

MEMORANDUM

August 30, 2022

TO: Mike Kerr, PE

CC: File

FROM: Edmund Burke, PE

SUBJECT: Fedlife Basin along Deerfield Road (CBBEL Project Number 19-304.0003a)

This memorandum summarizes the proposed drainage volumes to be placed on the property along Deerfield Road, currently known as Fedlife, along the Deerfield Road Corridor. The Fedlife site was proposed to provide detention and compensatory store volume for the Des Plaines River Watershed. Coordination has been ongoing with a developer who is looking to develop the existing Fedlife site.

- **Overview**

In Phase I (CBBEL project number 15-331), the required detention volume and floodplain compensatory storage was proposed to be placed in an expanded basin on the Fedlife property in Riverwoods, Illinois. At some point between Phase I and Phase II, this site has been proposed to be developed. The developer has reached out to the County to determine the volume requirements associated with Deerfield Roads' proposed improvements. The memo's purpose is to summarize the required volumes that will need to be placed in the expanded Fedlife basin.

- **Detention Volume**

Required detention volume is calculated based on the Bulletin 75 nomograph using the added impervious area. Based on the current geometry, a total of 1.04 AC-FT of detention storage is required to be placed in the expanded Fedlife Basin. This detention volume does not account for any future access drive on the Fedlife site.

- **Compensatory Storage Volume**

Compensatory storage volume has been calculated based on the Phase II cross sections. The calculated fill only accounts for fill placed by the Deerfield and Milwaukee Road improvements and does not take credit for any proposed cut in the Fedlife Basin or any fill place by future access road on the Fedlife site. The water surface elevations have been based on an IDOT approved Hydraulic Report using the regulatory model. The normal water level (NWL) is based on coordination with the developer and record drawings citing the 638 elevation. A 1.2:1 Compensatory storage ratio was utilized to calculate the required



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compensatory storage volume. The elevations that were used along the Fedlife site are as follows.

NWL=638.00
10-Year=642.25
100-Year=645.00

Changes from Phase I numbers are using a lower NWL of 638 vs. 639. This change causes an increase in fill between the NWL-10-year elevations. Geometric and project limit changes cause a slight decrease in the required 10-100 Year volumes. The required compensatory storage floodplain volumes are summarized below. The volumes below include the required floodway volume.

NWL-10 Year =1.21 AC-FT
10-100 Year=0.88 AC-FT

- ***Other Considerations***

The proposed low edge of pavement in the project is 643.50. This elevation is lower than the 100-Year floodplain elevation. Freeboard design deviations were granted as part of the Phase I design. Any proposed detention HWL within the proposed basin should factor in freeboard to this low edge of pavement.

- ***Summary***

Based on the current design, a total of 3.13 AC-FT of volume is required. This volume is proposed to be placed in an excavation on the existing Fedlife property. These numbers do not reflect any proposed access road along the Fedlife site. Below is a summary of the required volumes.

Detention=1.04 AC-FT
NWL-10 Year =1.21 AC-FT
10-100 Year=0.88 AC-FT



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