55 Farm Road Drainage Outfall Investigation

Email Dated March 5, 2022 from Sean Maxwell, Stormwater Engineer at AECOM, to Sean Killeen Director of Public Works

"Sean,
Thanks for taking the time to meet with me on Friday, March 4th. After taking the time to investigate the situation in the field, it was evident that flow out of the discharge pipe on 55 Farm Road from two nearby infiltration (cistern) catch basins is minimal and that the pipe could be removed with minimal or no stormwater impacts.
The following observations are supporting evidence for this:

1. When we investigated the area directly downhill of the pipe opening there was no defined channel with a hard bottom that is characteristic of an intermittent stream or evidence of significant stormflow or ponding.
2. Although discharge from the recent rains and melting were enough to melt the approximately 5 inches of snow that was deposited during a storm a week prior, It was apparent that there were multiple layers of undisturbed leaves present down gradient of the pipe. These leaves that had not been disturbed from flow since they had been deposited in the fall. There were multiple heavy rain events in the fall and early winter that would have cleared this duff layer if flows were significant.
3. Based on the local landforms and topography of the roadway, the 2 infiltration (cistern) catch basins have very small catchment areas, and do not accept significant runoff from the surrounding impervious surfaces.
4. The surrounding landform is in a gradual "bowl" valley formation with exposed rocks at the upper rim. It is apparent from the upgradient spring fed pond and evidence of other perched wetland formations in the surrounding area, that groundwater is near the surface in this area. The two infiltration catch basins were full of clear water. Water was flowing from one catch basin to the other, but was not discharging out of the discharge pipe, which presents evidence that these cisterns are full of groundwater and that the flow present was actually representative of flow through the ground at these open bottom cisterns. Runoff to these catch basins would likely infiltrate as part of this observed flow.
5. Based on current topography, in the event of an extreme storm where these catch basins are overtopped, then flow would likely proceed off of the road with minimal ponding.
6. Removing the discharge pipe would increase the availability of the minimal stormwater accepted at these catch basins to infiltrate by allowing stormwater to fill the additional ~2.5 feet of vertical catch basin area.

It is apparent that this discharge pipe was installed as an overflow pipe for these cistern catch basins that also receives foundation water from a nearby farmhouse foundation. However, it does not appear that this overflow measure is needed. Regardless of these observations, I recommend that affects from stormwater and groundwater flows (including potential icing) are monitored in this area.

Please let me know if you have any questions

Regards,
Sean

Sean Maxwell
AECOM"