

July 9, 2018

## Drainage Projects Update

Following as requested is an update of some of the drainage projects completed in the City of Mulvane:

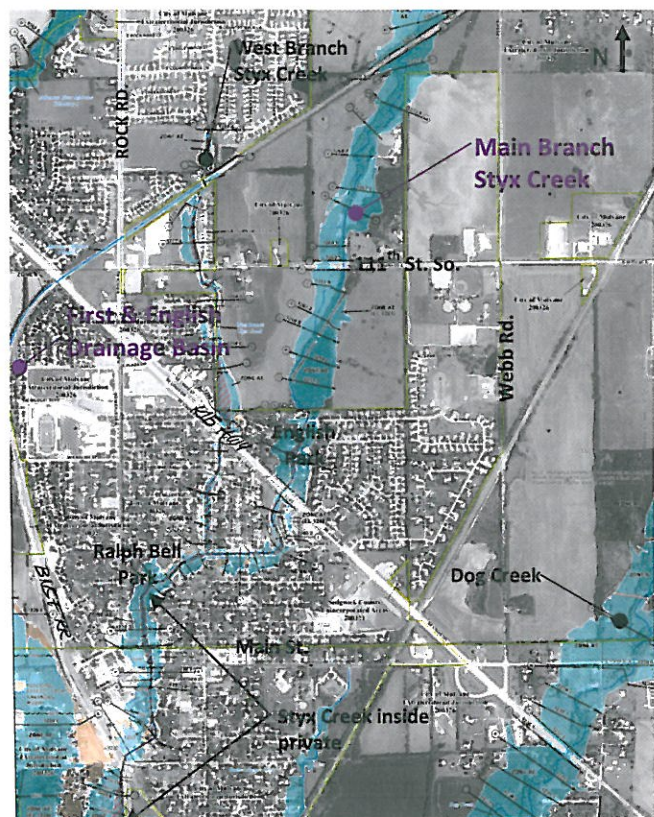
*A Drainage Study Update, Part 1 First & English Street Drainage Basin and Part 2 Styx Creek Drainage Basin* were completed by Young & Associates, PA consulting engineers. These studies provide recommendations for drainage improvement projects, adopting design and construction standards for storm sewer projects and a review of the City's storm sewer rates and financing alternatives. The Public Works Department and Floodplain Manager continue to implement and update those recommendations.

The City's Community Development Director and City Engineer are currently working with State and FEMA officials to obtain a Flood Mitigation Grant to address flooding along Styx Creek. This project would address channel conditions in English Park and out of bank flows along Styx Creek, from K-15 to Bridge Street. Preliminary flood analysis and other (Phase 1) grant funding requirements are anticipated to be completed in 2018 with construction (Phase 2) planned in 2019.

In the Spring of 2004, the City adopted a "zero increase" in stormwater runoff policy for land development projects. Since the implementation of this policy, land developers are required to mitigate increases in runoff due to added hard surfaces (i.e., roofs, drives, streets, parking lots, etc.). The construction of detention ponds, storm sewers and other drainage improvements are typically used to address these stormwater increases. Recent updates to the Drainage Policy have included requirements to install temporary erosion control devices to improve the quality of stormwater runoff from construction sites. The City's Public Works Department also maintains a stormwater discharge permit with the KDHE and performs semi-annual water quality testing and monitoring of receiving streams.

The image shown right was taken from the new (2017) FEMA flood maps for the City of Mulvane. The Styx Creek and First & English drainage basins have been the primary focus of drainage improvements for the City. The colored areas shown ( ) indicate flood prone areas lying inside the FEMA floodplain. The majority of Styx Creek north of English Park is outside the City limits and flows through privately owned land. Styx Creek flowing south from Ralph Bell Park is also located on private property. These areas are not under the jurisdiction of the City and must be maintained by private property owners.

*Styx Creek Drainage Improvements* – In the spring of 2017 the City Council reviewed alternative concept plans and cost estimates for improving Styx Creek inside English Park. The proposed improvements would include re-grading the existing eroded channel to remove silt, stabilize channel banks and mitigate soil erosion. This project, and other recommended drainage improvements in the Styx Creek and First & English basins, was placed on the City's 2019-2023 Capitol Improvement Plan.





In the summer of 2017 City Staff prepared a Letter of Intent (LOI) requesting participation in the FEMA HMGP (Hazard Mitigation Grant Program) through the Kansas Division of Emergency Management and Federal Department of Homeland Security (DHS). The grant is intended to provide financial assistance for reducing the risk to individuals and property from natural hazards while reducing reliance on Federal disaster funds. If awarded the grant could provide over \$750,000 for drainage improvements along Styx Creek, including those planned for English Park. The HMGP will be administered in two phases, with the first phase (engineering analysis and design) scheduled for 2018 and second phase (construction) scheduled for 2019.

Since 2009, the City has completed a number of drainage improvements projects using storm water fees, capitol improvement funds and private development funds. Following is a summary and brief narrative of these projects:

*Styx Creek, K-15 to Ralph Bell Park* -

This project, completed in 2010, removed silt deposition and restored lost flood storage along Styx Creek from the south side of K-15 to west of Franklin. The project included stabilizing channel banks and mitigating soil erosion.



*Carr Ditch Easement Grading* - The City constructed drainage channel improvements adjacent to the Carr's agricultural property. Channel improvements extended southwesterly from the BNSF railroad to the Arkansas River and resolved maintenance responsibilities for a drainage easement agreement between the City and Carr family.

*Merlin's Glen Drainage Improvements* -

Property owners submitted a petition requesting drainage improvements at the intersection of Merlin's Glen and Fox Run to address standing water. Drainage improvements included the installation of storm sewer inlets at the SW and SE corner of the intersection.



Merlin's Glen and Fox Run

*O'Reilly's Addition* - This project, completed in 2016, constructed storm sewers and approx. 0.3 acre-ft of stormwater detention storage to serve the new 1.8 acre commercial development on Rock Road.

*Emerald Valley Estates* - This project, completed in 2017-2018, constructed storm sewers and approx. 2.5 acre-ft of stormwater detention storage to serve the first two phases of a new residential development located west of the Mulvane Pool.

*Nottingham Estates at Hunters Pointe* - This project, completed in 2017-2018, constructed storm sewers and approx. 1.8 acre-ft of stormwater detention storage to serve the new residential development north of the Merlins Glen subdivision.



O'Reilly's Detention Pond