



CITY COUNCIL WORK SESSION
Wednesday, April 19, 2023 at 6:00 p.m.

CITY HALL
6090 Woodson

Meeting In Person and Virtually via Zoom

This meeting will be held in person at the time and date shown above. In consideration of the COVID-19 social distancing recommendations, this meeting will also be available virtually via Zoom (<https://zoom.us/join>). Information will be posted, prior to the meeting, on how to join at <https://www.missionks.org/calendar.aspx>.

If you require any accommodations (i.e. qualified interpreter, large print, reader, hearing assistance) in order to attend this meeting, please notify the Administrative Office at 913-676-8350 no later than 24 hours prior to the beginning of the meeting.

AGENDA

1. Comprehensive Stormwater Overview – Celia Duran

Public Works Director Celia Duran will present information on the various types of stormwater issues and challenges which exist throughout Mission, will provide a recommended criteria ranking system and will share preliminary rankings and general cost estimates for a number of existing stormwater projects.

Criteria for Nuisance/Localized Stormwater Projects Mission, Kansas

Celia J. Duran, P.E.
Public Works Director

April 19, 2023



Overview

Types of Stormwater Concerns

- Nuisance/Localized Drainage
 - Typically in residential areas
 - Staff makes determination if private vs. public stormwater
- Aging Public Stormwater Infrastructure
 - Failed CMP pipe
 - Sinkholes
 - Lack of stormwater infrastructure
- Deteriorated Concrete Channels/RCBs
 - Rock Creek Subsidence/Roeland Ct. (2018)
 - Rock Creek Channel Failures (2020, 2022)
 - Beverly Ave. RCB



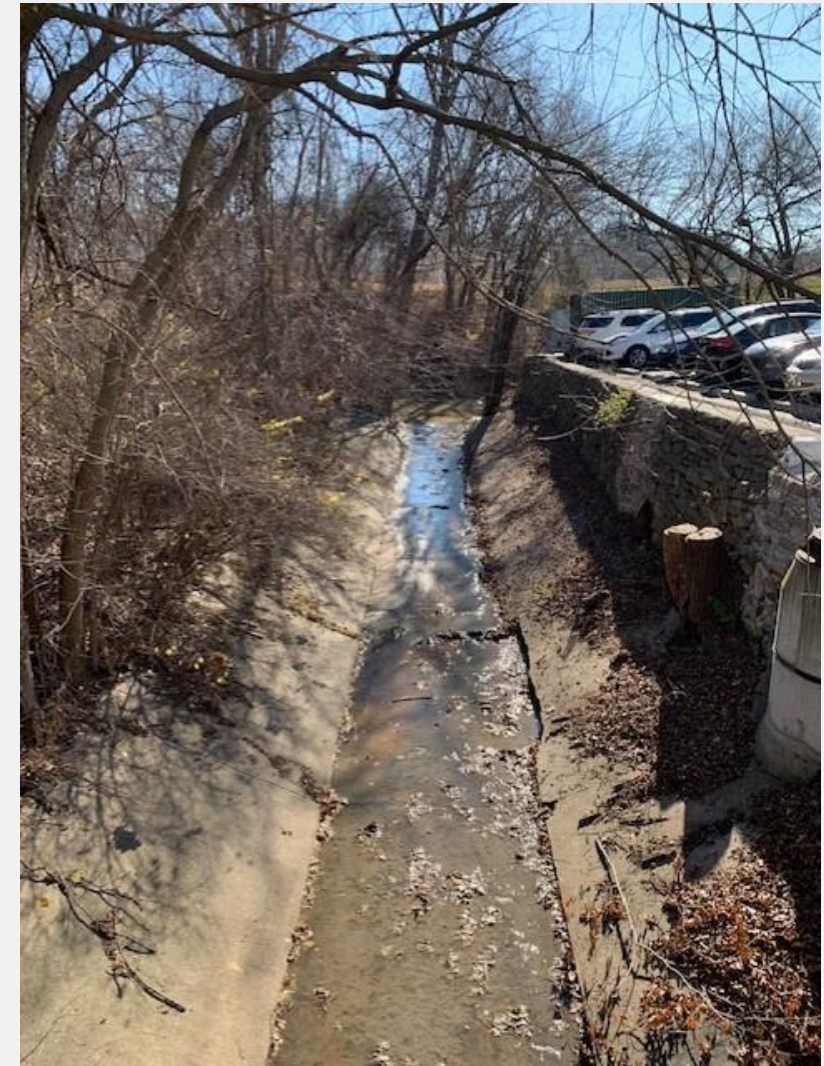
Stormwater Challenges

- Nuisance/Localized Drainage
 - Subdivisions/infrastructure designed in 1950s; minimal/no storm pipe; poor design
 - Sometimes residential lots built lower than street
 - Some private stormwater drainage creates safety/erosion hazards for public
- Aging Stormwater Infrastructure
 - Failed CMP/Sinkholes
 - Undersized pipe; pipe under buildings
 - Public interconnected with private pipe
 - Often no easements in residential areas; pipe constructed too close to homes
 - Condition inventory underway
- Deteriorated Concrete Channels/RCBs
 - Buildings located within Rock Creek floodplain
 - Rock Creek bank failures (2018, 2020, 2022)
 - Sediment accumulates in concrete boxes and channels; repairs needed
 - Repairs needed for cracks in RCBs
 - Difficult to maintain/remove brush
 - Minimal access; encroachments



Stormwater Work-To-Date/Progress

- Nuisance/Localized Drainage (\$250,000 budget for 2023)
 - Identified project list
 - Developed draft prioritized criteria and costs
 - List is ongoing
- Aging Stormwater Infrastructure (\$150,000 budget for 2023)
 - Fix sinkholes as they occur
 - Continue annual inventory (\$72K SMAC grant) (50% match)
 - Continue pipe replacement with CARS/Street Program (\$254K SMAC grant) (50% match)
 - GOAL: More proactive
- Deteriorated Concrete Channels
 - Rock Creek PPS (Lamar to Maple) (\$147K SMAC grant) (25% match)
 - Continue annual inspection
 - Annual creek maintenance/brush removal (\$20,000 budget)



Proposed Stormwater Criteria Nuisance/Localized Drainage

- Project benefit criteria developed from JoCo SMAC and Olsson
 - 13 criteria with 285 rating points
 - ✓ Loss of life
 - ✓ Flooding of buildings or streets
 - ✓ Widespread ponding
 - ✓ Erosion (threatens buildings, utilities, or structures)
 - ✓ System condition
 - Includes frequency and severity multiplier
 - Projects ranked by cost/benefit ratio
 - Used as a general planning tool only; flexibility necessary
 - 9 current projects (Total \$1,635,000) (2023 dollars)
 - List updated as new projects identified

Proposed Stormwater Projects Nuisance/Localized Drainage

9 Projects City-wide with Current Ranking

- Area 1 (6126 Glenwood) – Rank #2
- Area 2 (5030 Foxridge) – Rank #1
- Area 3 (6347 W. 47th St./6334 W. 50th St.) – Rank #5
- Area 4 (5816 W. 62nd Terr.) – Rank #6
- Area 5 (Hodges Dr. & 61st Terr.) – Rank #4
- Area 6 (6200 Russell St.) – Rank #8
- Area 7 (58th & Horton) – Rank #9
- Area 8 (6012 Rosewood Dr.) – Rank #3
- Area 9 (5230/5234 Riggs Ave.) – Rank #7



Proposed Stormwater Projects

Project Rank 1:

Area 2 (5300 Foxridge Dr.) \$45,000

- Water ponding, mud, and ice accumulates on sidewalk from public and private drainage
- Safety hazard for pedestrians and liability for City
- Ongoing maintenance required for PW staff
- Project includes installation of 1 area inlet and 27' 15" pipe

Area 2



Project Rank 2

Area 1 (6126 Glenwood) \$95,000

- Curb doesn't drain resulting in ponding and driveway deterioration
- Project includes driveway replacement and installation of curb, inlet, and 110' 15" pipe



Area 1

Proposed Stormwater Projects

Project Rank 3:

Area 8 (6012 Rosewood Dr.) \$85,000

- Stormwater from cul-de-sac ponds in front of and on residential driveway
- Existing 8" grate inlet pipe is undersized and backs up
- Project includes removal and replacement of the driveway approach, curb and gutter, and installation of 3 curb inlets and pipe

Area 8



Project Rank 4:

Area 5 (Hodges Dr. and 61st Terr.) \$55,000

- Stormwater from Hodges/61st Terr. drains onto public ROW (former street)
- ROW is partially gravel/asphalt and used as cut-through
- Project includes partial driveway replacement and installation of 1 area inlets and 30' 15" pipe

Area 5

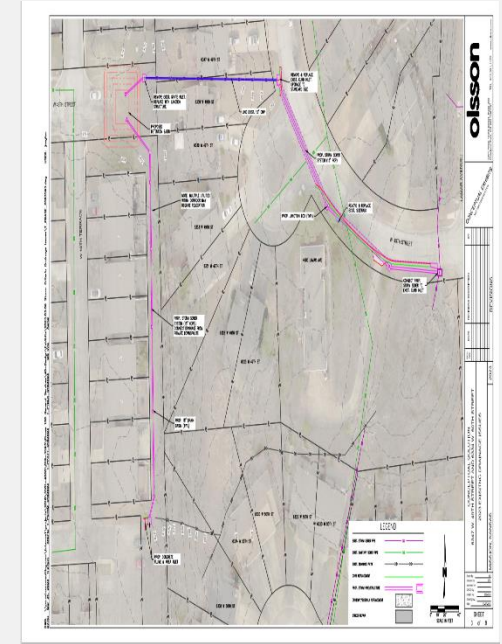


Proposed Stormwater Projects

Project Rank 5:

Area 3 (6347 W. 49th St./6334 W. 50th St.) \$450,000

- Apollo Gardens has no stormwater infrastructure
- Private stormwater from residential lots, sump pumps and parking lot and public stormwater from streets drain onto residential lots to the east
- This project addresses two locations:
 - 6347 W. 49th St.: Stormwater drains into area inlet and undersized public pipe to W. 49th St. inlet
 - ✓ Inlet has no outfall pipe and drains into street when full or clogs
 - ✓ Pipe is undersized and close to homes; no easement
 - 6334 W. 50th St.: Stormwater drains onto residential lots to the east
 - ✓ Residents have constructed concrete channel to convey stormwater away from homes
 - ✓ Impacts four properties downstream
- No easy solution. Project may include detention basin, 3 structures, 270' pipe, lining existing 12" pipe, street repairs
- Consider public/private funding



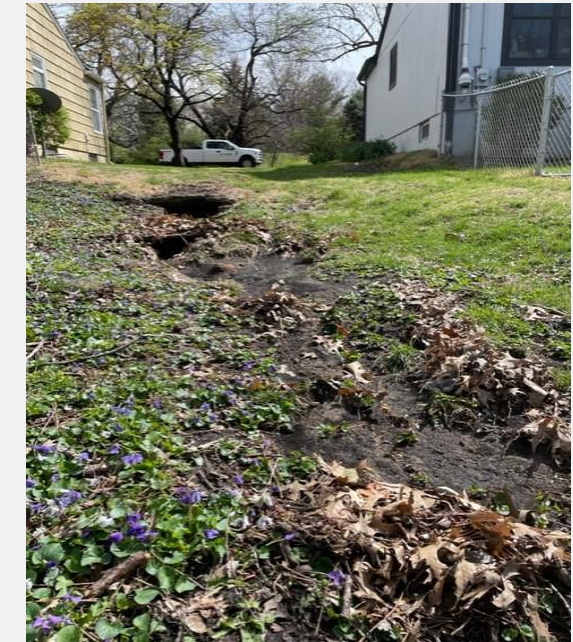
Proposed Stormwater Projects

Project Rank 6

Area 4 (5816 W. 62nd Terr.) \$220,000

Area 4

- Stormwater from 62nd Terr. and SMP drains into pipe and swale between 2 houses.
- Pipe is between homes and partially collapsed
- Silt and erosion occur at discharge outlet
- No public easement
- Project includes removal and replacement of 2 structures and 290' 24" pipe, and street repair
- May be completed with future street project



Project Rank 7:

Area 9 (5230/5234 Riggs Ave.) \$110,000

Area 9

- Pipe carries public stormwater from Riggs west to outfall
- Pipe is rated a "5" (failed) and pipe is close to 2 homes
- Developer has application to construct 2 homes behind existing lots and plans to extend public pipe this Fall if approved by PC
- City should consider lining pipe prior to construction due to limited access



Proposed Stormwater Projects

Project Rank 8:

Area 6 (6200 Russell Street) \$245,000

- Sump pump and drainage from residential lot on Russell drains to Russell & 62nd St. intersection and ponds
- Private drainage causes ponding and icy conditions in street
- Requires ongoing PW maintenance and liability for City
- No close existing stormwater infrastructure to connect sump pump
- Recommend installing stormwater system with future street project
- Project includes installation of 2 structures, curb, street repairs, and installation of 300' 15" pipe to Lamar Ave.

Area 6



Project Rank 9:

Area 7 (58th and Horton) \$330,000

- Sump pump and drainage from residential lots to north drain onto street and pond at NE corner
- Private drainage causes ponding and icy conditions in street
- No existing stormwater to connect sump pump
- Recommend installing stormwater system with future street project
- Project includes 3 structures, installation of 410' 15" and 475' 24" pipe and street and concrete drive repairs

Area 7



Recommendation For Next Steps

- Next Steps:
 - Area 9 (5230/5234 Riggs) (\$110,000):
 - ✓ Obtain bids and approve contract to line pipe prior to construction by developer
 - Area 2 (5300 Foxridge Dr.) and Area 1 (6126 Glenwood):
 - ✓ Complete design in 2023 (estimated \$25,000)
 - ✓ Bid for potential construction in 2023 (estimated \$140,000)
 - ✓ Bid alternate Area 8 (6012 Rosewood Dr.) (estimated \$85,000) (design completed)
- Relocate Beverly Ave. RCB; flow fill collapsed portion (potential cost-sharing with developer)
- Evaluate funding (i.e., public/private funding options, external funding, utility fund)
- Complete Stormwater Master Plan in 2024 to provide comprehensive overview of stormwater needs (potential for 50% cost-share)



Thank You!
Questions?

