

PROJECT: **Meeting with Maple Terrace, Mountain Avenue,
and Berkeley Road Residents**
Maple Terrace Drainage Improvements
Maplewood Township, Essex County, NJ

MEETING DATE: **July 30, 2024 (7:30 P.M.)**

MEETING LOCATION: **The Woodland**
60 Woodland Road
Maplewood, NJ 07040

MEETING AGENDA:

- 1. Introductions**
- 2. Goals/objectives of improvements:**
 - A. Resolve structural deficiencies
 - B. Incorporate safety measures
 - C. Minimize frequent clogging and maintenance
 - D. Manage flooding and increase hydraulic efficiency to extent possible given existing site constraints
- 3. Previously proposed improvements (A.K.A. “full piping” plan; refer to drainage plans/profile):**
 - A. Application to fully pipe the watercourse on 12, 13, and 14 Maple Terrace was submitted to NJDEP on August 31, 2022.
- 4. Flood hazard area (FHA) permit application coordination with NJDEP:**
 - A. NV5 and the Township coordinated closely with NJDEP during the permit review process. The improvement design was based on a standard one-dimensional (1D) hydraulic HEC-RAS model that is generally found acceptable to NJDEP. However, due to unique site complexities/constraints and a move within NJDEP towards two-dimensional (2D) hydraulic modeling, NJDEP ultimately requested that a 2D HEC-RAS model be prepared in lieu of a standard 1D HEC-RAS model. Since this model could not be prepared before NJDEP’s review clock expired, it was necessary to withdraw the application on November 9, 2023 in order to avoid a formal denial of the application and not lose the application fee. This new application, however, is now subject to the current FHA Rules (enacted on July 17, 2023) which require the use of updated NOAA precipitation data.
 - B. NV5 developed a HEC-RAS 2D model that reflected the previously proposed “full piping” improvements. This resulted in adverse (non-permittable) upstream and/or downstream floodplain impacts. NV5 then worked to modify the “full piping” plan to resolve these adverse impacts, but was unable to balance the model to achieve acceptable results (no increase in flood elevation at any location) with a “full piping” solution.
 - C. Various other alternatives were considered and modeled, including reconstructing the retaining walls and fully maintaining the open watercourse with grating on top, and partially piping the watercourse to various degrees. The models of these scenarios produced favorable results, and it was ultimately decided to advance a “hybrid” scenario (described in further

detail below under item no. 4) that proposes to pipe as much of the watercourse as is feasible without resulting in adverse (non-permittable) upstream and/or downstream floodplain impacts.

5. Summary of improvements (A.K.A. “hybrid” plan; refer to drainage plans/profile) currently proposed, in which NV5 has coordinated with NJDEP:

A. In summary, the “hybrid” plan differs from the “full piping” plan as follows:

- I. On 12/14 Maple Terrace: Watercourse filled and piped only between the existing 48” outlet pipe (near Maple Terrace) to a point past the driveway gates (just to the downstream side of the existing concrete drop structure) with a 30”X60” concrete box culvert and an inlet chamber with custom safety/debris rack. Retaining walls between the existing 30” intake pipe and the proposed outfall of the 30”X60” box culvert will be replaced with a 3-sided open-top concrete structure. A decorative formliner is proposed to enhance the look of the watercourse bottom and retaining walls. Fencing is proposed along the back of the retaining walls and a safety/debris rack is proposed on the existing 30” intake pipe.
- II. On 13 Maple Terrace: Proposed improvements are unchanged from those proposed under the “full piping” plan, with the exception of the invert of the headwall intake being dropped by 1.4’, and the proposed inlet grate being changed to a custom safety/debris rack. The footprint of these improvements also remains unchanged.

6. 2D HEC-RAS modeling presentation (existing verses proposed conditions):

- A. Pre-development model
- B. Post-development model (“hybrid” plan)
- C. Hydraulic benefits (in addition to safety improvements proposed)

7. Schedule:

- A. Mid-August 2024: Public notice and electronic resubmittal of FHA permit application to NJDEP
- B. November 2024: Approval of permit is expected within approximately 90 days of administrative and technical NJDEP acceptance
- C. February 2025: Execute easement documents/ formalize construction documents for bidding and award of contract
- D. Spring 2025: Start of construction (3-month approximate construction duration)

8. Project funding

9. Questions/ open discussion