



Implementation of this alternative will allow Berkley Drive, classified as a collector road, to meet the 50-year level of service. Currently, Berkley Drive does not meet the 50-year level of service. Nine parcels along Mill Pond Road will also be protected from the 100-year flood. **Table 4.6.6** shows the conceptual cost estimates for this alternative.

In its existing state, this section of Two Mile Branch also experiences high stream velocities, in excess of 5 ft/sec during the 1.2-inch storm, resulting in erosion and additional sediment load to Mill Pond. Implementation of alternative TM2 reduced the in-channel velocities to approximately 2 ft/sec during the 1.2-inch storm, resulting in less erosion and decreased sediment generation.

An additional analysis was performed to determine if raising the roadway elevation of Berkeley Road at Two Mile Branch would be sufficient to allow Berkeley Drive to meet its defined level of service (more than 6 inches of flooding for a 50-year storm event). This analysis was performed due to the expected cost of implementing alternative TM2, and the possibility of beaver recolonization in the stream. If raised by approximately 2.5 feet near the crossing of Two Mile Branch, it is feasible for Berkeley Drive to meet its level of service. Cost analysis and a feasibility study should be performed before recommending this option for design.

Alternative TM3 – Berkley Drive RSF

The City requested evaluation of the possibility of a RSF located upstream of Mill Pond to capture sediment and litter that would otherwise be deposited in Mill Pond. While an in-line facility would be the best option to serve this purpose, difficulty in permitting an in-line facility makes implementation unlikely. Therefore, an off-line RSF is proposed. Based on an evaluation of adjacent properties, topography, and stormwater conveyance systems, the proposed location of the facility is immediately upstream of Berkley Drive and north of the Two Mile Branch main channel, as shown on **Figure 4.6.5**.

The proposed RSF occupies approximately 3 acres of land currently owned by the City. The facility will intercept an existing stormwater ditch draining 41 acres of residential land between Berkley Drive and Willow Wood Circle. The RSF provides a Permanent Pool Volume of 6.1 ac-ft and a residence time of almost 7 days, resulting in an annual reduction of approximately 4,800 pounds of sediment.

Some wetland mitigation should be anticipated with implementation of this alternative; however, the stream buffer is wide in this section of Two Mile Branch and mitigation would likely be required with an alternative adjacent to the stream. **Table 4.6.7** shows the conceptual cost estimates for this alternative.