

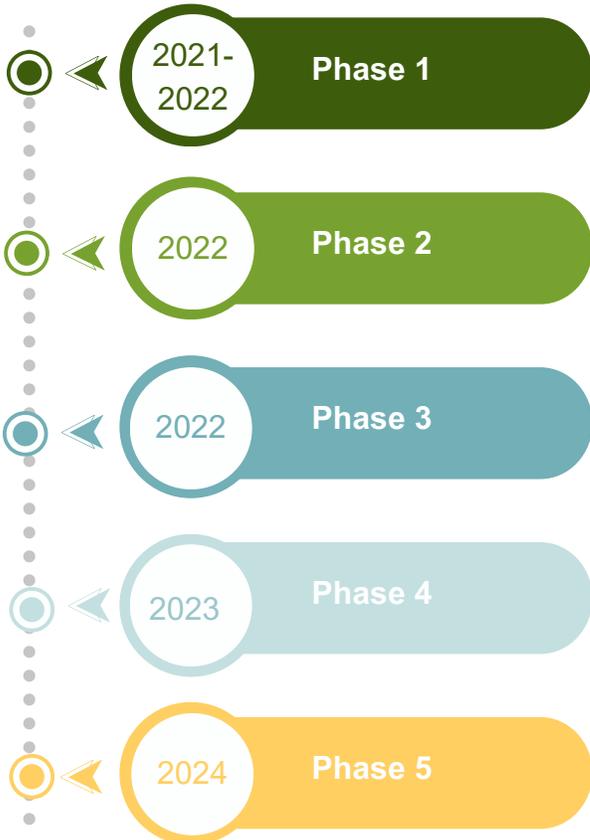


# Oak Crest Area Improvement Project



**BACKGROUND:** The Roseau River Watershed District (RRWD) in partnership with the City of Roseau and the Oak Crest Golf Course is leading implementation to improve water quality runoff within the Oak Crest subdivision and development area adjacent to the golf course. This project will provide a drainage outlet, serve as stormwater treatment and runoff control, reduce undesirable vegetation, improve the coulee ecosystem, provide long-term maintenance ability of the coulee, and reduce phosphorus into the Roseau River for the Oak Crest subdivision area.

## TIMELINE



WE ARE HERE!

## PROJECT SCOPE

Houston Engineering, Inc. (HEI) and the RRWD performed the following phases:



### Phase 1 - Site Reconnaissance and Aquatic Vegetation Investigation

Visited the site to visually assess the problem and perform topographic survey of the project area. This also included classifying and locating the existing aquatic vegetation present within the pond and coulee.



### Phase 2 - Drainage Area Assessment and Water Quality Analysis

Review of drainage area to define sources of existing and future runoff. Developed a hydraulic model to determine the amount of runoff contributed by each source. A sediment/phosphorus loading assessment was performed to evaluate options for reducing phosphorus and sediment loads on the Roseau River.



### Phase 3 - Develop Mitigation Options

Develop options for mitigating identified poor aquatic vegetation, excessive phosphorous loading, and poor water quality characteristics.



### Phase 4 - Project Design and Permitting

This included developing design plans, wetland delineation report, identifying project impacts, project cost estimate, and wetland permit applications before moving the project into the bidding and construction phases.



### Phase 5 - Construction

The project has been bid and awarded. Construction will take place in the summer of 2024.



# PROJECT BENEFITS

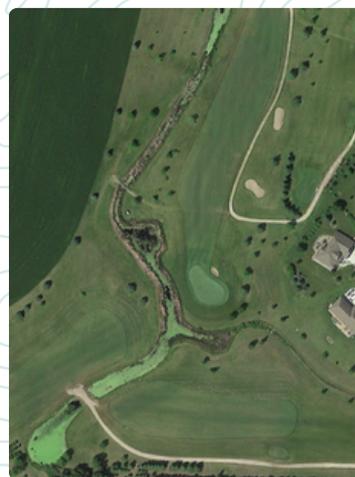
**Address channel modifications and stormwater treatment**



**Improve water management capabilities and reduce sediment**



**Reduce the total amount of phosphorus entering the Roseau River**



**Reduce undesirable aquatic vegetation and improve ecosystem within coulee**