# City of Norman, OK



Municipal Building Council Chambers 201 West Gray Norman, OK 73069

# Master

# File Number: R-1516-84

File ID:	R-1516-84	Туре:	Resolution	Status:	Consent It	em
Version:	1	Reference:	Item No. 25	In Control:	City Cound	cil
Department:	Public Works Department	Cost:		File Created:	02/08/2016	6
File Name:	Imhoff Creek Bank Widening Final Ad					
Title:	RESOLUTION R-1516-84: A RESOLUTION OF THE CITY OF NORMAN, OKLAHOMA APPROVING A MODIFICATION TO THE STREAM BANKS OF IMHOFF CREEK AT LINDSEY STREET AS PART OF THE WEST LINDSEY STREET PROJECT.					
Notes:	Notes: ACTION NEEDED: Motion to adopt or reject Resolution R-1516-84.					
	ACTION TAKEN:					
	Agenda Date: 02/23/2016					
				Agenda Number:	25	
Attachments:	R-1516-84, Proposed Stream Bank Mod Detail, W Lindsey Bridge over Imhoff Aesthetics, Existing and Proposed Bridge, 2016-2-15 FP Permit Committee Minutes, STAFF REPORT- Floodplain Permit #558A Staff Report Feb 1 Update copy					
Project Manager:	John Clink, Capital Pr	ojects Manager				
Entered by:	rachel.warila@normar	nok.gov		Effective Date:		
History of Legis	lative File					
Ver- Acting Body:	Date:	Action:	Sent To:	Due Date:	Return	Result:

## Text of Legislative File R-1516-84

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### BACKGROUND:

On August 28, 2012, the citizens of Norman voted in favor of a Bond Election to finance the local share of eight transportation/storm water improvement projects. One of the eight 2012 bond projects is West Lindsey Street from 24th Avenue S.W. to Berry Road.

The West Lindsey Street Project has been under design since fall 2012. The project design is complete. Land acquisition is complete. Utility relocation is complete. All environmental clearances and permits have been acquired except the City floodplain permit for the replacement of the Imhoff Creek Bridge. This permit must be issued by February 23, 2016 in order for ODOT to authorize the project bid opening on April 21, 2016.

The roadway portion of the project includes transportation, storm water and aesthetic improvements to Lindsey Street. The West Lindsey Street corridor between Interstate 35 and Berry Road is the most congested corridor in the Oklahoma City metropolitan area. This section of West Lindsey Street has a traffic accident rate three (3) times the national average.

Date:

Proposed improvements for the roadway project include:

- Widening West Lindsey Street from 3 lanes to 4 lanes with additional lanes at intersections
- New bridge over Imhoff Creek

Continuous sidewalks on both sides of the street

Access management to adjacent properties

Multi-modal improvements including bicycle lanes

- Aesthetic enhancements including decorative pavement, landscaping, and roadway lighting
- Underground utilities

Accessibility for disabled individuals

Proposed improvements for the storm water system in the area are also included this project. These improvements are designed to reduce the impacts of flooding at Lindsey Street and McGee Drive and areas north of Lindsey Street along McGee Drive and Wylie Road. These improvements include:

Construction of an underground 8 foot by 7 foot reinforced concrete box from the intersection of Lindsey Street and McGee Drive to the Canadian River

Construction of an underground 8 foot by 4 foot reinforced concrete box from Lindsey Street and Wylie Road to Imhoff Creek

Construction of a storm water pipe system north of Lindsey Street along McGee Drive

Construction of a storm water pipe system north of Lindsey Street along Wylie Road

Replace the bridge at Imhoff Creek

#### **DISCUSSION:**

The replacement of the bridge over Imhoff Creek is included in Phase 4 of the Lindsey Street Bond Project (see attached Location Map). The bridge replacement is part of the bid documents and all permits must be acquired prior to ODOT bidding the project on April 21, 2016. In fact, ODOT officials insist that all local, state, and federal permits for the project be secured prior to the City and ODOT entering into the project agreement on February 23, 2016. Construction may begin as early as June 2016.

Since the bridge replacement will occur in the floodway/floodplain of Imhoff Creek, **Section 429.1 Flood Hazard District** of the City's 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 February 15, 2016 by a vote of 6-0. The Floodplain Permit Committee minutes are attached.

The City Council must also approve the floodplain permit in this case because Section 429.1.4(b)(17)(iii) of the floodplain ordinance requires that modifications to the stream banks or flow line be approved by both the City Floodplain Permit Committee and the City Council. More specifically, any modifications of the stream banks or flow line within the area that is in a 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.

The existing bridge structure at Imhoff Creek currently consists of a triple 8' by 6' reinforced concrete box (RCB) that is 32' long. This bridge was originally constructed in 1918 and reconstructed in 1951. Photos of the existing structure are attached. During the design of the project it was confirmed that the current box culvert structure is undersized leading to the overtopping of Lindsey Street at slightly less than the 2 year (50 percent) rainfall event resulting in flooding of the roadway. The City's 2009 Storm Water Master Plan (SWMP) identified this as a concern. The SWMP recommends replacement of the Imhoff Creek Bridge at Lindsey Street.

The proposed solution for the bridge structure is to replace the existing structure with a Conspan arch type bridge structure. Photos showing examples of this type of structure are attached. The proposed structure is 56' wide edge to edge with a maximum height of 8 feet in the center. The total length of the arch structure will be 55 feet. The bridge will also contain aesthetic features as shown in the attached rendering.

In addition to replacing the bridge structure, stream bank modifications are proposed for a distance of approximately 100' upstream and 500' downstream of the proposed bridge structure. The stream bank is defined as the edge of the stream from the stream bed to the floodplain. The steam bank modification is required to transition from the existing width of the channel to the width of the proposed structure to maintain the hydraulic capacity of the structure. The existing stream bed is a V-channel on the north side of Lindsey

Street and a rectangular concrete channel with a 20 foot bottom on the south side of Lindsey Street. The proposed channel will have a 38' concrete bottom with 1:1 concrete side slopes extending 3' up the banks. The remainder of the banks will be either grass or grass paver blocks on a 3:1 slope, tying back into natural ground. A drawing showing this design is attached. This design is very close to the solution proposed in the City's Storm Water Master Plan which proposes to widen the channel in the proximity of the Lindsey Street Bridge using articulated blocks and concrete to line the channel. This design minimizes the impacts of the project on the adjacent property owners and meets the needs of the project.

The purpose of section 429.1.4(b)(17)(iii) of the City's floodplain ordinance is to retain streams and channels in their existing state wherever possible. However, it is very common on bridge replacement projects to also modify the stream banks leading to and from the new bridge. The City's bridge designers in this case have carefully considered all necessary impacts to the stream banks in an effort to minimize any negative impacts to the stream and to adjacent properties. The attached cross sectional drawing of Imhoff Creek illustrates the limited, proposed stream bank modifications upstream and downstream of Lindsey Street. Staff feels that this project meets or exceeds the City's floodplain ordinance.

### **RECOMMENDATION:**

Staff recommends adoption of the Resolution R-1516-84 for the Lindsey Street Bridge - Imhoff Creek Bank Modification project.