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Stevens Mill Project (FERC No. 3760) Comments

1 message

Rosset, Julianne <julianne_rosset@fws.gov> Thu, Jun 11, 2020 at 9:44 AM
To: "comments@lowimpacthydro.org" <comments@lowimpacthydro.org>

To whom it may concern,

The United States Fish and Wildlife Service (Service) has reviewed the Low Impact recertification application for the Stevens Mill Hydroelectric Project (FERC No. 3760) and has the following comments regarding fish passage.

The Stevens Mill Project (Project) consists of two turbine units, one on river right and one on river left (looking downstream). The following fish passage concerns are related to the river left unit, which has a hydraulic range of 100 cfs to 800 cfs.

1. Rack Spacing – the existing intake rack spacing is roughly 3 inches. Relevant to juvenile river herring, service fish passage guidelines recommend a maximum rack spacing of ¾ inches. Therefore, the existing rack spacing does not prevent downstream migrating river herring from becoming entrained in the turbine unit.

2. Sweeping velocity - juvenile river herring can physically swim through a gap of ¾ inches and therefore it is critical to provide a sweeping velocity (velocity vector measured parallel with the rack structure) that guides them past the intake racks and into the existing downstream bypass. The intake rack structure at Stevens Mills is parallel with the river flow, which is typically ideal for creating a prominent sweeping velocity vector. However, due to the units capacity relative to the total river flow (i.e., most of the river flow goes through the river left unit) as well as a reduced intake area as a result of built up sediment in front of the rack, the sweeping velocity is not pronounced. Flow inducers were utilized in an attempt to create a sweeping velocity, but based on a visual inspection on September 10, 2019 by Service Engineers, fish were witnessed becoming entrained, and therefore the flow inducers were determined to be ineffective.

3. Normal velocity – Service fish passage criteria recommends that the velocity normal to the intake racks are 2 ft/s or less. Velocities have not been measured, but a visual inspection on September 10, 2019 by Service Engineers revealed several hot spots (zones where velocities may have been greater than 2 ft/s) as shown in the attached photo (*SMphoto.png*).

4. Dredging – The impoundment created by the Stevens Mills project has become a depositional zone (i.e., an area in which mobilized sediment from upstream drops out of the water column) due to the fact that the reach just upstream is steep (greater than 2% slope). A significant amount of sediment builds up in front of the racks within a single year. The sediment reduces the cross-sectional area of the intake rack and in turn increases the velocity through the racks. This issue has been remediated by dredging the sediment and removing it from the site, but has not been done on a regular basis (e.g., annual) such that the problem was evident during the September 10, 2019 site visit.

While Eagle Creek has tentatively agreed to addressing Item #4 above (dredging sediment at Stevens Mill on an annual or semiannual basis) Eagle Creek has also requested two Memorandum of Agreement (MOA) extensions and a new, updated, MOA won't be signed until October 2020. Therefore, as part of this LIHI recertification process, the Service recommends the above fish passage issues are addressed and are implemented in any conditions issued or required by LIHI in order to provide safe, timely, and effective passage to downstream migrating river herring. Any changes to the Project relevant to fish passage and protection shall require consultation with, and approval of facilities, by the Service.

Thank you for this opportunity to comment. If you have any questions, please feel free to email me.

Kind regards,

Julianne

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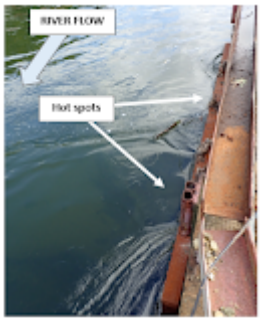

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