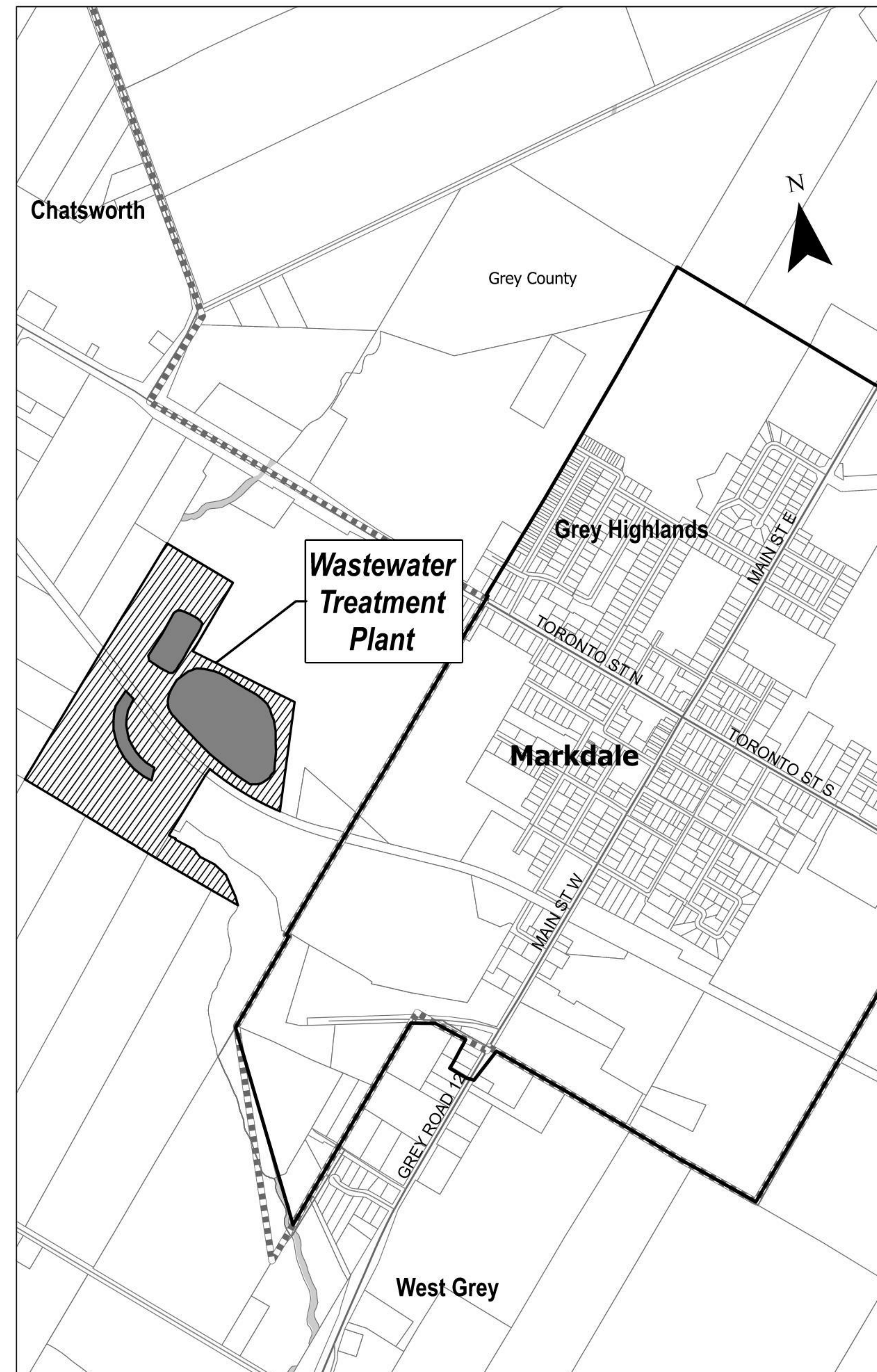


Project Overview

J.L. Richards & Associates Limited (JLR) has been retained by the **Municipality of Grey Highlands** to complete a **Municipal Class Environmental Assessment (MCEA)** to assess the ability of the **Markdale Wastewater Treatment Plant (WWTP)** to accommodate increased demands from future development in the serviced area.



Markdale System Overview



The Markdale Wastewater Treatment System consists of:

- 200 mm gravity sewers
- two sewage pumping stations
- a wastewater treatment plant (WWTP)

The WWTP consists of:

- two aerated lagoons cells operating in series
- eight rapid infiltration basins that discharge into the groundwater table

Discharge indirectly reaches the Rocky Saugeen River.

Key Issues & Phase 2 Findings



Current committed and conditionally approved developments will bring the WWTP to its **rated capacity**, with pending approvals **exceeding** that capacity.



The WWTP rated capacity is **limited by the aeration system and the rapid infiltration basins**.



Increasing the rated capacity of the WWTP will require **an expansion of the existing system to provide treatment capacity**.



Phase 2 concluded that **upgrading the existing lagoon is the preferred solution** over doing nothing or constructing a new mechanical WWTP at the current or a new site.

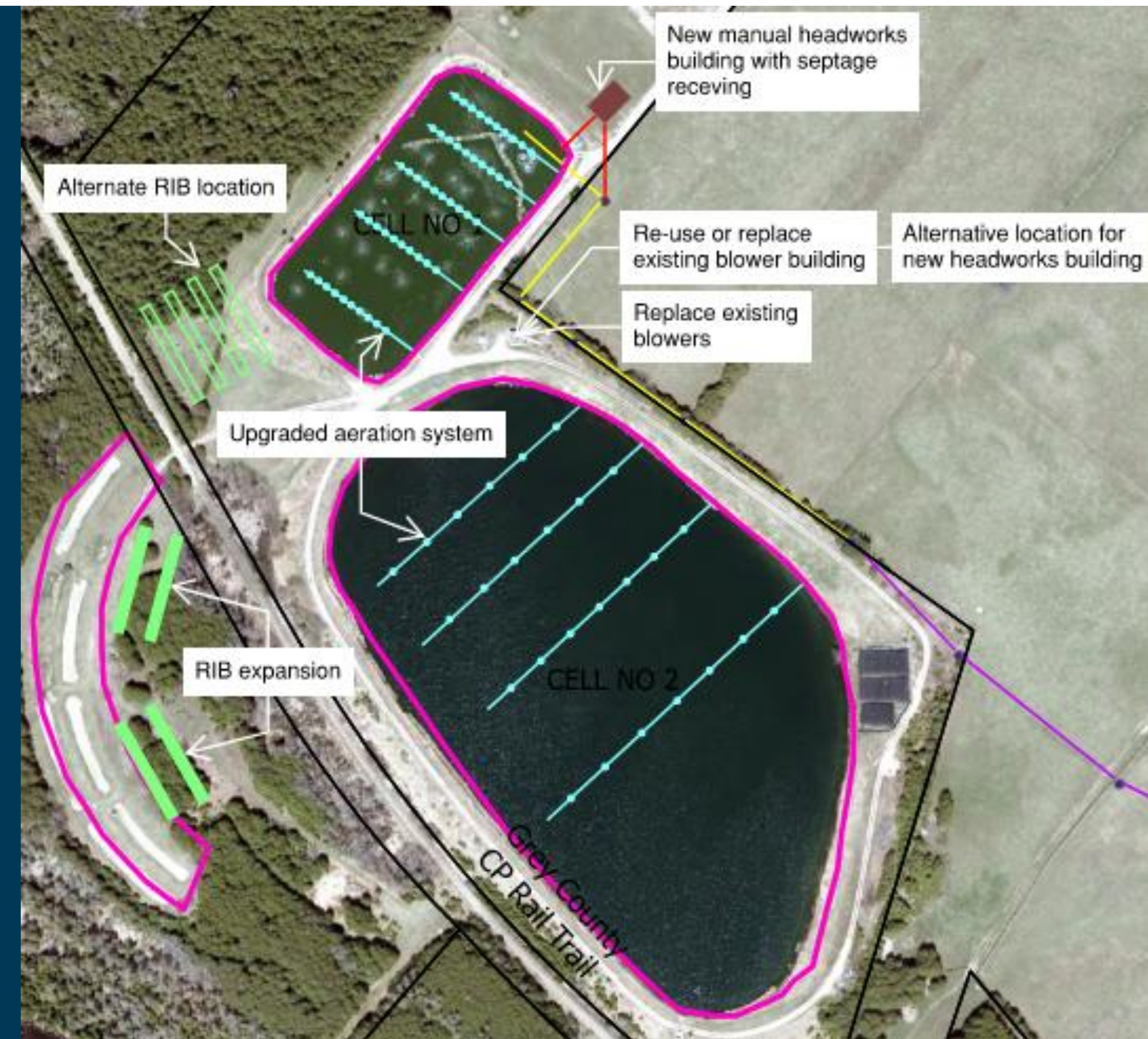
Design Concept Option No.1

- Manual Headworks Building
- Upgraded Aeration System
- Rapid Infiltration Basin (RIB) Expansion



Has the lowest capital cost.

May be less reliable due to poorer anticipated performance of headworks.



Capital Cost

Operation and Maintenance Cost

Ability to Reliably Achieve Effluent Requirements

Constructability and Complexity of Construction

Recommendation: Do not carry forward

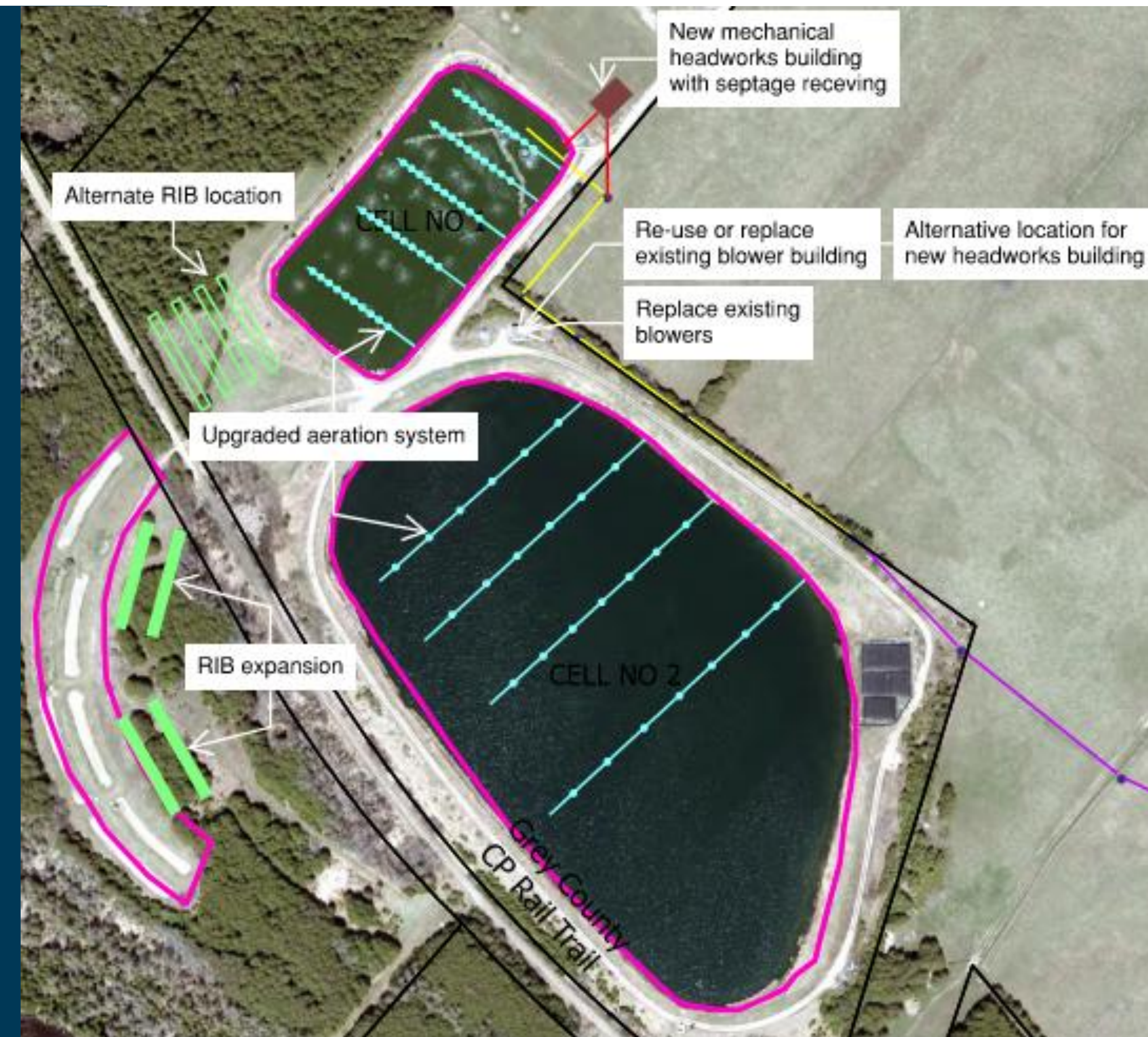
Design Concept Option No.2

- Mechanical Headworks Building
- Upgraded Aeration System
- Rapid Infiltration Basin (RIB) Expansion



Expected to reliably meet effluent requirements.
Lowest operating cost.

Construction of a headworks building is required.



Capital Cost

Operation and
Maintenance Cost

Ability to Reliably
Achieve Effluent
Requirements

Constructability and
Complexity of
Construction

Recommendation: Carry forward

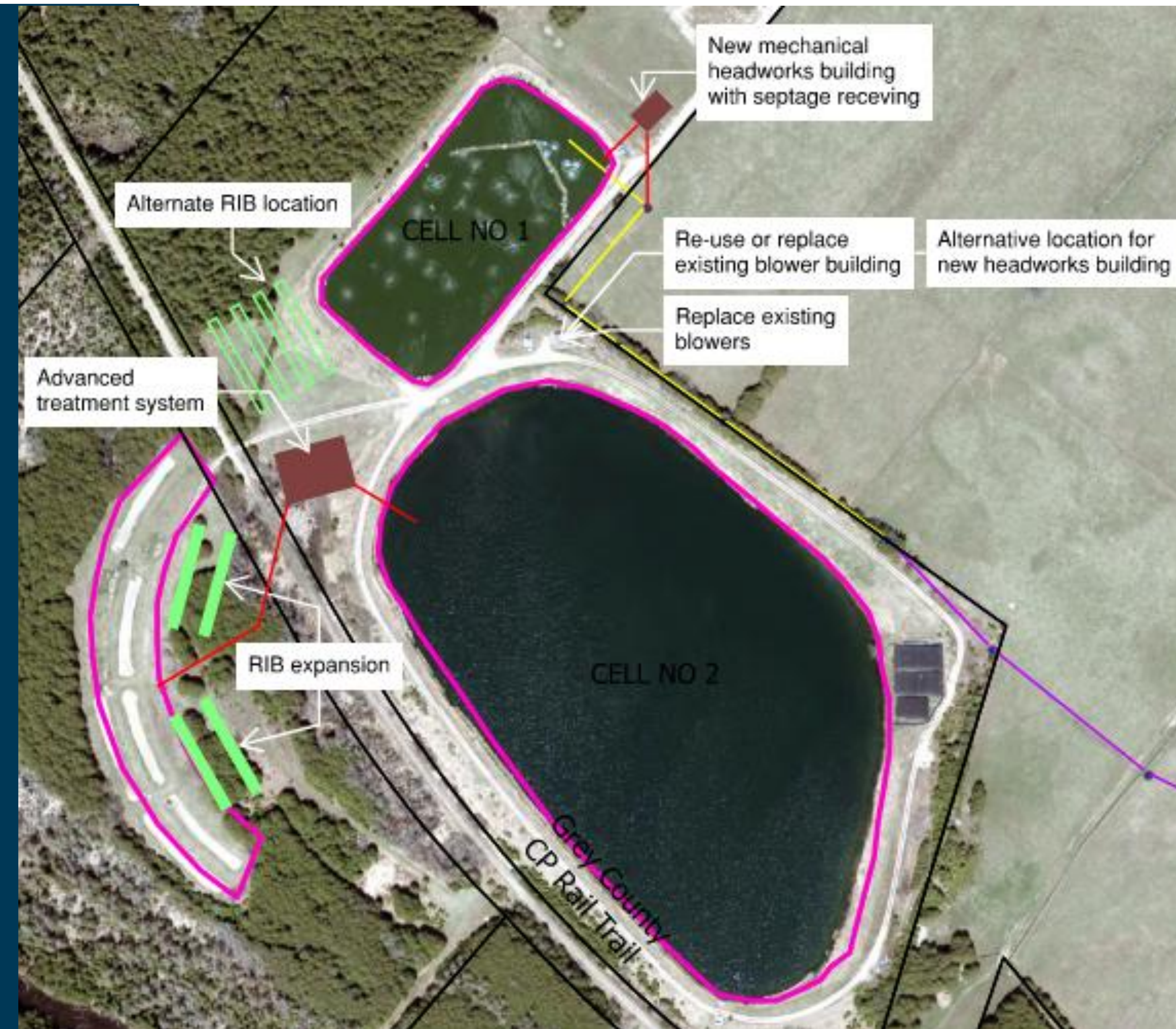
Design Concept Option No.3

- Mechanical Headworks Building
- Advanced treatment system
- Rapid Infiltration Basin (RIB) Expansion



Likely reliably meets more stringent effluent requirements.

Highest capital and operation & maintenance costs.
Advanced treatment system requires additional land area and excavation.



Capital Cost

Operation and Maintenance Cost

Ability to Reliably Achieve Effluent Requirements

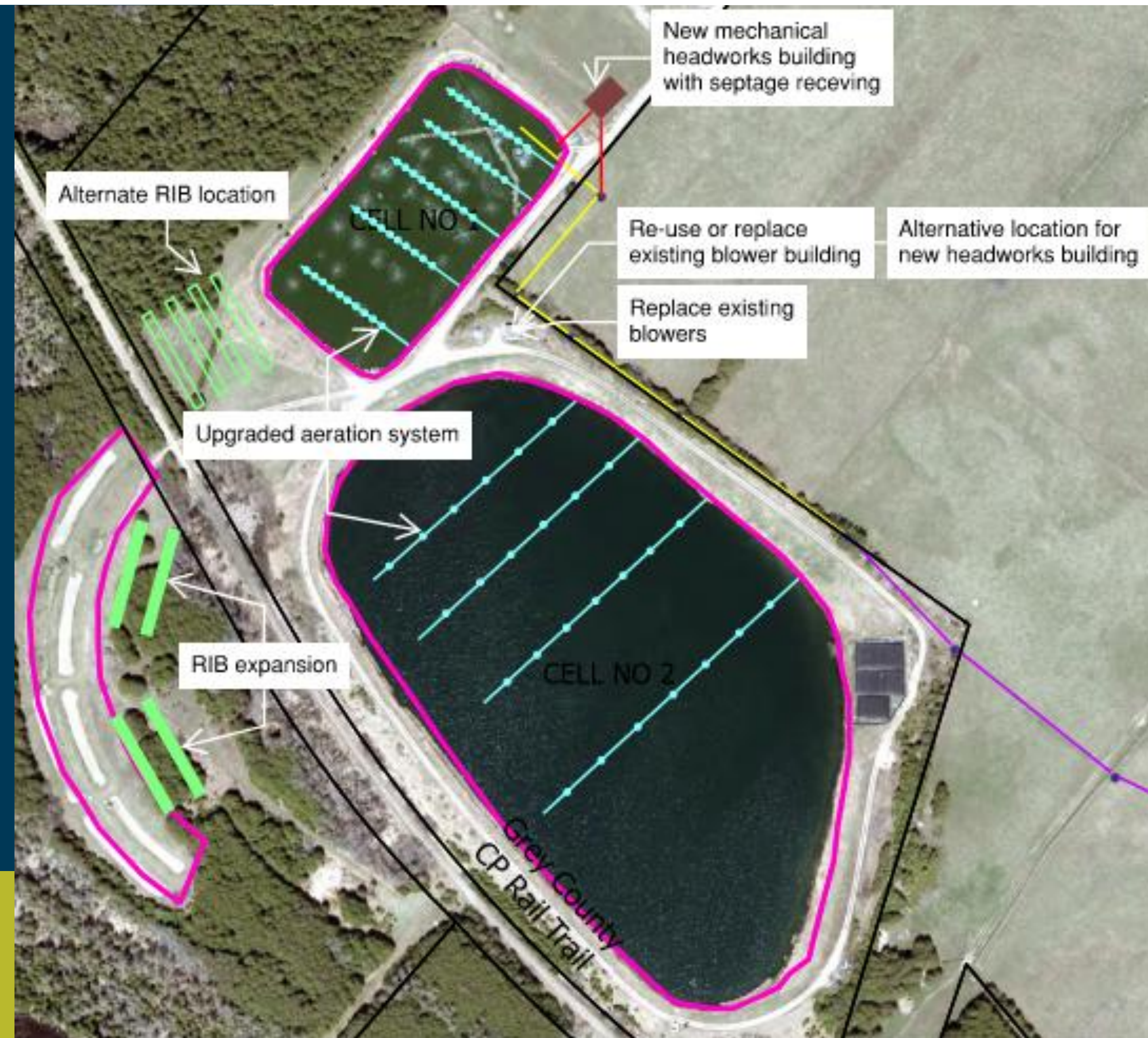
Constructability and Complexity of Construction

Recommendation: Do not carry forward

Recommended Alternative: Design Concept Option No.2

Upgrades:

- New mechanical headworks building
- Upgraded aeration system
- Expanded rapid infiltration basins (RIB)



Capital Cost

Operation and
Maintenance
Cost

Ability to Reliably
Achieve Effluent
Requirements

Constructability
and Complexity
of Construction

Recommendation: Advance to Phase 4 of MCEA

Potential Environmental Impacts and Mitigation

Species at Risk and Natural Heritage

- Portions of the proposed RIBs slightly overlap significant woodlands. Potential disruption will be confirmed before implementation. Permits may be required.
- The proposed headworks building is located on land classified as mixed meadow. All necessary actions will be taken to reduce impact.

Archaeology

- A Stage 2 Archaeological Assessment is underway on undisturbed lands. No archaeological potential found to date.
- Indigenous groups have been consulted as part of the archaeological assessment.

Surface Water

- Measures will be implemented to protect the Rocky Saugeen River from construction and operational impacts such as spills, erosion, and pollution.
- Fisheries and Oceans Canada's protective measures for fish and fish habitat will be followed in the case construction work is needed.
- Exfiltration basins will be maintained and monitored to ensure they continue functioning as designed.



Next Steps

