DEPARTMENT OF
PUBLIC
WORKS

MEMORANDUM

Date: June 24, 2025
To: Utilities Committee
From: Laura Jungwirth, Director of Public Works
Pete Neuberger, Deputy Director of Public Works/City Engineer
Subject: Northland – Bellaire Flood Study Update

On November 20, 2024, The Appleton Common Council authorized the Department of Public Works (DPW) to contract with stormwater consultant Brown and Caldwell (B&C) for the 2024D Northland Creek and Bellaire Watersheds Stormwater Evaluation in response to significant flooding that occurred following severe rainfall events in July 2024. The study limits are approximately bound by I-41 to the north, STH 441 to the east, Mason Street to the west, and Packard Street to the south.

DPW staff have been coordinating closely with Brown and Caldwell and would like to report the following progress and the ongoing and upcoming tasks anticipated for this contract.

Completed Tasks

- Tasks reported as completed at March 25, 2025 Utilities Committee Meeting
  - Kickoff meeting held December 11, 2024.
  - Reviewed location and description of July 2024 and historic flooding reports with DPW.
  - Updated the previously developed system models to reflect current industry standard rainfall distributions and depths.
  - Merged previously developed Northland model and Bellaire model into one combined model incorporating both watersheds.
  - Performed field site visits to verify previously modeled existing conditions, including flow paths.
- Reviewed and updated model based on existing/surveyed storm sewer information from Town of Grand Chute.
- Performed subwatershed-level inlet capacity calculations.
- Ran sensitivity analyses for two different antecedent moisture conditions.
- Ran sensitivity analyses for concept-level scenarios using 10-year and 100-year storm events to narrow down potential locations and types of practices for more detailed evaluation.

- Began alternatives evaluations using sensitivity analysis findings.
    - Alternatives evaluation to date has focused on combinations of storage and conveyance components in the Central Northland Watershed Area.
- Conducted an initial utility conflicts evaluation of the Central Northland Watershed Area for potential storm sewer improvements
    - Adjusted potential sewer inverts and sizes to avoid known potential conflicts.

Ongoing Tasks

- Analysis toward developing a prioritized list of potential inlet capacity improvements based on the subwatershed-level capacity calculations and other system information.
- Evaluating potential flood reduction benefits from increased stormwater detention within Memorial Park amongst other locations under multiple combinations of storage and conveyance scenarios.

Future Tasks

- Meet with Parks and Recreation Staff to discuss feasibility and potential Memorial Park South Pond expansion limits and park use goals.
- Continue to identify storage and conveyance improvement alternatives within the watersheds.
- Continue to refine potential improvements, check and adjust for potential significant utility conflicts.
- Develop WinSLAMM water quality models to identify potential stormwater pollution reduction measures that could be incorporated into the alternatives under consideration.
- Group most highly ranked individual alternative components into three combined alternatives and present to Utilities Committee with recommendations for approval.
- Develop design refinements for selected combined alternative to facilitate resolution of utility conflicts in preparation of future design phases.
- Prepare a technical memorandum documenting the procedures, recommended improvements, and conclusions for all tasks under this project.