

A Stormwater Master Plan for Malvern Borough

February 21, 2023

Problem

Climate Change, Policy, Land Use Changes

ADAPTING TO CLIMATE CHANGE

NORTHEAST

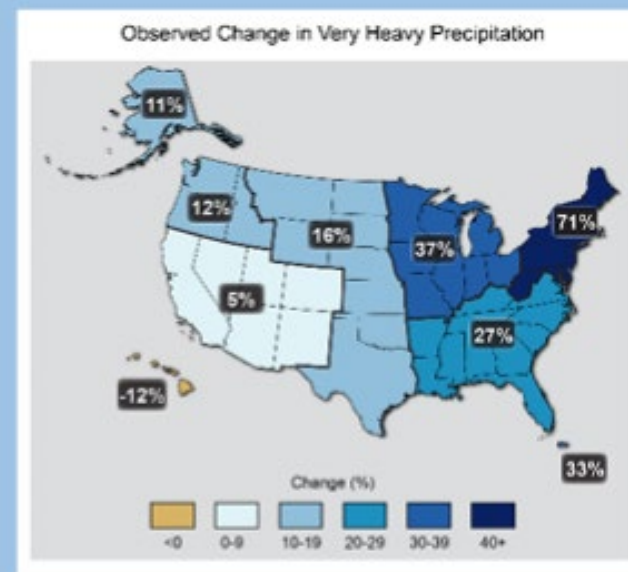


The Northeast is projected to experience increased precipitation, more frequent and intense storms, and higher average temperatures. These projected changes pose challenges to communities as they protect water and waste infrastructure, maintain water quality, and protect air quality and public health. Many communities are building resilience to the risks they face under current climatic conditions. This fact sheet provides examples of communities that are going beyond resilience to anticipate and prepare for future impacts.

Moving Beyond Resilience to Adaptation

Climate change adaptation goes beyond resilience by taking actions to address future risks. Adaptation refers to how communities anticipate, plan, and prepare for a changing climate.

Intense storms have increased



The Northeast experienced a 71% increase in the amount of precipitation falling in very heavy events (the heaviest 1%) from 1958 to 2012.

Stormwater Ordinance adopted in 2014 – applies to "new development, redevelopment, and earth disturbance activities that are located within the municipality." Development in that was in place prior to 2014 is excluded from the ordinance unless significant changes—increased impervious surface or earth disturbance—are undertaken on the property.

Impervious/Earth Disturbance	Required Remediation
impervious surfaces <400 sq. ft. or earth disturbance <5000 sq. ft.	No stormwater remediation required
impervious surfaces >400 but <1000 sq. ft. or earth disturbance <5000 sq. ft.	"Simplified Approach" – retain only the additional runoff generated by the increased impervious or earth disturbance
impervious surfaces of >1000 sq. ft. or earth disturbance >5000 sq. ft.	Full "Stormwater Management Site Plan" is required

Local Land Use Changes

- Stormwater impacts are likely to increase as a result of recent residential building trends— “existing residential dwellings will continue to be enlarged and others will be demolished and replaced with new dwellings to accommodate the needs and preferences of existing and future residents and property investors” (p. 16, 2022 Comp Plan Update).
- This redevelopment activity will increase impervious coverage and intensify stormwater runoff.



Headwater Responsibilities

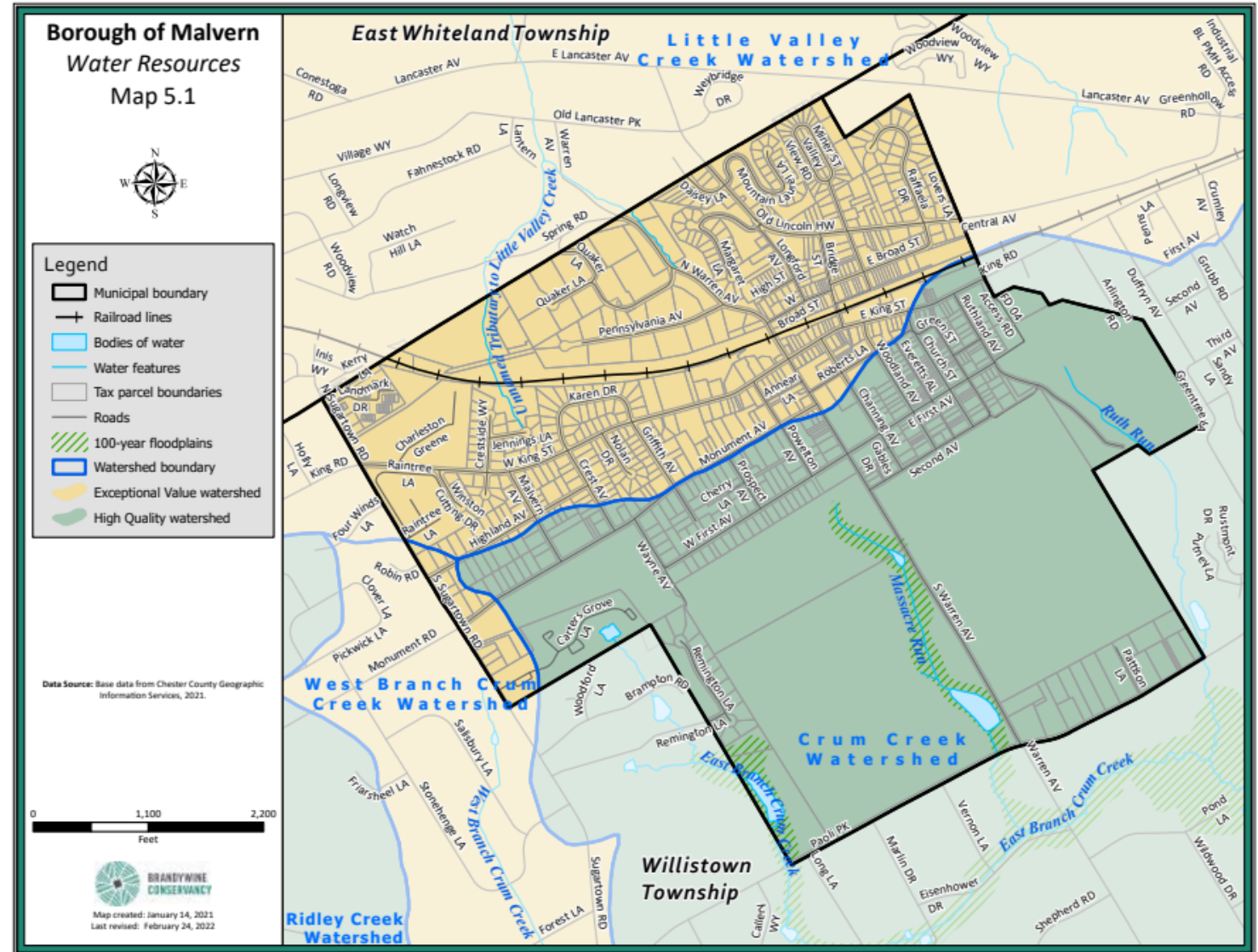
Malvern Borough lies at the headwaters of of

- Crum Creek – Exceptional Value (EV)
- Valley Creek - High Quality (HQ)

These designations provide protections for those waterways

- EV –water quality must be maintained
- HQ – water quality can only be lowered as a result of “necessary” development

Each watershed has a Stormwater Management Plan that Malvern Borough participated in developing. These plans call for the implementation of practices that improve stormwater management.



Headwaters are less resilient to disturbance and pollutants from land uses adjacent to or upstream of a headwater. Stormwater management at the headwaters impacts the overall hydrology of the stream.

Multiple areas in the Borough have already been identified as flood-prone and have sustained flood damage during heavy rain events—King Street and Warren Avenue, PMA/Tidewater, Bridge Street, as well as many private properties

PMA/Tidewater



North Warren Ave



Highland Ave
Goshorn Dr
Malvern Ave

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13 August 2018 · 🌧️

FLOODING! As of 8am-8:20:

King Street has standing water.

Bridge Street (yes! that hill) has torrents of water.

Old Lincoln Highway is nearly a washout. Torrents of brown water from Bridge down to the Old Lancaster Pike (the one to General Warren). The water reaches both sides of the road and is probably 6-8" high.

😱👍😞 28

61 comments

Solution

Stormwater Master Plan

Stormwater Master Plan, Not Just “Another Study”

- Evaluation of stormwater infrastructure system and stormwater inputs to identify deficiencies and to create a comprehensive plan to address stormwater problems

This goes beyond identifying individual flooding “problems” to understand the cumulative contributing factors throughout the Borough.

- Model alternatives and strategies to increase effectiveness of the stormwater system in reducing the frequency/extent of flooding and to determine the best alternatives for correcting deficiencies
- Develop a prioritized and phased plan for implementing improvements. Factors to be considered when prioritizing actions include
 1. overall costs and funding sources
 2. flood reduction and water quality benefits
 3. land suitability and ownership

Stormwater Master Plan Deliverables

1. Mapping of the existing stormwater infrastructure, including current conveyance systems, peak stormwater flow capacity, and discharge outlets (Strategy 7.1-10).
2. Identifying and mapping stormwater runoff and flooding problems throughout the Borough (Strategy 7.1-10).
3. Assessing the effectiveness of Malvern's current stormwater ordinance and updating and aligning the stormwater ordinance to reflect Chester County County's newly updated model ordinance (Strategy 2.1-2).
4. Identifying where green stormwater infrastructure (GSI) and best management practices could be employed to help mitigate flooding. The plan should emphasize infiltration of stormwater directly into the soil rather than conveyance that uses inlets and pipes that can be overwhelmed during large storm events (Strategies 5.2-1, 5.2-2).
5. Identifying specific areas where impervious surfaces can be limited or removed and areas where existing impervious surfaces can be replaced with GSI (Strategies 5.3-7).
6. Developing phased stormwater management planning that can be implemented over a period of time, consistent with the Valley Creek and Crum Creek watershed stormwater management plans, and can be coordinated with the Capital Improvement Program (Strategies 7.1-3, 7.1-10, 7.1-12).

Deliverables are designed to meet the Borough goals described in 2022 Comp Plan Update.

Next Steps

Action	Timeframe
Identify funding sources to complete a stormwater master plan and apply for grants (e.g., Growing Greener Watershed Protection grant, University sources for grant information)	1 year
Initiate a request for proposals (RFP) from engineering firms experienced in comprehensive stormwater management	9 months
Form task force comprised of MPC and EAC members to vet RFPs and make recommendation to MBC	6 months
Complete Master Stormwater Plan with phased implementation	2 years

Malvern Borough has stormwater issues.
They will not Magically go away.

1 September 2021 · 🌍

When someone asks how Malvern roads are...



😂👍 295

20 comments

Stormwater Master Plan for Malvern will ensure we
don't have unexpected visitors on our roads!