

**ITEM:** This Floodplain Permit Application is for the replacement of a bridge over Rock Creek on 60<sup>th</sup> Ave. NE between Tecumseh and Rock Creek roads.

**BACKGROUND:**

APPLICANT: City of Norman, Streets and Engineering Divisions

BUILDER: K&R Builders Inc.

ENGINEER: Garver

The applicant is requesting a floodplain permit to replace the existing, failed bridge over Rock Creek on 60<sup>th</sup> Ave. NE between Tecumseh and Rock Creek Roads. The existing bridge was constructed in 1940. On December 1, 2022, this bridge was closed following receipt of an October 2022 Inspection Report listing the bridge as structurally deficient due to a condition rating of “Poor (4)” given to the superstructure and substructure of the bridge. Additional information related to this rating and subsequent road closure can be found in the Preliminary Engineering Report submitted with this application. According to the applicant, construction activities include the demolition of the existing bridge and construction of a new single span prestressed concrete bridge and relocation of an existing City of Norman waterline. The channel flowlines and banks will not be altered at the site beyond what is required to excavate and construct the new bridge abutments and placement of riprap on the slopes in front of the bridge. These construction activities do not fall below the ordinary high water mark that was determined during final design of the project. According to the hydraulic summary in the engineering report for Prestressed Concrete Beam bridge, the existing 100 year water surface elevation (WSEL) is 1071.55. Proposed conditions would lower the 100 year WSEL to 1070.34. No Individual Permit from the US Army Corps of Engineers is required for this project.

**STAFF ANALYSIS:**

Site located in Little River Basin or its Tributaries?      Yes     no

According to the latest FIRM, the site of the proposed work is located in the Rock Creek floodplain (Zone A). At the proposed site, the BFE is approximately 1171.55. Proposed work would lower the BFE to approximately 1170.34 according to the hydraulic analysis provided by the engineer.

Applicable Ordinance Sections:	Subject Area:
36-533	(e)2(a)..... Fill restrictions
	(e)2(e)..... Compensatory storage
	(e)2(j)..... Utilities constructed to minimize flood damage
	(e)2(k)..... In/exfiltration of flood waters in utility systems
	(f)3(a)(8)..... No rise considerations

(e)2(a) and (e)2(e) Fill Restrictions in the Floodplain and Compensatory Storage – Fill is restricted because storage capacity is removed from floodplains, natural drainage patterns are adversely altered, and erosion problems can develop. Compensatory storage must be provided within the general location of any storage that is displaced by fill or other development activity and must serve the equivalent hydrologic function as the portion which is displaced with respect to the area and elevation of the floodplain.

According to plans submitted by the engineer, cut quantities exceed fill quantities in all areas below the 100 year WSEL, meeting this ordinance requirement. Cumulative cut = 86.39 CY and Cumulative Fill = 83.24 CY creating a net increase of 3.15 CY of storage in the floodplain.

(e)2(j) and (e)2(j) Utilites Constructed to Minimize Flood Damage and In/exfiltration of Flood Waters in Utility Systems - All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating

within the components during conditions of flooding. All public utilities and facilities shall be constructed to minimize flood damage. Additionally, all new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

The waterline pipe joints have gaskets making the system watertight, and the entire system is leak tested prior to going into service.

(f)3(a)(8) No Rise Considerations – For proposed development within any flood hazard area (except for those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work is required. For proposed development within a designated regulatory floodway, certification that no increase in the BFE on any adjacent property as a result of the proposed work is required.

The project engineer has certified that there will be no increase in the 100-year water surface elevation as a result of the improvements in the floodplain satisfying this requirement.

**RECOMMENDATION:** Staff recommends Floodplain Permit Application #696 be approved.

**ACTION TAKEN:** \_\_\_\_\_