

Post Point Solids Handling Pilot Program RFP update

April 8, 2024



Outline

- History of Incineration and Biosolids at Post Point
- Solids Handling Pilot Program
- RFP Overview
- Submitter Overview
- RFP Scoring
- Next Steps



History

1973 Primary treatment



1990-93 Added Secondary and Incinerator #2



2014 Secondary upgrade

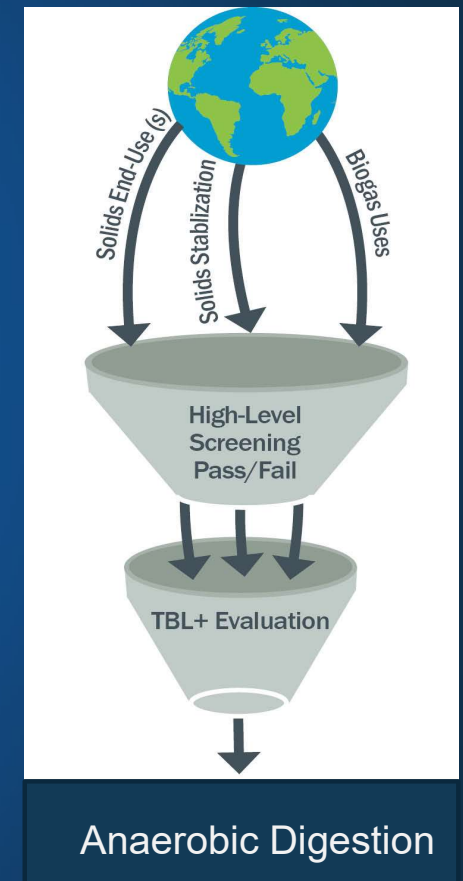


Five years of planning decisions

2017-January 2022

- ✓ Replace incinerators
- ✓ Focus on resource recovery
- ✓ Support Climate Action Plan goals
- ✓ Advance an anaerobic digestion-based solution

Then came major question, where will the biosolids ultimately go?



TBL+ criteria guided decision-making

Environmental *(Healthy Environment)*

- E1** – Minimize Carbon Footprint
- E2** – Protect Air Quality
- E3** – Maximize Resource Recovery
- E4** – Minimize Energy Usage
- E5** – Protect Local Habitat

Financial *(Quality, Responsive Services, Vibrant Sustainable Economy)*

- F1** – Optimize System Value
- F2** – Maintain Affordability
- F3** – Minimize Market Sensitivity

Social *(Sense of place, Safe and Prepared Community)*

- S1** – Minimize Noise
- S2** – Minimize Odor
- S3** – Minimize Truck Traffic
- S4** – Minimize Visual Impacts
- S5** – Minimize Toxin Exposure

Technical *(Quality, Responsive City Services)*

- T1** – Proven Reliability
- T2** – Minimize Post Point Impacts
- T3** – Maintain Flexibility
- T4** – Minimize Complexity

Affordability

- \$1.1 billion program over ~15 years
- Highly uncertain economic outlook
- Uncontrolled inflation
 - CPI at 8+%??
 - Construction 12%-20%+??
- Community concerns regarding PFAs, Heavy Metals, Microplastics \$\$???
- Supply chain issues



Salish Sea Protection- Nutrient Reduction



- Changing regulatory environment
- Digester processes increases nutrients
 - \$200 million with incinerators
 - \$400+ million with digesters

PFAS = Per- and Polyfluoroalkyl Substances

Why do we care?

- Over 5000 compounds
- Persistent and difficult to destroy
- Pervasive
- Evidence of human health and environmental effects



Cost comparison

			Resource Recovery	Maintenance of Incinerators
1	WIFIA Loan application (\$429.5m)	Incinerator Functionality	\$ 5,000,000	\$ 100,000,000
2		End use	\$ 10,000,000	\$ -
3		Cost of property	\$ 10,000,000	\$ -
4		Resource Recovery	\$ 218,000,000	\$ -
5		Escalation/Inflation	\$ 101,000,000	\$ 50,000,000
6		Plant Wide Generators	\$ 21,000,000	\$ 21,000,000
7		Design	\$ 41,000,000	\$ -
8		Planning	\$ 8,000,000	\$ -
9		Other Capital	\$ 15,000,000	\$ -
10		Financing Fee	\$ 500,000	\$ -
11	Nutrients low (incineration)		\$ 200,000,000	\$ 200,000,000
12	Nutrients High (digesters)		\$ 200,000,000	\$ -
13	Additional O&M Expenses nutrient requiriements		\$ 57,200,000	\$ 30,000,000
14	Additional O&M expenses for biosolids/digesters		\$ 8,580,000	\$ -
15	Annual Capital/Reserve		\$ 140,000,000	\$ 140,000,000
16	Total		\$ 1,035,280,000	\$ 541,000,000

Pathway Forward

- Catch up and correct deferred maintenance needs
- Consider new fluidized bed incinerator vs rehab of existing multi-hearth incinerators (ref. CDM 2010)
- Replace gravity belts, centrifuges, emissions, storage tank(s), controls, pumps, emergency generators, electrical components, building rehabilitation, etc.
- Maintenance projects using existing revenue to be included in Mayor's proposed 2023-2024 budget
- Plan for future expansion of solids and handling capacity and explore options for small scale pilots of new, emerging technologies



Solids Handling Pilot Program

- The purpose of this RFP was to obtain information from potential system technology providers interested in pilot testing their solids processing system at Post Point.
- These pilot tests will help provide valuable information as the city continues planning for future solids handling upgrades.

RFP specifically asked for information on the following:

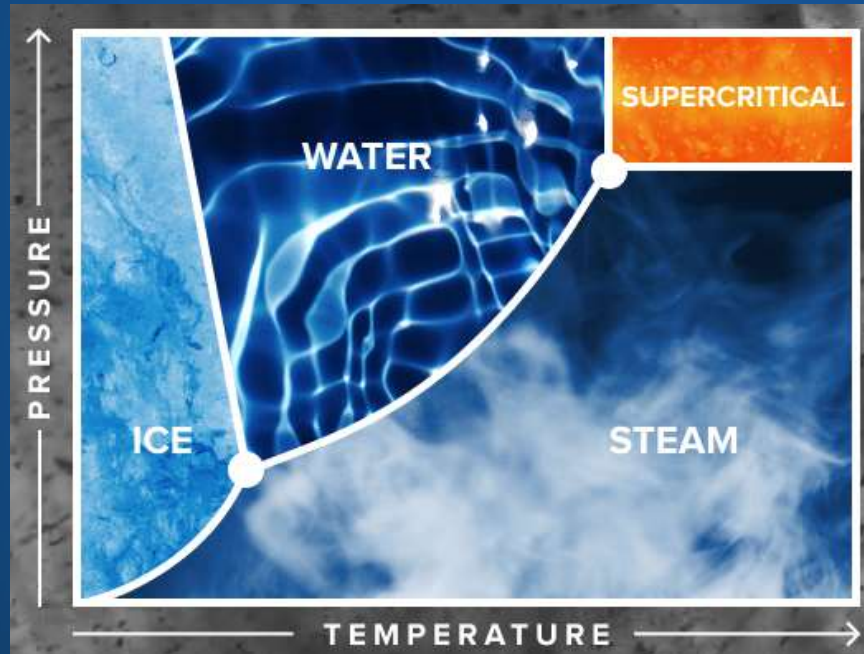
- The types of solids handling processing and technology proposed (i.e. gasification, pyrolysis, drying/dewatering, etc.)
- The ability of the proposer to pilot test their system at Post Point.
- The types of renewable / beneficial uses / products to be generated from the process (end products)
- Financial cost to the city to pilot test proposer's system.

Received 4 submissions

- 374°Water
- BioForce Tech
- Connell Soil Farm
- Sedron Technologies

374°Water

- Supercritical Water Oxidation (SCWO)



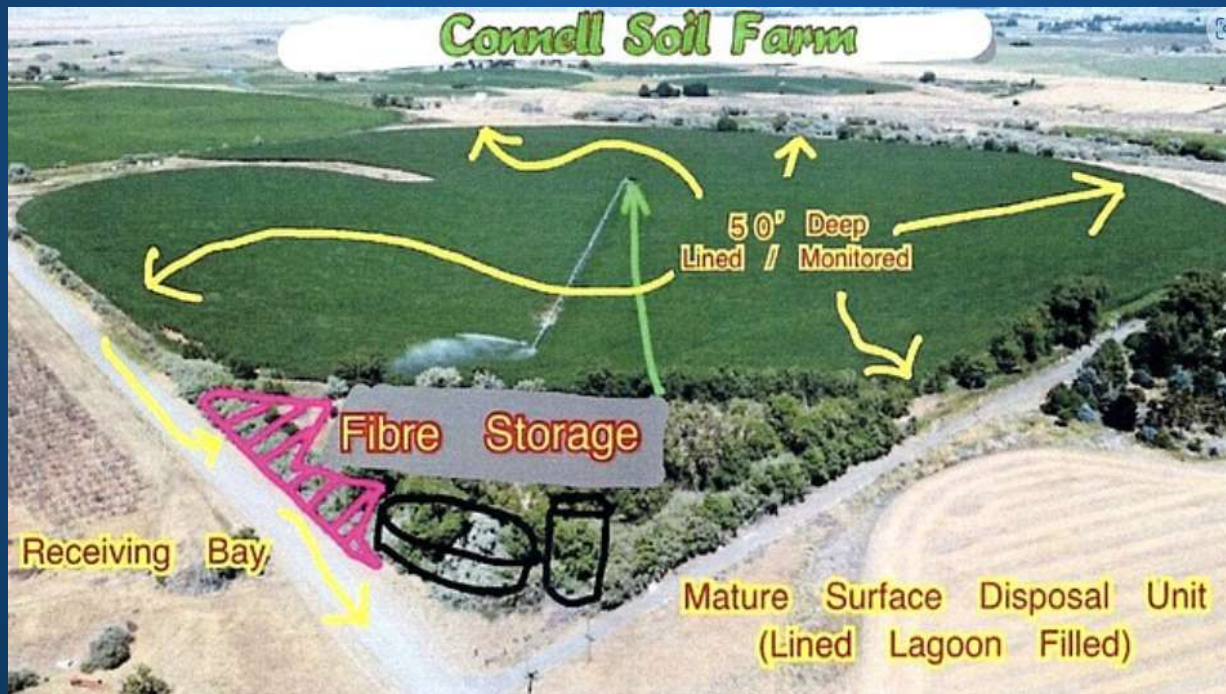
BioForceTech

- Pyrolysis



Connell Soil Farm

- Lined Lagoon



Sedron Technologies

- Varcor Waste Processing system



Scoring of the submittals

WRITTEN QUALIFICATION EVALUATION SUMMARY SHEET FOR:										Number of Evaluators		4							
<i>Solids Handling Pilot Program</i>					Invitation # RFP 76B-2023					Date		1/9/24							
										Ranking		4 firms							
SOQ Eval-1										SOQ Eval-2		SOQ Eval-3		SOQ Eval-4		Rank Based on Evaluator Ranking			
Firm Name										Evaluator 1		Evaluator 2		Evaluator 3		Evaluator 4		Ranking	
										Score	Rank	Score	Rank	Score	Rank	Score	Rank	Avg. Rank	Final Rank
Sedron Technologies, LLC										59.1	3	57.1	3	68.0	2	61.4	3	2.75	3
Connell Soil Farm LLC										20.9	4	12.1	4	48.1	4	20.0	4	4	4
Bioforcetech Corporation										62.8	2	63.0	2	49.9	3	64.9	2	2.25	2
374Water Systems Inc.										92.8	1	85.8	1	81.8	1	86.8	1	1	1

Revised: 09 Jan 2024 SMD

Scoring of the submittals (costs)

Cost Summary					RFP 76B-2023
<i>(Project Manager: Update this example to match your RFP cost information)</i>					
	Cost	Calculated Cost Score (1-10)	Rank	Comments	
Maximum Weighted Points Possible (as listed in RFP)	\$570,500.00	10			
<i>Firm Name</i>					
Sedron Technologies, LLC	\$ 1,295,000.00	4.4	2		
Connell Soil Farm LLC	\$ 2,858,047.05	2.0	3	\$525 per ton. Calculated to a 6 month test using 10% of average TWAS feed. See "Cost-CSF" Calculation worksheet.	
Bioforcetech Corporation	\$ 8,948,219.36	0.6	4	Did not include weekly operating costs in total cost value. See "Cost-BFT" Calculation worksheet.	
374Water Systems Inc.	\$ 570,500.00	10.0	1		

Evaluating submittals

- These pilot tests will assist the city in making key decisions regarding future full scale solids handling upgrades.
- The City may choose to engage further and conduct pilot testing with all, some, or none of the proposers.

Next Steps

- Plan funding in the 2025-2026 budget for pilot testing.
- Include the Water Resource Advisory Board in future discussions.
- Continue participation in state PFAs testing.

Next Steps

- Engage in discussions with 374°Water for a 2026-2027 pilot test.
 - Lowest cost submitted that also eliminates PFAs
- Continue conversations with BioForce Tech on their submittal.
 - Quoted high costs, but also eliminates PFAs
- Planning team will continue investigating emerging technologies that proves to destroy PFAs.
 - Continue attending national level conferences and meeting with technology suppliers.
 - Conduct site visits to proven technologies that eliminates PFAs.

Discussion and Questions

Presented by:
Eric Johnston, Public Works Director

