SUMMERVILLE BOROUGH WATER TREATMENT PROJECT

Redbank Creek Engineering, Inc.

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Introduction/ Project Objectives

Introduction: Summerville, PA is a small rural town located in Jefferson County, PA. The municipal authority services 210 connections, including one industrial connection, the Glen Gery Brick Factory.

- The raw water source is spring water but in the summer months the springs are depleted
- There is not enough water to provide for fire flow and drinking water in the town.

Objective: The objective of this project is to engineer an dependable source of drinking water for Summerville Borough that is resilient, affordable and sustainable.

Alternative 1

The first alternative would source water from wells and would treat the groundwater for: Iron, Manganese, and Barium removal.

- The cost of this alternative is **$142,000**

Alternative 2

The second alternative would source water from Redbank Creek and then would pass through a modular surface water treatment plant before distribution.

- The cost of this alternative is **$455,000**

Alternative 3

The third alternative would recycle the wastewater effluent from the WWTP and would be pumped to a storage tank at the brick factory, and then distributed for industrial use. The storage tank would also be constructed as part of the scope

- The cost of this alternative is **$194,000**

ENVISION

Envision is a framework to assess and incentivize sustainability for infrastructure projects. Based on project attributes, a level of achievement is determined for 64 credits across five categories. If total points earned is great enough, a level of verification is awarded.

Criteria → Alternative	Quality of Life	Leadership	Resource Allocation	Natural Word	Climate & Resilience
Alternative 1	15	10	12	24	50
Alternative 2	15	9	12	15	50
Alternative 3	15	26	29	26	56

FINAL PROPOSED DESIGN

The final proposed design is a combination of groundwater and recycled wastewater.

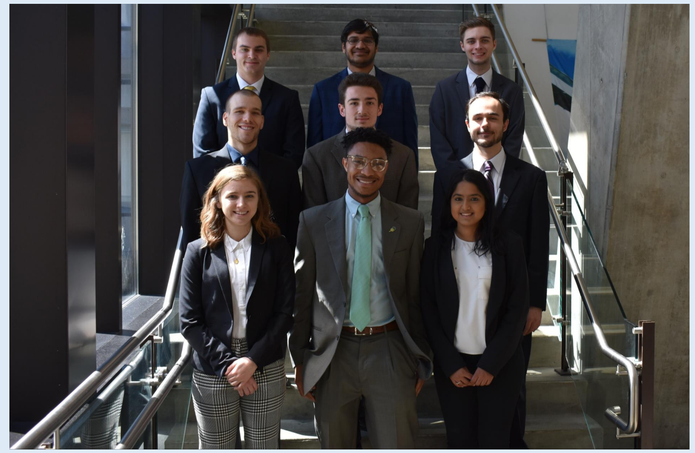
- The springs will be supplemented with treated groundwater from a well during the summertime
- Recycling the wastewater will decrease the stress put on the wells and springs and will meet the needs of the industrial customer
- Envision Verified Certification Awarded- 28% of points earned

COST

The final cost of this alternative is **$271,000**. Partial funding for this project could come from:

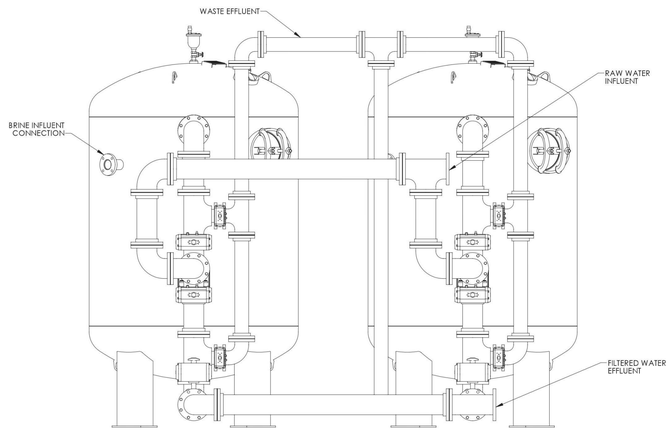
- PennVest loans
- The Appalachian Regional Commission grants
- Department of Commerce Planning Program Loan

TEAM PICTURE



FINAL PROPOSAL: TREATMENT DESIGN

- The groundwater will be treated for Iron and Manganese through oxidation with Potassium Permanganate and greensand filtration.
- Barium will be removed through Ion-Exchange with Potassium Chloride used as a water softener- shown below



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