

# City of Harrisonburg Drainage Improvements Policy

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## **I. Purpose**

This policy describes the procedure for the request, approval, design, and construction of stormwater drainage improvement projects on, abutting, or affecting private property involving the expenditure of public funds. One purpose of this policy is to enhance the health, safety, and welfare of the residents of property upon which the improvements are constructed, property abutting the improvements, and property in other affected areas.

## **II. Introduction**

Stormwater drainage improvement projects often involve the installation of flood and erosion control improvements such as storm sewer pipe, storm drainage structures, and rip rap. They may also include larger best management practices such as detention ponds and stream restorations. On private property, some projects can feasibly be completed by the property owner. Other projects have a larger, regional effect and it is not feasible for such work to be performed without engineering oversight and a broader planning perspective. The construction of these larger projects may be performed by city staff or by a contract between the City and private construction firms.

This policy centers around drainage improvements for the larger, regional scale projects on private land. For larger-scale drainage improvement projects, proposed projects are initiated and may be completed by the procedure described in this policy. The Stormwater Advisory Committee will assist with review and selection of projects. Smaller projects, such as those on private land impacting one or two properties, should be explored through the Harrisonburg Conservation Assistance Program

## **III. Applicability**

This policy applies to projects on, abutting, or affecting private property within the City. This policy applies to properties that are experiencing drainage concerns such as standing or pooling water, erosion issues, or accelerated runoff issues.

## **IV. Procedure**

The procedure for implementing this policy includes the steps outlined below and described in more detail in the corresponding sections.

- A. Proposal of Project and Placement on Recommended Stormwater Drainage Projects List
- B. Facilitated Neighborhood Meeting
- C. Placement of Recommended Projects on the Prioritized Stormwater Drainage Projects List
- D. Engineering Study
- E. Project Approval and Funding
- F. Project Design and Maintenance Plan Development

- G. Easement Acquisition
- H. Long-term Maintenance Plan and Agreement
- I. Project Bidding and Construction
- J. Project Completion Acceptance
- K. Long Term Maintenance Begins

### **A. Proposal of Project and Placement on Recommended Stormwater Drainage Projects List**

Projects may be proposed by submitting a completed Drainage Improvement Program Application to Public Works, by staff recommendation, by capital improvement project request, or by City Council request. A proposal of a project does not guarantee the project will be accepted or completed. Proposed project applications will be evaluated by the Director of Public Works based on outfall adequacy<sup>1</sup>, the drainage problem severity, the project potential to be linked to water quality pollutant removal, the long-term maintenance needs, easement acquisition, site constraints, synergy with other city projects, and other stormwater drainage engineering criteria.

The project must meet the following criteria:

1. Necessity for the proposed drainage project must be demonstrated.
2. The proposed project is feasible based on scope, complexity, constraints, etc.
3. There must be adequate outfall.
4. The public benefit and utility of the proposed project must be significantly greater than any adverse environmental and downstream impacts.
5. The proposed project must be of public benefit or utility.

The Director of Public Works will not recommend for Stormwater Advisory Committee (SWAC) consideration and will dismiss a project application if it does not meet the criteria set out above.

Projects that initially meet the criteria will be reviewed by SWAC during one of the regularly held quarterly meetings. If SWAC approves the project, it will be placed on the recommended stormwater drainage projects list.

If SWAC does not approve project, the applicant will receive a memo detailing why the project was denied.

A project that is not considered for the recommended stormwater drainage projects list may be appealed to the SWAC at their next regularly held meeting. A written request to Public Works

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<sup>1</sup> Drainage Improvement Plan projects must be able to discharge concentrated runoff into an adequate manmade, restored, or natural stormwater conveyance system. Channel adequacy is conditioned on the channel being able carry runoff without overtopping and without eroding the channel bottom. If there is no adequate conveyance system to discharge flow into, one will need to be constructed, or an alternative design will be needed. Discharge to level spreader devices intended to convert concentrated discharges into sheet flow may be considered by the City on a case-by-case basis. For some projects, needed improvements may extend onto adjacent properties, in which case permission from the adjacent owner, or possibly private drainage easements, will be needed.

must be submitted at least 30 days before the next regularly held SWAC meeting for the appeal to be heard.

#### **Citizen Tasks**

- Complete and submit a Drainage Improvements Program Application. Prior to submittal, it is recommended (but not required) that the applicant meets with neighbors to discuss the program and application
- Optional to appeal to SWAC if a project is not considered for the recommended stormwater drainage projects list

#### **Outcomes**

- Projects that are feasible will be placed on the recommended stormwater drainage projects list

### **B. Facilitated Neighborhood Meeting**

Once the project is placed on the recommended stormwater drainage projects list, Public Works will coordinate a facilitated neighborhood meeting for the project. At this meeting, project scope, funding, and timeline will be discussed. Easement donation letters will be collected from all property owners. If easement donations are not received from all property owners, the project will be removed from the recommended stormwater drainage projects list.

#### **Citizen Tasks**

- Work with Public Works staff to coordinate a facilitated neighborhood meeting
- Collect easement donation letters within a timely manner

#### **Outcomes**

- Community meeting
- Easement donation letters

### **C. Placement of Recommended Projects on the Prioritized Stormwater Drainage Projects List**

The Department of Public Works will prioritize the recommended stormwater drainage projects list using the Drainage Improvement Project Ranking Factors and Scoring Guidelines. For projects rated equally, the lower cost project will be given a higher priority. Proposed projects may be added to the list and prioritized by the procedure described in this policy. Public Works staff will maintain the prioritized stormwater drainage projects list.

A project may be removed from consideration at the direction of the Director of Public Works, City Council, or at the request of the person(s) initiating the project. Person(s) initiating the project may not remove the project if costs have been incurred by the City.

If the project is removed from consideration at the direction of the Director of Public Works or City Council, the applicant will receive a memo detailing why the project was removed. A project may be appealed to the SWAC at their next regularly held meeting. A written request to Public Works must be submitted at least 30 days before the next regularly held SWAC meeting for the appeal to be heard.

Once a project is added to the prioritized stormwater drainage projects list it will be assessed, according to its prioritization on the list, through a detailed preliminary engineering study.

#### **Citizen Tasks**

- None required, optional to appeal to SWAC if a project is removed from consideration by the Director of Public works or City Council

#### **Outcomes**

- Project prioritization
- Conceptual cost estimate

#### **D. Engineering Study**

Once a project is placed on the prioritized stormwater drainage projects list it qualifies for a preliminary engineering study (subject to available resources). This study will determine the feasibility of the proposed project, the environmental impacts of the project, and the impact on existing structures, facilities and affected properties. A preliminary cost estimate will also be prepared at the end of the study.

All projects placed on the prioritized stormwater drainage projects list that qualify for an engineer's preliminary study (as resources allow) must continue to meet the project criteria outlined in Section A.

If the preliminary engineering study finds the project does not meet the project criteria, or is not cost effective or within budgeted funding, it will be removed from the prioritized stormwater drainage projects list.

If the above occurs, the applicant will receive a memo detailing why the project was removed from the prioritized stormwater drainage projects list. A project may be appealed to the SWAC at their next regularly held meeting. A written request to Public Works must be submitted at least 30 days before the next regularly held SWAC meeting for the appeal to be heard.

#### **Citizen Tasks**

- None required, optional to appeal to SWAC if a project is removed from the prioritized stormwater drainage projects list after the engineering study

## **Outcomes**

- Project engineering study
- Preliminary cost estimate

## **E. Project Approval and Funding**

Projects will require Council approval before implementation. The results of the preliminary engineering study and prioritization process will be relayed to the City Council, along with a staff and SWAC recommendations regarding project approval, funding, and scheduling. Projects may be approved by appropriations for funds during the annual budget process or by the City Council at other times throughout the year on an as-needed basis. A public hearing is required if the necessary funds have not been previously appropriated. City Council will be provided with the current projects list for review on an annual basis during the annual five-year Capital Improvement Program (CIP) process. City staff will establish that the drainage project meets the criteria outline in Section A and that the Drainage Improvements Program procedure has been followed.

## **Citizen Tasks**

- None required, optional to attend public hearings/meetings to show support for project

## **Outcomes**

- Project engineering study
- Preliminary cost estimate

## **F. Project Design and Maintenance Plan Development**

The Department of Public Works is responsible for project design and the preparation of construction plans. A maintenance plan and maintenance agreement will be developed for each project. There will be varying property owner(s) responsibilities and City responsibilities for long-term maintenance depending on the project type.

## **Citizen Tasks**

- Understand and be prepared to sign maintenance agreements with attached maintenance plans

## **Outcomes**

- Project engineering study
- Preliminary cost estimate
- Develop preliminary maintenance plans and maintenance agreements

## **G. Easement Acquisition**

The Department of Public Works is responsible for preparing easement plats (showing what temporary and permanent easements will be needed on each property) for each approved project. This includes those projects with water quality features that will be submitted by the City for Chesapeake Bay TMDL pollutant removal requirements.

The Department of Public Works is responsible for preparing legal documents for the easements. Property owners are responsible for donation of all necessary easements for project design, construction, and long-term maintenance. The Department of Public Works will attempt to accommodate any reasonable suggestions and comments of property owners concerning project design. Land acquisition is a ranking criterion in determining the financial and practical feasibility of any given project; projects with a straightforward land acquisition process will rank the highest. The final project design and plan approval is the responsibility of the Director of Public Works.

### **Citizen Tasks**

- Donate necessary easements

### **Outcomes**

- Completed project design/construction plans
- Easement plats
- Land acquisition complete

## **H. Long-term Maintenance Plan and Agreement**

A maintenance plan and maintenance agreement will be developed for each project. There will be varying property owner(s) responsibilities and City responsibilities for long-term maintenance depending on the project type. It is the responsibility of the property owner(s) to sign a maintenance agreement with an attached maintenance plan. In general, for all projects, an annual inspection will be performed by Public Works staff and issues will be addressed by Public Works that fall under their responsibilities outlined in the maintenance agreement.

### **Citizen Tasks**

- Understand and sign maintenance agreements with attached maintenance plans

### **Outcomes**

- Develop final maintenance plan and maintenance agreements
- Acquire maintenance agreements from all property owners

## **I. Project Bidding and Construction**

The Department of Public Works is responsible for all project bidding and construction monitoring, including but not limited to: surveying, contractor supervision, inspection, and approval of invoices.

### **Citizen Tasks**

- None

### **Outcomes**

- Construction of project begins

## **J. Project Completion Acceptance**

Accepting the final, completed project from the construction company is the responsibility of the Director of Public Works. Any concerns of a property owner as to whether a project has been properly constructed should be addressed by the Director of Public Works, the City Manager or the City Council.

### **Citizen Tasks**

- None

### **Outcomes**

- Project Completed

## **K. Long-term Maintenance Begins**

Following project acceptance, long-term maintenance of the project begins.

### **Citizen Tasks**

- Follow maintenance plan and maintenance agreement

### **Outcomes**

- Long-term maintenance begins



## V. Drainage Improvement Project Ranking Factors and Scoring Guidelines

The following will be used to determine the Prioritized Stormwater Drainage Projects List outlined in Section III, Part B.

Drainage Improvement Project Ranking Factors and Scoring Guidelines		
Ranking Factor	Scoring Guidelines	Score
Severity of Drainage Issues	Threat to habitable structures = 25	25
	Nuisance erosion and siltation, damage to landscaping, standing water in yard = 5	
Water Quality Benefits	Project has the potential to be paired with a water quality feature that yields pollutant removal = 20	20
	Project can not be paired with a water quality feature = 0	
Maintenance Burden (Long-term)	Low maintenance burden (e.g. concrete ditch conveyance, curb and gutter, curb cut) = 15	15
	Medium maintenance burden (e.g. closed drainage system, riprap channel, outfall stabilization) = 10	
	High maintenance burden (e.g. curb cut to bioretention or rain garden, detention pond, swales) = 5	
Land Acquisition and Public Buy-in	City-Owned Land = 10	10
	All easements donated by property owners = 5	
Site Constraints & Potential Utility Constraints	No apparent site or utility constraints = 10	10
	Vegetation or utilities present but relatively easy to avoid (e.g., electric or phone lines) = 7	
	Access somewhat constrained = 5	
	Vegetation or utilities present but relatively easy to avoid (e.g., electric or phone lines) AND Access somewhat constrained = 3	
	Poor access, major grading required, or karst area OR Major utilities must be moved (e.g., sewer) = 2	
	Poor access, major grading required, or karst area AND Major utilities must be moved (e.g., sewer) = 1	
Community Benefits	The project will benefit multiple properties in the community = 10	10
	The project will benefit 1-2 properties in the community = 0	
Implementation Schedule *Timeline begins after appropriation of funds	Project can be implemented in under 12 months, with no permitting requirements = 5	5
	Project can be implemented in under 12 months, with permitting requirements = 4 OR Project can be implemented in 12 to 24 months, with no permitting requirements = 4	
	Project can be implemented in 12 to 24 months, with permitting requirements = 2 OR Project cannot be implemented in under 2 years, with no permitting requirements = 2	
	Project cannot be implemented in under 2 years, with permitting requirements = 0	
Synergy	Project can be incorporated within other city infrastructure plans and projects AND provides environmental benefits beyond stormwater = 5	5
	Project can be incorporated within other city infrastructure plans and projects, including other potential best management practices = 4	
	Project may provide multi-purpose or environmental benefits beyond stormwater = 2.5	
	Other project benefits are very unlikely = 0	
<b>TOTAL =</b>		<b>100</b>

## **J. Types of Drainage Improvement Requests**

Public Works and other city departments field many questions and requests for drainage improvements. These are guidelines for how requests will be handled:

### **To be routed through Drainage Improvement Program:**

- New Drainage System Project
- Improvement of Drainage System
- Improvement of Outfalls
- Impounding, Rerouting, and Diverting Drainage System Waters

### **Example Projects:**

- Closed Drainage System
- Curb and Gutter
- Concrete Ditch Conveyance
- Riprap Channel/Check Dam System
- Curb Cut
- Curb cut to bioretention or rain garden
- Outfall stabilization
- Detention Pond
- Swales

### **To be routed through Public Works Service Request by calling 540-434-5928:**

- Repairs to existing public storm sewer system
- Unclogging of existing public storm sewer systems
- Request to inspect existing public storm sewer system

### **To be routed through the Harrisonburg Conservation Assistance Program (HCAP):**

- Rain Garden
- Bioretention
- Impervious Surface Removal
- Conservation Landscaping
- Rain Gardens
- Vegetated Stormwater Conveyances
- Rainwater Harvesting
- Permeable Pavement
- Green Roofs

## **J. Drainage Improvement Program Application**



City of Harrisonburg  
Department of Public Works  
320 East Mosby Road  
Harrisonburg, VA 22801  
540-434-5928  
[stormwater@harrisonburgva.gov](mailto:stormwater@harrisonburgva.gov)

## Drainage Improvement Program Application

Submit to: [stormwater@HarrisonburgVA.gov](mailto:stormwater@HarrisonburgVA.gov) or mail to: Department of Public Works, 320 East Mosby Rd, Harrisonburg, VA 22801

### Description of Drainage Problem

Provide a narrative description of the type, location, and frequency of the drainage problem.

### Neighborhood Liaison Contact Information

The neighborhood liaison will be the point of contact between City staff and property owners (neighborhood) impacted by the drainage problem. They will represent neighborhood interests and provide information about project development to their neighbors.

Liaison name (Last, First): \_\_\_\_\_

Mailing address: \_\_\_\_\_

Phone number (w/area code): \_\_\_\_\_ Email: \_\_\_\_\_

### Impact of Drainage Problem

Use the Harrisonburg City GIS Viewer (<https://www.harrisonburgva.gov/GIS>) to determine what properties are impacted by the drainage problem and would be impacted by a drainage improvement project. Attach a map of the drainage impact area and list the names and contact information for affected property owners below.

Name	Street Address	Phone Number	Email
1.			
2.			
3.			

Name	Street Address	Phone Number	Email
4.			
5.			
6.			
7.			
8.			
9.			
10.			

**Neighborhood Meeting \*OPTIONAL**

Prior to submitting this application, it is suggested that the impacted property owners listed above meet as a group to discuss the following questions:

**1. What project would the group consider the ideal solution to their drainage problem? *Provide a description of the project with as many details as possible.***

**2. What other possible solutions were discussed?**

**3. Describe why this project would be a reasonable use of citizen fee dollars.**

**4. Would the project be of public benefit or utility to multiple properties - if yes, how many properties would benefit?**

\_\_\_\_\_ number of properties

**5. Do you think that the project would yield any adverse environmental and downstream impacts such as tree removal, land disturbance, or erosion issues?**

**Required Attachments to Complete the Application:**

**Map of Drainage Impact Area**

Use the Harrisonburg City GIS Viewer (<https://www.harrisonburgva.gov/GIS>) to obtain a general map/sketch of the drainage issue and affected properties with parcel lines.

**Pictures of the Drainage Problem**

Photographs of the area to show what the drainage problem is. Pictures during a wet-weather event are encouraged.

**Additional Contact Information**

If there are more than 10 properties impacted by the drainage problem, attach contact information as an additional sheet.

**\*\*\*\*\* The Following is For City Use Only \*\*\*\*\***

**City staff recommends this project be considered by the Stormwater Advisory Committee (SWAC) at the next SWAC Meeting:**      Yes                       No

**The project was not moved to be considered by SWAC and was dismissed for the following reasons:**

The proposed project is not feasible.

Are there any other feasible alternatives?

The adverse environmental/downstream impact is greater than the public benefit and utility of the proposed project.

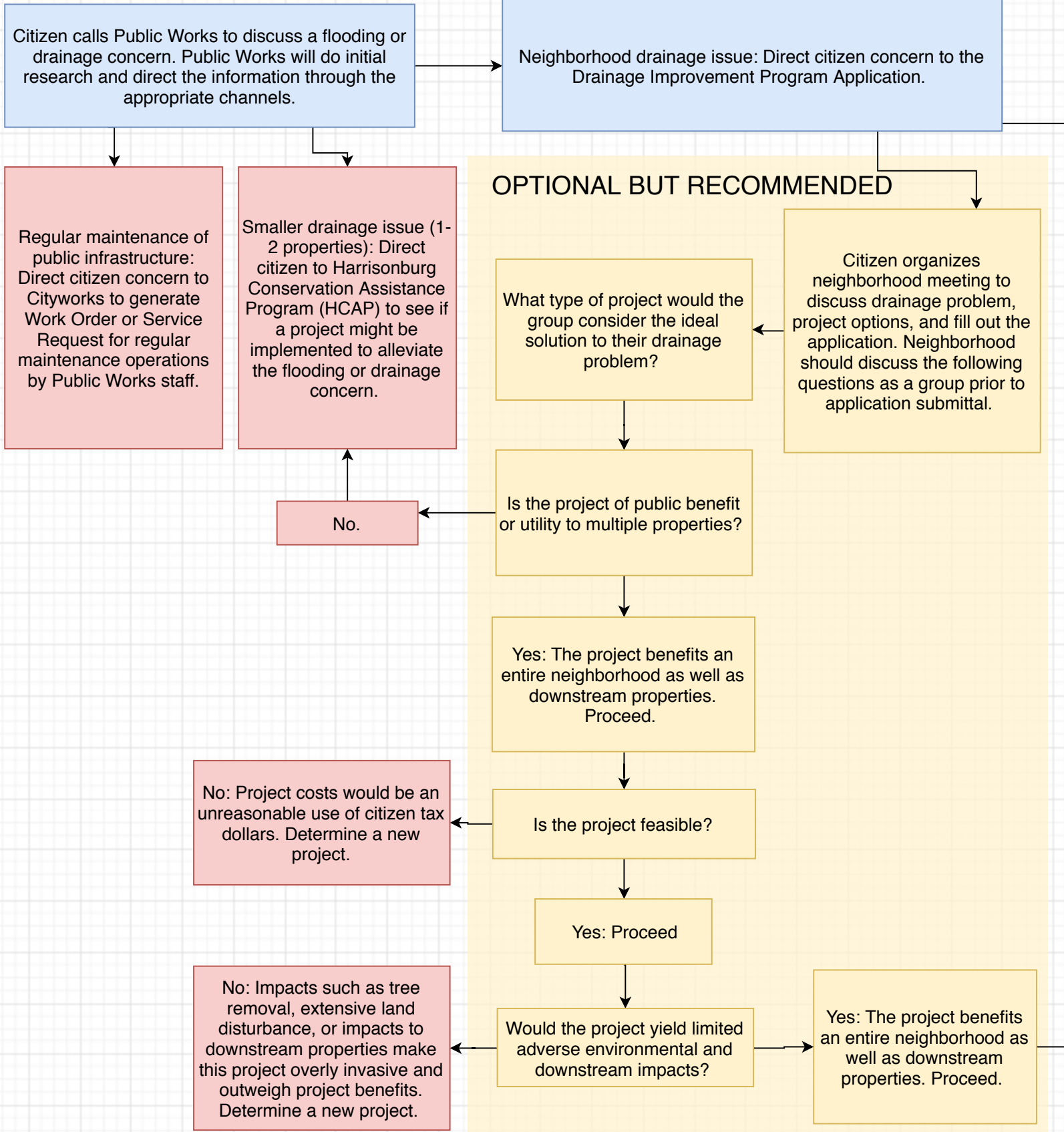
The proposed project is not of public benefit or utility.

The outfall is not adequate.

**J. Drainage Improvement Program Process**

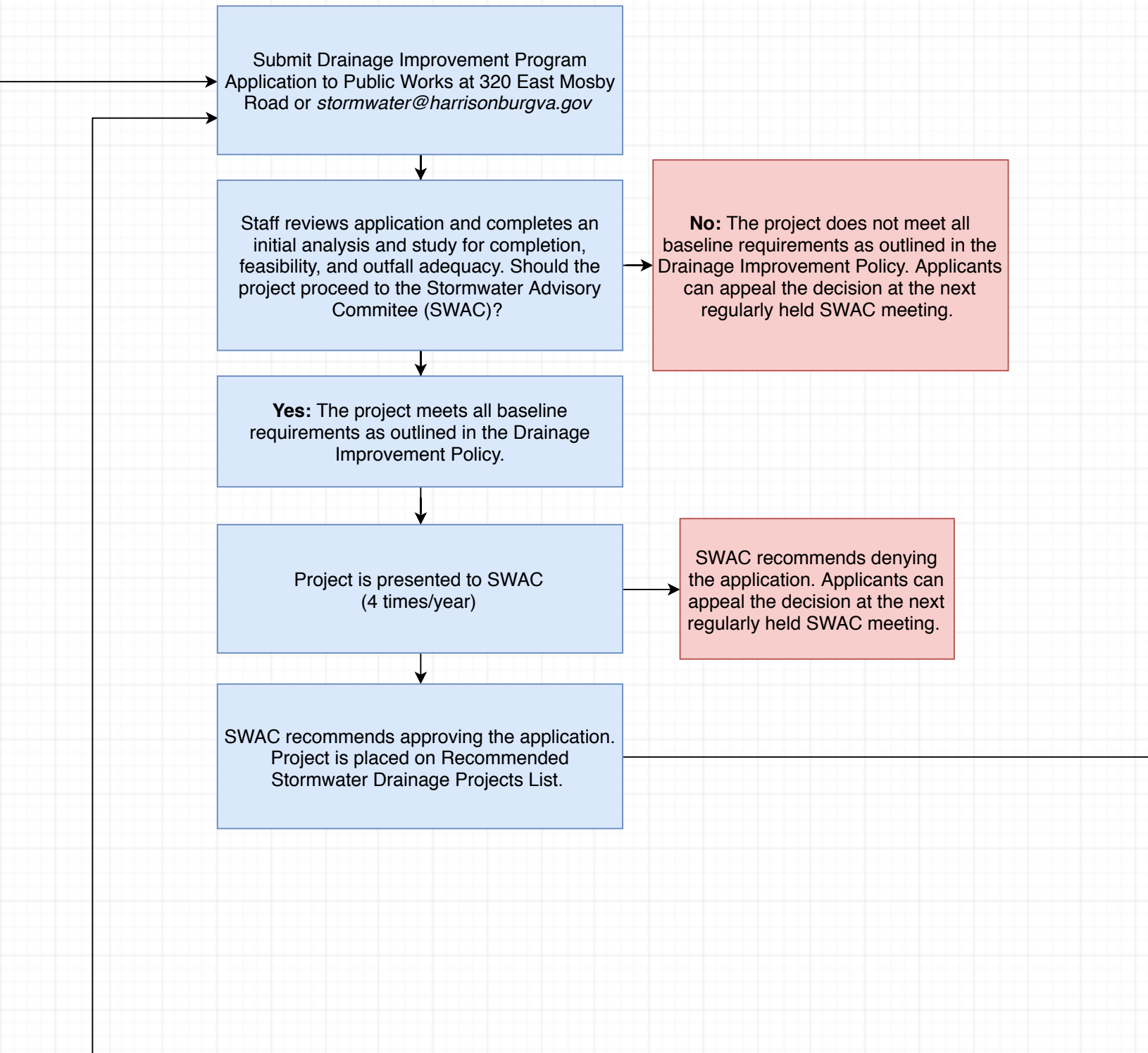
# Drainage Improvements Program

## A. Proposal of Project and Placement on Recommended Stormwater Drainage Projects List



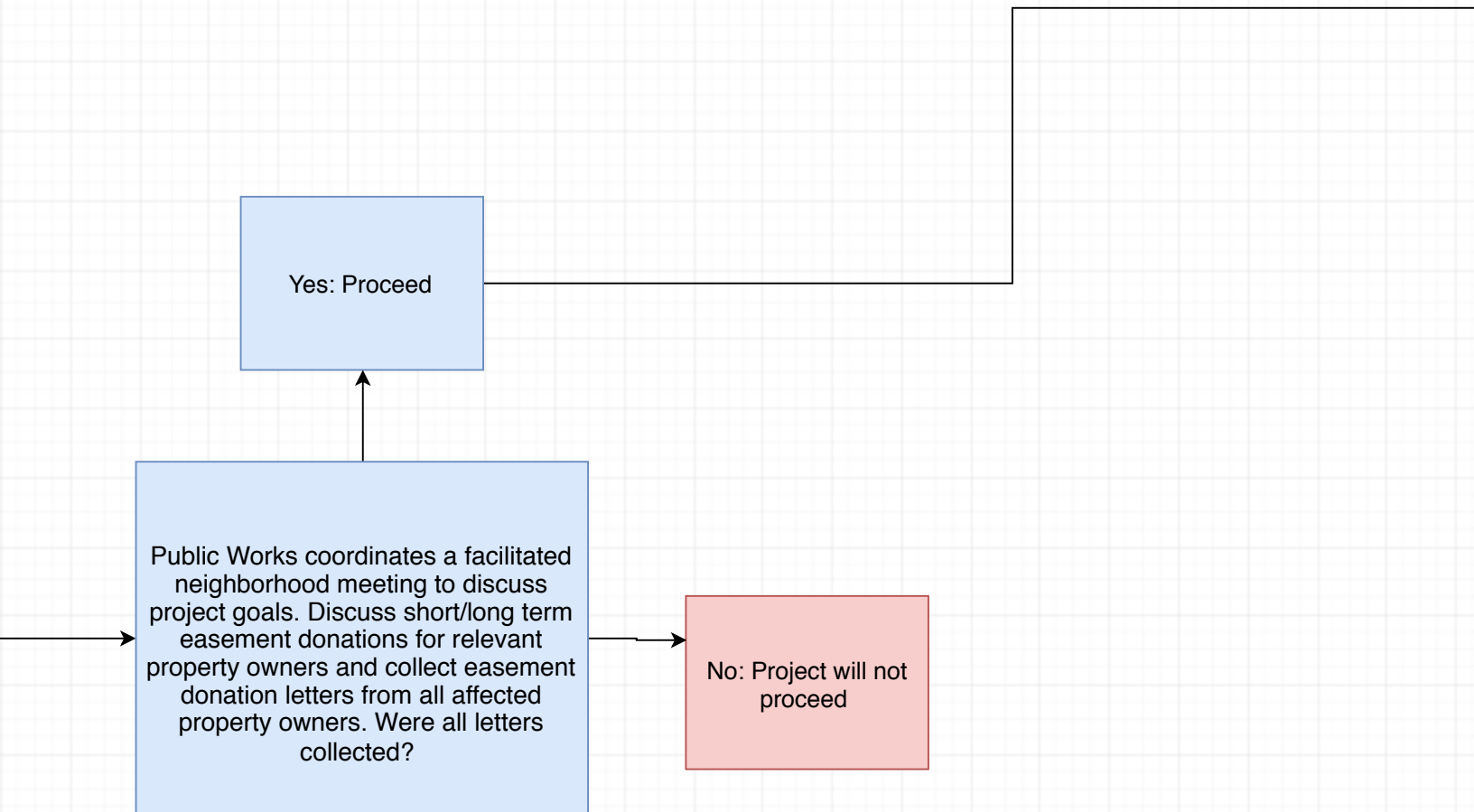


# A. Proposal of Project and Placement on Recommended Stormwater Drainage Projects List



**Timeline: 4 Months**

## B. Facilitated Neighborhood Meeting

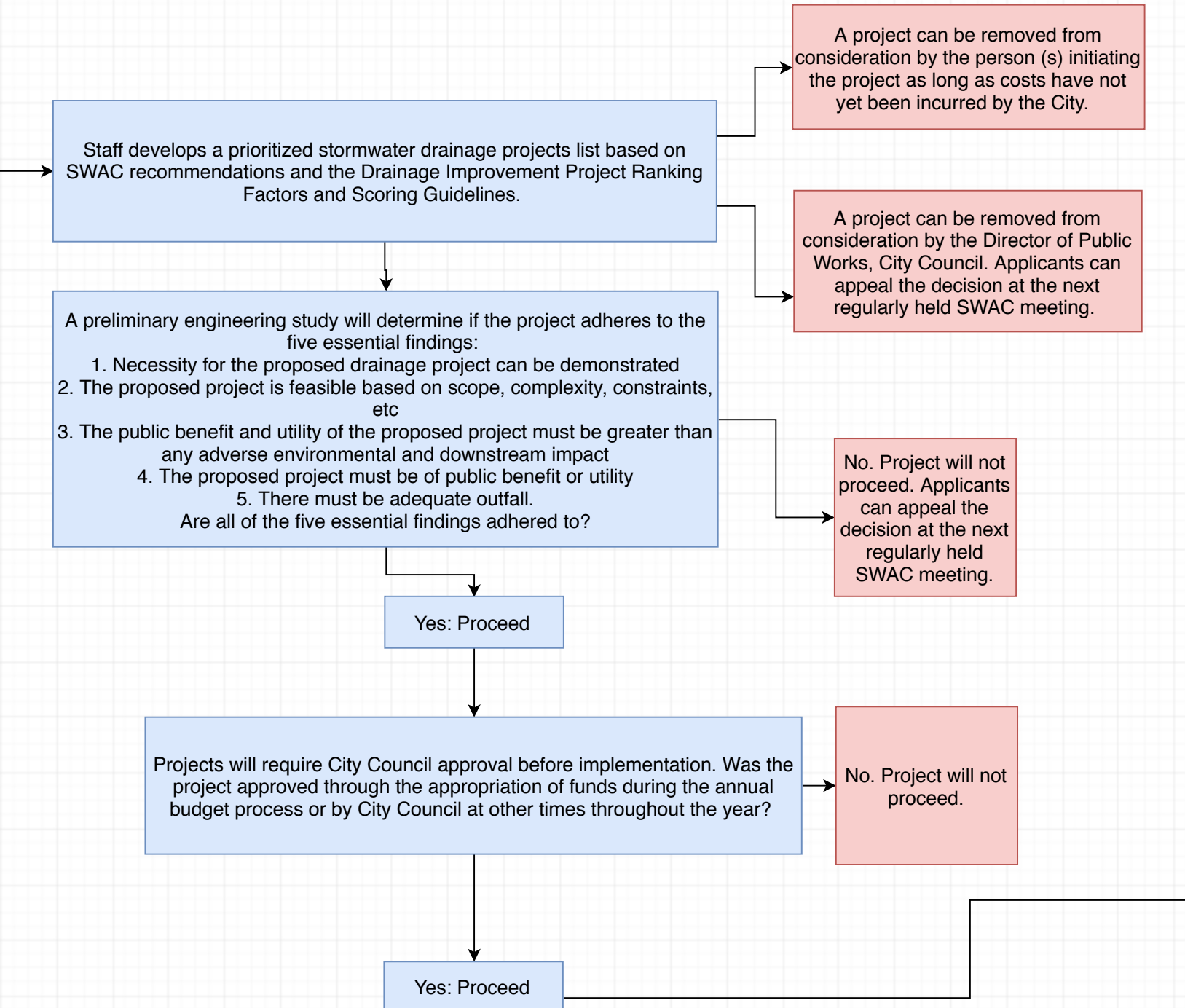


**Timeline: 1-2 Months**

# C. Placement of Recommended Projects on the Prioritized Stormwater Drainage Projects List

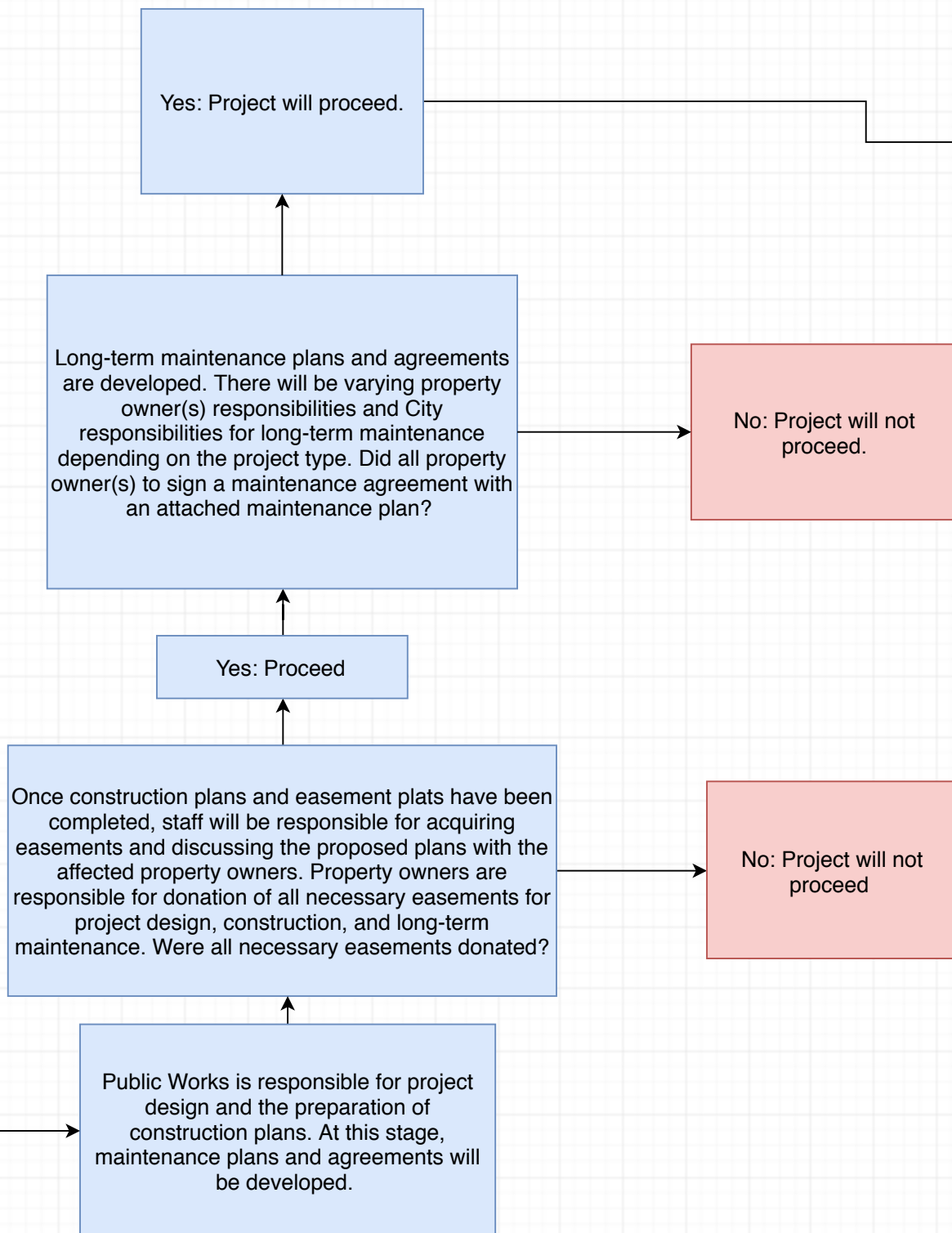
## D. Engineering Study

## E. Project Approval and Funding



**Timeline: 6 Months**

**F. Project Design and Maintenance Plan Development**  
**G. Easement Acquisition**  
**H. Long-term Maintenance Plan and Agreement**



**Timeline: Varies**

**I. Project Bidding and Construction**  
**J. Project Completion Acceptance**  
**K. Long-term Maintenance Begins**

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graph TD; A[Public Works will bid out project construction and is responsible for construction monitoring. Project is considered complete when the Director of Public Works accepts the project, taking ownership from the construction company.] --> B[Long-term maintenance begins.];
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Public Works will bid out project construction and is responsible for construction monitoring. Project is considered complete when the Director of Public Works accepts the project, taking ownership from the construction company.

Long-term maintenance begins.

**Timeline: Varies**