



City of Lee's Summit, MO

August 18, 2020

Attn: Mike Weisenborn
220 SE Green Street
Lee's Summit, MO 64063

Re: LSR7 Middle School #4 Stream Buffer Variance - PL2020209

Dear Mike:

This letter is being sent in response to your email dated July 7th, 2020 requesting more information for the waiver request on LSR7 Middle School #4 to perform construction activities within the proposed stream buffer for the site.

As requested in your email, Olsson has performed a Stream Assessment to demonstrate that the proposed construction activities within the stream buffer will not adversely affect the natural condition of the existing stream.

The stream assessment was performed in accordance with Section 5605 of the APWA KC Metro Design Criteria and Specifications. Information for the stream assessment was based on field survey data and field site visits by Olsson.

Per Section 5605.4 a Plan-Form Analysis was performed on the stream. The existing stream information and the plan-form analysis have been shown are the attached Stream Assessment Drawings. The Plan-Form Ratio lies with the typical range with the exception of meander length/full bank width.

This could be explained in the outfall from the enclosed storm system coming under Bailey Road. The north end of the stream where the outfall is located shows a lower sinuosity than the south end of the stream. There two concrete flumes or checks (Sta. 13+05, Sta. 23+80) constructed in the stream. The checks are immediately downstream of locations where natural swales enter the channel. Finally, a structure has been constructed in the stream at the south end of the property. The structure consists of riprap bank protection on each side of the stream and concrete channel walls. These structures would tend to anchor the stream in its current location.

Based on the plan-form analysis, general stream corridor limits have been shown on the Stream Assessment Plans. The stream corridor limits show that the proposed construction will not interfere with the natural meandering of the stream.

In regards, to flow in the stream, no increase in the flow is anticipated. The area north of Bailey Road is a fully developed residential area. The proposed middle school development will not increase flows because detention basins will limit runoff rates to pre-construction levels. This is also true for the area to east of the stream. Detention will also be required for that development.

Flow rates for the fully-developed watershed were calculated for the 2 and 100 year storm events using the Rational Method. Water surface elevations for each section were calculated and added to the stream assessment drawing. The sections show the proposed development will not interfere with the flow in the channel.

In conclusion, the purpose of the stream setback is to ensure there is sufficient space for the stream to meander in a natural manner. The Plan-Form Analysis demonstrates that the proposed construction will not interfere with the natural movement of the stream channel. In addition the proposed construction will also not cause any channel constrictions within the flow level of the 100-year storm.

Thank you,

Terry Parsons
Olsson