerous conditions and behaviors.

To encourage participants to comply with the rules of the road and norms of good behavior, the Potomac Pedalers posts Virginia’s bicycling laws on its Back Roads Century website, and (in response to concerns voiced by Berryville and Clarke County officials and residents) requires registrants to read and acknowledge its Rider Behavior Policy ([www.backroadscentury.org/resources/riderbehaviorpolicy](http://www.backroadscentury.org/resources/riderbehaviorpolicy)).

Volunteers are recruited from among the club's experienced group ride leaders to maintain cohesive groups of riders and to promote safety during the ride.

In general, organizers of large events should

- Check routes well in advance for hazards
- Provide first-aid facilities
- Coordinate with local officials including law enforcement regarding traffic control and motorist information (in advance and on day of event).
- Recruit and train ride marshals/route monitors to keep riders on route, encourage safe riding and to provide first response to incidents
- Provide information to participants on rules of the road, traffic etiquette and safe riding
- Provide comfort facilities
- Ensure that the routes and staging areas are left as they were found.

Motorists do not like to be surprised: drivers should be informed about the event well in advance through print, broadcast, electronic and social media; and, closer to the event date, through portable variable message signs so that they know what to expect, and may plan their travel accordingly.

#### *Appendix D: Bicycle Safety Tips*

Bicycles are subject to the same laws as motor vehicles. Riders of all ages should use the following tips to help ensure safe and legal bike operation (from VA Department of Motor Vehicles, 2014):

- Ride with traffic.
- Stop and look both ways before entering the street.
- If you are a new or inexperienced rider, it's a good idea to stop at all intersections.
- Before turning, use hand signals and look all ways.
- Be a responsible bicyclist - obey all traffic control devices and use proper hand signals.
- Ride defensively - anticipate the actions of other road users and watch for road hazards.
- Pass vehicles with extreme care - turning vehicles may not see you.
- Be aware of motor vehicle blind spots while riding or when stopped at an intersection.
- Walk your bicycle when you get into traffic situations beyond your cycling abilities.
- Park your bicycle so you do not block sidewalks, disabled accesses, building accesses, or emergency drives.

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**NRADC**

**NORTHWESTERN  
REGIONAL ADULT DETENTION CENTER**

141 Fort Collier Road . Winchester, VA 22603

PH: (540) 665-6374

FAX: (540) 665-1615

DATE: AUGUST 25, 2014

DUE: SEPTEMBER 25, 2014

INV #: CLARKE - SALARY INCREASE SHARE 001

CLARKE CO FINANCE DEPARTMENT

ATTENTION: TOM JUDGE

524 WESTWOOD ROAD

BERRYVILLE, VA 22611

**INVOICE TOTAL: \$ 15,245.04**

**EXPENSE FOR FY 2014-2015 SALARY INCREASE**

COMPUTATION: \$292,611.22 X 5.21% =

**\$ 15,245.04**

NOTATIONS:

**PLEASE MAKE CHECKS PAYABLE TO: TREASURER, FREDERICK COUNTY**

C/O NORTHWESTERN REGIONAL ADULT DETENTION CENTER  
141 FORT COLLIER ROAD  
WINCHESTER VA 22603

MEMORANDUM

TO: Board of Supervisors

FR: Thomas Judge, Director of Joint Administrative Services

DT: 9/3/2014

RE: *Recommendation for Two Appropriation Actions*

The following two appropriation actions are recommended:

1. Transfer \$177,828 of budgeted salary and benefit appropriation from the Sheriff to Communications to better reflect the costs of these divisions.
2. Transfer \$7,715 from Personnel Contingency to the Building Inspections Department to cover anticipated costs in that department.
3. Bills and Claims and Expenditure Summary will be provided under separate cover.