

Hare Snipe Watershed Study

The Hare Snipe Watershed Study will help us make informed and strategic decisions about stormwater projects planned over the next several decades. Projects identified from the watershed study include stormwater conveyance improvements, stream restoration, flood hazard mitigation, water quality improvements, and stormwater infrastructure rehabilitation.

Study Area

This watershed is one of 36 watersheds in Raleigh and covers more than seven square miles. The study area includes portions of Northwest Raleigh near Lake Lynn between Strickland Road and US70.

Community Engagement

We connected with those who live and work in the watershed to better understand stormwater priorities. As part of this watershed study, we released a survey to gather feedback on stormwater conditions, held three public meetings, and talked with many community members. In all, we've collected feedback from over **700 project participants**. We appreciate your feedback!



Hare Snipe Watershed Public Meeting

Key Findings and Project Recommendations

Improving Stormwater Conveyance

A hydraulic model was developed to look at the severity and frequency of flooding in the watershed. Conveyance improvements are made when existing pipes and culverts are too small to convey stormwater during rainfall events. Replacing undersized infrastructure can help reduce flooding and prevent roadway overtopping. Priority projects were identified to address roadway overtopping in the watershed.



Example of a Stormwater Conveyance Improvement

Repairing Stream Banks

The goal of the stream assessments was to collect information that will help inform the City's strategic planning, develop future stream enhancement opportunities, and further partnerships with the community. Twenty-two miles of stream were inventoried in the watershed and 70% have been impacted to the point where some level of stream restoration or stabilization would be beneficial. A number of stream enhancement opportunities were identified and prioritized. Because stream restoration projects often involve re-establishing a stream's floodplain, one consideration for these projects is the availability of land for the City to perform an effective project. Homeowners who wish to repair streambanks may contact our Drainage Assistance Program.



Repaired streambank in Hare Snipe watershed

Reducing Flooding Impacts in the Watershed

The floodplain is an area next to a river or creek that floods during a storm. The floodplain gives water a place to go when streams cannot handle any more water. The floodplain also helps to reduce pollution. We cannot prevent flooding in the floodplain, but we can take steps to offset the impacts to streets and structures. These steps could include constructing stormwater control measures such as wet or dry ponds to help manage stormwater runoff. However, there is limited space for effective stormwater detention/retention in the Hare Snipe watershed.



Flood mitigation in Hare Snipe Watershed

This means there is limited opportunity to significantly reduce the volume of stormwater that flows during rainfall events. In addition, even if the capacities of all stormwater culverts in the watershed were increased, hydraulic modeling shows that low-lying areas would still be impacted by flooding.

Where flooding impacts are severe, the City has a voluntary flood hazard mitigation program to purchase properties in the floodplain. Properties are prioritized based on the severity of flooding.

Improving Water Quality

A central goal of the Stormwater program is to protect water resources and support environmental sustainability. The City is leading by example with investment in Green Stormwater Infrastructure (GSI) and capital projects to improve water quality, enhance wildlife habitat, and create public amenities. An example of this is Wooten Meadow Park in Hare Snipe watershed which was completed in 2022. A water quality model was constructed for the Hare Snipe Creek Watershed to assess the potential benefits of future capital projects could be assessed. Approximately 20 water quality improvement opportunities were identified as part of this study. These include retrofitting existing stormwater control measures to provide greater water quantity and quality benefits as well as identifying opportunities for GSI.



Wooten Meadow Park

The water quality model also showed that Lake Lynn, Springdale Lake, and Summer Lake had a positive impact on water quality by reducing downstream nutrient and sediment loads. In the upper areas of Lake Lynn, captured sediment has helped to form important wetland habitat without significantly decreasing the storage capacity of the lake.

Renewing Aging Infrastructure

The City operates and maintains stormwater infrastructure in the public right of way. Older infrastructure was inspected in the Hare Snipe watershed through use of a camera to record conditions. The majority of inspected pipes were in fair to good condition. Approximately 10 percent of pipes were flagged for follow-up inspections due to poor condition. Repairs have already been made at several of these locations and four additional projects were identified and will be implemented in the watershed.