#### **SPECIAL EDITION 2018** A Joint Publication of the Lucketts Ruritan Club & Lucketts Community Center Advisory Board

**PART OF THE MISSION** of both the Lucketts Ruritan Club and the Lucketts Community Center Advisory Board (LCCAB) is to provide service for the benefit of our Lucketts area community. The usually quarterly Lucketts News & Notes newsletter is jointly published by these non-profits. This special issue is an endeavor of the Club and LCCAB striving to fulfill that mission without taking a position.

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The "EXTRA" is dedicated to informing residents about our unique US Route 15 corridor sandwiched between the Catoctin Ridge and Potomac River. It describes the area's history, geology and the currently ongoing process to improve a highway once part of the Old Carolina Road, now also known as James Monroe Highway. Loudoun County elected officials, County staff, consultant Kimley-Horn, VDOT, a Board of Supervisor's-appointed Stakeholder's Committee and concerned citizens are all working towards a solution that will ultimately affect our daily lives for many years to come. Route 15, as it bisects our diverse community, serves as our "Main Street". We hope that you will find within these pages,

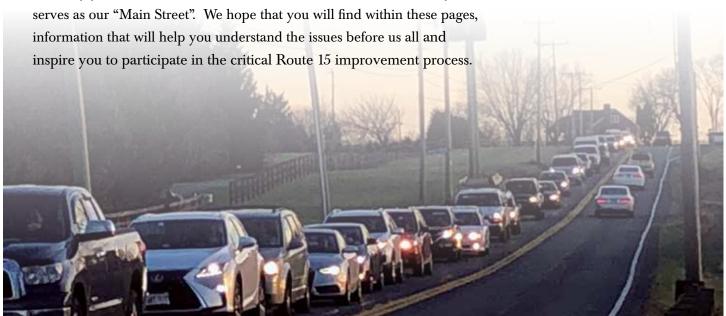
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Download this newsletter at: www.luckettsruritan.org



# Lucketts NEWS & NOTES

#### Historic Designations that Recognize the Route 15 Corridor's Unique Attributes:

#### Catoctin Rural Historic District

A 25,000-acre area from the Catoctin Ridge on the west to the Potomac River on the east and north, and to Leesburg in the south. The designation documents the history and details on hundreds of contributing structures.

#### Mosby Heritage Area

The nonprofit Mosby Heritage Area Association was formed to preserve this unique cultural, historical, and geographical resource through visitor and educational programs.

#### Journey Through Hallowed Ground (JTHG) National Heritage Area

Signed into law by President George W. Bush. The Commonwealth of Virginia, Loudoun County, and the Town of Leesburg all endorsed the designation.

#### A Corridor Byway Management Plan

provides detailed guidance on maintaining the important intrinsic qualities of the byway, and promoting economic development that supports it.

Old School at Lucketts (1916)

1 ......

Lucketts Store (1912)

st Church (1869)

IN BU DI NU

## Lucketts and the Old Carolina Road

ANYONE DRIVING ON ROUTE 15 NORTH of Leesburg takes a journey into the history of Loudoun County-and colonial America. Although the most prominent historic buildings of the Lucketts area date to the nineteenth and early twentieth centuries-the grand manor houses of Rockland (1822); Selma (1902); the small country churches (Christ Church, 1869; Faith Chapel, 1885; Furnace Mountain Presbyterian, 1917); the Limestone School (1873) and the old school at Lucketts (1916); and the Lucketts Store (1912)-the history of Lucketts goes back much further.

Modern Route 15 closely follows the Carolina Road, one of the most important and heavily traveled roads of colonial America (and before that, it was a Native American migration route). Over it went goods, cattle and horses, and Scots-Irish and German migrants from Pennsylvania and Maryland heading for the farmland opening up to settlement in Virginia and points south.

Lucketts itself dates to 1786, when Thomas H. Luckett, who owned extensive tracts of land just across the river in Maryland, bought 182 acres on the Virginia side from his father-in-law (who was the proprietor of Noland's Ferry, the crossing point for the Carolina Road).

Where the Carolina Road intersected the Point of Rocks Turnpike–the crossroads that to this day forms the center of Lucketts–his son built a manor house on the southwest corner. Later, blacksmith's and wheelwright's shops, a gristmill, and a post office joined the small village.

A mile south of Lucketts was another small crossroads, where Spinks Ferry Road branched off: known as Black Swamp for the black oaks that grew in abundance, it too goes back to colonial times. An Episcopal congregation met on the site of present-day Christ Church as early as 1773.

But it is Route 15 itself that most faithfully preserves the earliest history of Lucketts. For all that has changed, the canopy of trees that line the road, the vistas of mountains, woods, and fields, and the springs that provided water to colonialera travelers can still be seen, and through them the past vividly imagined.

Historic Rockland (1822)

## At a Crossroads The Future of US Route 15: Leesburg to the River

CRITICAL DECISIONS on the future of Route 15 will be made this fall by the Loudoun County Board of Supervisors (BOS) to address the problem of increasing congestion and to improve safety on the "main street" of Lucketts.

As early as September 4, the Board of Supervisors will vote on Phase 1 of the Route 15 Project, the area between Battlefield Parkway and Montresor Road. They will vote on how far north to four-lane this section of road and whether to use signals or roundabouts at two key intersections.

On Wednesday, September 26th the County will offer a 90-minute public input session at the Lucketts Community Center asking citizens to review two Concept Designs being considered as the plan for Phase 2–the balance of the road between Montresor Road and the Point of Rocks Bridge. The Supervisors will vote on this northern segment plan before the end of this year.

These votes and the September 26th meeting will be the last significant opportunities for citizens to express their desires and concerns to the County about this project.

#### Background

Safety, access and congestion have been issues on Route 15 for decades. The increasing volumes of commuter traffic in recent years have made the issues much worse. Current daily traffic volume now exceeds the capacity of the current road south of Montresor. Serious traffic accidents have increased. Lack of trafficable shoulders in many places makes enforcement more difficult, accidents more serious, and fire and rescue response problematic. In addition to resident and regional commuter traffic, the growth of the area's tourism industry has increased weekend volume. Secondary roads connected to Route 15 are often used to access popular recreational and tourist destinations. Many residents also rely on these secondary roads, driveways, and business entrances to gain access to the community's "main street."



2

Lucketts NEWS & NOTES



**left** Bypass Route 15 as it merges with King Street (Business Route 15

right Route 15 looking north just beyond White's Ferry Road.



# Lucketts NEWS & NOTES

## The County's Plan A Phased Approach

#### Phase 1: Battlefield Parkway to Montresor Road

The County has been moving on an accelerated timeline for Phase 1 to secure the necessary approvals for final design and construction. Funding of \$81 million is in place for this 3.6 mile segment. A tenative schedule on consideration and vote by the County Board of Supervisors (BOS) for Phase 1 is a **regular meeting 9/4/18, public hearing, 9/12/18, and business meeting** and vote on **9/19/18**. Construction would begin later this year on **Phase 1A**, which will add an additional northbound lane from Battlefield Parkway to Tutt Lane. **Phase 1B**, to follow, would four-lane the entire segment from the King Street/Bypass split to White's Ferry Road and possibly as far north as Montresor Road.

#### Phase 2: White's Ferry or Montresor, and north to the Potomac River

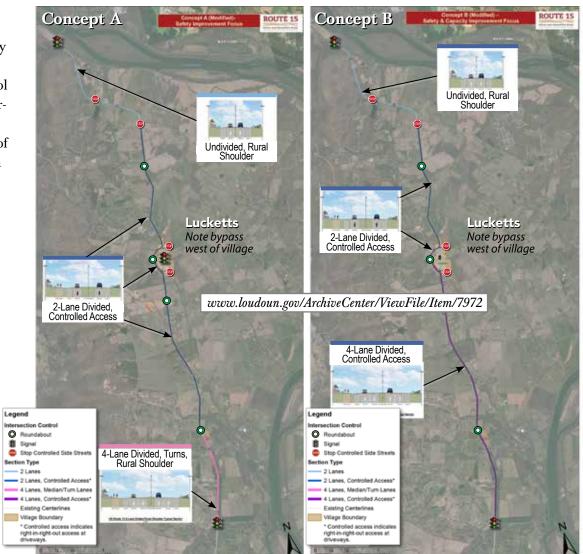
No funding is yet available for this 7.5-mile phase of the Route 15 project. The County is pressing for an early decision (by vote of the Supervisors) on this Phase in the hope of coordinating the overall design of the corridor. Initial Concept Plans A and B for Phase 2 were shared in public meetings held last March. Modified Concepts A and B, detailed here, were updated in July and shared with the Route 15 Stakeholder Committee. The two concepts propose different degrees of road widening and restricted access to achieve greater levels of congestion relief.

#### Concept A-

would four-lane the road from the traffic signal at White's Ferry beyond to a new, realigned intersection of Limestone School and Montresor Road. This fourlane section would have both a median and turn lanes. North of Montresor until the intersection with St. Clair Lane, the road becomes a two-lane, controlled access road with a median to restrict access and improved shoulders to enhance safety.

#### Concept B-

would be four lanes all the way up to Stumptown Road and continue as a two-lane, controlled-access, median divided road to St. Clair Lane with improved shoulders. In this plan, the segment between the traffic signal at White's Ferry Road and the Stumptown roundabout is a controlled access four-lane, median-divided road. Turn lanes are not provided. Below: County Concepts A and B (Modified)



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Both plans retain the signal at Whites Ferry/Raspberry Falls and propose a western bypass around the traffic signal in the Village of Lucketts. Both plans will use the new roundabouts for many current left turns requiring residents to use the new roundabouts to access points on the opposite side of the road. Residents and visitors will have to turn right and reverse direction further along Route 15 to get to their local destinations. Both concepts include a new signal at Lovettsville Road just before the Point of Rocks bridge at this often challenging intersection. Both include the addition of a shared mixed-use path part way (i.e. hike/bike) separated from the highway by a grass divider.

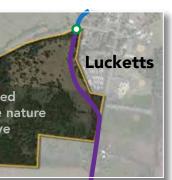
As part of the Concept Design process, County staff and their consulting engineer Kimley Horn, projected increases in traffic volumes through 2040. Plan B anticipates greater congestion relief for a longer period of time than Plan A. Both plans present significant challenges to the daily access patterns of Lucketts residents with the goal of improving regional flow at peak hours.

On **September 26**, citizens will have **90 minutes** to view maps and details outlining Concepts A and B (*see previous page*) and to talk with County staff and representatives from consultant Kimley-Horn. The Loudoun **County Board of Supervisors is planning to vote on these two Concepts in November. Because these Concept plans, if implemented, would profoundly reduce access to Route 15 for Lucketts area residents, it's important to consider the implications that these options present as soon as <b>possible.** Following BOS approval, the approved Concept plan will proceed to the National Capital Region Transportation Planning Board (TPB) for consideration before it can then finally be funded by the Northern Virginia Transportation Authority (NVTA). The TPB may be found at: <u>www.mwcog.org/tpb/</u>. Look for the NVTA here: <u>www.thenovaauthority.org</u>

A full review of the County's information on this important project, as provided to the public, can be found at: <u>www.loudoun.gov/route15</u>, where additional details and earlier design concepts are also available for review.



# Lucketts NEWS & NOTES



**left** A bypass to the west of Lucketts is proposed in both in Concepts A and B, passing through flood plain, behind the Hiway Mobile Court and through a proposed nature preserve.

far left Traffic during peak hours queueing over four miles from the light at Point of Rocks, MD.

# Grade-separated interchanges are planned for the Route 15 Bypass

The Town of Leesburg this year approved the design for two grade-separated interchanges on the Route 15 Bypass, at Fort Evans and Edwards Ferry Roads. In addition, a study is underway for a grade-separated interchange at Battlefield Parkway.



# Safety, Access and Flow...

### and the Alternative Solution

A TRADITIONAL APPROACH TO ALLEVIATING CONGESTION through increased capacity is represented by the County's Phase 1 and Phase 2/Concept A and Concept B in the preceding article. However, along with increasing the capacity come associated costs. Roads are expensive, and in more ways than one. There are not just economic, but human, social, environmental and aesthetic costs to consider as well. Requiring millions of dollars and taking

*"Evidence from around the"* world teaches us that wider and faster roads actually make people less safe." years to construct, a divided highway can decrease local access, consume valuable real estate, and encourage increased travel speeds raising safety concerns. An alternative to more pavement and signalized intersections is a context-sensitive, low-impact approach employing a corridor-long balance of the "holy trinity" of good road design-safety, access, and flow.

Many citizens who reviewed the initial versions of the Phase 2 plans during the March public meetings organized into an advocacy group that is urging

and faster roads actually make people less safe."

"Loudoun County residents are ready for Route 15 to change. Today, there

is a lot of traffic congestion, and safety is an issue as well. Conventional

traffic engineering wisdom says that the solution is to widen Route 15.

But while that may seem like it might solve these problems, it would not:

A wider road would beget heavier cut-through traffic from Maryland and

"Fortunately, it is not as though the only option is to widen Route 15 or do

nothing and continue to suffer with the problems that exist today. There is

a better way to accomplish the objectives of moving traffic more effectively

and making Route 15 safer for all who use it. Rather than making the road wider, use thoughtful design to manage traffic flow strategically and

in the best short- and long-term interests of the County. The result of a

traffic-calmed Route 15 will be a road where motorists can access the road

safely and easily and Loudoun County's rural community character and

more congestion. Evidence from around the world teaches us that wider

County Supervisors and staff to consider a different approach to planned Route 15 corridor improvements. The goal would again be to reduce congestion, but also improve safety while still retaining current levels of local residential and business access. It would preserve the rural character of the area as well. To this end they engaged the engineering and design firm Toole Design Group (www.tooledesign.com) and one of its engineers, Ian Lockwood. Lockwood is recognized nationally for his leadership in transportation solutions. As part of this process, he submitted a white paper to the Board of Supervisors this past June. In it he states:

> **below** Aerial view looking west from one in a series of roundabouts at the Gilbert's Corner system









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These concepts were used in the design of the intersection of Route 50 and Route 15 at Gilberts Corner and will be used in the upcoming improvements to Route 9 through Hillsboro. Congestion, safety, and truck traffic were adversely affecting Gilbert's Corner at the intersection of Routes 15 and 50. Citizens engaged Lockwood to explore a less intrusive alternative after reviewing VDOT's plans. Along with citizens' involvement and vision, he turned to a traffic calming approach to achieve their goals with a series of roundabouts, eliminating the historic backups at the former traffic signal without adding new lanes. The award-winning project was so successful that it was incorporated into the 2001 County comprehensive plan (see quote):

Most recently in Loudoun, Lockwood designed the \$12 million soon-to-be-built Hillsboro Route 9 Traffic Calming Project. As on Route 50, it would address congestion, safety, and access in a way that preserves the community and the vitality of rural and tourism economy while protecting the resources that enhance our quality of life.

On June 22, Mr. Lockwood met with Supervisors Geary Higgins and Kristen Umstattd, aides to Chair Phyllis Randall and County transportation staff and their consultants on the Route 15 project, Kimley-Horn. They agreed to consider this alternative approach. Ian Lockwood will present an alternative concept for solving the congestion issues for Route 15's Phase 1 project-from Battlefield Parkway to Whites Ferry Road-to the County and the public in the very near future.

"I am a strong believer of roundabouts in managing access at intersections and see numerous opportunities to use this tool on the Route 15 corridor."

> Dennis Morrison, P.E. Former Administrator. VDOT Northern District

far left Traffic calming in Lucketts concept (2006) by lan Lockwood. Note Hiway Mobile Home Community on the right

center Imagined 2-lane roundabout at White's Ferry Road. Addition of 'slip lanes' could allow Raspberry Falls residents and Ferry traffic ease of access without entering the roundbout.

left Concept of the Route 9 Traffic Calming Project in Hillsboro. Construction has begun.

US Route 15 Leesburg North Conceptual Plan

"The County fully supports the U.S. Route 50 (John Mosby *Highway) traffic calming* project ... as a national model in rural traffic calming. A goal of the project is to serve as a model for similar projects in other areas of the County as a means of providing safer communities at cost savings. Traffic calming is in keeping with the goal of preserving the scenic and historic value of the Rural Policy Area."

> Current Loudoun County Comprehensive Plan

Roundabout at St. Clair Lane

Round-

about

at 662

Roundabout/

Realignment at

New Valley Church

and St. Clair Lane

A Modified lan Lockwood **Context-Sensitive** Lucketts Plan (2006)

Roundabout

at Lovettsville Road and Bridge

Roundabout/ Realignment at Montresor and Limestone School Roads

right Traffic calming concept featuring realignment of intersections with roundabouts, 2- lane through traffic with widened, stabilized shoulders for emergency refuge

> Traffic calming designs create an environment in which safe driving behavior is encouraged. An added benefit is that designs cost less to implement, retain access for local businesses and residents are minimally intrusive to communities while being faster to build

Whites Ferry/ Raspberry Falls Roundabout

Big/Little Springs: Environment Concerr

> N. King St./Bus. Rt.15 Roundabout

> > Battlefield Parkway Overpass

Rust Cave

Conservation

Area

# about the Route 15 Project



How will people access private driveways and local businesses where the road is widened to 4 lanes with a divided median?

**Karst:** a geologic term referring to landscape topography underlain by limestone, that has been eroded by dissolution, producing ridges, towers, fissures, sinkholes, and other characteristic landforms.

#### **O.** What initiated Phases 1 and 2 of this project and why are we looking at concept designs now?

**A**. In 2016 the County ordered a congestion study of Route 15 north of Leesburg. Phase 1, from Battlefield Parkway to Tutt Lane. It has received funding to Montresor Road. The Board of Supervisors then authorized County staff to study the remainder of the highway, from Montresor to the Potomac River Bridge (Phase 2).

#### **O.** How were the plans developed and who was involved?

A. County Supervisors and staff, VDOT, consulting engineers from Kimley-Horn, and a 19-member Stakeholders Committee including representatives from the Catoctin and Leesburg Districts have been working on these concepts. Two public surveys were conducted.

#### **Q.** What steps does the County still have to take before a final design for Phase 2 is approved?

**A.** Any additional 4-laning plans will require another amendment of the County's Comprehensive Plan before funding can be requested. Funding requests must then compete with other proposed projects. An assessment of environmental impact (floodplains and karst-see side bar) and impact on historic resources is required by state and federal authorities; mitigation of adverse impacts must be achieved.

#### $\mathbf{O}$ . How will people access private driveways and local businesses where the road is widened to 4 lanes with a divided median?

A. Generally, drivers will not be able to turn left onto or off of the highway except at a few intersecting roads. Drivers will have to turn right and drive to the next major intersection to turn around. Some other breaks in the median for U-turns may be made.

#### **Q.** Will there be opportunities for citizen input on the final designs of Phases 1 and 2?

**A.** Yes. Citizens may provide input continuously through direct communication with the County Board of Supervisors. There will be other public input sessions as part of the environmental and historic resource impact of the final design.

#### **Q.** Why is Route 15 a National Scenic Byway and what does that mean?

**A.** Route 15 has been a Virginia Byway for decades, and was designated a National Scenic Byway in 2008 as part of the Journey Through Hallowed Ground National Heritage Area, signed into law by President George W. Bush. "The National Scenic Byways program," says Anaise Berry, president of the National Scenic Byways Foundation, "is an economic development program. It's not just a matter of placing signs along the road. It creates jobs and attracts small business."

#### **O.** Will the road still be considered a Scenic Byway after any of these options are approved?

A. For designation as a National Scenic Byway a road must have one of six intrinsic qualities: scenic, natural, historic, cultural, archeological, or recreational. A Scenic Byway's corridor management plan "should provide for the conservation and enhancement of the byway's intrinsic qualities as well as the promotion of tourism and economic development". Significant degradation of any these intrinsic qualities may threaten its Scenic Byway status.

#### **O.** How long will it take for the County to actually build one of these concepts once a final design is approved?

A. As per the minutes of the Route 15 Safety and Opertional Study Stakeholder Meeting #6, July 16, 2018, page 3:

"The design of the project will take anywhere from 2 to 3 years to complete. Funding for design was allocated in FY 2019; the County's fiscal year began on July 1st, 2018. The right of way and utility relocation phase of the project is largely based on the negotiations with the affected property owners and takes anywhere from 1 to 2 years to complete. Upon completion of design and right of way acquisition, construction can begin and it is estimated to take anywhere between 2 to 3 years to complete the construction. The earliest construction could be awarded would be the summer of 2022, with the earliest possible completion date in summer of 2024. The long range could be the start of construction in 2024, with a completion date in 2027."

#### **Q.** Why is a citizen group working on an alternate concept and who is doing the work for them?

**A.** Local citizens have worked at least since the mid 1980s on shaping Route 15 road improvements. VDOT's 1998 study proposed widening and straightening Route 15 (this design was built in 2001 up to White's Ferry Road), but the Loudoun Transportation Director cautioned that such a design north of White's Ferry would result in higher speeds and a more dangerous road. Citizens asked that a safer, less intrusive and a cheaper traffic calming approach be considered. (Such a traffic calming design on U.S. 50 in Loudoun had then begun construction.) They have engaged the designer of that project and the Hillsboro Traffic Calming Project to produce an alternative design for Phase 1 (and hope to engage him for an entire corridor redesign).

#### Q. Why didn't the County's consultant take a traffic-calming approach in developing these concepts?

**A.** The County's applications to regional funding entities have focused solely on traditional solutions to congestion by increasing capacity. The County's applications state that its goals are to attract traffic from the Washington Beltway, more freight traffic from I-81, and more commuter traffic from Maryland. Its draft 2040 Comprehensive Plan states that it plans that the Route 15 National Scenic Byway to become an "expressway" like Route 7 in Sterling.\*

#### Q. How would a traffic calming solution compare in cost to the County's two options for the 8 miles of Phase 2?

**A**. Estimates are not yet available for Phase 2. The cost estimate for 4-laning just the 3.6-mile segment from Battlefield Parkway to Montresor Road is \$81 million. A traffic calming approach involves significanly less construction and acquisition of right-of-way. A fully developed concept plan for a traffic calming solution would be required in order for the County to prepare a comparison estimate. Concept B would be the most expensive because it involves the most 4-laning.

\*Envision Loudoun: Our County, Our Future, Draft Loudoun 2040 General Plan, May 7, 2018, pg. 3-16.

Application for BUILD 2018 Planning Grant, U.S. Route 15 (White's Ferry Road to the Maryland State Line). Submitted by Loudoun County Department of Transportation & Capital Infrastructure. Prepared for the U.S. Department of Transportation., pp. 19-23.

#### Where will the funds come from to build Phases 1 and 2 once approved?

Funding for Phase 1 of this project (from Battlefield Parkway to Montresor Road) came from local, regional, state, and federal sources. Phase 2 funding will be secured by similar competitive funding processes.

Where can additional information about the County's project be found?

At Loudoun.gov/route15

What is the role of the state and federal government in this process?

The Commonwealth of Virginia is a partner through the entire process. Federal agencies have the primary role of protecting the environment and preserving historic resources.

How can I find out more information about a traffic calming alternative?

Visit:

• pecva.org/rt15north,

or local community Facebook pages for announcements about the traffic calming alternative for Route 15:

- Route 15 Project/ Catoctin Coalition
- · Ladies of Lucketts
- Lucketts Business Collaborative
- Lucketts Life



## Uncommon Ground, Common Concern

Karst, clean water and the Limestone **Overlay** District

below The left map shows the service area of Loudoun Water. The orange area serves Eastern Loudoun with water from water treatment facilities. The areas in green show the areas served by community-based groundwater well systems. The areas in white are all areas of the county where homes and businesses rely on water from privately maintained wells. Whether they use a private well or a community well, residents of Lucketts share uncommon ground as well as a common concern for maintaining their supply of clean water.

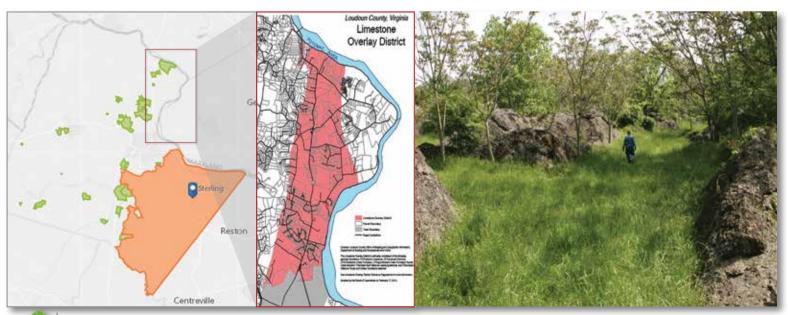
center the area in pink shows the extent of the Limestone Overlay District (LOD)

right Large rock outcroppings seen punctuating fields in the Limestone Overlay District WHATEVER SOLUTION the Loudoun County government chooses for Route 15, it will put them between a rock and a hard place-the karst geology/topology that spreads cross the entire length of Route 15 and through Leesburg. You can see the signs of it as you drive along the highway: many oddly shaped rock outcroppings arising in the middle of fields on either side of Route 15. What you may not see are the springs, sinkholes, and caverns formed when groundwater dissolves the underlying limestone.

To early settlers of the Lucketts area, the limestone was a boon. It was quarried for stone and burned to produce agricultural lime. (A large three-hole lime kiln on St. Clair Lane can still be seen.) Hand-dug wells or springs served residents' water needs; cisterns were used for wastewater.

Driving north along King Street, there is evidence of how water can flow easily in and out of this geology. At the Smart's Mill traffic signal, you encounter a frequently repaired patch of asphalt that covers a sinkhole. Continuing north onto Route 15 you pass by Big Spring, where one of Loudoun's strongest flowing springs emerges from the limestone. A few hundred feet north of the Whites Ferry traffic light, there is a visible opening to a cavern, not 10 feet off of the right shoulder. The opening is big enough to climb into. When tested for depth, a 16-foot survey rod could not reach the bottom. [Do not investigate for yourself; the cave is on private property.] Temple Hall Farm has outcrops that "breathe" in the winter from warm air exiting the holes around them. There once was a large pond at Temple Hall Farm, but it disappeared overnight when a sinkhole opened up at its bottom.

These karst features make it easy for groundwater to flow to the surface and for surface water to flow directly into streams of groundwater below that are tapped for wells. This unchecked movement of surface water increases the potential for groundwater pollution and well contamination. Pollution can come from excess fertilizers, herbicides, insecticides, oil, grease, bacteria, and nutrients from pet and livestock waste, as well as failing septic systems. In Lucketts, protecting groundwater is important to everyone, since all water systems (both community-based Loudoun water and private wells) rely on groundwater (not reservoirs) for supply.



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Most of the old hand-dug wells and wastewater cisterns have been abandoned and rural residents now have the common setup of a drilled well and septic system with a tank, distribution box, and drain field pipes. The drain field allows the wastewater to soak into the soil and naturally cleanse before reaching the groundwater. Locating these too close to hydric (waterholding) soils, streams, or limestone outcrops may allow wastewater to reach groundwater without completing the natural cleaning process performed by layers of soil.

In the newer large housing developments, community well and wastewater treatment facilities have been constructed, such as the ones Loudoun Water maintains at Village Green and Selma Estates.

Altering the topography (by grading or excavation) can change where and how fast surface water enters the groundwater system. Following repeated issues with sinkholes and drinking water contamination, in 2010 the county designated the region as the Limestone Overlay District, with special rules requiring setbacks and other precau tions to reduce the risk of these problems to the 1.200 landowners within its boundaries.

In June 2017 two sinkholes opened during the construction of a parking garage for the Loudoun County courts complex in downtown Leesburg. They have set the project back by about five months and raised the cost by more than \$5 million. Even prior testing can't always predict what will happen in the porous karst geography we live on top of.

The county has mapped (www.loudoun.gov/DocumentCenter/Home/View/4770) about 100 known sinkholes in the karst area from Leesburg to the river, some as large as 30 feet in diameter. More information about karst is available on the county's website at: www.loudoun.gov/index.aspx?NID=1455.

"The LOD conservatively sets the boundaries for a leaky groundwater-surface water system that discharges within short distances and quick travel times to the Potomac River."

> Wayne Newell, PhD USGS Geologist (retired)







top A cavern opening less than 7 feet from the edge of Route 15 at White's Ferry Road above Limestone outcroppings at Temple Hall in proximity to a pond that emptied overnight when a sinkhole opened at it's bottom.

right A close-up of our limestone conglomerate

Lucketts NEWS & NOTES

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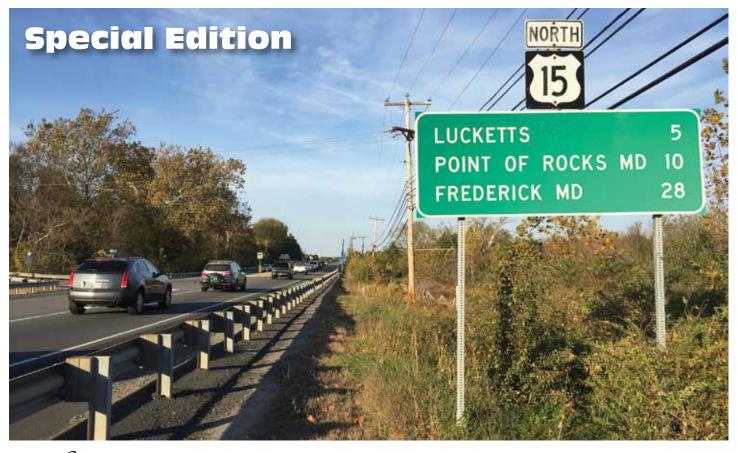
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#### Special Edition 2018



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