

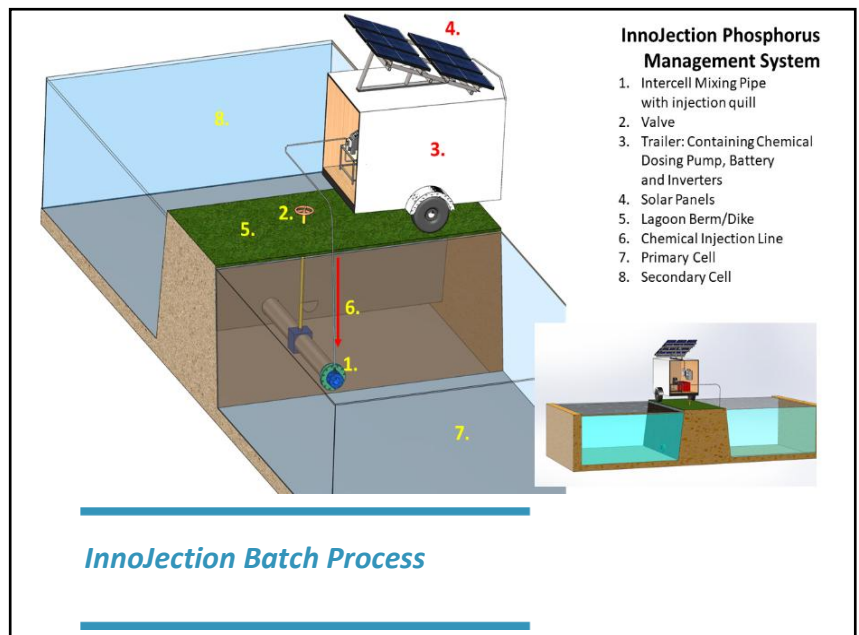
Technical Sheet

InnoJection is an intercell precision chemical dosing technology for managing phosphorus in wastewater lagoons. The technology relies on the gravity flow of lagoon wastewater between cells and offers an alternative solution to traditional in-cell chemical injection methods for phosphorus management.

The InnoJection comes in 2 configurations: **Continuous flow** and **Batch Process**.

1. InnoJection Batch process configuration

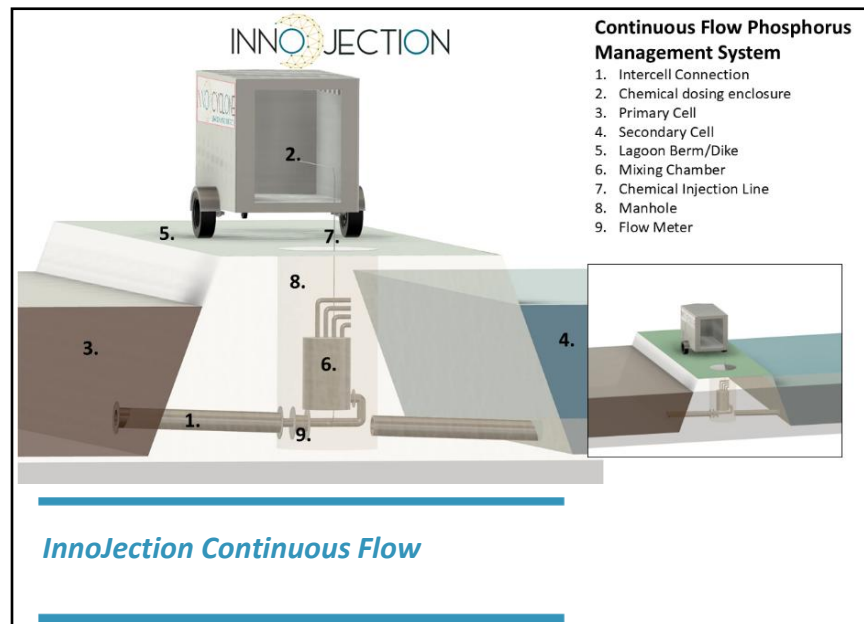
- Designed for lagoons requiring seasonal phosphorus treatment.
- Ideal for retrofitting lagoons, using existing infrastructure.
- The Control Module will be installed on the berm between the cells. This will include the coagulant.
- The Mixing Module will be installed in the existing piping connection between the 2 cells.
- Process Flow:
 - **Cell Equalization:** At the beginning and end of the season, the valve is opened to equalize water levels between the two cells.
 - **Coagulant Dosing:** The chemical dosing system is activated to inject coagulant into the inlet of the pipe.
 - **Mixing and Precipitation:** The static mixer in the pipe will ensure thorough mixing of the coagulant with the wastewater. The mixture then flows into the secondary cell where phosphorus has enough time to precipitate.
 - **Sedimentation:** The precipitated phosphorus settles to the bottom of the secondary cell.



2. InnoJection Continuous flow system configuration

- Optimized for wastewater lagoons requiring continuous phosphorus treatment.
- The continuous flow system uses a manhole and a mixing tank to enhance coagulant mixing efficiency.
- Equipped with a flow meter for precise chemical dosing control.
- Process Flow:
 - **Coagulant Dosing:** A flow meter installed in the wastewater pipeline informs the PLC on a precise coagulant dosing rate based on the wastewater flow rate.

- **Mixing and Precipitation:** Coagulant-injected wastewater enters the mixing chamber, where thorough mixing occurs to ensure effective interaction between the coagulant and the wastewater. Slow mixing continues as the mixture flows through the pipeline into the secondary cell, allowing sufficient time for phosphorus precipitation.
- **Sedimentation:** Precipitated phosphorus settles at the bottom of the secondary cell, completing the treatment process.



3. Advantages of the InnoJection Systems

- **No need for external dosing equipment:** The system eliminates the need for boats, sprinklers, or extensive mixing devices typically required for coagulant injection in lagoon wastewater,
- **Minimal labor requirements:** The only labor involved is opening the valve and starting the chemical injection system, saving time during busy municipal operations,
- **Improved dosing and mixing:** Precise dosing and effective mixing enhance the contact between the coagulant and wastewater, improving coagulation efficiency and reducing the volume of coagulant needed.
- **Cost savings:** Reduced labor, elimination of external equipment, and lower chemical volumes contribute to significant operational cost savings.
- **Extended lagoon cell lifespan:** Using smaller volumes of chemicals helps preserve the integrity of the lagoon cells, extending their lifespan.
- **Options for either solar or electricity**

