PROJECT CONCEPT
TOWN OF ELKTON
DOWNTOWN TRIANGLE STORMWATER DRAINAGE

Location Description
38.40835, -78.62224
Downtown triangle east of the railroad and along West Spotswood Trail near the town pavilion.

Project Purpose
Install/upgrade stormwater capture and conveyance infrastructure to mitigate flooding impacts on existing businesses and roads.

Additional Information Needed
- Presence and location of existing utilities
- Existing stormwater infrastructure capacity calculations
- Discuss possibility of partnering with VDOT to fund if CFPF monies can be made available
- Easements

Background
Currently, stormwater flows along the road surface, collecting on Warren Street and Ashby Avenue and joining flow down West Spotswood Avenue, concentrating in the downtown triangle area east of the railroad tracks along West Spotswood Trail (US Route 33) (**Figure 1**; **Figure 2**). Water pooling in the intersection of West Spotswood Avenue and US Route 33 poses a traffic safety hazard. Stormwater also encroaches on nearby businesses, creating a hazard for pedestrians and business owners. There is some existing stormwater conveyance infrastructure along US Route 33, but either the inlets or overall capacity are inadequate. It is also possible that backwater from the eventual outlet of the stormwater system to Elk Run has impacted flooding in this corridor, as the intersection of West Spotswood Avenue and US Route 33 is partially in the FEMA special flood hazard area (1% annual chance). A preliminary engineering review has been conducted previously by a town-retained engineer which indicated that the downstream stormwater infrastructure has the capacity to convey the additional flow volume from this area. This information should be reviewed and corroborated as part of the design study. There is currently a detention/bioretention pond at the Town-owned Downtown Marketplace (**Figure 3**); however, this is then routed directly onto Warren Street, which leads to West Spotswood Avenue.

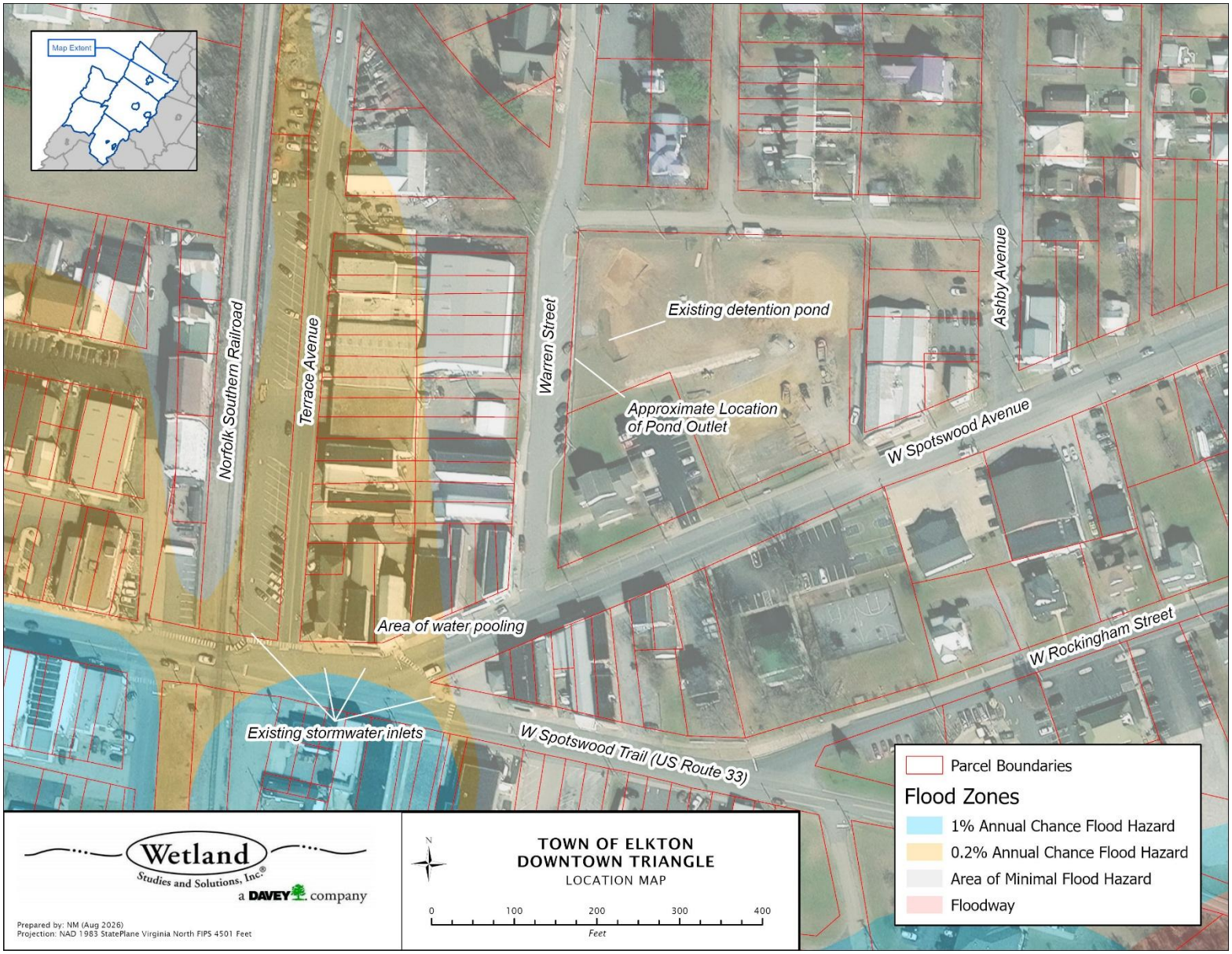


Figure 1. Map of Elkton in proximity to Ashby Avenue and Warren Street.



Figure 2. Photograph of West Spotswood Avenue facing southwest displaying some of the businesses experiencing the most severe flooding.



Figure 3. Photograph facing north along Warren Street. Existing detention/bioretention pond at the Downtown Marketplace, out of frame to far right, outfalls onto the road along the roadside parking visible at far right.

Project Proposal and Planning-Level Cost Estimate

Unless adequate documentation of existing stormwater infrastructure design can be acquired from VDOT and/or prior review, a stormwater infrastructure survey and an H&H study would be necessary to first analyze the capacity of the current stormwater system. Adequate conveyance capacity along these roadways must be confirmed, as this is an underlying assumption of the proposed conceptual plan. This study will gather information on the current drainage characteristics along US Route 33 and inform design decisions such as inlet sizing and placement.

If existing stormwater infrastructure has adequate capacity, additional inlets and connecting infrastructure are proposed to be installed (**Figure 4**). Curb inlets and connecting stormwater lines should be installed along West Spotswood Avenue, Warren Street, and Ashby Avenue, connecting to the existing system at West Spotswood Trail (US Route 33). Improved curb and gutter with appropriate curb inlets installed along each of these streets will collect and convey stormwater underground to alleviate flooding on the roadways and adjacent buildings. This would relieve some of the flooding events regularly occurring in the downtown triangle. Concrete sidewalk replacement or installation is anticipated along the proposed paths.

The existing stormwater system is understood to be owned and maintained by VDOT, making coordination with VDOT critical to project success. GIS data identifies existing utilities along the roadway within the project corridor, including water and sewer main lines. These utilities must be survey-located as part of the pre-design survey. A set-aside is currently included in the planning-level cost estimate to account for utility conflicts and relocation.

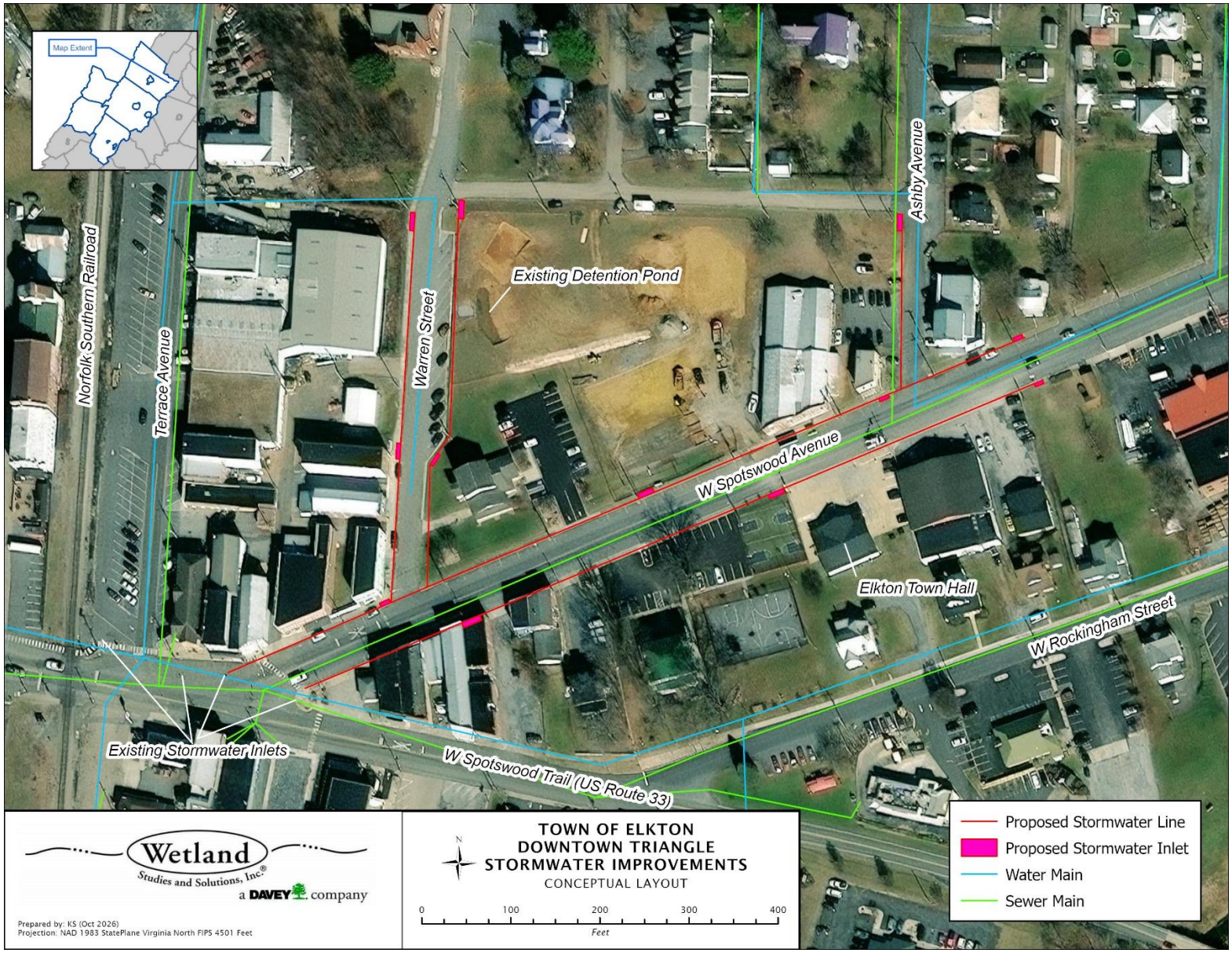


Figure 4. Conceptual layout of proposed stormwater drainage improvements.

ITEM/DESCRIPTION	QTY	UNIT	UNIT COST	ITEM SUB-TOTAL	EXTENDED SUB-TOTAL
Survey and Design					**$314,000**
Existing Conditions Survey	1	LS	$60,000	$60,000	
Geotechnical Study	1	LS	$44,000	$44,000	
H&H Study	1	LS	$40,000	$40,000	
Design	1	LS	$150,000	$150,000	
Permitting	1	LS	$20,000	$20,000	
Construction Administration and Oversight					**$200,000**
Access and Erosion/Sediment Control					**$82,300**
Traffic Control	90	DAY	$500	$45,000	
Silt Fence	2800	LF	$9	$25,200	
Inlet Protection	3	EA	$300	$900	
Orange Safety Mesh	2800	LF	$4	$11,200	
Construction					**$2,607,705**
Stakeout and As-Built	1	LS	$36,000	$36,000	
Mobilization	1	LS	$135,905	$135,905	
Excavation and Hauling	3700	CY	$100	$370,000	
Utility Relocation	2	EA	$150,000	$300,000	
Curb Drop Inlets	12	EA	$10,000	$120,000	
Storm Sewer Pipe	2800	LF	$300	$840,000	
Curb & Gutter	2800	LF	$75	$210,000	
Concrete Sidewalk	2500	SQ YD	$80	$200,000	
Pavement Replacement	2500	SQ YD	$150	$375,000	
Mill and Overlay	160	SQ YD	$95	$15,200	
Striping	2800	LF	$2	$5,600	
Contingency (30%)					**$961,202**
TOTAL ESTIMATED BUDGET					**$4,165,207**

Assumptions

- Watershed (via StreamStats 8/10/2026) is 0.05 square miles at the railroad crossing on West Spotswood Trail.
- Existing stormwater system along West Spotswood Trail (US Route 33) assumed to be in good condition and adequate to handle the added collection from Ashby Avenue, Warren Street, and West Spotswood Avenue.
- Estimates assume 2,800 lf storm sewer with sidewalk replacement or installation

Recommended Next Steps

Begin outreach to VDOT regarding potential improvements as W. Spotswood Trail (US Route 33) is a VDOT-maintained road. Evaluate funding options.