

LAKE AVONDALE NORTH WOODS RAIN GARDEN

INTRODUCTION

Lake Avondale has been, and continues to be, a key component of the quality of life enjoyed by Avondale Estates citizens. The Lake is a centerpiece to the “small-town” ambiance that makes our community such a great place to live. It is important to protect and nurture this City resource, so that it will continue to serve as a City focus for community gatherings and activities. With that in mind, the Lake Avondale Advisory Board presents the following concept for the City Commissioners to consider.

CURRENT CONDITIONS

The west side of the north woods receives a portion of stormwater flow and volume from Berkeley Road and the drainage along Berkley to the north. There are two inlets in Berkley that collect a portion of the stormwater and send it to the north woods. The stormwater currently enters the north woods via a man-made ditch. This ditch has been eroding over time such that it now presents a safety concern because of its depth. This erosion has also allowed sediment to be deposited in the western cove of Lake Avondale. As can be seen from the following photo, runoff into the west cove is discolored from the sediment it is transporting from the man-made ditch. The east cove is not discolored since flow from that drainage is filtered through a small marsh in the feeding stream, and through the underground drainage system in front of the Community Club building. The Advisory Board recommends that a similar filtering type system be implemented in the western portion of the north woods.



[Runoff into Lake Avondale](#)

In addition to the sediment runoff entering the Lake, flooding occurs at the intersection of Berkley and Wiltshire from stormwater entering from the north along Berkley and from the west along Wiltshire. Improved collection capacity at the inlets along Berkley where a portion of the stormwater enters the North Woods would reduce the propensity for flooding at the Berkley/Wiltshire intersection.

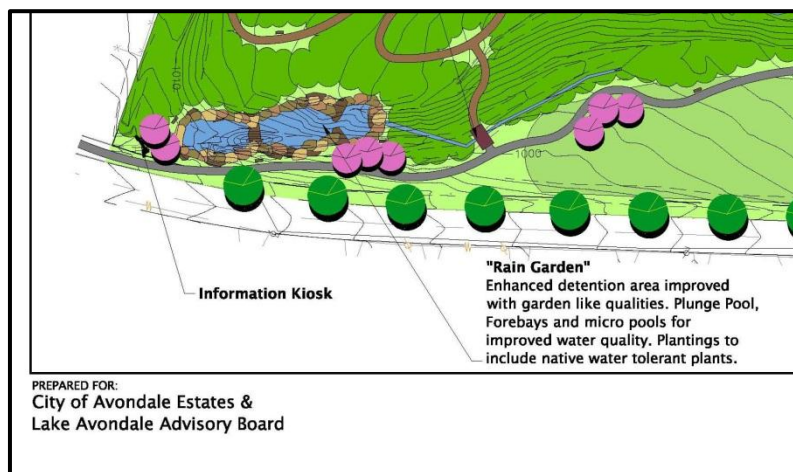
Improved inlet capacity would also reduce the propensity for erosion downstream of the Berkley/Wiltshire intersection and the Dam by reducing the volume and therefore the velocity of the stormwater discharge below the Dam.

There is currently a need to improve water quality in Lake Avondale by implementing a filtering system, and improving water quality downstream of the Dam by reducing flooding propensity.

SOLUTION CONCEPT

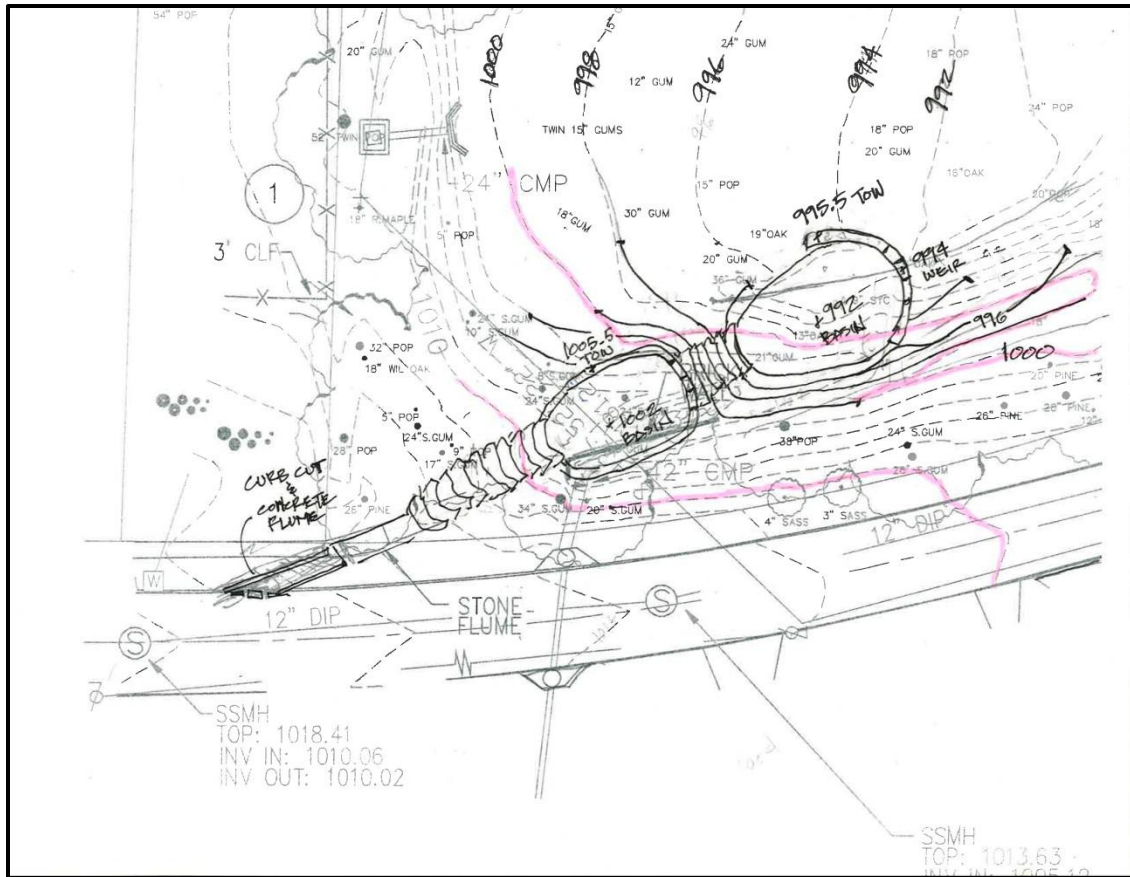
The North Woods Rain Garden would receive a larger portion of stormwater flow from Berkley Road than currently occurs. This would be facilitated by increased inlet capacity to transport more volume and flow into the north woods. The man-made ditch would be removed and stormwater would then flow into the Rain Garden in the west portion of the north woods. The flow velocity would be substantially reduced in the Rain Garden and a meandering flow path would allow suspended sediments and other floatables to “settle out” in the Rain Garden. The stormwater would eventually be slowly released into the original stream channel in the northwest woods and then into Lake Avondale. Maintenance access to remove settled material would be facilitated in the design of the Rain Garden.

This concept is part of the Lake Avondale Park Master Plan, an excerpt of which is shown below. The concept is labeled a “Rain Garden” in the Master Plan, and this is similar in concept to what the Advisory Board presents now for consideration.



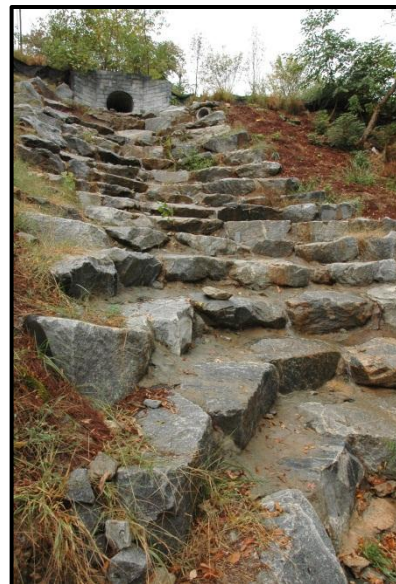
Excerpt from Lake Avondale Park Master Plan

A concept sketch is presented in the following that describes in more detail how such a facility might be configured.



Concept Sketch - North Woods Rain Garden

The implementation would strive to maintain a natural ambiance so as not to detract from the natural beauty of the north woods. The materials and layout used in the construction of the facility would be similar to those in the photo to the right.



SUMMARY

In summary, a rain garden in the north woods provides the following benefits:

- 1) Eliminate sediment loading to the northwest cove of Lake Avondale
- 2) Enhanced water quality in Lake Avondale
- 3) Reduced flooding at the intersection of Berkley and Wiltshire
- 4) Reduced erosion downstream of the Lake Avondale Dam

RECOMMENDATION

The Lake Avondale Advisory Board recommends the City Commissioners consider issuing an RFP for consultant selection to develop a concept design for a North Woods Rain Garden. The consultant would be tasked with developing the feasibility of the concept and determining a size and footprint necessary to achieve the outlined benefits.