



City of Westfield
OFFICE OF THE MAYOR



59 Court Street Suite 200
Westfield, MA 01085
413-572-6201
Mayor Michael A. McCabe

December 1, 2022

City Council
Westfield, Massachusetts 01085

Attention: Kaitlyn Bruce
City Clerk

Councilors:

Please accept for your review, the attached status update of the Arm Brook and Powdermill Brook Flood Control Dams rehabilitation projects, as requested at the November 17, 2022 meeting.

Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael A. McCabe".

Michael A. McCabe
Mayor



The City of Westfield

Engineering Department

59 Court Street
Westfield, Massachusetts 01085
City Engineer: Allison B. McMordie

Honorable City Council
Westfield City Hall
59 Court Street
Westfield, MA 01085

Re: Update on Rehabilitation Projects: Arm Brook and Powdermill Brook Flood Control Dams

Dear City Council:

At the November 17, 2022 meeting, there was a motion to request an update on the status, progress, timeline, and funding parameters for the rehabilitation projects for the Arm Brook Flood Control Dam and the Powdermill Brook Flood Control Dam.

Arm Brook Dam: In 2020, the USDA Natural Resources Conservation Service prepared a Watershed Plan and Environmental Assessment for the Rehabilitation of the Arm Brook Dam. Within this, alternatives were provided as well as a preliminary design and cost estimate based on the preferred method of rehabilitation. The total project cost is approximated at \$6,799,000 of which \$2,379,650 will be incurred by City funds and \$4,419,350 will be funded by the Watershed Protection and Flood Prevention Act, through USDA Natural Resources Conservation Service (NRCS). It should be noted that the federal assistance is subject to the availability of Congressional appropriations in each fiscal year. Design is an NRCS funded effort with municipal responsibility of permitting and Right-of-Way Acquisitions. The City will be required to match 35% of the construction cost using *non-federal funds*, so the grant opportunities are limited for the \$2,379,650 the City is required to pay. These figures were estimated in 2020, and costs have likely risen from then due to inflation.

The works of improvement for rehabilitation of the dam are planned for installation in year one of the evaluation period. The actual installation period is contingent on the availability of funds for design and installation. NRCS had determined that installation should be completed in one construction season in order to minimize the disturbance to plant, wildlife, and human communities. Therefore, the City will likely need to budget the \$2,379,650 in one to two fiscal years, depending on start dates.

The Arm Brook Dam is classified as a large sized, high (Class I) hazard potential dam. Although this dam could be detrimental if failed, it is rated **Satisfactory** based on the Tighe & Bond Inspection on November 6, 2020. The scale is (1) Unsafe, (2) Poor, (3) Fair, (4) Satisfactory, and (5) Good. The Satisfactory Rating explains that only requires minor operations and maintenance deficiencies, which can be completed internally. There are no structural defects and there does not appear to be any threat of failure as it is not in disrepair. An additional Phase 1 Inspection was completed by Tighe & Bond on 11/1/2022 to provide an assessment of the current condition of the dam and to also provide action items to improve the structure to potentially get it to a "good" rating. We are still awaiting the rating on the dams for this inspection.

Powdermill Brook Dam: In 2021, the USDA Natural Resources Conservation Service prepared a Watershed Plan and Environmental Assessment for the Rehabilitation of the Powdermill Dam. Within this, alternatives were provided as well as a preliminary design and cost estimate based on the preferred method of rehabilitation. The project installation costs were estimated to be \$7,734,800 of which \$5,599,800 will be paid from the Small Watershed Rehabilitation funds (NRCS) and \$2,135,000 from City funds. Design is an NRCS funded effort with municipal responsibility of permitting and Right-of-Way Acquisitions. The City will be required to match 35% of the construction cost, using *non-federal funds* so our grant



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opportunities are limited for the \$2,135,000 we are required to pay. It should be noted the federal assistance is subject to the availability of Congressional appropriations in each fiscal year. These figures were estimated in 2020, and costs have likely risen from then due to inflation. The most likely scenario presented by NRCS is the project to be implemented over four years, unlike the Arm Brook Dam, which includes both design and construction.

A yearly breakdown for the Powdermill Brook Dam rehabilitation project is below:

Year 1: \$2,000 for project administration, \$10,000 for engineering services, \$19,300 for land rights, and \$5,500 for permits;

Year 2: \$3,000 for project administration and \$10,000 for engineering services;

Year 3: \$7,000 for engineering services, \$3,000 for project administration, and \$1,034,100 for construction;

Year 4: \$3,000 for engineering services, \$4,000 for project administration, and \$1,034,100 for construction.

This dam is classified as a large sized, high (Class I) hazard potential dam. Although this dam could be detrimental if failed, it is rated **Fair** based on the Tighe & Bond Inspection on November 6, 2020. The scale is (1) Unsafe, (2) Poor, (3) Fair, (4) Satisfactory, and (5) Good. The Fair Rating explains that only requires significant operational and maintenance deficiencies but there are no structural deficiencies. At this point in time, there does not appear to be any major threat of failure of this dam but there is significant work required from a maintenance perspective, which can be completed in house. An additional Phase 1 Inspection was completed by Tighe & Bond on 11/1/2022 to provide an assessment of the current condition of the dam and to also provide action items to improve the structure. We are still awaiting the rating on the dams for this inspection.

These dams are not in threat of failure and are not in poor condition from a structural perspective. Both of the designs for the Arm Brook and Powdermill Brook Dam increased the capacity, and inflated the design. With increased capacity, more liability is placed on the City as that means more water and more extensive damage in the event of a failure in the future. This also means additional maintenance on the City. It is a question if the City believes that the added protection is merited and sustainable from a maintenance perspective, and if the \$4,500,000 of local funding should be spent bringing the current structures up to a "Good" rating. Engineering will work to create an action plan to complete these projects to increase the capacity and performance of these flood control structures, if warranted.

The City is currently awaiting, for some time, notice from NRCS of continuation. NRCS is most likely awaiting funding authorization since the funding is based on appropriation. The next step at which time the City must commit. No funds have been allocated for the rehabilitation projects yet as this has been on hold. This will either need bonding or support for additional funds within the Engineering Budget in the upcoming years if the City deems these projects as critical. If you have any questions please contact me at allison.mcmordie@cityofwestfield.org.

Thank you,

Allison McMordie
City Engineer