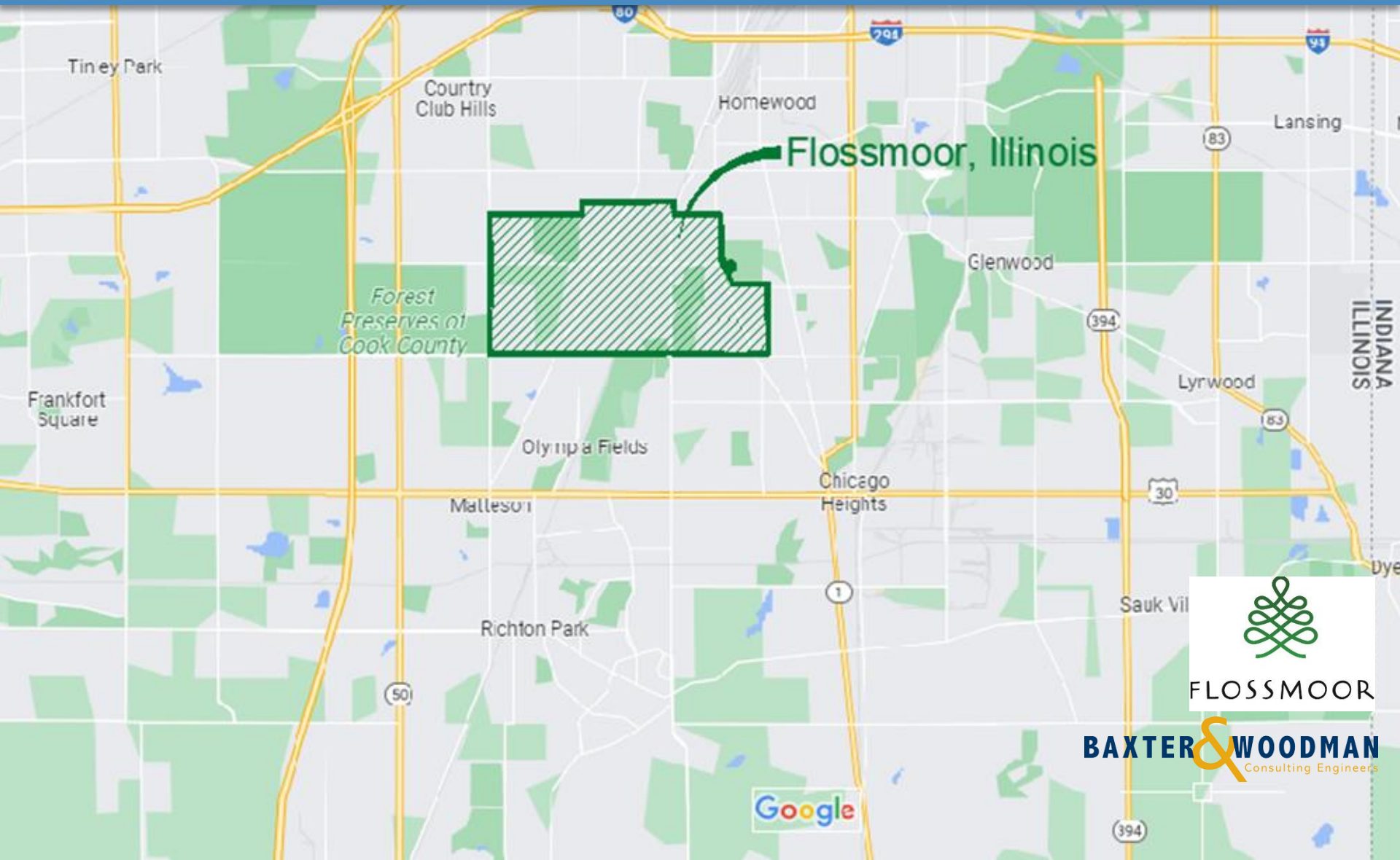




## Illinois Association for Floodplain and Stormwater Management *Multiple Funding Partnerships for Stormwater Mitigation*



## Where is Flossmoor, Illinois?



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

## History of Flossmoor



Flossmoor Train Station built in 1890 with the extension of the Illinois Central Railroad



Incorporated in 1924 with a population of 270



Developed as a summer home and golf destination for IC Railroad executives and the University of Chicago faculty





## Flossmoor Today

- Located 28 miles south of the City of Chicago in Southern Cook County
- Diverse population of 9,704 (2020 census)
- Area of 3.66 square miles
- Bedroom community



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

## Flossmoor Road Viaduct Flooding

Viaduct flooding is top priority to Village for mitigation

Flooding has been an issue since its construction in early 1900s



*Flossmoor Rd. Viaduct - 1928*



*Flossmoor Rd. Viaduct - 1951*



## Flossmoor Road Viaduct Flooding - 2019





## Berry Lane Flooding - 2019



## Plan of Action

Previous ACOE drainage studies focused on viaduct

Baxter & Woodman completed a comprehensive study in 2020

Determined two options for improvements



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers



## Funding

- In November 2020, G.O. Bond Referendum was approved by voters for \$10 million for Street Rehabilitation and Flossmoor Road Viaduct Drainage Improvements
- Half of Bond proceeds were allocated for viaduct project
- Rebuild Illinois Bond Fund proceeds were used for viaduct engineering



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

# Balancing Funding Requirements and Deadlines

**Nov. 2019**

**Flooding**

**July 2020**

**Nov. 2020**

**Spring 2022**

**Finding Funding**

**Comprehensive Study**

**ACOE Project**

**Green  
Infrastructure**



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

## Balancing Funding Requirements and Deadlines

2019 Flooding initiated increased interest in solving flooding

**November 2019: Legislator Meeting**

**December 2019: MWRD Meeting**

**December 2019: Initiate ACOE Discussion**

~~February 2020: FEMA HMGP Pre-Application~~

May 17 & 23, 2020: Viaduct and Street Flooding

~~June 2020: DCEO (Rebuild Illinois) Application~~

June 2020: Start Comprehensive Study

July 2020: ACOE Selection Notification





## Balancing Funding Requirements and Deadlines

August 2020: IEPA GIGO Application

September 2020: MWRD GI Partnership Application

September 2020: Formal ACOE Selection (~\$1.5M)

★ October 2020: Comprehensive Study Preliminary Draft Memo

October 2020: Kick-Off ACOE Schedule

~~November 2020: Village votes to approve Referendum~~

November 2020: FEMA BRIC Application

November 2020: Define ACOE Scope of Work

November 2020: ACOE Preliminary Design Submittal (QCP, Alternative Analysis)



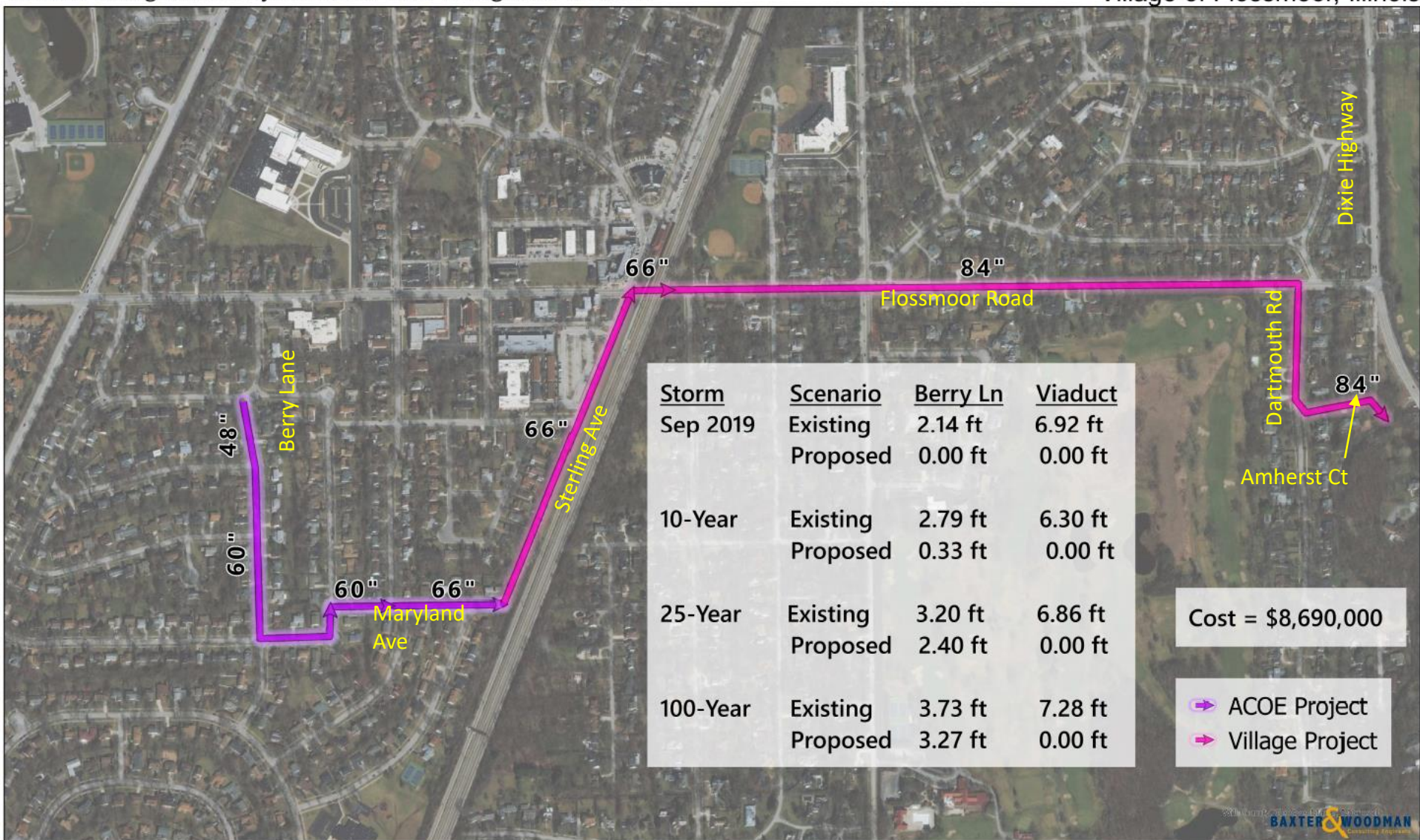
FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

# Upsized Conveyance Option

10-Year Design for Berry Lane, 100-Year Design for Viaduct

Village of Flossmoor, Illinois



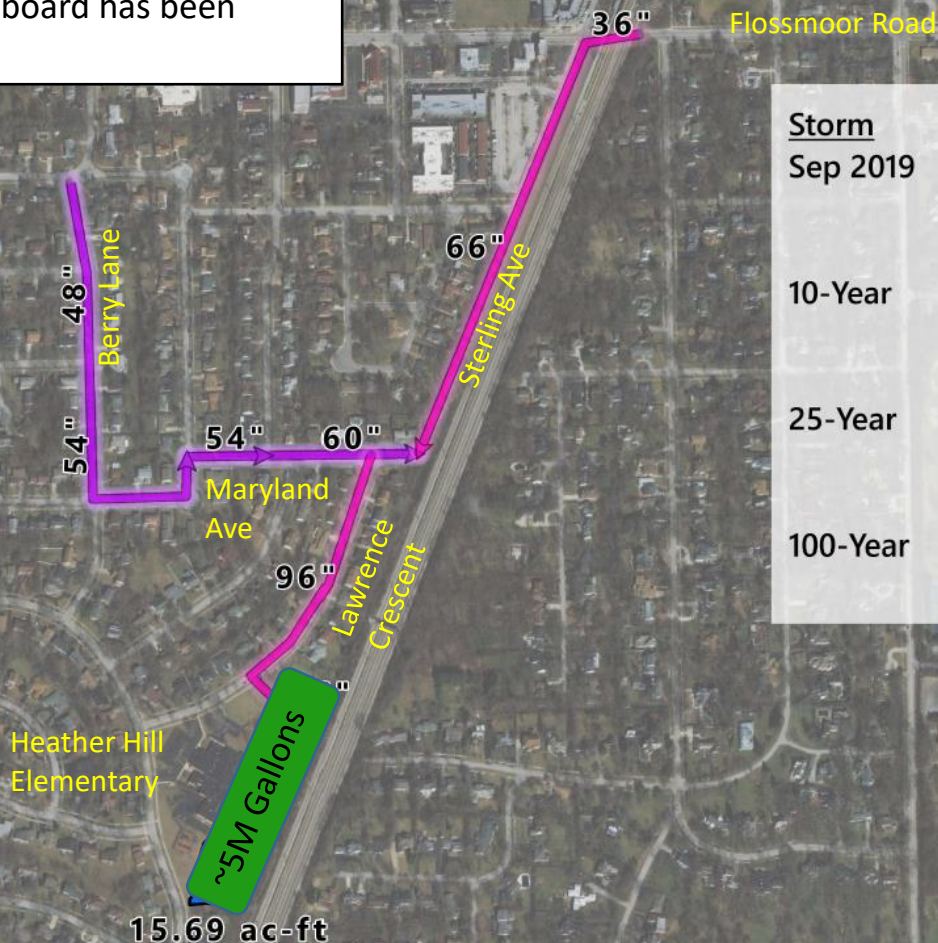


# Local Detention Option

## 10-Year Design

Village of Flossmoor, Illinois

School District and Park District staff are open to the concept – neither board has been approached yet.



| Storm    | Scenario | Berry Ln | Viaduct |
|----------|----------|----------|---------|
| Sep 2019 | Existing | 2.14 ft  | 6.92 ft |
|          | Proposed | 0.00 ft  | 4.83 ft |
| 10-Year  | Existing | 2.79 ft  | 6.30 ft |
|          | Proposed | 0.52 ft  | 0.35 ft |
| 25-Year  | Existing | 3.20 ft  | 6.86 ft |
|          | Proposed | 2.60 ft  | 4.05 ft |
| 100-Year | Existing | 3.73 ft  | 7.28 ft |
|          | Proposed | 3.37 ft  | 7.13 ft |

Cost = \$7,240,000

- ACOE Project
- Village Project
- Proposed Detention Basin



## Balancing Funding Requirements and Deadlines

August 2020: IEPA GIGO Application

September 2020: MWRD GI Partnership Application

September 2020: Formal ACOE Selection (~\$1.5M)

October 2020: Comprehensive Study Preliminary Draft Memo

★ October 2020: Kick-Off ACOE Schedule

~~November 2020: Village votes to approve Referendum~~

November 2020: FEMA BRIC Application

November 2020: Define ACOE Scope of Work

November 2020: ACOE Preliminary Design Submittal (QCP, Alternative Analysis)



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

# ACOE Schedule

| Task Mode | Task Name   | Duration | Start        | Finish       |
|-----------|---|----------|--------------|--------------|
| 1         | <b>Project Formulation (LS, AE &amp; USACE)</b>                   | 299 days | Thu 10/24/19 | Tue 12/15/20 |
| 2         | Initial Letter of Intent  | 27 days  | Thu 10/24/19 | Fri 10/2/20  |
| 3         | Initial USACE, LS & AE meeting                                    | 1 day    | Wed 9/23/20  | Wed 9/23/20  |
| 4         | Local Sponsors provide Project Scope and Location Map             | 20 days  | Thu 9/24/20  | Wed 10/21/20 |
| 5         | USACE Planning develops Scoping Letter                            | 10 days  | Thu 10/22/20 | Wed 11/4/20  |
| 6         | Scoping Letter approved   | 5 days   | Thu 11/5/20  | Wed 11/11/20 |
| 7         | Scoping Letter posting period                                     | 24 days  | Thu 11/12/20 | Tue 12/15/20 |
| 8         | <b>Initial Design Development</b>                                 | 22 days  | Thu 10/22/20 | Fri 11/20/20 |
| 9         | Pre-Design Conference & Kickoff                                   | 1 day    | Thu 10/22/20 | Thu 10/22/20 |
| 10        | USACE QAP (Budget, Schedule)                                      | 15 days  | Fri 10/23/20 | Thu 11/12/20 |
| 11        | AE Develop QCP, Alternatives Analysis                             | 10 days  | Fri 10/23/20 | Thu 11/5/20  |
| 12        | Preliminary Design Submittal (C Analysis)                         | 20       |              |              |
| 13        | USACE reviews and posts comments in DrChecks                      | 21       |              |              |
| 14        | AE responds to Preliminary Design DrChecks                        | 22       |              |              |
| 15        | <b>50% Submittal Development (AE)</b>                             | 23       |              |              |
| 16        | Development of Pre 50% Design Estimate and 100% Real Estate Plans | 24       |              |              |
| 17        | AE Internal Review  | 25       |              |              |
| 18        | Pre 50% Submittal of Quantities Real Estate Plans Submittal       | 26       |              |              |
| 19        | USACE Development of 50% Cost Schedule                            | 27       |              |              |
| 20        |   | 28       |              |              |
| 21        |   | 29       |              |              |
| 22        |   | 30       |              |              |
| 23        |   | 31       |              |              |
| 24        |   | 32       |              |              |
| 25        |   | 33       |              |              |
| 26        |   | 34       |              |              |
| 27        |   | 35       |              |              |
| 28        |   | 36       |              |              |
| 29        |   | 37       |              |              |
| 30        |   | 38       |              |              |
| 31        |   | 39       |              |              |
| 32        |   | 40       |              |              |
| 33        |   | 41       |              |              |
| 34        |   | 42       |              |              |
| 35        |   | 43       |              |              |
| 36        |   | 44       |              |              |
| 37        |   | 45       |              |              |
| 38        |   | 46       |              |              |
| 39        |   | 47       |              |              |
| 40        |   | 48       |              |              |
| 41        |   | 49       |              |              |
| 42        |   | 50       |              |              |
| 43        |   | 51       |              |              |
| 44        |   | 52       |              |              |
| 45        |   | 53       |              |              |
| 46        |   | 54       |              |              |
| 47        |   | 55       |              |              |
| 48        |   | 56       |              |              |
| 49        |   | 57       |              |              |
| 50        |   | 58       |              |              |
| 51        |   | 59       |              |              |
| 52        |   | 60       |              |              |
| 53        |   | 61       |              |              |
| 54        |   | 62       |              |              |
| 55        |   | 63       |              |              |
| 56        |   | 64       |              |              |
| 57        |   | 65       |              |              |
| 58        |   | 66       |              |              |
| 59        |   | 67       |              |              |
| 60        |   | 68       |              |              |
| 61        |   | 69       |              |              |
| 62        |   | 70       |              |              |
| 63        |   | 71       |              |              |
| 64        |   | 72       |              |              |
| 65        |   | 73       |              |              |
| 66        |   | 74       |              |              |
| 67        |   | 75       |              |              |
| 68        |   | 76       |              |              |
| 69        |   | 77       |              |              |
| 70        |   | 78       |              |              |
| 71        |   | 79       |              |              |
| 72        |   | 80       |              |              |
| 73        |   | 81       |              |              |
| 74        |   | 82       |              |              |
| 75        |   | 83       |              |              |

Start – 10/2020  
100 % PSE – 6/2021  
Bidding – 8/2021

|    |   |         |             |             |
|----|---|---------|-------------|-------------|
| 57 | Development of 100% Drawings, Specifications and DA including Internal Review | 25 days | Tue 3/9/21  | Mon 4/12/21 |
| 58 | OP SEC Cover Sheet -> Security Officer  | 5 days  | Tue 4/13/21 | Mon 4/19/21 |
| 59 | AE Submittal Revised Quantity to USACE Cost Engine                            | 5 days  | Tue 4/13/21 | Mon 4/19/21 |
| 60 | Development of 100% Bid Schedule and Cost Estimate                            | 10 days | Tue 4/20/21 | Mon 5/3/21  |
| 61 | Submit 100% Bid Schedule to Contracting                                       | 1 day   | Tue 5/4/21  | Tue 5/4/21  |
| 62 | Contracting provides revised Front Ends for 100% Review                       | 3 days  | Wed 5/5/21  | Fri 5/7/21  |
| 63 | Submit 100% Plans and Specs including Front Ends                              | 1 day   | Mon 5/10/21 | Mon 5/10/21 |
| 64 | <b>100% BCOES, LS Review, QA Review (USACE)</b>                               | 15 days | Tue 5/11/21 | Mon 5/31/21 |
| 65 | USACE reviews and posts comments in DrChecks                                  | 10 days | Tue 5/11/21 | Mon 5/24/21 |
| 66 | 100% Plan in Hand Site Visit  | 1 day   | Thu 5/20/21 | Thu 5/20/21 |
| 67 | AE responds to 100% Comments in DrChecks                                      | 5 days  | Tue 5/25/21 | Mon 5/31/21 |
| 68 | <b>Backcheck Review</b>   | 9 days  | Tue 6/1/21  | Fri 6/11/21 |
| 69 | Complete Backcheck Plans and Specs  | 5 days  | Tue 6/1/21  | Mon 6/7/21  |
| 70 | USACE Review BackCheck Submittal  | 4 days  | Tue 6/8/21  | Fri 6/11/21 |
| 71 | <b>Certified Final (AE)</b>   | 4 days  | Mon 6/14/21 | Thu 6/17/21 |
| 72 | <b>Certified Final P/S</b>  | 4 days  | Mon 6/14/21 | Thu 6/17/21 |
| 73 | <b>Final Approval (USACE)</b>   | 9 days? | Fri 6/18/21 | Wed 6/30/21 |
| 74 | DQC Checklist Complete  | 4 days  | Fri 6/18/21 | Wed 6/23/21 |
| 75 | TS Certification (CELRC FORM 41) route for approval                           | 5 days  | Thu 6/24/21 | Wed 6/30/21 |
| 76 | <b>Procurement Checklist (CELRC FORM 42) route for approval</b>               | 7 days? | Fri 6/18/21 | Mon 6/28/21 |
| 83 | <b>Solicitation Phase</b>   | 25 days | Thu 7/1/21  | Wed 8/4/21  |

## Balancing Funding Requirements and Deadlines

August 2020: IEPA GIGO Application

September 2020: MWRD GI Partnership Application

September 2020: Formal ACOE Selection (~\$1.5M)

October 2020: Comprehensive Study Preliminary Draft Memo

October 2020: Kick-Off ACOE Schedule

★ November 2020: Village votes to approve Referendum

~~November 2020: FEMA BRIC Application~~

November 2020: Define ACOE Scope of Work

November 2020: ACOE Preliminary Design Submittal (QCP, Alternative Analysis)



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers



## Balancing Funding Requirements and Deadlines

December 2020: Notified of MWRD Green Infrastructure Partnership Award

January 2021: Notified of IEPA GIGO Award

\*January 20, 2021: ACOE Funding Reduced

★ February 2021: ACOE 50% Submittal (50% Drawings, EOPC, Real Estate Plans)

February 2021: Comprehensive Study Presentation to Village Board

May 2021: ACOE 100% Submittal

August 2021: ACOE Bid Opening

\*February 2021: Full ACOE Funding Reinstated



FLOSSMOOR

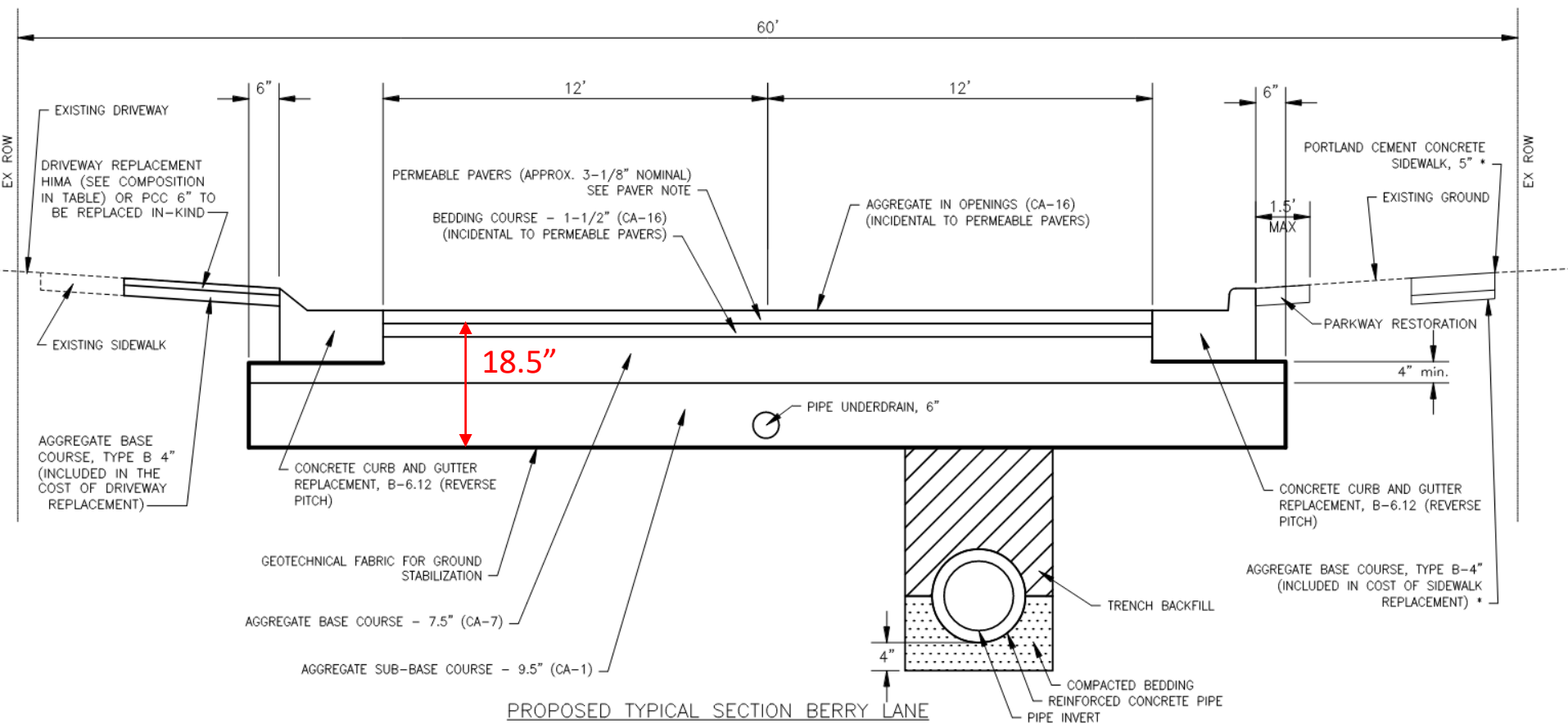
**BAXTER & WOODMAN**  
Consulting Engineers

## ACOE Project



- ACOE Project Defined Early
- Upstream Project Works!
- Add Permeable Pavers

# Berry Lane - Full Width Permeable Pavers





## Balancing Funding Requirements and Deadlines

December 2020: Notified of MWRD Green Infrastructure Partnership Award

January 2021: Notified of IEPA GIGO Award

\*January 20, 2021: ACOE Funding Reduced

February 2021: ACOE 50% Submittal

★ February 2021: Comprehensive Study Presentation to Village Board

May 2021: ACOE 100% Submittal

August 2021: ACOE Bid Opening

\*February 2021: Full ACOE Funding Reinstated



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

## Balancing Funding Requirements and Deadlines

December 2020: Notified of MWRD Green Infrastructure Partnership Award

January 2021: Notified of IEPA GIGO Award

January 20, 2021: ACOE Funding Reduced

February 2021: ACOE 50% Submittal

★ February 2021: Comprehensive Study Presentation to Village Board

May 2021: ACOE 100% Submittal

August 2021: ACOE Bid Opening

February 2021: Full ACOE Funding Reinstated

IAFSM!

March 2022: Begin Construction

Spring 2022: Determine Downstream Project

November 2022: Construction Complete



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers

# Design Reviews

| Funding Agency | # of Reviews |
|----------------|--------------|
| ACOE           | 12           |
| MWRD           | 3            |
| IEPA           | 1            |
| Village        | 2            |

## *Sample Deadline Order:*

- ACOE – 50% Review
- MWRD – 30% Review

- ACOE – 100% Review
- MWRD 60% Review

## ***MWRD Reviews***

1. Preliminary Design Submittal
2. Response to Preliminary Design Submittal Comments
3. Pre 50% Submittal
4. 50% Submittal
5. Response to 50% Submittal
6. Revised Quantities
7. 100% Plans and Specs
8. Response to 100% P&S Comments
9. Back Check P&S
10. Certify Final P&S
11. For Bidding
12. For Construction



FLOSSMOOR

**BAXTER & WOODMAN**  
Consulting Engineers



# Other Requirements

ACOE Affirmative Action Goals

vs.

MWRD Affirmative Action Requirements

IEPA Quarterly Reporting





## Illinois Association for Floodplain and Stormwater Management *Multiple Funding Partnerships for Stormwater Mitigation*

