



Midwest Assistance Program, Inc. (MAP) the Midwest RCAP, assists rural drinking water, wastewater and solid waste utilities find solutions to their infrastructure needs.

MAP IN ACTION

LOCATION: Plymouth, Nebraska

TOTAL POPULATION SERVED: 422

MAP TECHNICAL ASSISTANCE PROVIDER: Monte Kerchal

SERVICES PROVIDED: Developing an engineering report, as well as new NiTrox system.

BACKGROUND: Founded in 1872, Plymouth is a small rural town located off Highway 4.

The Village of Plymouth experienced high levels of ammonia (anhydrous) in the wastewater system making it difficult to meet the industry standard for acceptable levels for safely releasing finished water into discharge wetlands. High ammonia content in oxidation ponds has become more of an issue in small systems that lie in cooler temperatures.

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Midwest Assistance Program, Inc. is a charter member of the Rural Community Assistance Partnership Incorporated (RCAP) with funding under the New and Innovative Technology Program.

THE CHALLENGE: MAP found that communities in Iowa (along the same latitude as Plymouth) were using a warm water/ammonia-eating bacteria water finishing pod called NiTrox. The system is typically designed for milder temperatures that allow the bacteria to live through low temperatures. The use of this system allows the water to remain a constant and exceptional growing environment for the bacteria to eliminate the ammonia to an extent it can be directly discharged from the pod to the wetlands.

SOLUTIONS: The Village of Plymouth, with the assistance of MAP, has worked with engineers to develop an engineering report to adopt this method of water finishing. The funding for the system is a 75% grant 25% loan under the New and Innovative Technology Program. The village was awarded the grant and loan, selected their engineering firm through competitive bid and is set to begin construction.

THE IMPACT: With the success of the NiTrox system, it is expected that reducing ammonia through this process will provide additional alternatives in the state of Nebraska as this is the first of its kind in the state.

