



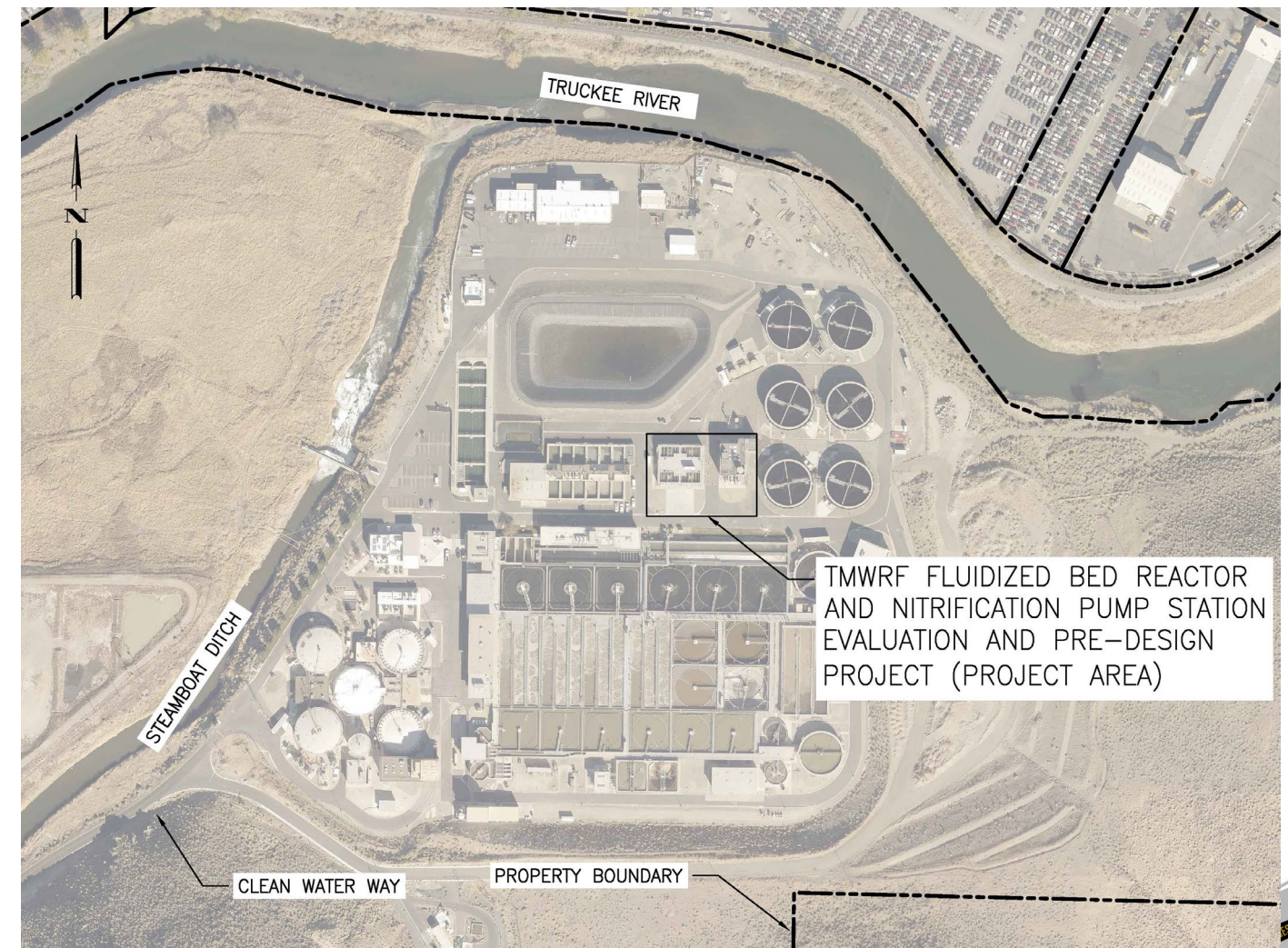
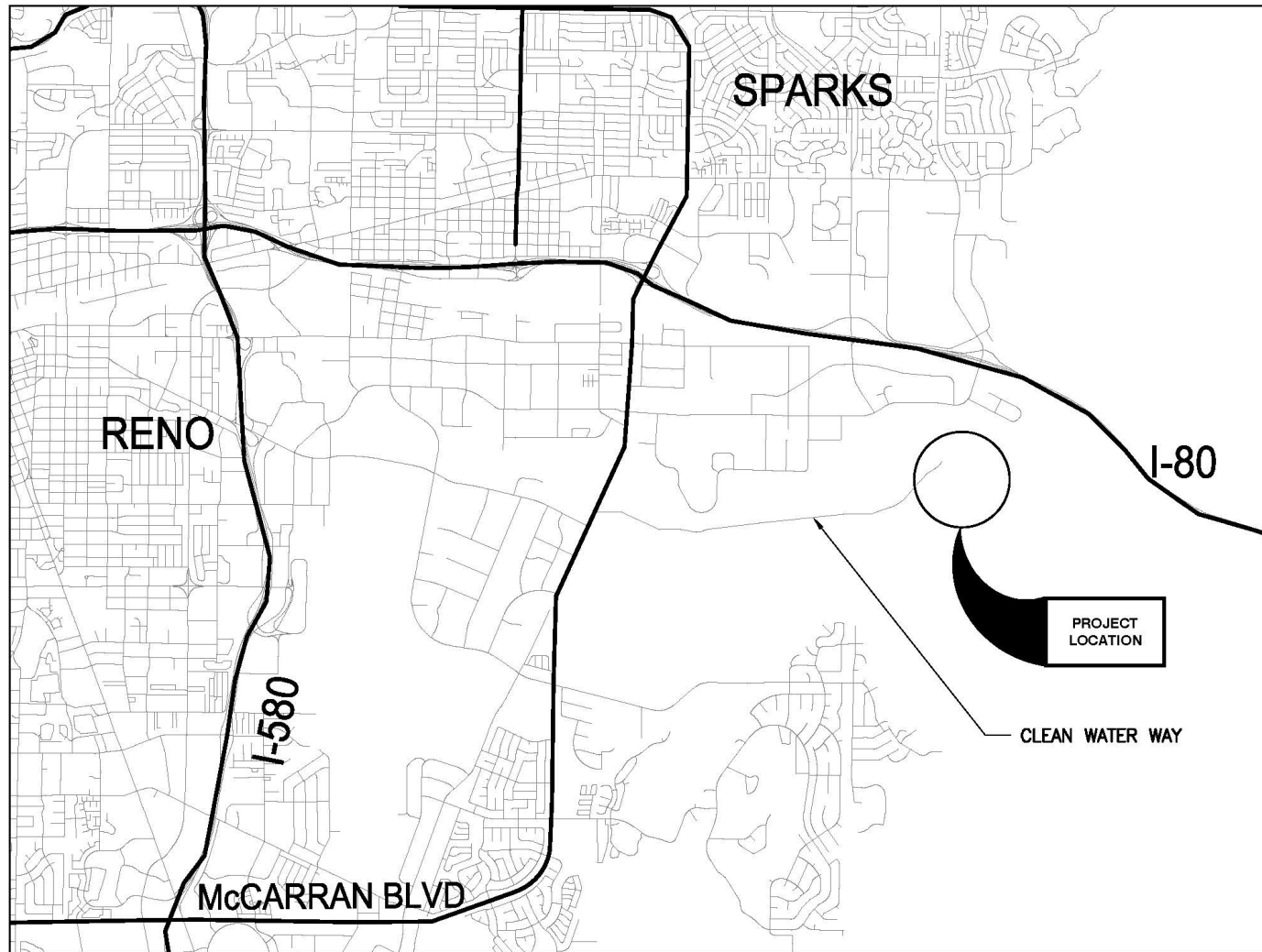
Truckee Meadows Water Reclamation Facility (TMWRF) Fluidized Bed Reactor (FBR) and Nitrification Pump Station (NPS) Evaluation and Pre-Design Project

Item B.12 –TWMRF Fluidized Bed Reactor and Nitrification Pump Station Evaluation and Pre-Design Services Agreement

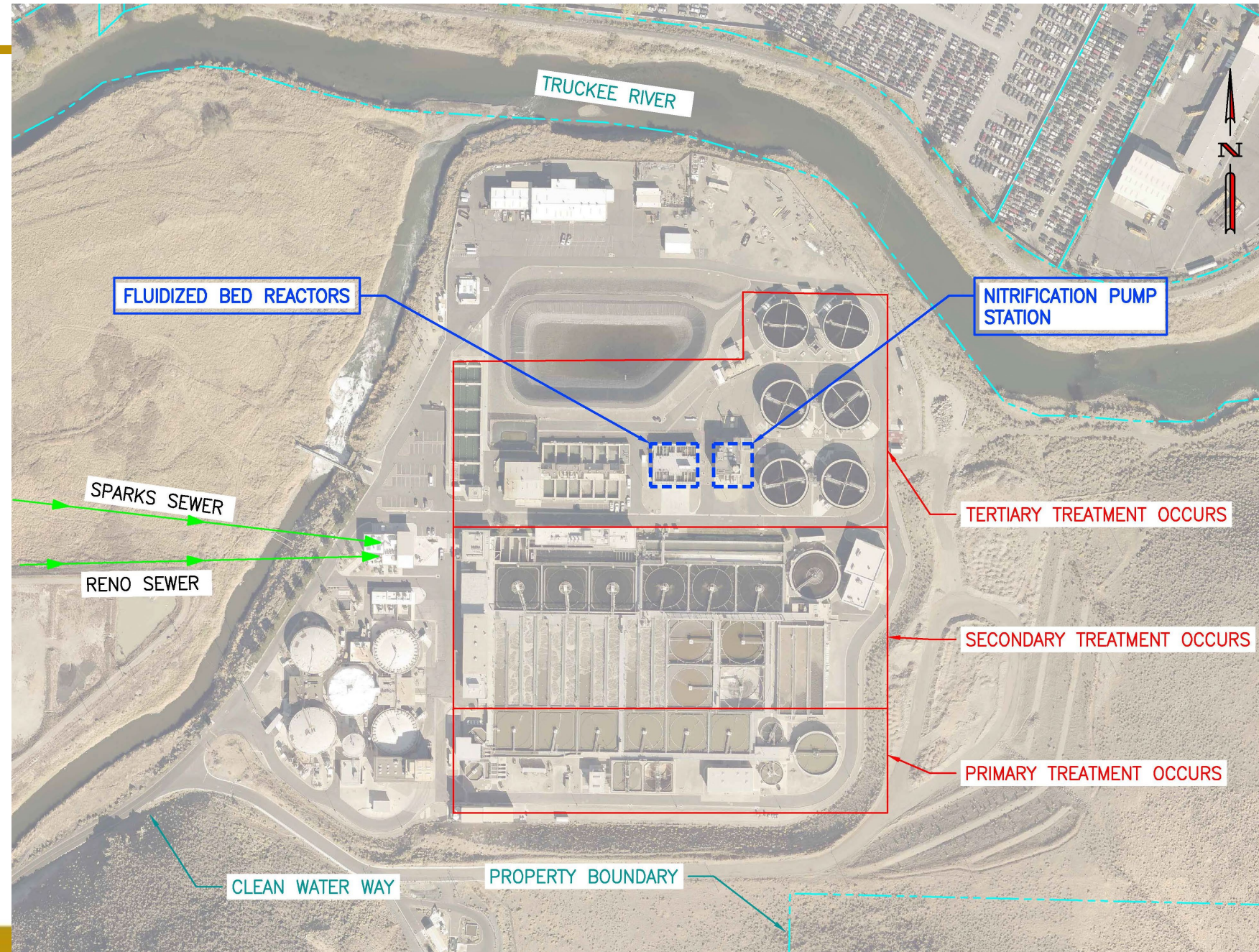


**Utility Services Department
October 26, 2022**

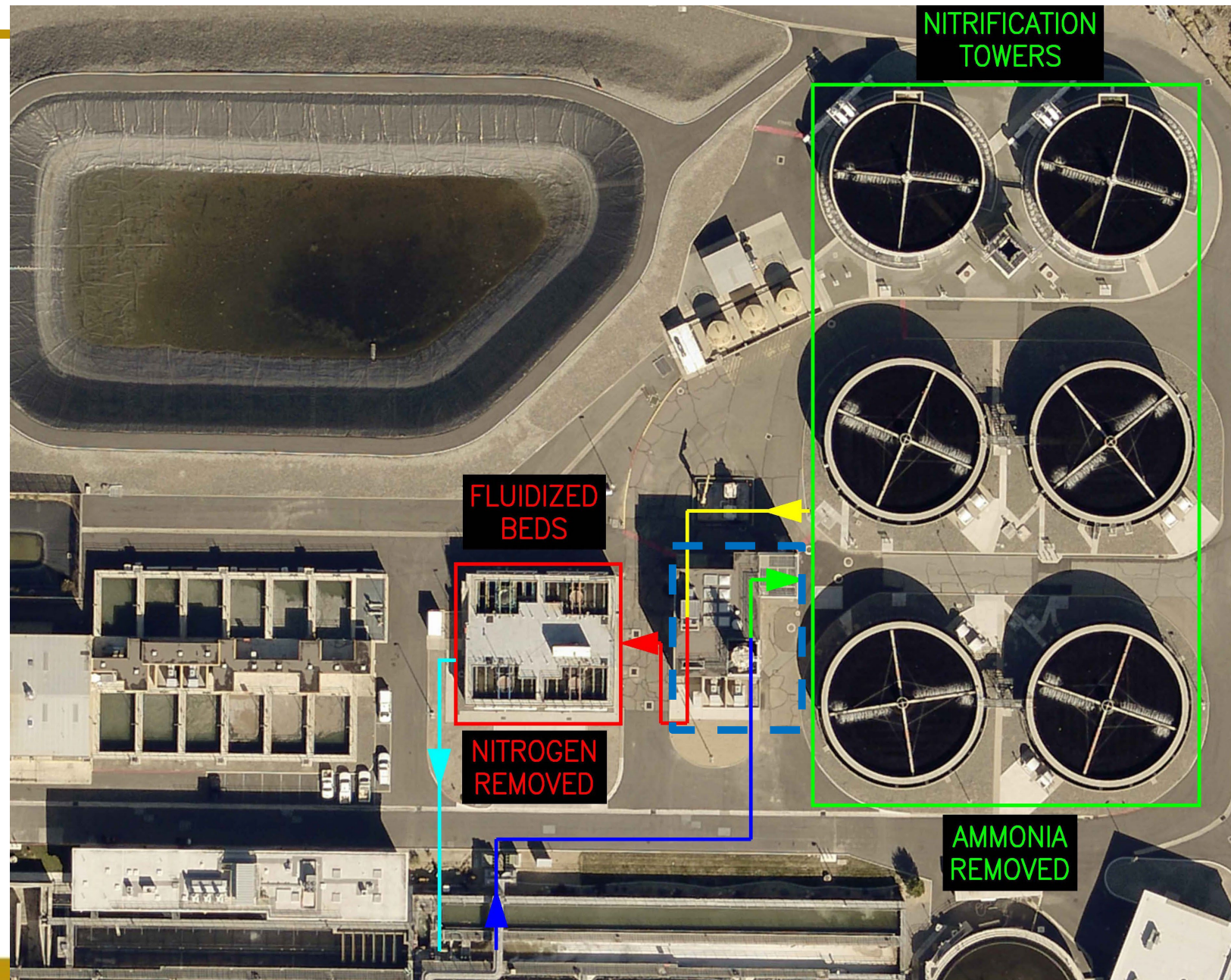
Project Overview



TMWRF Overview

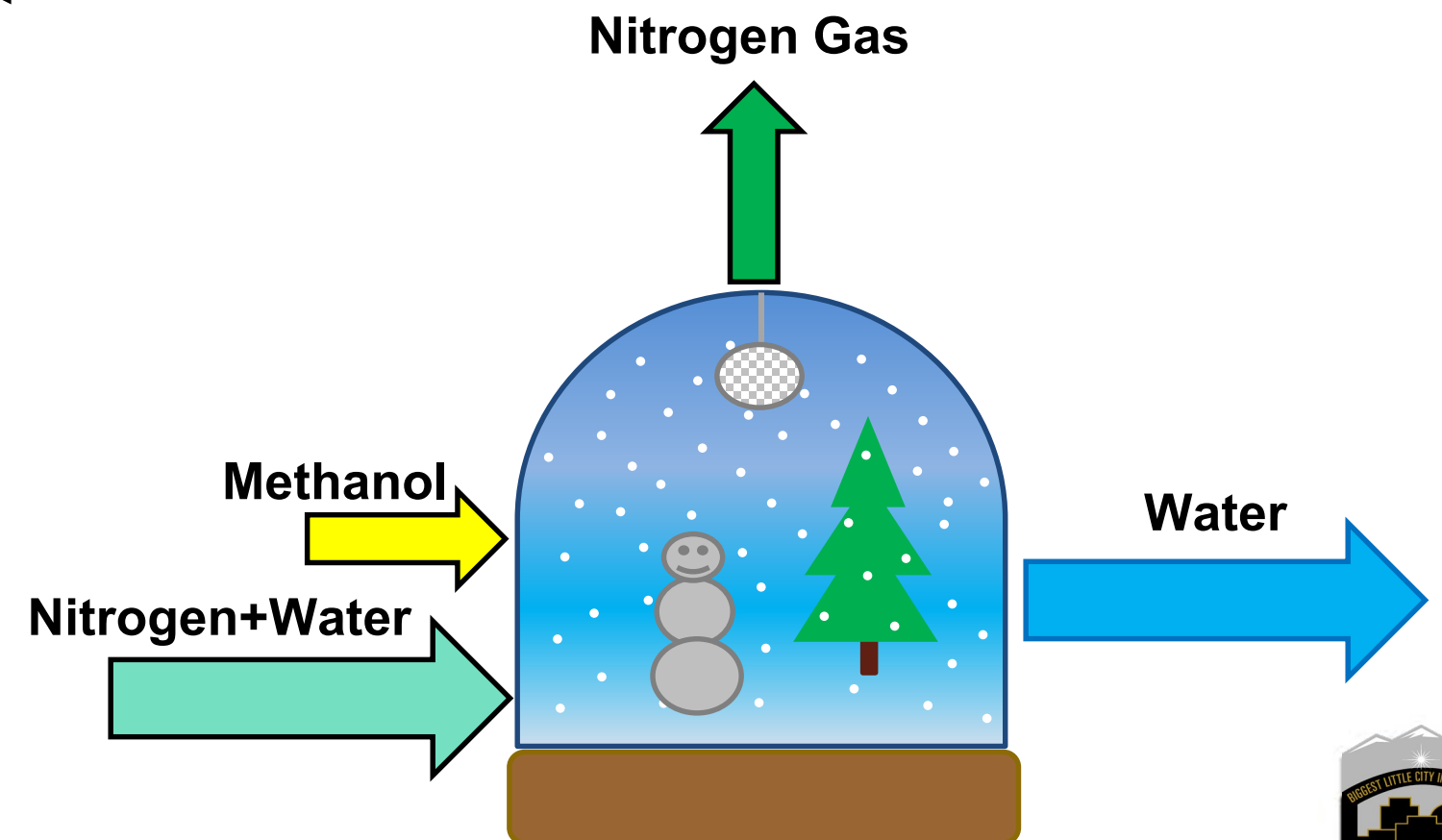
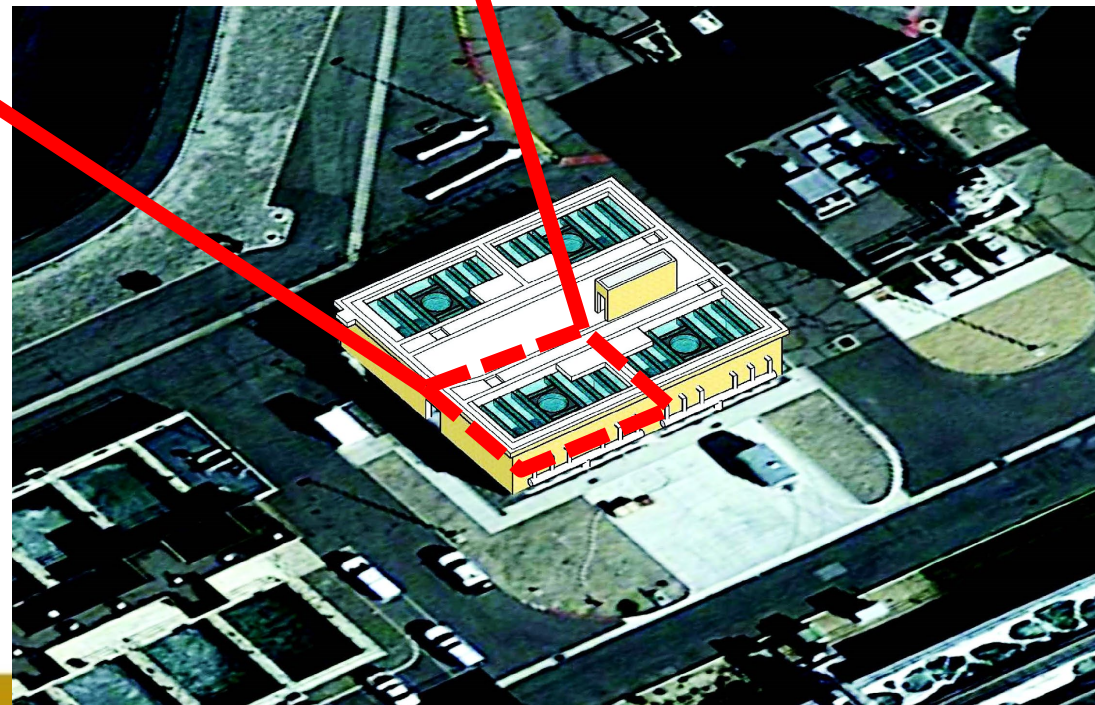
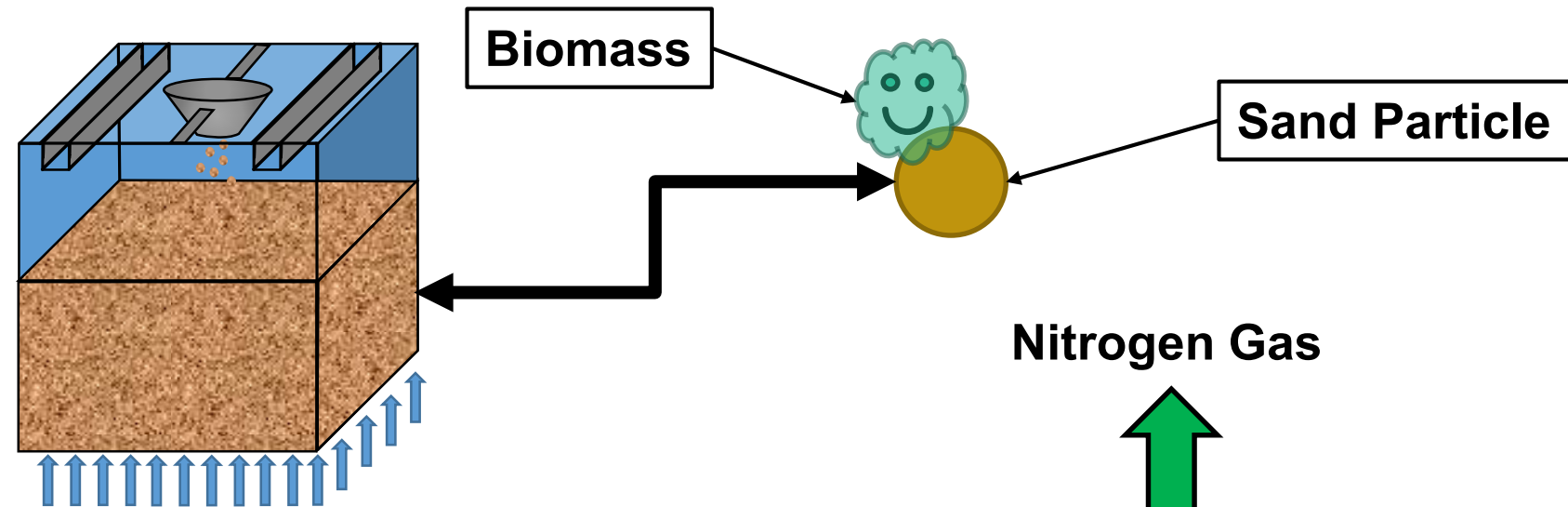


What is a “Nitrification Pump Station” at TMWRF?



Nitrification Pump Station

What is a “Fluidized Bed Reactor” at TMWRF?



Why It's Recommended

- Capacity
- Redundancy
- Critical Infrastructure
- Safety
- Permit
- Facility Plan
- Old Infrastructure (1985-Pump Station 1987-FBRs)



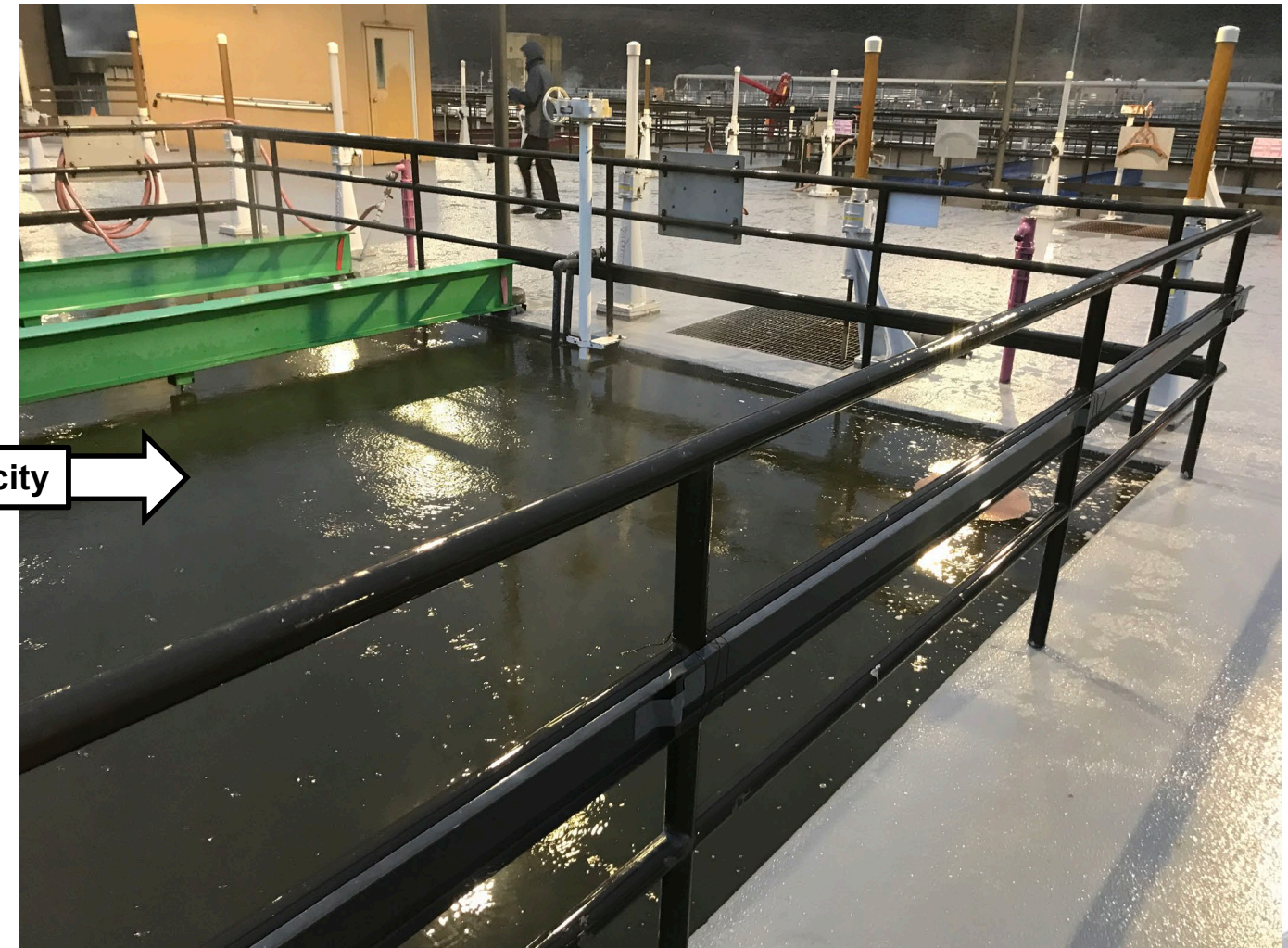
Staff Recommendation

Item B.12 – TMWRF Fluidized Bed Reactor and Nitrification Pump Station Evaluation and Pre-Design Services Agreement - \$1,205,437 (\$827,291.41 Reno Share)

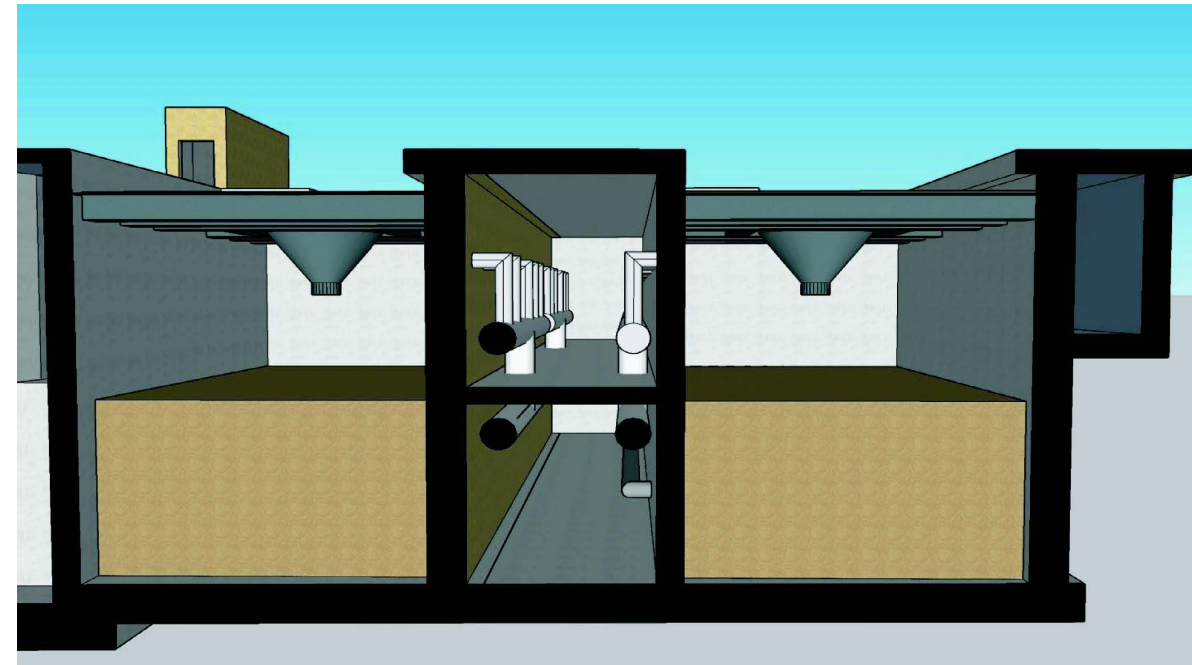
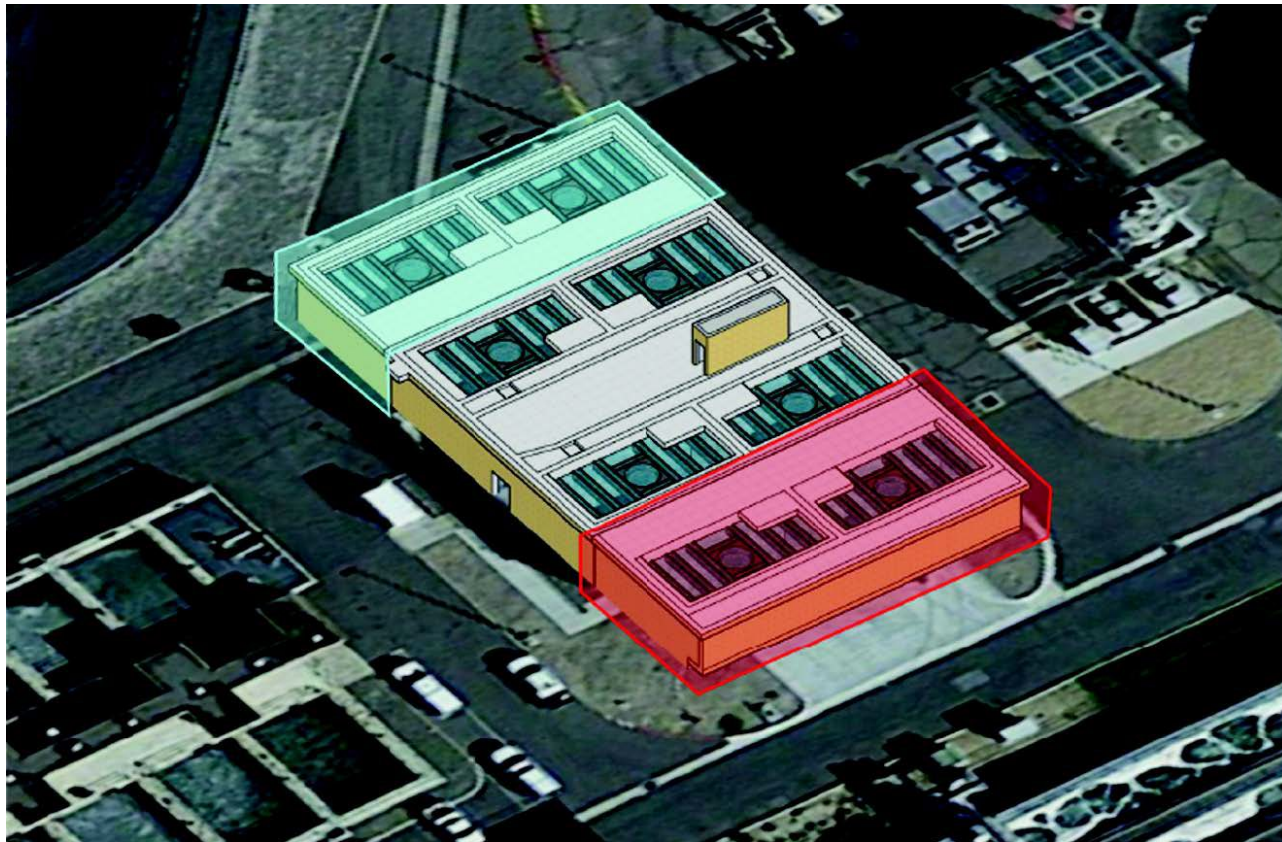
I move to approve the consultant agreement for evaluation and pre-design services for the Truckee Meadows Water Reclamation Facility (TMWRF) Fluidized Bed Reactor and Nitrification Pump Station Evaluation and Pre-Design Project in an amount not to exceed \$1,205,437, with the City of Reno's portion being \$827,291.41 (Sewer Fund), and authorize the Mayor to sign.



Why It's Recommended



Potential Proposed Improvements



Approval at JCC

TMWRF CAPITAL IMPROVEMENT PROGRAM

FY 2023 – 2027

Project

Denitrifying Fluidized Bed Reactor Evaluation and Expansion Pre-Design

Project Description

One of the key discharge permit limits is associated with the concentration of nitrogen in the TMWRF effluent being discharged to the river. As the TMWRF acquires new sewer customers and higher flows into the plant, processes need to be expanded to handle the higher hydraulic loadings. This project will confirm the denitrification process capacity and provide recommendations for improvements and expansions for the process.

Risk Assessment Rating

- ☐ CONSEQUENCE RATING : Moderate consequence / limited capacity
- ☐ PROBABILITY RATING: Possibility of occurring during high flow conditions

Impact

- Increases TMWRFs treatment capacity without incurring violations.

Critical Milestones/Schedule

- Selection of consultant May 2022
- Evaluation, basis of design, and pre-design completed in FY23.
- Construction tentatively scheduled FY26

Potential Permit Ramification

- TMWRF treatment capacity is limited hydraulically by the denitrification fluidized bed reactors. The facility plan states that this process should be expanded at 30.3 million gallons per day (MGD).

Strategic Plan Impact

- ☐ Supports strategic initiative of compliance with the Operating Permit discharge limitations and for asset management

Cost Est:

FY23: \$2,000,000

FY26: \$10,000,000

Project Photo



FY23 Risk Rank:

Capacity Project – Not Ranked