PROJECT IDENTIFICATION

ROCKBRIDGE COUNTY

THE GLADES AT NATURAL BRIDGE STATION DRAINAGE IMPROVEMENTS — ROUTE 130

Location Description
37.62243, -79.5054

"The Glades" — a low-lying, naturally flat, poorly drained corridor along State Route 130 at Natural Bridge Station extending approximately 0.75–1 mile; terminates near a natural drainage way discharging to the James River; naturally swampy soils with low permeability and high-water table; multiple private driveway culvert crossings along the corridor.

Project Issue
Stormwater drainage — flat, swampy low-lying area collects runoff from a broad contributing area with no adequate outlet. Insufficient ditch depth and grade, undersized and level ditch culverts, and numerous private driveway culverts (some as small as 12 inches) restrict longitudinal drainage flow. Yard flooding reaches near the edges of homes and State Route 130 is periodically covered with ponding water creating a vehicle safety concern. Adequate grade is available if the system were properly designed and unobstructed (approximately 7–8 ft of elevation drop over ~1 mile).

Project Purpose
Improve stormwater drainage along the Glades corridor to reduce chronic standing water in residential yards and periodic road ponding on State Route 130 at Natural Bridge Station.

Identified Constraints

a. Infrastructure – overhead power lines, sanitary sewer located along Route 130
b. VDOT coordination (own/maintain State Route 130 and ROW, roadside ditch or culvert work requires coordination)

Additional Information Needed

a. Location of utilities
b. Stormwater infrastructure survey and mapping
c. H&H analysis

Project Proposal and Planning-Level Cost Estimate
Higher ground between State Route 130 and the James River to the south push all runoff along this section of State Route 130 to the north and east before meeting a tributary that carries flow south to the James River. Ditches and culverts along State Route 130 are intended to contain and

convey stormwater along the very low slopes of this path, but the ditches are poorly defined or partially obstructed in several places along the approximately 0.75 mile stretch. Several culvert blockages were noted on a WSSI site visit on 7/13/2026 (**Figure 1**, **Figure 2**, and **Figure 3**) at the intersection of State Route 130 and Douglas Way, which was noted by County staff as part of the area experiencing the most flooding impacts. These blockages compound the already low-slope flow paths and often poorly defined ditches (**Figure 4**).

A full survey and assessment of ditch and culvert locations and conditions in the project area (**Figure 5**) will guide a preliminary engineering report (PER) to determine the extent of ditch re-establishment necessary. An evaluation of the adequacy of culverts (once restored to full capacity) should be included as well. No visible structural issues with culverts were noted on WSSI's preliminary site visit, aside from blockages, but a more detailed survey is necessary to verify that the existing culverts, including multiple driveway culverts, are in good working condition as assumed here.

Clearing of blocked culverts and re-establishment of ditches along this approximately 0.75 mile stretch of State Route 130 should be coordinated with VDOT, as they are the agency responsible for maintenance of State Route 130 and its drainage infrastructure.



Figure 1. Partially blocked culvert at intersection of State Route 130 and Douglas Way. Photo taken facing northeast.



Figure 2. Fully blocked culvert at intersection of State Route 130 and Douglas Way. Photo taken facing north.



Figure 3. Partially blocked culvert at intersection of State Route 130 and Douglas Way. Photo taken facing southeast.



Figure 4. Lack of positive drainage in gas station frontage and adjacent residence.

ITEM/DESCRIPTION	QTY	UNIT	UNIT COST	ITEM SUB-TOTAL	EXTENDED SUB-TOTAL
Survey and PER					**$55,000**
Access and Erosion/Sediment Control					**$36,160**
Ditch Re-establishment					**$375,800**
Survey and As-Built	1	LS	$30,000	$30,000	
Mobilization	1	LS	$9,000	$9,000	
Ditch Re-establishment	3960	LF	$40	$316,800	
Culvert Blockage Clearing	2	EA	$10,000	$20,000	
Contingency (30%)					**$140,088**
TOTAL ESTIMATED BUDGET					**$607,048**

The table above presents estimated costs for an existing conditions survey and a preliminary engineering report to assess the current condition of the stormwater system and identify constrictions and then re-establish positive drainage along ditch lines and clear identified blockages. The ditch revitalization access and ESC incorporates a set-aside for traffic control.

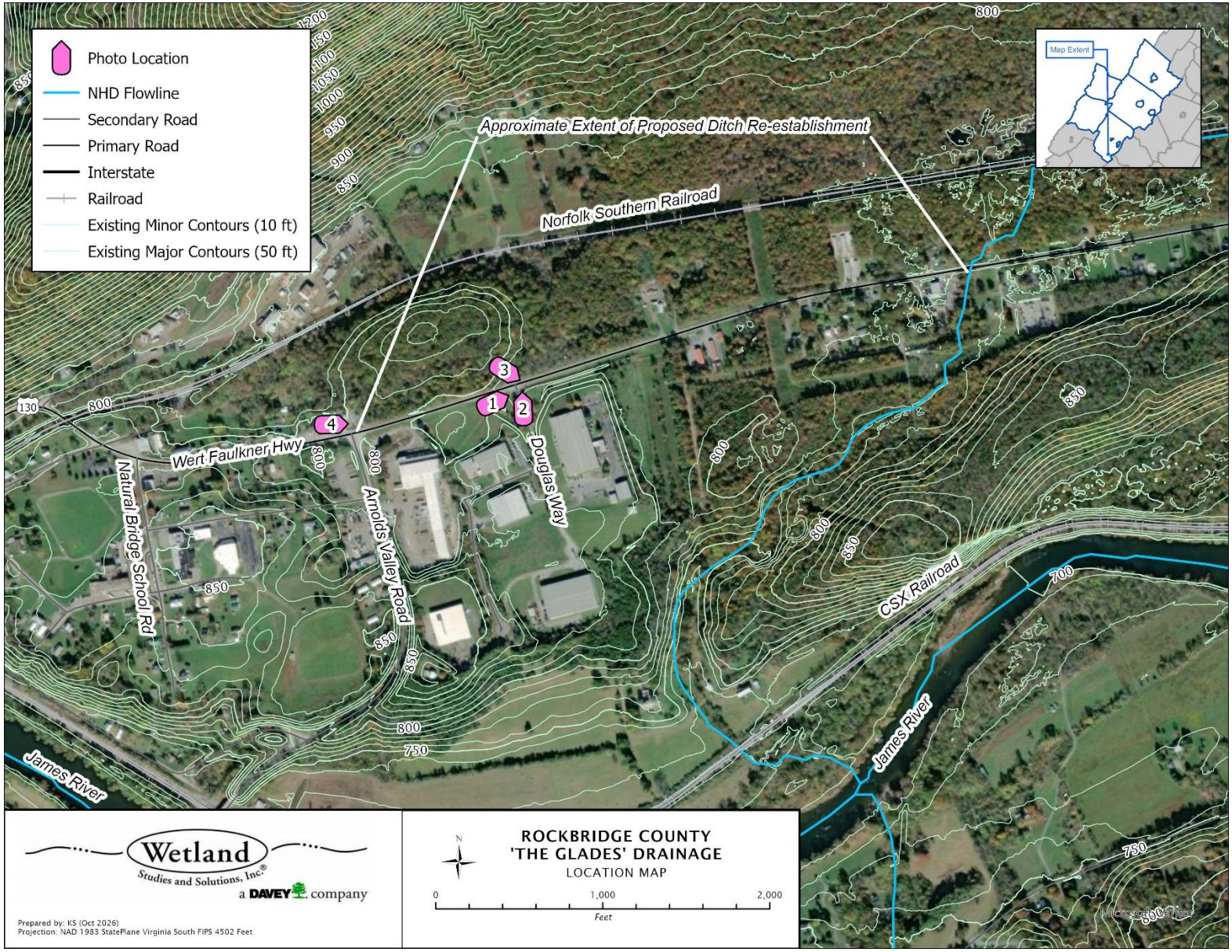

Figure 5. Location map of the Glades area experiencing flooding due to poor drainage.

Possible Alternatives and Additional Considerations

Based on the results of the initial survey, culverts should be assessed to determine condition and any replacements needed. Additionally, there is an open lawn at the corner of State Route 130 and Douglas Way, which could be evaluated for the development of a regional BMP to address some of the stormwater related issues.

TMDL/MS4 Considerations

The project site is part of an approved TMDL for PCBs in the James River. Stormwater infrastructure improvements in the area are unlikely to impact this pollutant of concern.

Assumptions

The length of the project is estimated at 0.75 miles, per input from County staff. Aside from noted blockages, culverts are assumed in good working condition for the purposes of the estimated budget.

Recommended Next Steps

Coordinate culvert clearing with VDOT and then discuss next steps and division of responsibility.

References

VT BSE. 2025. PCB Total Maximum Daily Load Development for the Middle and Upper James River, Maury River, and Jackson River Watersheds.

PROJECT IDENTIFICATION

ROCKBRIDGE COUNTY

WATERSHED-SCALE COORDINATION — LAKE MERRIWEATHER AND LITTLE CALFPASTURE RIVER

Location Description

37.961854, -79.457858

Lake Merriweather / Little Calfpasture River watershed, largely within Augusta County.

Project Issue

Potential flood impacts related to Goshen Dam and Lake Merriweather —the Goshen Dam is considered a high hazard dam and a breach event would cause potential damage and loss of life downstream. Sediment accumulation in the lake limits its utility in flood control, reduces its recreational benefits (primary purpose of construction in 1966), and increases and complicates required maintenance, in addition to impacting the downstream aquatic environment.

Project Purpose

Reduce potential flood impacts related to Lake Merriweather.

Identified Constraints

a. Project requires multi-party coordination between Rockbridge County, Augusta County, the Boy Scouts of America (BSA, responsible party for the dam), and private landowners, and both Natural Bridge and Headwaters Soil and Water Conservation Districts.

Additional Information Needed

a. Status of DEQ Water Quality Improvement Plan implementation actions
b. Current sediment loading rate to the lake
c. Status of dredging and other maintenance plans

Project Proposal and Planning-Level Cost Estimate

The current status of the DEQ Water Quality Improvement Plan implementation should first be understood to determine where resources are already being allocated and where additional effort would be most impactful. Additional efforts to reduce the sediment load to the lake would be expected to incrementally increase its ability to serve as a flood control tool, and so implementation of efforts including cattle exclusion fencing and riparian buffer establishment noted in the 2018 DEQ Water Quality Improvement Plan would be beneficial. Coordination with DEQ in these efforts could also open up additional funding avenues for interested landowners, as the Little Calfpasture River watershed is eligible for additional funding sources for water quality improvement efforts.

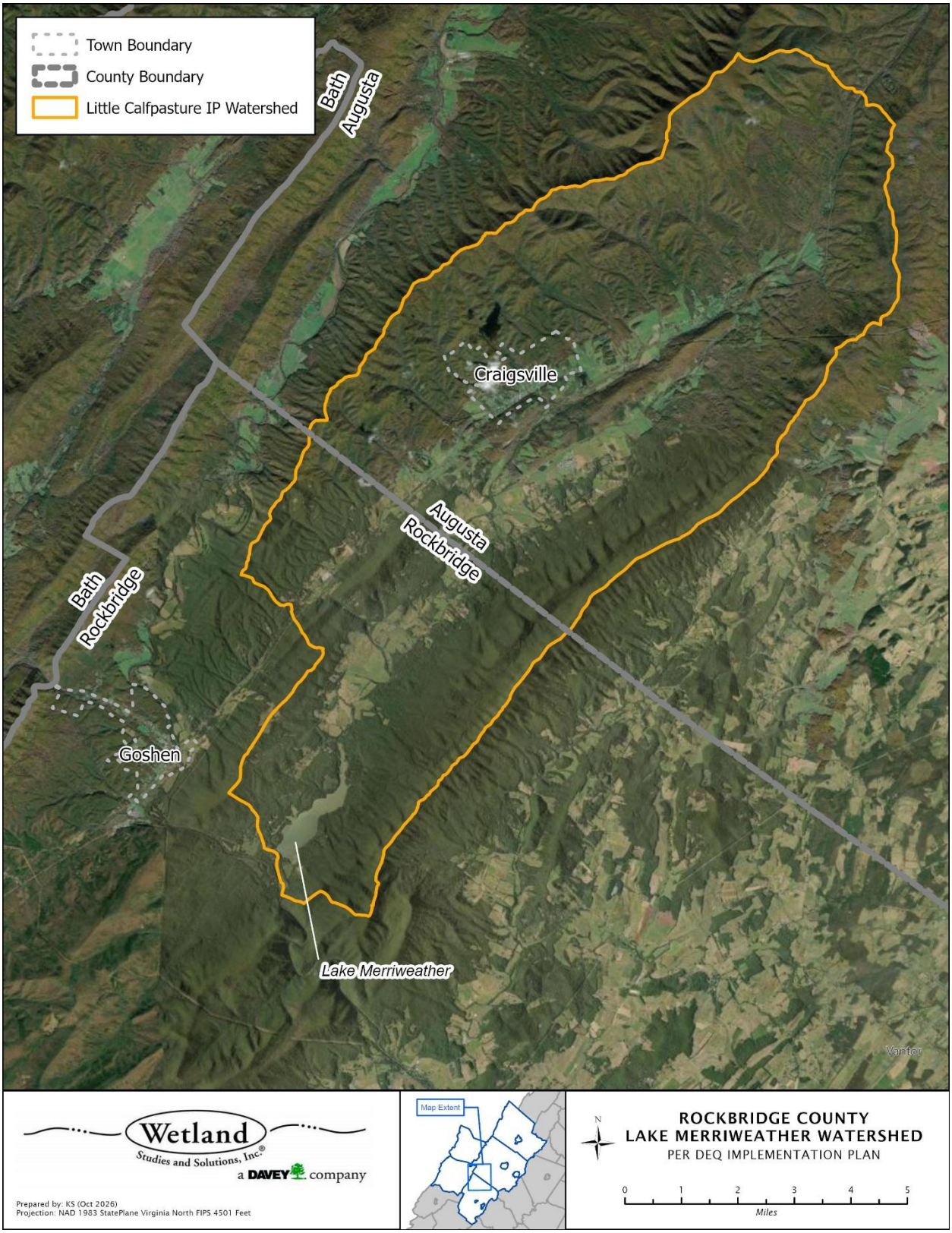

Figure 1. Drainage area to Lake Merriweather per the 2018 Implementation Plan.

Currently, emergency alerts can be disseminated via the County's Rockbridge Alert system. Interest in and utility of a siren-based alert system could be evaluated to supplement the Rockbridge Alert system in case of an imminent dam breach or other emergency event. The County could also encourage the BSA and other involved stakeholders to participate in an emergency plan table-top exercise of a hypothetical dam emergency, if that is not already a regular occurrence.

Estimation of costs associated with construction-phase efforts will require additional study and scoping.

Possible Alternatives and Additional Considerations

Should the current or future owners of the dam show interest in partial or full removal of the structure, multiple different project funding sources could be explored, including DCR's Dam Safety, Flood Prevention and Protection Assistance Fund, the Community Flood Preparedness Fund (CFPF, also administered by DCR), and potentially funding sources from DEQ related to water quality.

TMDL/MS4 Considerations

There is an approved TMDL for sediment to address a benthic impairment on the Little Calfpasture River downstream of Lake Merriweather. As noted above, a water quality improvement plan has also been developed to guide the implementation of the TMDL, and a portion of that plan has already been implemented. While Rockbridge County is not an MS4 permittee and as such is not obligated to take action towards local TMDL goals, the County and any interested landowners could benefit from the additional funding sources that the approved water quality plans make available.

Assumptions

Watershed (via StreamStats 10/12/2026) is 82.7 square miles at Goshen Dam.

Recommended Next Steps

Reach out to DEQ to determine the current status of TMDL implementation projects in the watershed. Reach out to BSA and other stakeholders regarding an emergency plan table-top exercise and interest in a local siren-based alert system.

References

James Madison University. 2010. Total Maximum Daily Load Development to Address a Benthic Impairment in the Little Calfpasture River, Rockbridge County, Virginia.

VA DEQ. 2018. Little Calfpasture River Water Quality Improvement Plan