BPW Plant Renewal: Building Sustainable, Resilient, and Efficient Water Infrastructure

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Buffalo Pound Water Treatment Corporation

- Regional Water Treatment Plant
- Operating since 1955
- 205 MLD Facility
- Non-Profit 2016
- Board of Directors

BUFFALO
POUND
WATER
TREATMENT
PLANT

Strategy Map

BUFFALO POUND WATER TREATMENT CORPORATION

eVision

As an essential service provider, BPW is committed to protecting the environment and public health through the provision of responsible potable water generation. We strive to exceed regulated standards, minimize our carbon footprint and stand as a

eMission

BPW will minimize our carbon footprint and treatment process waste by optimizing plant operations, and land and water use. We are committed to innovation and continual process improvement.

eValues

Safety	Team Culture	Accountability	Process Driven	Innovation	Continuous Improvement
We are pro-active in our approach towards avoiding ecological contamination and environmental damage.	Through education, documentation, and engagement, we foster understanding and commitment from all staff to be environmentally sustainable.	We ensure proper, efficient & effective usage of resources to operate a sustainable entity with the environmental impacts considered.	We optimize plant processes to maximize water recycling, "right-size" lake water withdrawals, and minimize wastewater production.	We improve our environmental footprint through innovative designs that maximize process effectiveness and utilize green technologies.	We improve environmental performance through effective measurement and development of KPIs.

Goal	Target	Tactic
Use 100% renewable power	All electricity used in the plant, administration building, pumping stations and outbuildings come from carbon-free	Utilize Solar Power and purchase SPC "Green" power to supplement demand.
Increase energy independence and decarbonize emergency backup power systems through renewable and low-carbon energy sources	Phase 1: Invest in 2.2-megawatt solar array providing up to 10% of total electricity needs of the entire Plant. Phase 2: Double solar capacity 4.5-megawatts. Phase 3: Invest in battery storage and backup diesel generator	Seek opportunities for grants and utility provider incentives to fund expansion of on-site renewable energy production and storage. Identify mechanical, storage and cost requirements to convert backup diesel generators to biofuel.
Develop resource conscious maintenance and operations program and procedures.	Ensure that equipment purchases are highly energy efficient, operate as efficiently as possible, and achieve expected useful life.	Purchase energy efficient equipment. Install energy monitoring system track usage and predict equipment failure. Maximize the service life of equipment providing replacement parts are still available. Recycle decommissioned equipment at the end of service
Minimize water content of sludge/solids disposal to landfill.	Water treatment process solid waste to contain less than 50% water content before diverting to landfill.	Stockpile sludge until the solids content exceeds 50%. Freezing of lagoon sludge in Winter and adequate drying (draining/evaporation) in Summer. Utilize new drying technologies and processes as they become commercially available.
Be recognized as a leader in low-carbon emissions and wastewater discharge.	Plant ranked above 50% of peers according to national benchmarking targets set by nationalbenchmarking.com.	Optimize use of renewable energy. Maximize water recycling process in design of new plant to minimize wastewater discharge. Continual technical process improvements for water recycling
Encourage public engagement and education about sustainable water management and resource conservation.	Develop public training, education, and promotion programs.	Work with municipal stakeholders to encourage promotion of the plant's sustainable operations through civic communications and inclusion of plant performance in Annual Reports. Collaborate with local school boards to develop a program that would be beneficial to their students. Engage with universities on research, training, internship, and education opportunities. Promote public education through news releases, web

BUFFALO POUND WATER TREATMENT PLANT

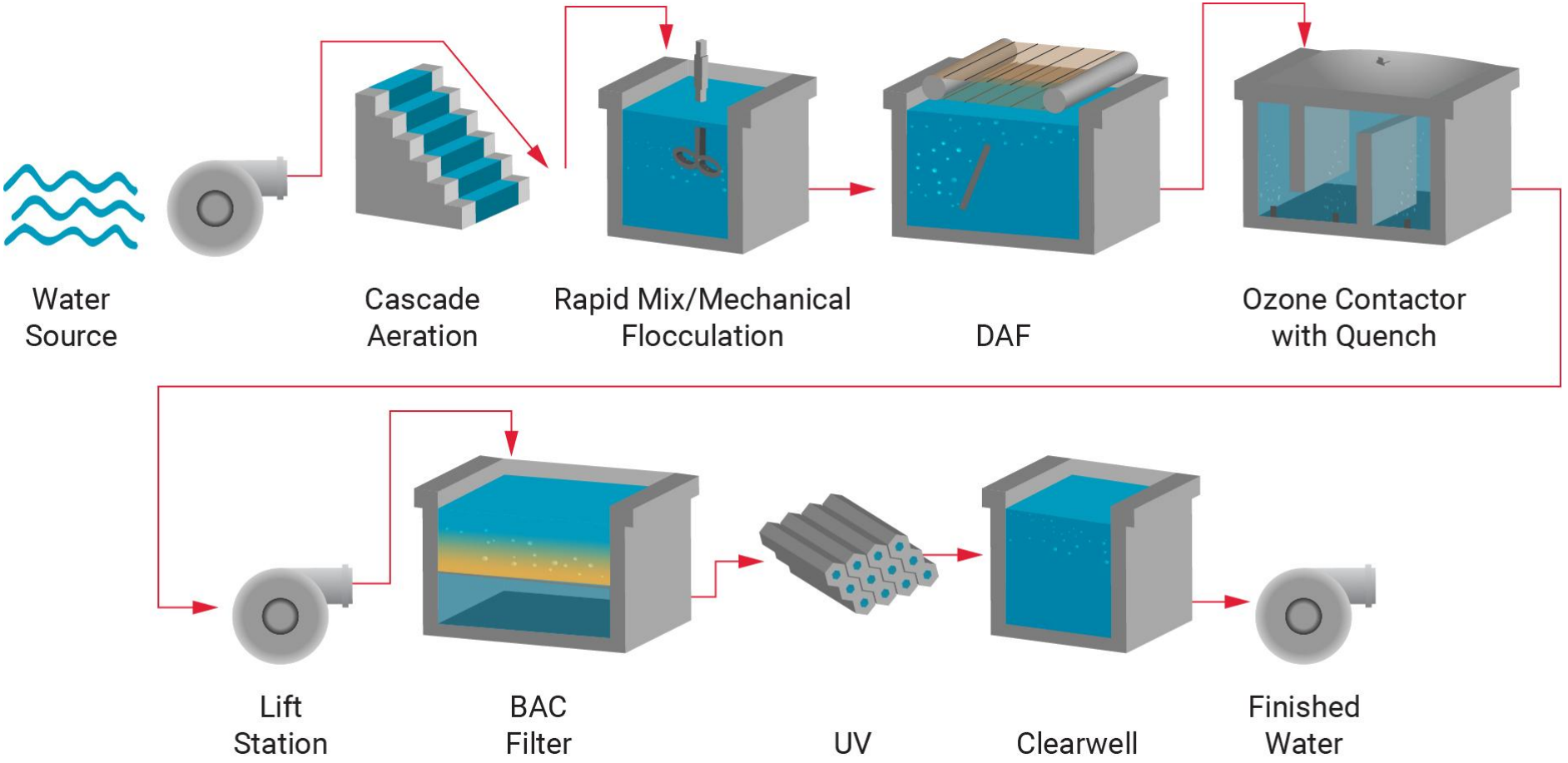
Plant Renewal Project Objectives

- Meet regulatory requirements
- Mitigate risks
- Ensure the sustainability of the Water Treatment Plant
- Provide resiliency to climate change
- Be more environmentally sustainable
- Operate more efficiently
- Meet Regional Growth

Plant Renewal Project Factoids

- Started Business Case and Gap Analysis 2017
- Progressive Design Build
- 3 Contractor - Engineering Teams
- 2 Submissions Received
- Awarded construction contract 2022
- $325M project all costs
- June 2026 Substantial Completion
- June 2028 Process Validation Period Ends
- 220 MLD Firm and 250 MLD Total Capacity

Renewed Water Treatment Plant Processes



BUFFALO POUND WATER TREATMENT PLANT

BPW - PR: Building Sustainable, Resilient, and Efficient Water Infrastructure.

Completed Works to Reduce Environmental Impact of Operations

- New treatment processes
- 100% of Power Utilized is Green
  - 2 MW Solar (on Site)
  - Green Offsite Power
- LEED
- ENVISION
- Water Cooling
- EV Truck

Future Plans to Reduce Environmental Impact of Operations

- Recycle Water
- Reduced Water Loses
- Steady State Production
- Phases 2+
- Process Waste Discharges
- pH and Lead control
- THM Reduction
- Collect and Share Research Data

QUESTIONS?