In 2007, the City of Lakeland and the Middle St. Croix Watershed Management Organization identified water quality issues related to the existing drainage on Quixote Avenue, a paved north/south roadway directly adjacent to the St. Croix River bluffline. Historically, Quixote Avenue collected and drained stormwater runoff from residential lots and roadways and concentrated flows at the end of the roadway and discharged over the bluffline directly into Lake St. Croix.

This project implemented previously identified and targeted water quality improvement projects on Quixote Avenue. Stormwater treatment features included two large raingardens, an iron-enhanced sand filter, and a stormwater pipe to convey treated runoff down the bluff to Lake St. Croix. Modeling indicates this project reduces 9.0 lbs/year of total phosphorus and 3,997 lbs of total suspended solids and prevents 1.0 acre foot of stormwater per year from discharging into Lake St. Croix.

**Project Narrative**

**Proposed Outcomes:**
Reduce Phosphorus by 9 pounds/year, Sediment by 2 tons/year and runoff volume by 1 acre-feet/year.

**Actual Outcomes:**
Reduced Phosphorus by 9 pounds/year, Sediment by 2 tons/year and runoff volume by 1 acre-feet/year.
Quixote Avenue Retrofit

Lake St. Croix

Key to Features:
- Pervious
- Lakes (DNR 14K)

- Stormwater
- Iron Enhanced Sand Filter
- Infiltration

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