Bullard Brine Water Wetland

Goodyear, AZ

With a projected increase in population of 167,700 residents by 2030, the city of Goodyear will need to meet the demands for potable water for its growing community. Given that the city currently depends solely on groundwater and will remain heavily reliant to meet this demand, future pressures of limited supply will require innovative and effective means of treating and reusing this supply throughout the city.

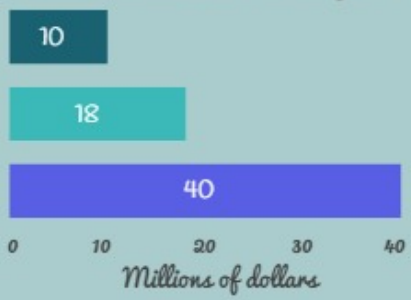
89% of Goodyear residents want improved green spaces

1,000,000 birdwatchers visit Arizona each year

What is a constructed wetland?

A constructed wetland for brine water management (BM) treats the water byproduct of reverses osmosis, a process used to remove salt content in pumped groundwater for Goodyear. Through soil, peat, and native wetland plants, toxins and metals are removed from this byproduct and the treated water can then be pumped back into the Gila River.

Cost per year for BM alternatives (10 MGD*)



Wetland

Injection Well

Evaporation Pond

A Brine Management Wetland Removes** ....

71% Arsenic

98% Selenium

86.0% Chromium

99% Nitrate

So what's next?

In the coming future, Goodyear will look to scaling up the Bullard pilot project to a full wetland. This wetland could help the city meet the future water needs of the community. If opened to the public, the wetland could also provide residents a place to relax, bird watch, and hike. If designed carefully, this wetland could help define the city as a top destination in Arizona and help create a unique sense of place for Goodyear.

The City of Goodyear currently...

...fails to meet a sustainable target for water consumption.***

...will fail to meet a sustainable target for adequate green space by the year 2030.

...But a BM wetland can help the city meet or exceed these targets!

*MGD = Million gallons per day (Poulson 2010)

**Removal percentages based on projected brine concentrations before and after wetland treatment (Poulson et al. 2012).

***Goodyear does meet the AZ Department of Water Resources efficiency targets.

REFERENCES:
- Poulson 2010
- Poulson, T., Rhodes, R., Bays, J., & Hwang, M. 2012
- City of Goodyear 2014
- US Fish and Wildlife Service 2006

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