



City of Reedsburg



2025

ABOUT THIS PROJECT:

Market Segment:
Wastewater Treatment
Plant

Owner/Developer:
City of Reedsburg

Products Used:
Xypex Bio-San

Location:
Reedsburg, WI, USA

General Contractor:
C.D. Smith Constructions

The City of Reedsburg is undertaking a comprehensive upgrade to its wastewater treatment plant, which is located within a floodway and has been facing significant operational challenges. The plant has experienced recurring flooding, particularly in 2008 and 2018, which has compromised its functionality. Additionally, the plant, initially designed in 1969, has reached its capacity and can no longer meet the growing demands of the city's wastewater treatment needs.

As a result, the city has initiated a multi-phase project to construct a new, more resilient wastewater treatment facility, build a new central lift station, and demolish the outdated infrastructure. This project, designated as Project A, has been allocated a budget of approximately \$109 million.



The scope of the project involves several key elements. First, a state-of-the-art wastewater treatment plant will be built to meet the community's current and future needs. Second, a new main lift station will be constructed to efficiently convey wastewater from the existing facility to the new structure.

Finally, the old infrastructure will be demolished, which is no longer suitable for the city's growing demands. The project aims to address not only the capacity limitations of the current plant but also the flooding vulnerability that has affected its operations in the past.



To enhance the durability and performance of the construction, Xypex's Bio San was selected to combat Microbial Induced Corrosion (MIC). MIC refers to the deterioration of materials, particularly metals and concrete, caused by the activity of microorganisms. These microorganisms thrive in H_2S environments, generating acids and sulphates which corrode concrete.

Bio San combines advanced crystalline waterproofing technology with a powerful antimicrobial solution to effectively inhibit the growth of acid-producing sewer bacteria, such as Thiobacillus. Its antimicrobial properties are evenly distributed throughout the paste fraction of the hardened concrete, ensuring protection not only on the surface but throughout the entire concrete matrix. This comprehensive defense significantly reduces the risk of bacterial growth and microbial-induced damage.

In addition to its antimicrobial benefits, Bio San provides crystalline waterproofing, offering a watertight solution that prevents moisture penetration. The admixture also features VDS (Visual Detection System) technology, which is visible in the hardened concrete, allowing for identification after application.

Bio San's combination of antimicrobial and waterproofing capabilities makes it ideal for protecting concrete in environments prone to microbial growth. This selection of Bio San not only accelerates the construction process but also improves the long-term durability and resilience of the facility, ensuring sustained protection against microbial damage and enhancing overall infrastructure integrity.

By incorporating Bio-San, CD Smith not only accelerated the construction timeline but also reinforced the durability and long-term sustainability of the Reedsburg WWTF upgrade. CD Smith is known for excellence in concrete work, and Bio-San proved to be a valuable admixture in helping them meet the unique demands of this project. "Our highly skilled field team adapted seamlessly and executed flawlessly, producing a result that reflects the quality and craftsmanship CD Smith is known for", said CD Smith Project Engineer, Cody Berger.



In terms of implementation, approximately **600 cubic yards of Bio-San concrete** were used in the headworks of the new Wastewater Treatment Facility (WWTF), specifically in the **screening channels, grit chamber and hauled waste tanks**. This application improves both the durability and efficiency of the filtration system. An additional **500 cubic yards will be used in the main lift station**, which transfers wastewater from the existing facility to the new plant.

Bio-San concrete will also be applied to the **primary clarifier walls with 350 cubic yards** and the **anaerobic and aerobic digester walls with 400 cubic yards**, providing enhanced resistance to the harsh conditions commonly found in wastewater treatment environments.