



City of Norman, OK

Municipal Building
Council Chambers
201 West Gray
Norman, OK 73069

Master

File Number: R-1516-100

File ID: R-1516-100

Type: Resolution

Status: Consent Item

Version: 1

Reference: Item 31

In Control: City Council

Department: Public Works
Department

Cost:

File Created: 03/15/2016

File Name: Modification of the Stream Banks along Brookhaven
Creek

Final Action:

Title: RESOLUTION R-1516-100: A RESOLUTION OF THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA, APPROVING A MODIFICATION TO THE STREAM BANKS ALONG BROOKHAVEN CREEK FOR THE PROPOSED MAIN STREET BRIDGE

Notes: ACTION NEEDED: Motion to adopt or reject Resolution R-1516-100.

ACTION TAKEN: _____

Agenda Date: 04/12/2016

Agenda Number:

Attachments: Text File R-1516-100, Main St Bridge Location Map,
R-1516-100, FP Permit 568 Approved, 2016-3-7 FP
Permit Committee Minutes, Existing Creek
Conditions, Improvements Due to Space Constraints,
Typical Channel Improvements

Project Manager: John Clink, Capital Projects Manager

Entered by: rachel.warila@normanok.gov

Effective Date:

History of Legislative File

| Ver- sion: | Acting Body: | Date: | Action: | Sent To: | Due Date: | Return Date: | Result: |
|---------------|--------------|-------|---------|----------|-----------|-----------------|---------|
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Text of Legislative File R-1516-100

body

BACKGROUND: The existing West Main Street Bridge was constructed in 1972. This bridge is identified in the Storm Water Master Plan as being "hydraulically deficient". It is unable to convey a ten-year (10%) storm. This means that the flow of storm water in Brookhaven Creek overtops Main Street during a rainfall of two and a half inches in an hour. This condition likely caused the bridge to sustain serious damage in the flood of August 19, 2007. City crews made temporary emergency repairs at that time to keep the bridge in service. At a later date additional repairs were required after a subsequent storm event caused a hole to form under the pavement.

On January 27, 2009, the Norman City Council approved programming Resolution No. R-0809-96 requesting federal funds to replace the bridge and roadway approaches on West Main Street over Brookhaven Creek, located ½ mile west of 36th Avenue West. On August 11, 2009, City Council approved contract K-0910-56 with Garver, LLC for the preliminary design of this project. On June 11, 2010, Council approved Amendment No. 1

with Garver, L.L.C. for the final design of this project. On December 31, 2012, Council approved Amendment No. 2 with Garver, L.L.C. modifying the design of the creek improvements which reduced the number of mobile home relocations from nine to two in the Canadian Shores Mobile Home Park that is located on the west bank of the creek.

On August 28, 2012, Norman voters approved a Bond Issue for eight major transportation/storm water projects throughout Norman in the amount of \$42.5 million dollars. The Main Street Bridge Project is one of those eight infrastructure projects. The total estimated cost of the project is \$5,545,385 of which federal funds will pay \$3,897,094 or 70.2%. Federal funds have been allocated for federal fiscal year 2017 which begins on October 1, 2016.

On April 22, 2014, Council approved Contract K-1314-137 a Right of Way, Utility and Encroachment agreement with the Oklahoma Department of Transportation. This agreement stipulates that the City will acquire all right-of-way required for the project, grant ODOT access to and the use of the right-of-way for this project, relocate all utilities and encroachments from the construction area and to indemnify and hold ODOT harmless. The City has completed the right of way acquisition for this project. The utility relocation is pending approval of this floodplain permit.

DISCUSSION: This project involves the replacement of the bridge on Main Street over Brookhaven Creek and stream bank improvements. All permits must be procured prior to the bid opening scheduled for October 2016. This includes the City Floodplain Permit for the improvements and completion of the utility relocations that are also required prior to bid opening. Utility relocations are scheduled to begin in May 2016. Construction of the new bridge and the channel improvements are scheduled to begin early 2017; without the issuance of a City Floodplain Permit the federal funding for this project may be lost.

The existing West Main Street Bridge consists of two 55 foot long by 9.5 foot by 6.4 foot corrugated galvanized metal arch pipes that were constructed in 1972. This structure is identified in the City's Storm Water Master Plan as being "hydraulically deficient" because it is unable to convey a 10 year (10%) storm without overtopping the roadway. The existing arch pipe bridge structure will be removed and replaced with a triple cell 16 foot by 8 foot reinforced concrete box bridge structure (box) that will be skewed to align with the existing creek channel and will be capable of handling the 100 year (1%) storm without overtopping the roadway. In addition, approximately 2,900 feet of channel improvements will be provided from just upstream of Main Street south to Willow Grove Drive. The channel improvements will transition the channel from the wider opening of the box to the width of the existing creek and stabilize the creek bank. Currently the stream banks are experiencing extensive erosion causing the loss of property for adjacent property owners. This project will aid adjacent property owners by stabilizing the conditions and stopping the current property loss. The attached Existing Creek Conditions exhibit shows an example of the current erosion along the stream. The proposed improvements will consist of gabion baskets and turf reinforcement mat for the majority of the channel installed at a 2:1 or 3:1 slope, as shown on the Typical Channel Improvements attachment. In certain locations due to space constraints the banks will be stabilized with walls consisting of Mechanically Stabilized Earth (MSE) or segmented block. See Improvements Due to Space Constraints attachment.

Since this work will occur in the floodway/floodplain of Brookhaven Creek, **Section 429.1 Flood Hazard District of the zoning ordinance** (commonly referred to as the Floodplain Ordinance) applies to this project. A floodplain permit for the new bridge and channel improvements was approved by the City Floodplain Permit Committee on March 7, 2016 by a vote of 6-1 contingent on City Council approval of the stream bank modifications. During the Floodplain Permit Committee meeting, several residents of the Willow Grove Addition expressed concerns about the impact of this project on their neighborhood. The issues included:

- Concerns about damage to the Willow Grove Drive Bridge over Brookhaven Creek.
- Concerns about increased flow and velocity of storm water in Brookhaven Creek.
- Concerns about flooding of their neighborhood.
- A Request to extend the improvements to Brookhaven Creek south of Willow Grove Dr.

Staff is prepared to address these concerns at the City Council meeting on April 12, 2016.

Section 429.1.4(b)(17)(iii) of the City's Floodplain Ordinance requires that modifications to the stream banks or flow line of a stream obtain City Council approval. More specifically, any modifications of the stream banks or flow line within the area that would be regulatory floodway, unless the work is being done by the City of Norman staff as part of a routine maintenance activity, requires City Council approval. This project is not considered routine maintenance. Channel improvements are proposed for a distance of approximately 200 feet upstream and 2700 feet downstream of the proposed bridge structure. As described above, these improvements will consist of gabion baskets and turf reinforcement mat for the majority of the channel installed at a 2:1 or 3:1 slope. In certain locations due to space constraints the banks will be stabilized with walls consisting of Mechanically Stabilized Earth (MSE) or segmented block. The channel improvements will transition the channel from the wider opening for the box to the width of the existing creek and stabilize the creek bank without raising the Base Flood Elevation (BFE) or increasing the water velocities along the creek. The floodplain permit also addresses the required utility relocations for the project.

RECOMMENDATION: Staff recommends approval of Resolution R-1516-100 authorizing the proposed modifications of the streambanks for Brookhaven Creek upstream and downstream of West Main Street and granting City Floodplain Permit No. 558A as approved by the City Floodplain Permit Committee.