SPRINGETTSBURY TOWNSHIP

BUCHART HORN, INC.

Strengthening Communities

Springettsbury Township

Wastewater Treatment Plant

BUCHART HORN, INC.

Strengthening Communities

Springettsbury Watewater Treatment Plant

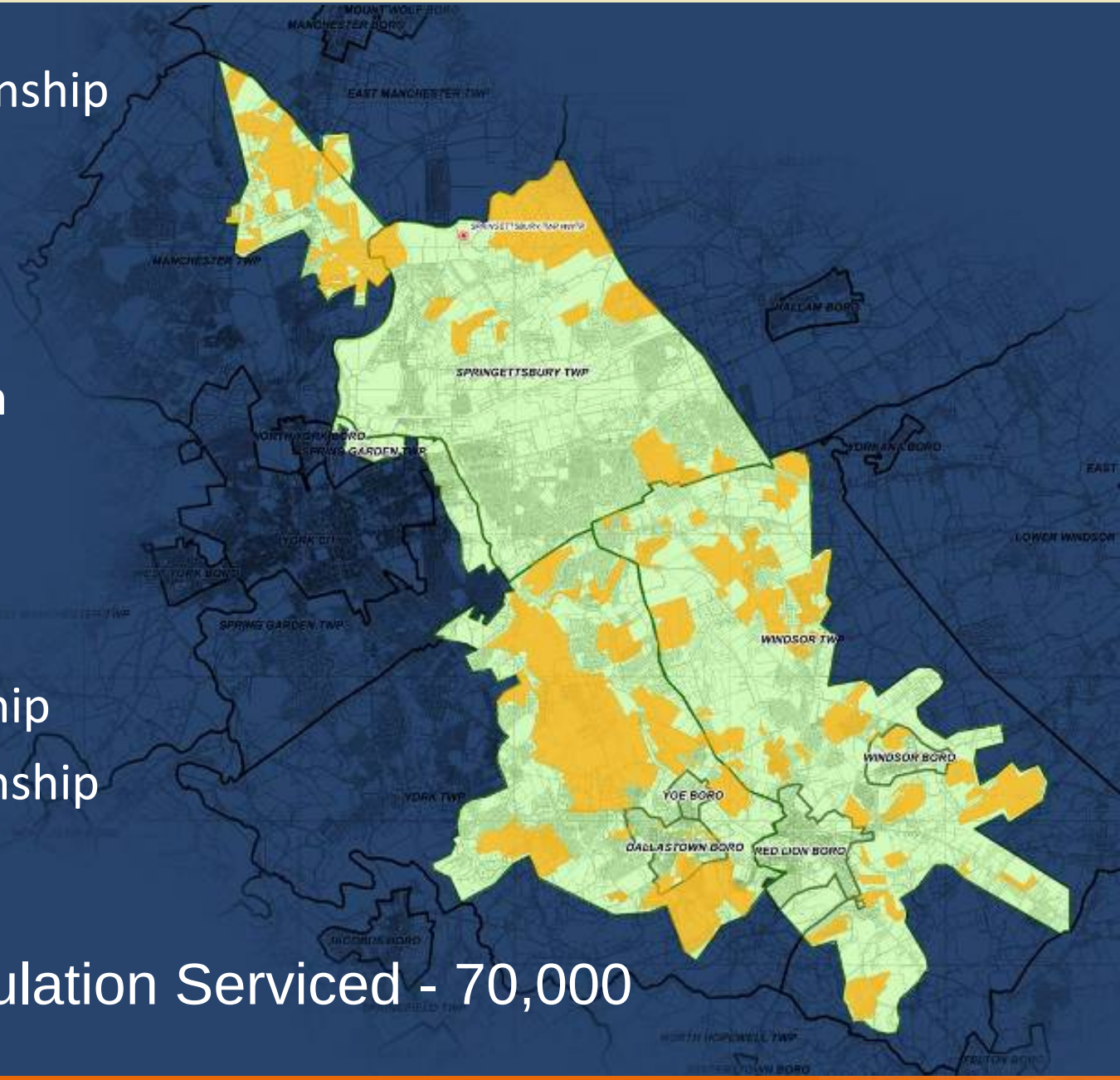
- Service Area
- WWTP History
- BNR Upgrade
- UV Disinfection Upgrade
- Administration Addition
- Construction Costs

Service Area

- Springettsbury Township
- Windsor Borough
- Red Lion Borough
- Yoe Borough
- Dallastown Borough
- Windsor Township

And Portions of:

- Manchester Township
- Spring Garden Township
- York Township



Approximate Population Serviced - 70,000

Service Area

Collection System within Springettsbury Includes

- 120 Miles of Gravity Sewer
- 7 Pumping Stations
- 20 Miles of Forcemain

Springettsbury Watewater Treatment Plant

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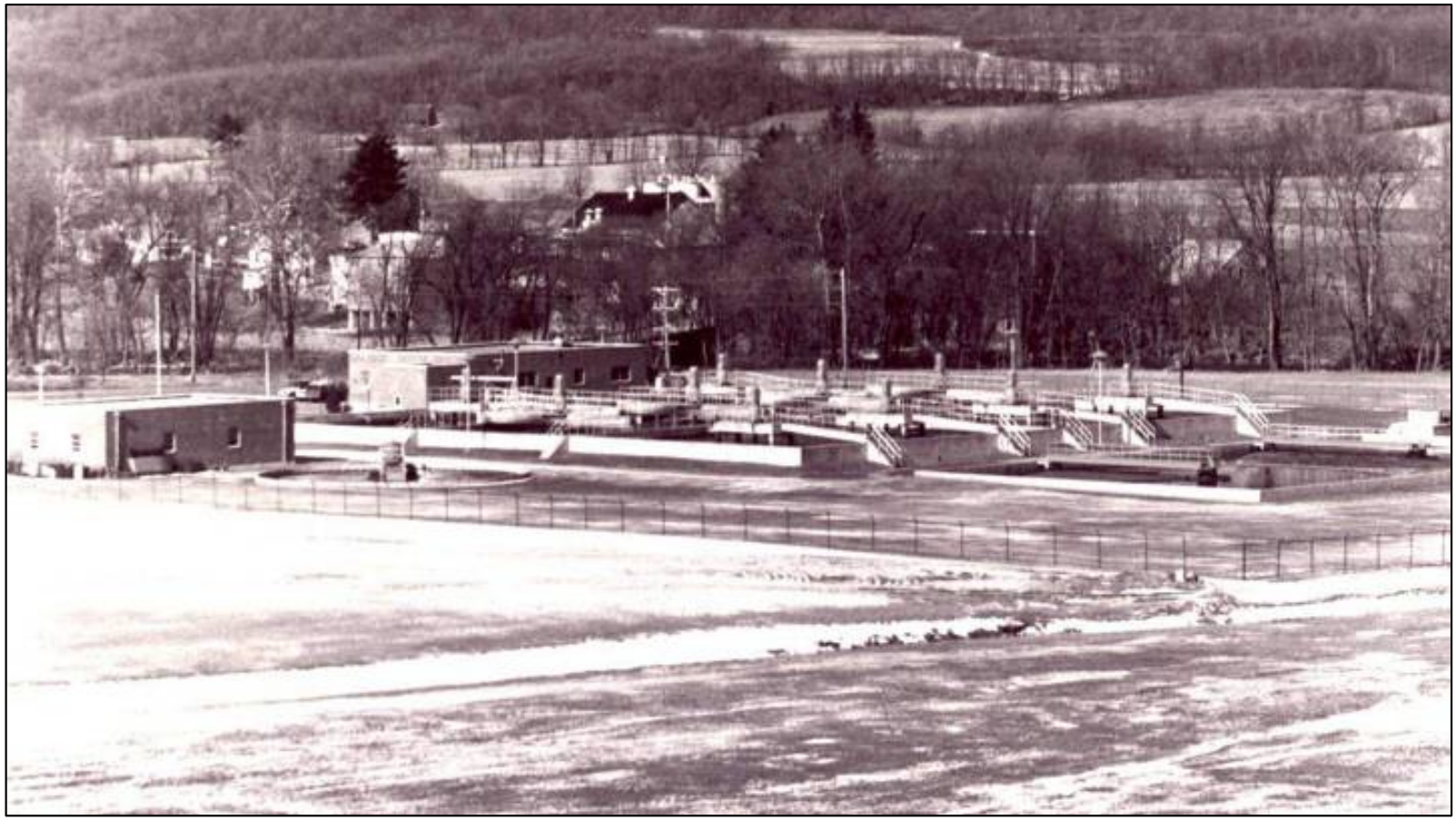
Wastewater Treatment Plant History



- The Springettsbury Wastewater Treatment Plant as it appeared in 1970
- The Plant was Permitted for 8 Million Gallons Per Day

Wastewater Treatment Plant History

- In 1984 the Wastewater Treatment Plant Underwent an Upgrade and Expansion to 15 Million Gallons Per Day

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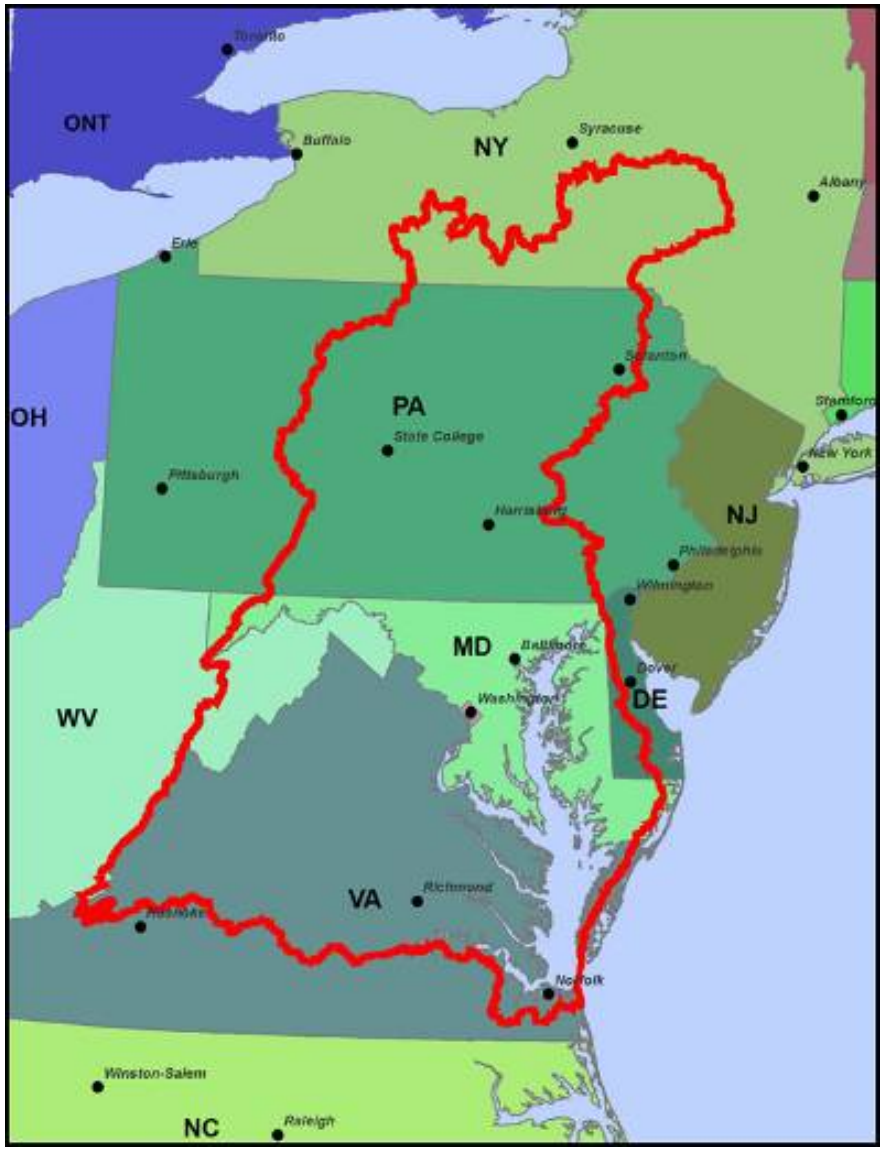
BNR Upgrade Project



Why Upgrade in 2011?

PA DEP Bay Strategy

Biological Nutrient Removal (BNR)

Reduce Nitrogen and Phosphorous discharges to the Chesapeake Bay

BNR Upgrade Project

2011 BNR Upgrade

BNR Strategy

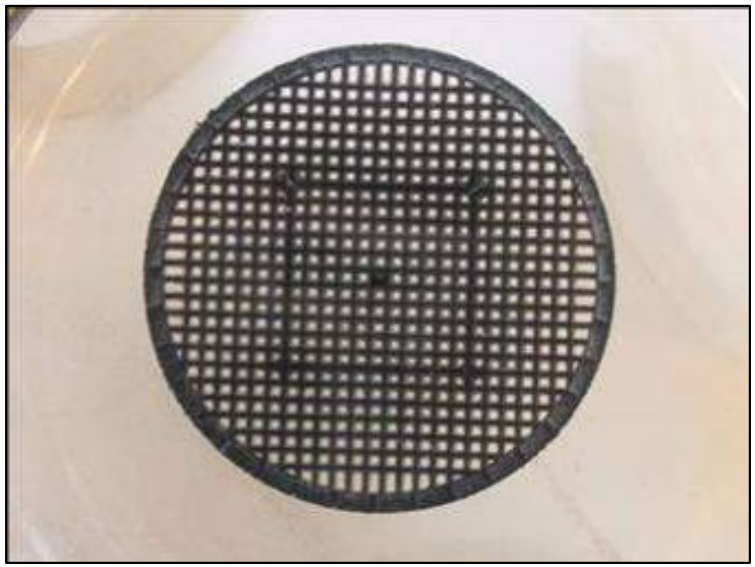
The main goal of this project was to design a BNR system that would meet the new effluent requirements without incurring the substantial expense of building new tanks (about 25 % more expensive).

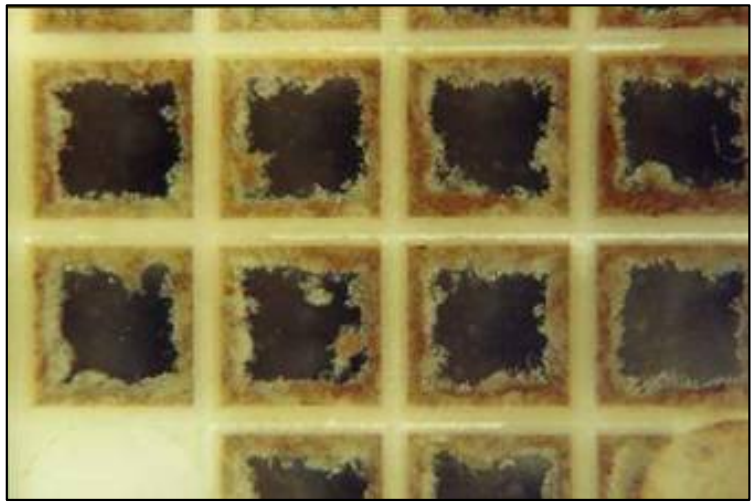
BNR Upgrade Project

- Integrated Fixed Film System (IFAS)
- Conventional Aeration Systems – Microorganisms are suspended in tank
- IFAS Systems – Microorganisms are attached to a suspended media; media offers greater surface area for microorganisms to grow
- More microorganisms:
  - Provide higher degree of treatment
  - Can offset the need for additional aeration basin capacity

BNR Upgrade Project

Kruger IFAS System



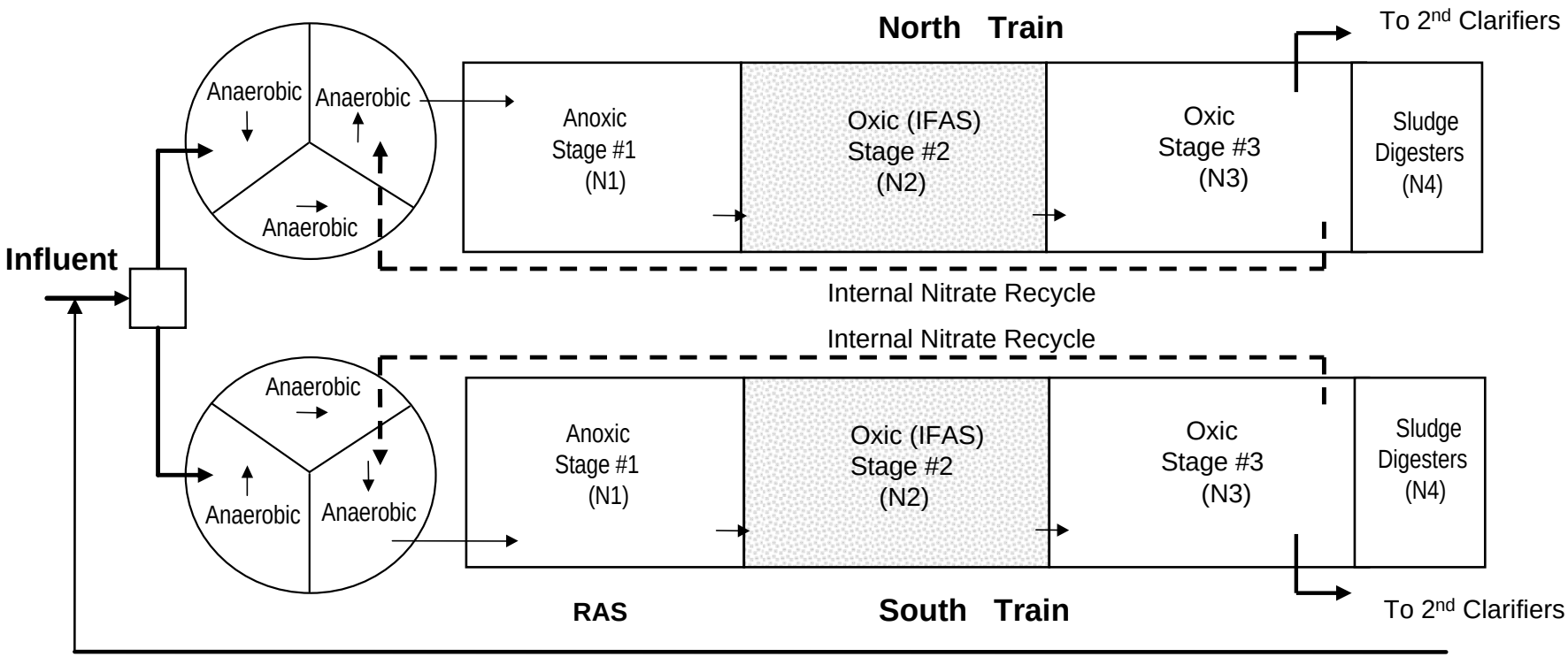


Media Facts

- -38% Fill
- -85,000 CF
- - 274 SF/CF
- -23M SF
- - 536 ACRES

BNR Upgrade Project

BNR System Site Plan



BNR Upgrade Project

Media Retention Screens

- 50 Screens
-16” Diameter
-10’ Long

BNR Upgrade Project

Additional Upgrades Required

- New High Efficiency Diffused Air System
- Blowers and Blower Building
- Internal Mixed Liquor Recycle Pumps
- Conversion of Primary Clarifiers to Anaerobic/ Anoxic Selectors (anaerobic portion for phosphorous removal; anoxic portion for nitrogen removal)

BNR Upgrade Project

Additional Plant Considerations

- Motor Control Center (MCC) Upgrade
- Emergency Power Upgrade
- Final Clarifier Improvements
  - Current Density Baffles
  - Algae Control System
- Headworks Screening System Upgrade
- Relocated Septage Dump Station

BNR Upgrade Project

Influent Screening is CRITICAL

3 mm opening

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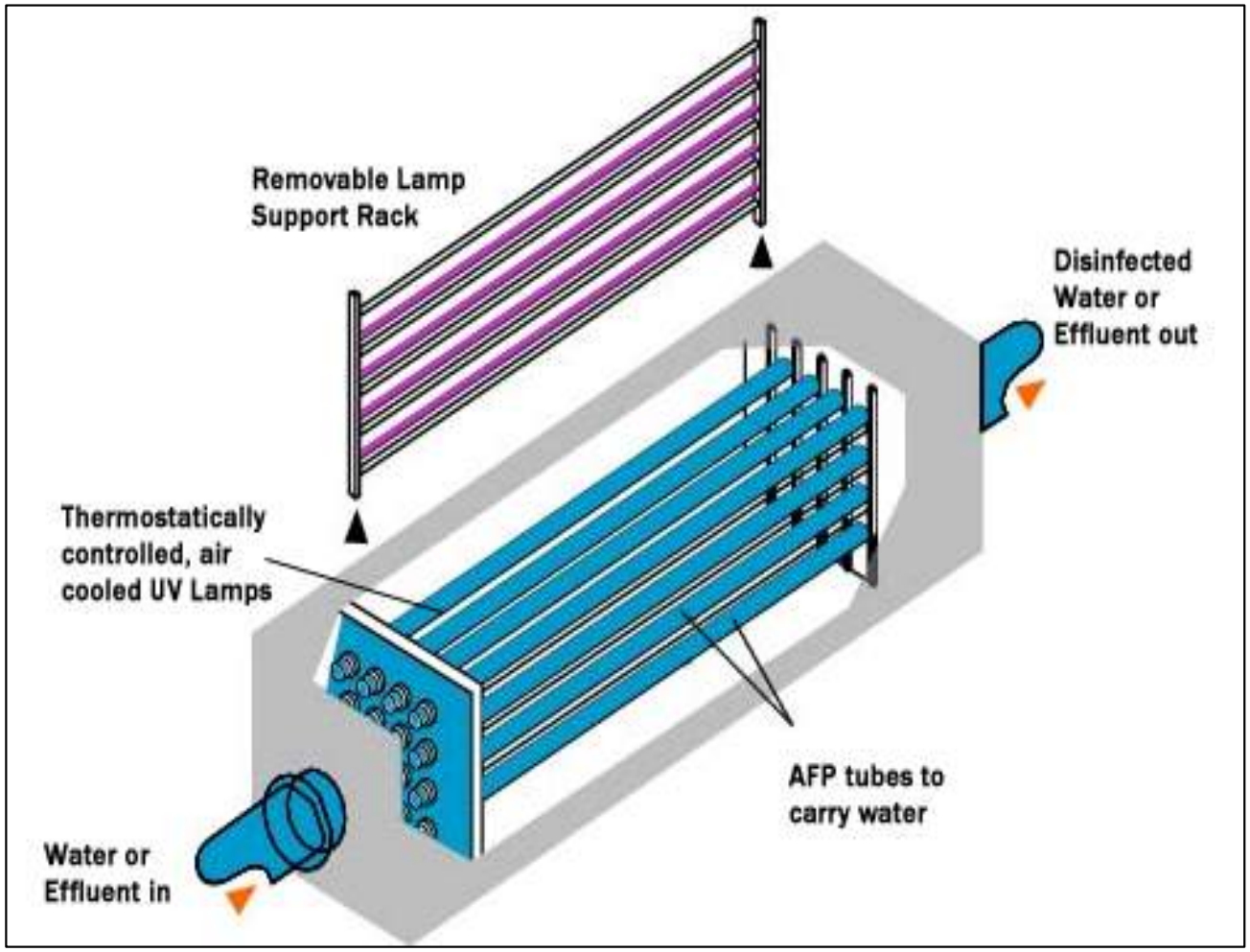
UV Disinfection Upgrade

Enaqua UV Disinfection System

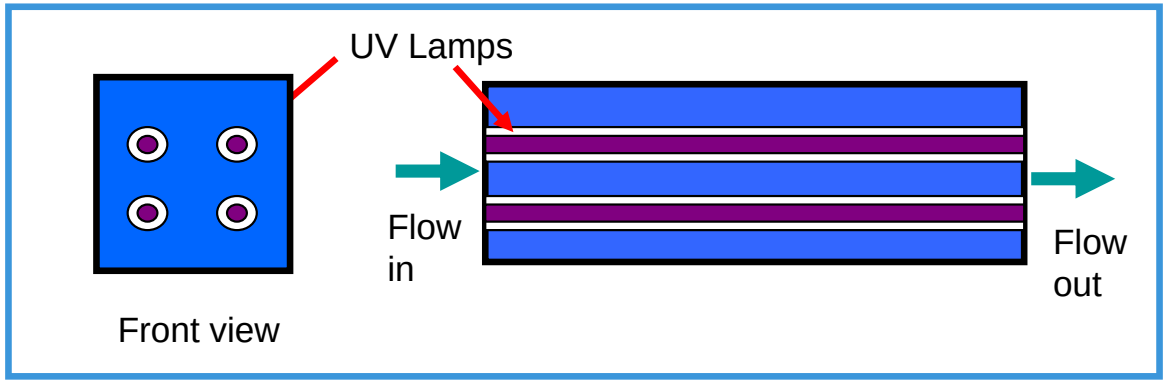


UV Lights do not
Contact the water

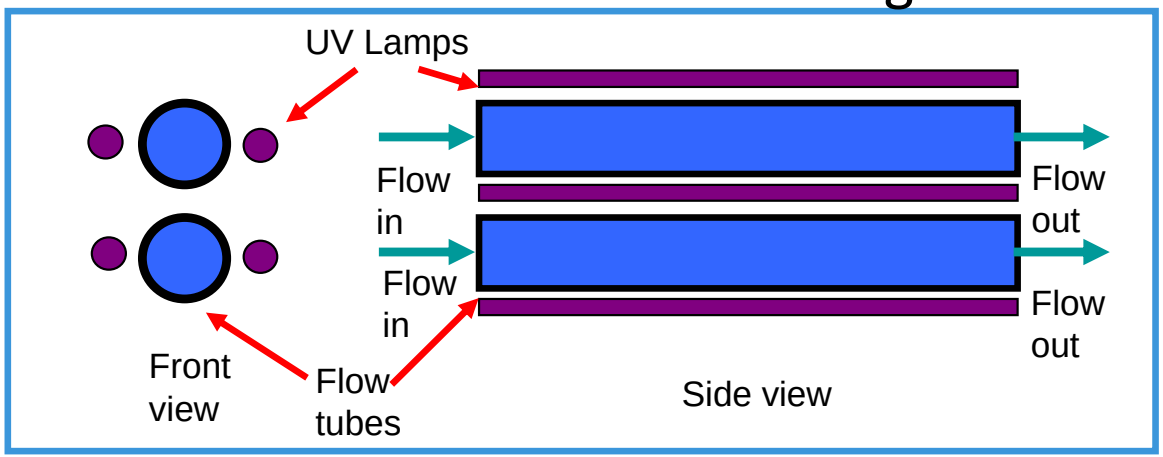
UV Disinfection Upgrade

Enaqua UV Disinfection System

- Contact UV reactor configuration



- Non - Contact UV reactor configuration



UV Disinfection Upgrade

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Administration Addition

- Enhanced Security Required Post 9/11
- Added Needed Office/Storage Space
- Added Multi-Use Training Room
- Existing Lab Updated

Administration Addition

Administration Addition

- Use of Regional Materials for Construction
- New High Efficiency Geothermal Heating/ Cooling
- Energy Efficient Windows throughout Building
- Passive Heating in Conference Room
- Day Lighting Throughout Entire Addition

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Construction Costs

- General	$18M
- Electrical	$ 4M
- Mechanical	$ 1M
TOTAL	$23M

Questions?