

STAFF REPORT
Application # IWW, WPL -11047-20
Cavalry Road Bridge
Bridge over West Branch of the Saugatuck River (BRG. #04964)
Public Hearing September 9, 2020
Prepared August 17, 2020 last revised to September 3, 2020

Receipt Date: September 9, 2020

Application Classification: Plenary

Application Request:

Applicant is requesting to the Town of Westport to replace an existing bridge which conveys Cavalry Road over the West Branch of the Saugatuck River in approximate place and kind. The work is within the waterway itself as well as the upland review area from wetlands, and within the WPLO from the West Branch of the Saugatuck River.

IWW and WPLO Regulated Areas:

IWW setbacks determined for this property include 20' non-disturbance buffer for the proposed site work and work within wetland boundaries.

The Waterway Protection Line Ordinance (WPLO) dictates that the WPL boundary be located 15' from the 25-year floodplain. The work for bridge is proposed within the WPLO.

Plans reviewed:

“Replacement of Cavalry Road Bridge (No. 04964) Over Saugatuck River”, Prepared for Town of Weston, Scale: As-Noted, dated April 27, 2020, prepared by WMC Consulting Engineers, 6 sheets PMT-01 to PMT-06

“Preliminary Fisheries Review – DOT Project 157-TBD” From DEEP-Fisheries Division to Office of Environmental Planning, DOT, Dated July 18, 2017.

“Flood Management Certification Local Bridge Program Project No. 0157-0058 Reconstruction of Bridge No. 04964, Cavalry Road over West Branch of Saugatuck River Town of Weston” From CT DOT to Chris Spaulding, First Selectman, Town of Weston, Dated July 15, 2020.

“Wetland/Watercourse Delineation Report, Cavalry Road Bridge, Weston, CT” Soils report by Davison Environmental, Dated May 14, 2018

“Water Pollution Control Special Provision” dated July 1, 2020.

“Hydraulic Design Report Reconstruction of Cavalry Road Bridge over West Branch of Saugatuck River (Bridge No. 04964) Towns of Weston and Westport” prepared by EcoDesign LLC, Dated November 2019 and last revised April 2020.

Background Information:

1. The pre-existing bridge is situated on the Westport-Weston town line. The bridge spans the West Branch of the Saugatuck River and was reportedly completed in 1957.
2. The existing bridge shows signs of structural deficiencies with cracks in the superstructure, leaks and evidence of scour.
3. The bridge location is approximately 150 ft. north of the intersection of Cavalry Road and Crooked Mile.
4. The average daily traffic at the bridge is estimated to be 622 vehicles per day with minor truck traffic.
5. It is located in the West Branch Saugatuck River watershed. The river flows from west to east across the project site. The confluence with the main reach of the Saugatuck River is approximately 3,600 ft. to the southeast. A FEMA flood zone is associated with this property as shown on the plans.
6. The site **is** within the Aquifer Protection Overlay Zone.
7. This site does **not** exist within the Coastal Areas Management Zone.
8. Wetland/Watercourse Delineation Report by Davison Environmental:
 - **No wetland soils** identified within the work area, “There is an abrupt transition from the riverbank to the adjacent upland. No alluvial or floodplain soils are present.”
 - The non-wetland soils were identified as Udorthents and Hinckley series soils
9. Flood & Erosion Control Board reviewed this application pursuant to the WPLO on September 2, 2020
10. The Town of Weston, CT Conservation Commission reviewed and approved the project on February 27, 2020.

Conformance to Section 6 of the Inland Wetlands and Watercourses Regulations

6.1 GENERAL STANDARDS

- a) disturbance and pollution are minimized;
- b) minimize height, width, length of structures are limited to the minimum; dimension to accomplish the intended function;
- c) loss of fish, other beneficial organisms, wildlife and vegetation are prevented;
- d) potable fresh water supplies are protected from dangers of drought, overdraft, pollution, misuse and mismanagement;
- e) maintain conservation, economic, recreational and aesthetic qualities;
- f) consider historical sites

Discussion:

The existing bridge structure consists of two spans with a central pier for support. The bridge shows structural issues including cracks and drainage issues. The proposed bridge is designed to address various deficiencies as identified in the proposal and will consist of one 72 ft. span compared to the existing two 28.5 ft. span. Staff feels this design proposal is less environmentally intrusive than the existing bridge, which has the central support restricting normal bankfull width of the flow of water. Removal of the restrictions from this structure and widening the span beyond the streambank is a benefit to establishing natural flow patterns and flow rates through this portion of the river. The

proposed bridge also allows for the passage of floodwaters that was restricted for the 100-year design flow.

The DEEP Fisheries Division established several conditions to ensure the protection of fish and habitat. They require the installation of a turbidity control curtain, where the curtain should reduce the risk of sediment movement from the work site. The work is limited to June 1 to September 30 timeframe to reduce possible impacts to organisms life cycles. The addition of boulders within the channel, upstream and downstream, create variation of water flows and produce potential habitat areas and places of refuge.

The majority of the work for the bridge will be conducted from the existing roadway. Temporary cofferdams are proposed to contain most of the northern abutment and central span support work. A double row of silt fencing will be installed around the work site. Minimal vegetation will be disturbed in areas adjacent to the roadway for access and a proposed vegetated swale will manage stormwater runoff from the existing roadway.

Only an area of 337 sq. ft. is proposed for permanent impacts as part of this proposal and 1,281 sq. ft. of area will have temporary impacts during site construction activities. Soil stockpile areas will be within the right-of-way roadway approaches. An area has been identified to handle the dewatering discharge from the excavations.

6.2 WATER QUALITY

- a) flushing rates, freshwater sources, existing basin characteristics and channel contours will not be adversely altered;
- b) water stagnation will neither be contributed nor caused;
- c) water pollution will not affect fauna, flora, physical or chemical nature of a regulated area, or the propagation and habitats of fish and wildlife, will not result;
- d) pollution of groundwater or a significant aquifer will not result (*groundwater recharge area or Aquifer Protection Overlay Zone*);
- e) all applicable state and local health codes shall be met;
- f) water quality will be maintained or improved in accordance with the standards set by federal, state, and local authority including section 25-54(e) of the Connecticut General Statutes
- g) prevents pollution of surface water

Discussion:

The “Handling Water Notes” on the “Water Handling Plan” indicates the contractor shall follow the sequence for construction of the bridge. A dewatering basin is provided along the northwestern embankment. Staff feels this is a critical portion of the construction activity. The Commission may wish to condition the application approval by assigning a site monitor to conduct weekly sediment and erosion control inspections and provide those reports to the Conservation Office. The “Water Pollution Control Special Provision” was submitted with the application and states the contractor shall provide “...a plan showing erosion and sedimentation controls above and beyond those called for in the plans and specifications...” Staff recommends the Commission consider requiring the applicant, the general contractor, site monitor, and Conservation Staff meet onsite at

the start of the project to review Sediment and Erosion controls and discuss the need for extra measures.

Conservation Staff recommends the Commission consider restoration of the vegetative buffer adjacent to the watercourse after bridge installation. Vegetation restoration adjacent to the work area will help to safeguard natural resources by providing additional stormwater runoff filtration prior to discharge into the river. The reduction of water velocities from stormwater runoff allows vegetation to absorb some non-point pollutants such as oils, fertilizers, or herbicides that may otherwise discharge into the watercourse. To this point, the proposed vegetated swale on the northwestern abutment could be duplicated for the other abutments.

6.3 EROSION AND SEDIMENT

- a) temporary erosion control measures shall be utilized during construction and for the stabilization period following construction;
- b) permanent erosion control measures shall be utilized using nonstructural alternatives whenever possible and structural alternatives when avoidable;
- c) existing circulation patterns, water velocity, or exposure to storm and flood conditions shall not be adversely altered;
- d) formation of deposits harmful to aquatic life and or wetlands habitat will not occur;
- e) applicable state, federal and local guidelines shall be met.

Discussion:

Specific erosion control methods are described in the application including silt fencing, temporary cofferdams, dewatering basin, and turbidity curtains. All erosion and sediment structures should be inspected and maintained on a regular basis. Staff feels the Commission should condition the application by assigning a site monitor to conduct weekly sediment and erosion control inspections and provide those reports to the Conservation Office. Staff additionally recommends the Commission consider requiring the applicant, the general contractor, site monitor, and Conservation Staff meet onsite at the start of the project to review Sediment and Erosion controls and discuss the need for extra measures. A dewatering location is shown on the site plan but may need to be relocated in the field to reduce the likelihood of water re-entering the temporary cofferdam locations. Additionally, a separate stockpiling area for the excavated stream substrate soil should be designated for reuse if needed. Soil stabilization of any stream channel side-slope areas disturbed should take place as soon as possible to include an erosion control blanket if necessary.

6.4 NATURAL HABITAT STANDARDS

- a) critical habitats areas,
- b) the existing biological productivity of any Wetland and Watercourse shall be maintained or improved;
- c) breeding, nesting and or feeding habitats of wildlife will not be significantly altered;
- d) movements and lifestyles of fish and wildlife (plant and aquatic life) will not be significantly affected;
- e) periods of seasonal fish runs and bird migrations shall not be impeded;

- f) conservation or open space easements will be deeded whenever appropriate to protect these natural habitats.

Discussion:

As the area and amount of disturbance adjacent to the watercourse is limited, it is not anticipated to affect habitat. The proposed plan limits the amount of work within the wetlands and watercourse areas including temporary and permanent disturbance. The contractor will be directed to conduct activities from within the travel-way as much as possible in order to complete tasks.

Any unconfined work within the river is restricted to June 1 to September 30 timeframe. All areas should be restored to pre-construction conditions upon completion. This should assure that plant and aquatic life will not be significantly affected long term. The CT DEEP recommends the use of a turbidity curtain to protect downstream fish habitat. Additionally, the CT DEEP requires restoration efforts within the river channel to restore habitat affected by the bridge construction.

6.5 DISCHARGE AND RUNOFF

- a) the potential for flood damage on adjacent or adjoining properties will not be increased;
- b) the velocity or volume of flood waters both into and out of Wetlands and Watercourses will not be adversely altered;
- c) the capacity of any wetland or watercourse to transmit or absorb flood waters will not be significantly reduced;
- d) flooding upstream or downstream of the location site will not be significantly increased;
- e) the activity is acceptable to the Flood & Erosion Control Board and or the Town Engineer of the municipality of Westport

Discussion:

The Flood and Erosion Board approved this project at their meeting on September 2, 2020.

The hydraulic analysis for the existing structure shows ~0.9 ft. of upstream backwater for the 100-year Design Discharge. The analysis for proposed replacement shows 0.0 ft. of upstream backwater for the 100-year Design Discharge. Staff feels this proposal will not cause adverse impacts to the capacity of any wetland or watercourse to transmit or absorb flood waters, will not increase flooding and will not adversely affect the velocity of flood waters into and out of the wetlands.

6.6 RECREATIONAL AND PUBLIC USES

- a) access to and use of public recreational and open space facilities, both existing and planned, will not be prevented;
- b) navigable channels and or small craft navigation will not be obstructed;
- c) open space, recreational or other easements will be deeded whenever appropriate to protect these existing or potential recreational or public uses;

d) wetlands and watercourses held in public trust will not be adversely affected.

Discussion:

The bridge currently provides public use for a secondary thoroughfare in town and neighbors to the north, the Town of Weston. The proposed development will not affect public use beyond the detours required while under construction. The recreational use is minimal.

CRITERIA TO BE CONSIDERED BY THE COMMISSION

In carrying out the purposes and policies of the IWW regulations for the Town of Westport Section 5.0 and Sections 22a-36 to 22a-45(a,) inclusive, of the Connecticut General Statutes, including matters relating to regulating, permitting and enforcing of the provisions thereof, the Commission shall take into consideration all relevant facts and circumstances, including, but not limited to:

- (a) The environmental impact of the proposed regulated activity on wetlands or watercourses;
- (b) The applicant's purpose for, and any feasible and prudent alternatives to, the proposed regulated activity which alternatives would cause less or no environmental impact to wetlands or watercourses;
- (c) The relationship between the **short-term** and **long-term impacts** of the proposed regulated activity on wetland or watercourses and the maintenance and enhancement of long-term productivity of such wetlands or watercourses.
- (d) Irreversible and irretrievable loss of wetland or watercourse resources which would be caused by the proposed regulated activity, including the extent to which such activity **would foreclose a future ability to protect**, enhance or restore such resource and any mitigation measures which may be considered as a condition of issuing a permit for such activity
- (e) The character and degree of injury to, or interference with, safety, health or reasonable use of property which is caused or threatened by the proposed regulated activity
- (f) Impacts of the proposed regulated activity on wetlands or watercourses outside the area for which the activity is proposed and **future activities** associated with, or reasonably related to, the proposed regulated activity **which are made inevitable** by the proposed regulated activity and which may have an impact on wetlands or watercourses. ; and
- (g) The degree to which the proposed activity is consistent with all applicable goals and policies set forth in Section 1.3 and 1.4 of these Regulations and Section 22a-36 of the Connecticut General Statutes, as amended.

Waterway Protection Line Ordinance

Section 148-9 of the Waterway Protection Line Ordinance states that the applicant shall submit information to the Conservation Commission showing that such activity will not cause water pollution, erosion and/or environmentally related hazards to life and property and will not have an adverse impact on the preservation of the natural resources and ecosystem of the waterway, including but not limited to impact on ground and surface water, aquifers, plant and aquatic life, nutrient exchange and supply, thermal energy flow, natural pollution filtration and

decomposition, habitat diversity, viability and productivity and the natural rates and processes of erosion and sedimentation.

The Waterway Protection Line boundary exists 15' from the 25-year flood line onsite. The Flood & Erosion Control Board has approved this application on September 2, 2020 with standard conditions.

Staff supports the Town's efforts to upgrade deteriorating infrastructure for the safety of its citizens. The new bridge's design and placement increases the amount of floodwaters able to pass for a 100-year storm, which in turn, reduces the amount of water backed up during major storm events. As stated in the "Hydraulic Design Report", the southerly approach will continue to flood during the 100-year storm event, but now will be passable during a 25-year storm event. The southerly approach currently is not passable. This effort will reduce the frequency of flooding of the roadway. Any erosion of soils and pollutants entering the watercourse should be minimized provided the erosion controls are properly installed and maintained throughout construction. Staff feels that long-term slope stabilization will occur by the addition of more plantings along the abutments and will benefit resources by limiting erosion and provide biofiltration of pollutants from any runoff. Staff feels this will not significantly impact resources as they are protected under the Waterway Protection Line Ordinance.

Alternatives for reduction of impacts:

1. No build alternative.
2. Approve Application with the following modifications to plans listed above:
 - a) A site monitor shall be retained for the duration of this project's construction and completion. Said monitor shall ensure compliance with the sediment and erosion control plans. Said monitor shall conduct weekly inspections and after storm events greater than 1 inch with written reports submitted to the Conservation Department on a weekly basis.
 - b) The applicant, the general contractor, site monitor, and Conservation Staff shall meet onsite at the start of the project to review Sediment and Erosion controls and discuss the need for extra measures. Conservation Department to be contacted 48 hours prior to construction commencement.
 - c) Provide a planting plan, prior to startup of onsite construction, to Conservation Department Staff for the disturbed areas around bridge abutments to ensure slope stabilization and biofiltration.
 - d) All planting within 20' from the wetland area shall be done by hand. Mulching within this area shall be done with organic leaf mulch. Plantings must be installed prior to the issuance of a CCC.
 - e) Submittal of the CT DEEP Fisheries Division final sign-off for stream restoration activities is required prior to the issuance of a CCC.