

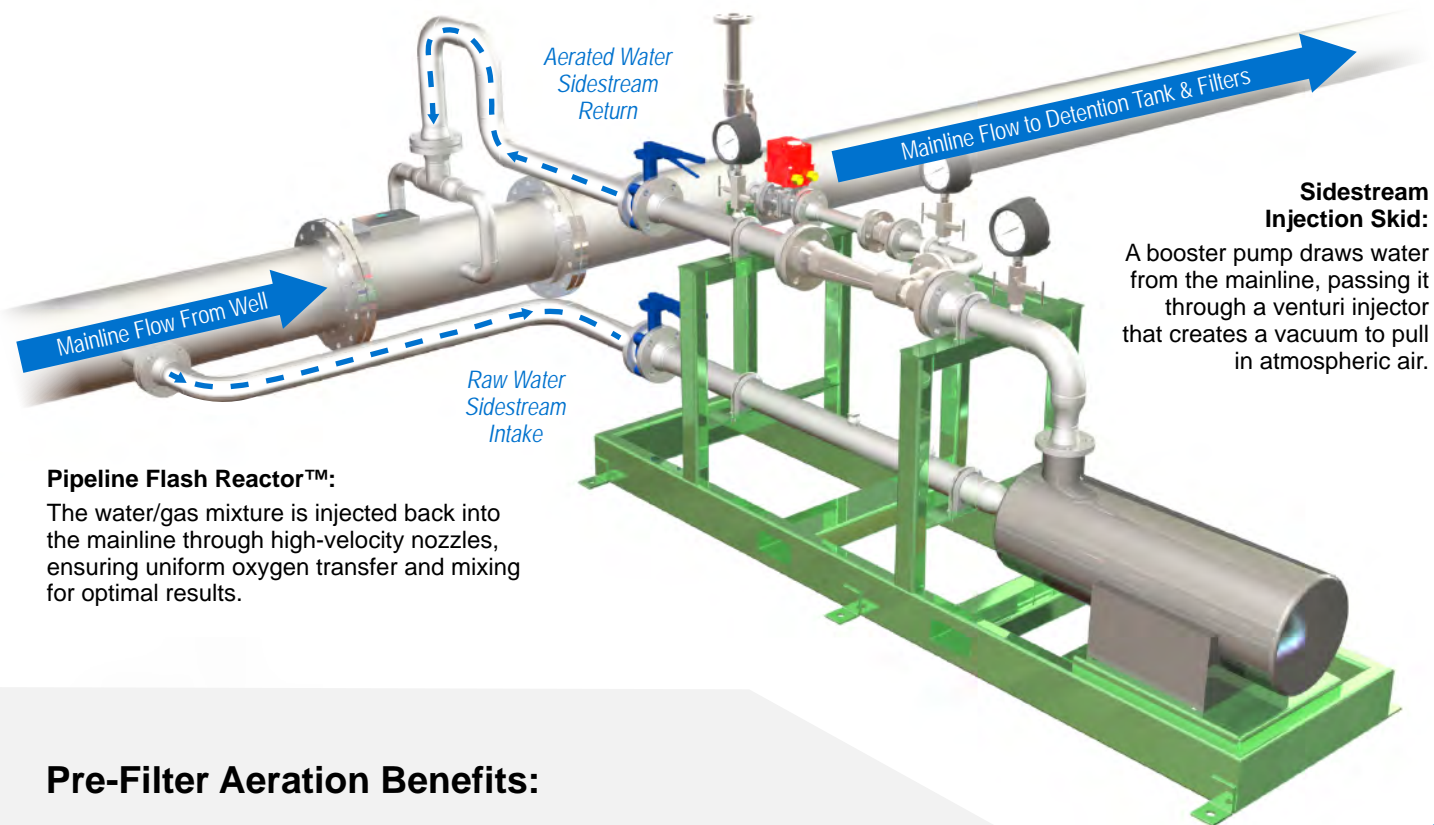
Pre-Filter Aeration

Efficient & Compact Water Treatment



Easy Solutions for Cleaner Water

Water treatment facilities face ongoing challenges when dealing with iron, hydrogen sulfide (H_2S), and ammonia in raw water. Traditional methods, such as forced or induced draft aerators, are often cumbersome to install and maintain, and can negatively impact the aesthetics of the facility. Mazzei offers a better alternative—advanced in-line aeration systems that provide effective pre-filter aeration while minimizing chemical use.



Pipeline Flash Reactor™:

The water/gas mixture is injected back into the mainline through high-velocity nozzles, ensuring uniform oxygen transfer and mixing for optimal results.

Sidestream Injection Skid:

A booster pump draws water from the mainline, passing it through a venturi injector that creates a vacuum to pull in atmospheric air.

Pre-Filter Aeration Benefits:

- ▶ **Iron Removal:** Converts soluble ferrous iron into insoluble ferric iron, which can be easily removed through media filtration.
- ▶ **H_2S Oxidation & Ammonia Removal:** Effectively oxidizes hydrogen sulfide and removes ammonia, reducing the need for costly and hazardous chemicals.
- ▶ **Chlorine Reduction:** Decreases chlorine demand, lowering chemical costs and minimizing the formation of harmful disinfection byproducts (DBPs) such as trihalomethanes (THMs).

Our in-line aeration systems consist of a sidestream injection skid paired with a Pipeline Flash Reactor™ (PFR). This setup eliminates the need for bulky draft aerators by integrating directly into your existing infrastructure.

Key Advantages

Mazzei's in-line aeration systems offer water treatment facilities a compact, efficient, and low-maintenance alternative to traditional aeration methods.



Installation Photo: PFR can be seen installed on mainline in upper left corner; Injection Skid in the foreground.

- ▶ **Small Footprint:** Mazzei's in-line aeration system can be installed indoors at ground level or in basements, avoiding the need for rooftop equipment. This compact design frees up building space, simplifies new designs, and enhances facility aesthetics by avoiding unsightly rooftop installations.
- ▶ **Low Maintenance:** The system's only component requiring routine maintenance is the pump, which is easily accessible. Unlike traditional aeration systems, Mazzei's design eliminates the need for blowers, compressors, or diffusers that commonly clog or develop bio-growth.
- ▶ **Reduced Installation Costs:** Installing the Mazzei system at ground level eliminates the need for costly mainline routing to the roof, significantly reducing civil work. This makes retrofits quicker, easier, and more affordable.
- ▶ **Flexible Design:** The Pipeline Flash Reactor™ (PFR) accommodates a wide range of flow rates with nearly zero mainline pressure loss. This flexibility ensures efficient and consistent operation under varying flow conditions, making the system adaptable and reliable.