

***Stormwater Management Supplemental Document***

Currently, there is one underground detention facility on the site in the existing parking lot closest to Windover Avenue. Most stormwater sheet flows to three (3) existing outfalls. One outfall is on Nutley Street, near the Head of School house; one is on Windover Avenue, northeast of the intersection of Nutley and Windover; and the third is near 206 Lewis Street. The revised plans propose three (3) additional underground detention structures and two (2) manufactured treatment devices to store, release, and treat stormwater.

While the existing system complies with the applicable requirements at time of installation, the proposed design will comply with all current applicable Town of Vienna and state DEQ requirements. The following table highlights the stormwater management data under existing vs. the proposed site plan:

CONCENTRATED FLOW	1-YR, 24-HR STORM		10-YR, 24-HR STORM	
	Existing	Proposed	Existing	Proposed
Outfall 1: Flow (cfs)	3.41	1.87	10.86	3.17
Outfall 2: Flow (cfs)	2.38	1.58	5.47	5.19
Outfall 3: Flow (cfs)	0.98	0.71	2.58	2.28
<b>TOTAL FLOW (cfs)</b>	<b>6.77</b>	<b>4.16</b>	<b>18.91</b>	<b>10.64</b>

SHEET FLOW	2-YR, 24-HR STORM		10-YR, 24-HR STORM	
	Existing	Proposed	Existing	Proposed
Sub-Area 4: Runoff Volume (CF)	57	52	111	104
<b>TOTAL RUNOFF VOLUME (CF)</b>	<b>57</b>	<b>52</b>	<b>111</b>	<b>104</b>

\*Values are sourced from sheet C-034 of the Green Hedges School Site Development Plan (dated October 24, 2025).

\*\*CFS (cubic feet / second); CF (cubic feet)

\*\*\*the periodic storm events cited are the recognized standards used in stormwater calculations

Concentrated Flow (1-Yr and 10-Yr, 24-Hr Storms):

- Concentrated flow is runoff that has entered designed channels or rills
- Outfall 1 (Existing Storm Sewer along Nutley St): Flow decreases from 3.41 cfs (existing) to 1.87 cfs (proposed) for the 1-Yr storm, and from 10.86 cfs to 3.17 cfs for the 10-Yr storm.

- Outfall 2 (Existing Storm Sewer along Windover Ave): Flow decreases from 2.38 cfs to 1.58 cfs for the 1-Yr storm, and slightly decreases from 5.47 cfs to 5.19 cfs for the 10-Yr storm.
- Outfall 3 (Existing Storm Sewer along Lewis St): Flow decreases from 0.98 cfs to 0.71 cfs for the 1-Yr storm, and from 2.58 cfs to 2.28 cfs for the 10-Yr storm.
- Total Flow: Overall flow decreases from 6.77 cfs to 4.16 cfs for the 1-Yr storm, and from 18.91 cfs to 10.64 cfs for the 10-Yr storm.

Sheet Flow (2-Yr and 10-Yr, 24-Hr Storms):

- Sheet Flow is shallow, uniform runoff over a plane surface. Some examples of sheet flow runoff occur over paved surfaces or relatively flat grassy areas.
- Sub-Area 4 (Overland flow to south adjacent properties): Runoff volume decreases from 57 CF (existing) to 52 CF (proposed) for the 2-Yr storm, and from 111 CF to 104 CF for the 10-Yr storm.
- Total Runoff Volume: Matches Sub-Area 4 values, showing a decrease from 57 CF to 52 CF for the 2-Yr storm, and from 111 CF to 104 CF for the 10-Yr storm.

In summary:

- Both concentrated flow and sheet flow values decrease significantly in the proposed condition compared to the existing condition across all storm scenarios.
- Post-development stormwater flows to the existing storm sewer systems along Nutley Street and Windover Avenue are decreased from the pre-development flow rates for the 1-yr and 10-yr storm events.
- Post-development stormwater flows that leave the site as sheet flow to the south adjacent properties are decreased from the pre-development volume for the 2-yr and 10-yr storm events.
- The site is designed in accordance with all applicable Town of Vienna and state DEQ requirements for allowable stormwater discharges in the post-development condition.