BIOFORCETECH
CORPORATION

City of Bellingham,
Solids Handling Pilot Program
RFP # 76B-2023

Section 1 – Cover Letter

City of Bellingham
Attn: Purchasing Office, RFP # 76B-2023
2221 Pacific Street
Bellingham, Washington 98229
Office: 360-778-7750

RE: City of Bellingham, Solids Handling Pilot Program RFP # 76B-2023

Dear City of Bellingham Selection Board,

Bioforcetech Corporation (“BFT” or “Proposer” or “Supplier”) is pleased to respond to the RFP issued by the City of Bellingham (“City” or “Owner” or “Buyer”) to provide a biosolids drying and pyrolysis pilot system for the Post Point Wastewater Treatment Plant located at 200 McKenzie Ave, Bellingham, WA 98225. The enclosed response is submitted in response to the above-referenced Request for Proposal. Through submission of this proposal, we agree to all of the terms and conditions of the Request for Proposals, with a clarification on Clause A.2 (“Intellectual Property Rights”) under “Selected Contract Clauses” in page 12 of 13 of the above-referenced Request for Proposal, which is not applicable and is therefore rejected. The contract with Bioforcetech will not be a contract under which BFT will carry out any "development" of a product for the City. Products are proprietary and patented machines of Supplier which are produced by BFT based on its know-how and other IPRs, and no IPRs are transferred to City, except for the untransferable/non-sublicensable right to use the machines according to their intended purpose

We have carefully read and examined the Request for Proposal and have conducted such other investigations as were prudent and reasonable in preparing the proposal. We agree to be bound by statements and representations made in this proposal and to any reasonable agreement resulting from the proposal.

Proposer Information: Bioforcetech Corporation, a Delaware C Corporation having its operating headquarters located at 938 Linden Ave, South San Francisco, CA 94080.
+1 (415) 508-7603
www.bioforcetech.com

Contact information of Proposer’s primary representative for purposes of this Proposal.
Valentino Villa
Co-Founder & COO
+1 (650) 906-0193
v.villa@bioforcetech.com

Bioforcetech extends our appreciation for reviewing the enclosed RFP response to the City of Bellingham. We look forward to discussing our proposals and next steps.
Yours truly,

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Valentino Villa
Chief Operating Officer

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Section 2 - Summary of Key Features of Proposal

Bioforcetech Corporation has assembled a Project Team that is uniquely qualified to assist the City in the development and implementation of a state-of-the art biosolids beneficial use program to meet the City long-term goals. As we understand them, these goals include:

• A focus on environmental performance that protects human health and the environment.
• Employment of a beneficial reuse technology which can dramatically reduce the City's generation of greenhouse gas emissions, helping the City meet its goal of carbon neutrality.
• Development of long-term beneficial reuse options for processed biosolids which do not rely on landfill or land application.
• Meeting current and future regulations for PFAS and CECs.

We believe our proposed approach, using our proprietary pyrolysis technology, can meet all these goals. The Bioforcetech pyrolysis process converts dried biosolids to energy which allows the process to be self-sustaining, resulting in significant volume reduction, a net reduction of greenhouse gas emissions, the generation of renewable energy and the creation of a solid product with a wide range of beneficial uses. Bioforcetech is the first company in North America to successfully commercialize biosolids pyrolysis with its installation at a municipal water resource recovery facility in Redwood City, CA. With over 15 full-scale installations worldwide, all of which are dedicated to biosolids, our expertise and technology is unmatched.

We recognize that the City is investigating a pilot project to review and qualify technologies that may help the City meet its long-term goals. Although we could build and construct a pilot facility at the Post Point WWTP, we strongly believe this is not the most direct and cost-effective approach to gaining the information the City is seeking. We believe much of the data already exists through Bioforcetech and other sources. If there are information or data gaps, we believe these can be filled in a more expeditious, cost-effective, thorough manner, as outlined in our response. The following pages contain proposals for both a pilot facility as written in the RFP with cost analysis as well as a proposal for an off-site testing regimen utilizing the BFT bench scale unit before implementing a full system in the place of a pilot system. We welcome any feedback and questions on both proposed approaches.

BFT extends our appreciation to the City of Bellingham for allowing us to provide the enclosed qualifications and response package. We sincerely look forward to discussing our proposal and ideas with the City once they have had the opportunity to review our response.

Section 3 – Team Structure and Business Approach

Bioforcetech has assembled a highly qualified project team of internal and external subject matter experts (SMEs) to respond to the needs of this RFP. The team consists of industry leaders in the biosolids and organics management space with expertise in processes including dewatering, biological drying, pyrolysis, manufacturing, engineering, research, technology development, project development, facility operations, transportation logistics, regulatory affairs, permitting, and the beneficial use of products produced during these processes.

Our project team is uniquely qualified to assist the City of Bellingham. The team will be led by Bioforcetech Corporation and supported by key team members such as Centrisys Corporation and our local agent Treatment Equipment Company (“TEC”). A detailed description of Bioforcetech’s local and corporate qualifications pertaining to this effort are provided in this section.

Key Team Members

Centrisys Corporation

Since 1987, Centrisys has provided centrifuge and drying equipment, repair and maintenance. The company evolved as a technical leader by developing decanter equipment for sludge dewatering and thickening, as well as advanced low temperature belt dryers. Centrisys applies its deep technology understanding to produce equipment and process breakthroughs that continue to improve efficiency, performance and safety. Centrisys has always leveraged what they know and has learned through the years to challenge the status quo and to consider new possibilities for equipment and processes. Centrisys is serious about continuous improvement.

Treatment Equipment Company

Treatment Equipment Company was established in 1969 and it is a sales organization meeting the water and wastewater needs of communities, tribes, and developers throughout the Pacific Northwest. Through our complete line of process equipment, we approach our business with one goal: providing our clients with the most innovative and cost-effective treatment solutions available.

PARTNERS

Waste Management

In 2020, WM Organic Growth, Inc., a corporate affiliate of Waste Management, Inc., joined with Bioforcetech Corporation as a minority investor to help further advance its biosolids and organic waste processing technology. As the leading provider of comprehensive waste and environmental services in North America, Waste Management is strongly committed to a foundation of financial strength, operating excellence, and professionalism. Waste Management is proud of its dedicated staff, and the customers they serve. Waste Management manages several million tons of biosolids annually throughout North America and has a team dedicated to

evaluating technologies to meet its customers' current and future needs. In 2018, Waste Management identified Bioforcetech as a company offering an innovative biosolids processing technology. Waste Management believes Bioforcetech's technology is ideally suited to meet the stated needs of the City of Bellingham to develop a long- term solution for the beneficial use of the biosolids, to reduce truck traffic, and to meet Bellingham PFAS destruction and greenhouse gas reduction goals. Waste Management believes this is a compelling fit for the City of Bellingham.

Presezzi Extrusion Group

Since 1994, Presezzi Extrusion S.p.A. has been involved in the design, production and commissioning of extrusion presses for aluminum profiles, hard alloy, copper and brass. The Presezzi Extrusion Group is a financially solid and well organized group of companies which is able to offer full support to its widespread customer base at all stages in the development and implementation of major projects in the manufacturing industry.

BIOFORCETECH CORPORATION

OUR MISSION

Since 2012, Bioforcetech has been working to produce waste management systems that work symbiotically with nature to leverage potential energy into direct value. Today, we are able to guarantee closed-loop, carbon negative biosolids management at an affordable price for the betterment of our people and planet.

OUR VALUES

In the US alone, over 100M tons of organic waste are landfilled, land applied, or incinerated each year. In between each of these problematic disposal methods are large transport costs and broad energy inefficiencies. The result is a system that is neither environmentally nor economically sustainable. At Bioforcetech we consider it our duty to reduce the emissions generated during the organics management process. We have worked tirelessly to develop a system that brings transport, fuel, disposal costs, and emissions down to zero. More than simply an equipment supplier, Bioforcetech offers a fully considered resilient strategy for managing organics. Our core values embody this mission and guide our practices as an organization. We are continually seeking to improve our system, further our impact, and learn together with other members of our industry. By remaining true to our mission and values we are able to play a role in the larger effort of building a safe and habitable planet for generations to come.

QUALIFICATIONS

We place our customers at the center of what we do every day. We are a strong and united team motivated by a desire to go above and beyond for our 15+ municipal, commercial and industrial clients throughout Europe and North America.

TECHNOLOGY READINESS LEVEL

BFT has been successfully operating a full-scale commercially available biosolids pyrolysis system at the Silicon Valley Clean Water since 2017. The system has proven to work in its final form under a full range of operational conditions. In addition, BFT's system has been permitted in other US states and those plants are currently under construction with anticipated commissioning in early 2024.

In February of 2021, US EPA PFAS Innovative Treatment Team published the findings of their work, which included reviewing traditional and innovative technologies to treat for PFAS. EPA evaluated four innovative technologies, including BFT's pyrolysis system located at SVCW. The table below provides a summary of those findings, with only BFT's pyrolysis system receiving a TRL for deployment.

Phase	TRL	Description
Research	1	Basic Principles observed
	2	Technology concept formulated
	3	Experimental proof of concept
Development	4	Technology validated in lab
	5	Technology validated in relevant environment
	6	Technology demonstrated in relevant environment
Deployment	7	System prototype demonstration in operational environment
	8	System complete and qualified
	9	Actual system proven in operational environment

https://www.twi-global.com/technical-knowledge/faqs/technology-readiness-levels

TRLs of Technology & PFAS Matrices

	Electrochemical	SCWO	Mechanochemical Milling	Pyrolysis
Spent GAC/AEX	N/A	N/A	TRL 2[10]	TRL 1
Soils	N/A	N/A	TRL 5[8]	TRL 1
Biosolids/Sludges	N/A	TRL 5[6]	TRL 1	TRL 7[9]
Unused and spent AFFF	TRL 5/6[1,2]	TRL 5[4,5,6,7]	N/A	N/A
Leachate	TRL 4[3]	TRL 4[5]	N/A	N/A

BASIS

[1] (AECOM)
[2] (Schaefer et al 2019)
[3] (Pierpaoli et al 2020)
[4] (General Atomics)
[5] (Aquarden)
[6] (374Water)
[7] (Battelle)
[8] (EDL)
[9] (BioForceTech)
[10] (PITT)

BUILT ON GENERATIONS OF EXPERIENCE

Engineering, manufacturing, and material management is in the fundamental makeup of BFT. Our founding member and CEO, Dario Presezzi, holds the name of the world leader in aluminum extrusion technology and material. Beginning as a family business in the 1950's, Presezzi group now operates hundreds of installations globally employing a team of over 500 employees with offices in countries around the world and an outstanding financial history of growth.

FINANCIAL STRENGTH

Since its founding, BFT has built a foundation of respect and connections in the organics management industry. Today we boast a partnership with the Presezzi Group and investments from WM Organic Growth, Inc., a corporate affiliate of Waste Management, Inc., together with

multiple US and EU installations. These strong financials in tandem with aftermarket biochar placement have allowed us to mature into a resilient solutions-based technology company that will continue to make our mission a reality in the decades to come.

MULTIPLE PATENTS, PROPRIETARY TECHNOLOGY

Bioforcetech strongly believes in utilizing a fully integrated ecosystem of technology to provide unit responsibility. To achieve this end-to-end seamless system, we have designed, patented, and built both hardware and software that work together to form the smartest system in the industry. Our proprietary BioDryer, Pyrolysis and Plexus System are leagues beyond the competition in efficiency and ease of use.

MARKET SCOPE

Today's population dynamics and movement calls for wastewater installations that can adapt effortlessly. The Bioforcetech system is modular, easily scalable, and decentralized to allow it to remain agile to new feedstocks, fluctuating capacities, and growth over time. We are able to accommodate anywhere between 1,000 and 20,000 wet tons of material annually, and our skid mounted modular machines make expanding as easy as plug-and-play.

GLOBAL REFERENCES

Our technology is the first and only of its kind. With over 20 years of combined experience, and more than 15 full scale installations worldwide, BFT and its industry partners provide state of the art systems, expertise in the industry and a unique in-depth knowledge of the biochar market. Our technologies are commercially available with accessible references and performance guarantees.

THE FIRST AND ONLY RUNNING BIOSOLIDS PYROLYSIS SYSTEM

Bioforcetech is proud to be the first and only fully permitted and operational pyrolysis system processing biosolids in the United States. Through our proprietary pyrolysis process, BFT has proven it can successfully develop value-added beneficial products through the process of transforming biosolids into renewable energy and biochar. What's more, we have achieved this with SSI exemption from the EPA as a non-incineration process and full permitting from the BAAQMD (Bay Area Air Quality Management District), one of the most stringent air quality districts in the world. Because we meet and exceed such strict air quality regulations, we are cleaner and lower impact than any known alternative. Click on the link here to hear Teresa Herrera, the General Manager Silicon Valley Clean Water, share her thoughts on our system installed at their plant which is our first US installation.

FORGIVING, CLEAN, AND SUSTAINABLE

Rather than a single machine installation, our multi-unit modular approach allows for a flexible and forgiving decentralized system that continues to produce quality material in the event of shutdowns. Our BioDryer produces Class A compliant dry material before pyrolysis, meaning that any plant can continue to produce dry material in the event the pyrolysis unit is inactive.

Whether you are only drying or processing material into biochar, the resulting product is always clean, Class A or EQ compliant, and produced at net zero energy.

CONTAMINANTS OF EMERGING CONCERN

At Bioforcetech we believe that our wastewater treatment is of the utmost importance to human health. The accumulation of PFAS, PFOA, PFOS, microplastics, and other contaminants in wastewater effluents puts our industry in a unique position to aid in the removal of these substances. BFT has taken on the contamination crisis as a personal challenge to overcome, and we are now proud to share that testing conducted on our technology shows considerable promise for its ability to successfully eliminate these harmful substances from input materials completely. In 2020 we partnered with the EPA's PFAS taskforce to confirm that our technology successfully removes PFAS, PFOA, and other CEC's to non-detectable levels. The results of this testing was published in the Journal of Air and Waste Management Association available at the link here.

BEAM PROVEN EMISSIONS PREVENTION AND CARBON REDUCTION

As an organics management technology producer, it is our unique responsibility to ensure we are contributing to a cleaner future for the next generation. After completing a third party Life Cycle Assessment (LCA) using the tried and trusted BEAM Model we are proud to report that every ton of OurCarbon® biochar produced from diverted US typical landfill biosolids prevents 10 tons of CO2e from emitting into our atmosphere.

REACHING BEYOND OUR INDUSTRY

We have initiated a large scale research and development project to bring biochar into new markets at new values. Called OurCarbon®, our clean and low BTU biochar is being tested for applications that are completely new to the waste management industry. From filtration medium to fabric dye and more, we are setting a new standard for circular economies.

KEY PERSONNEL

Bioforcetech Corporation

Dario Presezzi: Co-founder and CEO. Dario has been involved with BFT since its inception. Dario will personally oversee the entire process to ensure a successful installation and performances. Dario has been directly involved in all aspects of the previous projects that BFT has developed.

Valentino Villa: Co-founder and COO. Valentino has been involved with BFT since its inception. Valentino will act as the main point of contact for the City of Bellingham and be one of the PM assigned to this project. Valentino will be personally overseeing the entire process and project to ensure a successful installation and performances. Valentino has been directly involved in all aspects of the previous projects that BFT has developed.

Stefano Pessina: Co-founder and CTO. Stefano has been involved with BFT since its inception. Stefano will act as the main technical lead and be one of the PM assigned to this project. Stefano will be personally overseeing the entire process and project from a technical standpoint to ensure a successful installation and performances. Stefano has been directly involved in all aspects of the previous projects that BFT has developed.

Diego Thieme: Design Engineer. Diego joined BFT in 2018 and he has been involved with all projects BFT has developed. Diego will be working with Stefano and the engineering team on the design, engineering, and technical aspects of this Project.

Ozan Yasavur: EIT, Mechanical / Structural Engineer. Ozan will be working with Stefano and the engineering team on the design, engineering, and technical aspects of this Project.

Nicholas ("Nick") Johnson: Mechanical Engineer. Nick is a recent addition to the BFT Team as he joined the company a little less than a year ago. Nick will be working with Stefano and the engineering team on the design, engineering, and technical aspects of this Project.

Elizabeth Bridges: Director of Design Research. Elizabeth joined BFT in 2020, and she has been in charge of the development of the OurCarbon® brand and its off-take possibilities. Elizabeth will provide expertise on sustainability aspects of the industry, OurCarbon® biochar off-take and strategic PR aspects of this Project.

Garrett Benisch: Director of Design Development. Garret joined BFT in 2020, and he has been in charge of the development of the OurCarbon® brand and its off-take possibilities. Garrett will provide expertise on sustainability aspects of the industry, OurCarbon® biochar off-take and strategic PR aspects of this Project.

Devin Fabrizi: lead BFT technician for plants O&M. Devin Fabrizi joined BFT in 2019 and he has been trained to become the lead technician of the BFT plants O&M in the US. Devin has tremendous experience with complete BFT systems, and he has been personally responsible for training SVCW and other BFT Clients.

Centrisys Corporation

Michael Kopper: Centrisys C.E.O./Founder | Centrifuge & Dryer Expert
Madhavi Batchu, EIT: Chief Operation Officer
Jeffrey Kin, P.E.: Applications and Project Management Director
Brett Bevers, P.E.: Applications Engineer Manager
Jerod Swanson: Western Sales Manager

Treatment Equipment Company

Chris McCalib: President
Bob Smith: Service
Dennis Gleason: Project Manager
Austin McCalib: Service
Rick Zimburean: Senior Project Manager/Service Manager
Shannon McCalib: Office Manager/Sales Assistant
Andrew Dellacca: Service/Operations
Adrian Enciso: Service/Operations

Section 4 – Proposed Technical Approach

Bioforcetech is pleased to include in the following pages a detailed scope and narrative of our firm's approach to successfully completing all appreciable tasks efficiently to meet the contractual performance requirements of the Supplier which we understand and summarize here below.

The City currently utilizes multiple-hearth furnaces to incinerate wastewater residual solids recovered from Post Point. Approximately 4,650 dry tons per year of residual solids are currently generated at Post Point. The city uses gravity belts to thicken the TWAS to 6% solids and then centrifuges to dewater to approximately 24% solids. It is BFT's understanding that the City has a desire to employ a more sustainable solids management solution and achieve the following objectives:

• Enter into an agreement with technology/system/equipment Provider(s) to pilot test their solids treatment process.
• Enter into an agreement with a Service Provider that is capable of and willing to provide the guarantees necessary to assure the City of reliable, long-term performance during the pilot test duration.
• Priority may be given to commercially proven processing technologies that generate a sustainable biosolids end product.
• Utilize data gathered during pilot testing to assist in planning the path forward for future solids handling upgrades.
• Minimize impacts on the Post Point facility site and within the surrounding communities.

Schedule
The City will work with selected technology/process/equipment suppliers to schedule a time slot of not less than 4 weeks and not more than 6 months to complete the pilot test.

Parameters on testing
The City places the following parameters on testing:
• At any time during the pilot test the proposers test skid will only be fed at a maximum of 10% of actual plant system feed rate.
• Proposer will have the choice of receiving feed product from either the gravity belt storage tank at 4-6% solids or the centrifuge discharge hopper at approximately 20-24% solids.
• No interruption of current system operation will be permitted.

Bioforcetech and its team members are pleased to propose two options to meet the City's objectives as described above.

Option 1 - On-Site Pilot Testing

Bioforcetech proposes to install on-site at the Post Point Wastewater Treatment Plant an efficient and compact pilot system comprised of the following equipment/items:

- Conveyance (cake pumps or equivalent) from the current dewatering building to the pilot installation site to feed the dewatered solids storage tank, up to 50ft
- Dewatered solids storage tank (up to 30CY) to temporarily store wet biosolids (20-24% TS) and feed the belt dryer continuously and accordingly with dewatering schedules and the pilot equipment needs. This will allow the City to avoid interrupting the current system operation
- Conveyance to feed the belt dryer from the dewatered solids storage tank
- Centrisys' low temperature belt dryer (DLT120), suitable to cover the solids load requirements of this pilot (up to 10% of actual plant system feed rate) and easily expandable to cover the ~ 4,650 dry tons per year of residual solids currently generated at Post Point
- Wet scrubber (sulfuric acid based) with a dedicated blower to process the spent air from the belt dryer, an additional treatment step may be required depending on the City's biosolids composition and specific air permitting requirements. Our response and scope only includes the wet scrubber but BFT and its team members can provide additional solutions to meet air emissions requirements.
- Air piping from the Centrisys belt dryer to the wet scrubber, as per the drawing attached to our response
- Natural gas hot water heater to provide the necessary hot water for the belt dryer system and to efficiently manage the hot water production from the pyrolysis system. This will be a hot water closed loop. The Centrisys belt dryer will be able to beneficially utilize the hot water production for the pyrolysis system to reduce the needs of external energy to power the system. BFT anticipates the pyrolysis system to be able to provide ~50% of the overall heating requirements of the Centrisys belt dryer. More accurate information and data will be provided at a later stage after our team will have the possibility to review the City's biosolids specifications and analysis.
- Dried biosolids discharge conveyor to dried biosolids storage tank.
- Dried biosolids storage tank (up to 500 CF) to store the dried biosolids the Centrisys belt dryer will produce and feed the BFT pyrolysis continuously and according to the pilot system operations.
- Conveyance from the dried biosolids storage tank to the BFT pyrolysis system.
- BFT pyrolysis system with integrated abatement devices (thermal oxidizer, GAC filter and NaOH scrubber). This unit is suitable to cover the solids load requirements of this pilot (up to 10% of actual plant system feed rate) and easily expandable with the addition of more units to cover the ~ 4,650 dry tons per year of residual solids currently generated at Post Point.
- Automated bagging station for the OurCarbon® material the BFT pyrolysis system will produce.
- Electrical and control panels (non-classified environment)

The belt drying and pyrolysis package proposed by BFT and its team members (“System”) will accept ~20-24% TS biosolids from the City’s centrifuge discharge hopper as a feedstock. The feedstock will be automatically conveyed via pneumatic cake pumps or equivalent systems, and temporarily stored inside a dewatered solids storage tank provided by our team. BFT proposes to process and dry the dewatered sludge through the Centrisys DLT120 Belt Dryers in order to bring the material to a minimum of 75-85% dry solids for pyrolysis feeding purposes. The targeted dryness of the dried biosolids will be adjusted based on specific properties of the feedstock in order to optimize the pyrolysis performances. The drying process may generate Class A biosolids as defined by US EPA 40 CFR Part 503.32(a)(3), as long as the City’s biosolids metal levels comply with the Class B limits as defined by 40 CFR Part 503.32(a)(3). The proposed drying process may not generate Class A biosolids at all times if those dried solids will be processed via pyrolysis after. After undoing the pyrolysis process solids will be automatically Class A/EQ. Dried biosolids will be conveyed to an intermediate dried biosolids tank. Conveyance to and supply of the intermediate dried biosolids tank will be included in the proposed BFT package. The storage tank will include conveyance out of the bin with delivery points into either a truck load-out point after the pyrolysis process or directly to the pyrolysis process. Conveyance out of the tank will be included in the proposed BFT System. The pyrolysis process will convert the dried biosolids into OurCarbon® biochar. The OurCarbon® product will be conveyed to an automatic bagging system that fills and stages super-sacks or other approved portable containers with the pyrolyzed material for off-haul or off-site use.

For the basis of design of this RFP (~up to 465 dry tons/year of biosolids, at 20-24% TS), Bioforcetech proposes to install one (1) Centrisys’ DLT 120 belt dryer, one (1) BFT pyrolysis system, and all the necessary ancillary equipment necessary to transform the dewatered sludge into high quality OurCarbon® biochar.
From the City’s centrifuges, ~20-24% TS biosolids will be fed to the DLT belt dryer via an automated conveyance system/gravity pump. Ideally BFT would like to propose fully-automated loading/unloading schedules to meet the dryer needs and to achieve maximum capacity and performances. The dryer will be automatically loaded with a dedicated conveyance and run continuously for the duration of the pilot tests. BFT proposes to connect our conveyance system to one of the two centrifuges and to use a dewatered solids tank to have continuous feeding available to the dryer without discontinuing the City’s plant operations. The DLT belt dryer will dry Bellingham’s biosolids from ~22% solids content average to ~80% solids utilizing a combination of outside heat and pyrolysis waste heat resulting in an improved efficiency thermal system.

The dryer’s process exhaust air will be sent to the air filtration system proposed by BFT for this System. The air filtration system proposed will consist of a wet scrubber (sulfuric acid based), with a dedicated blower.
Once the biosolids are dried, they will be automatically transported with dedicated conveyance to the dried biosolids tank (sized for at least two days of continuous operations), ensuring enough material is on hand for continuous operation of the pyrolysis unit. The equalization tank will include a backup conveyance system that will be able to discharge the stored dried biosolids

in case the pyrolysis system is undergoing maintenance and should be shut down momentarily. During this time the DLT belt dryer will be set to produce class A solids. From the equalization tanks, the dried solids will be automatically conveyed to the pyrolysis unit for a 24/5 or 24/7 continuous feed and operation, up to the duration of the pilot tests. The pyrolysis unit will require a few hours of natural gas only during the start-up process. Once the pyrolysis system reaches the set temperature (500 - 1,200º F) and the biosolids enter the oxygen free reactor, the dried solids will be transformed into OurCarbon® biochar. This occurs in a continuous feed process with a residence time of about 10-20 minutes. The syngas generated during this process is entirely and immediately combusted inside the thermal oxidizer. No syngas leaves the unit. The proposed pyrolysis system will produce waste heat available to provide extra drying capacity to the belt dryers. This waste heat is available in the form of hot water. The exhaust gasses created after combusing the syngas in the thermal oxidizer will be sent to an NaOH scrubber with a GAC filter to remove possible HAP guaranteeing permitting compliance and an odorless local environment. From here, the conditioned exhaust will be composed of water and CO2 and will be sent to the emission stack.

The OurCarbon® biochar produced by the pyrolysis system will be discharged through a rotary valve and sent to a conveyor where the product will be quenched with water to reduce its temperature and manage possible dust. From the conveyor, the OurCarbon® biochar will be sent to an inclined screw that will transport the biochar to the automated bagging station. Based on the biochar volume, BFT will supply one biochar station, with four (4) slots to accommodate 1 CY super sacks The super sacks will be easily managed by the team's operators, and BFT will manage the entire production of OurCarbon® for local and beneficial applications such as concrete, pigmentation, soil applications at no cost to the City.

BFT and its team have prepared a preliminary layout drawing that shows the proposed equipment configuration and footprint requirements (~ 111 x 57 ft). The preliminary layout drawing is attached to this proposal.

Pyrolysis Technology Overview

BFT's first commercial biosolids pyrolysis system is located at the Silicon Valley Clean Water (SVCW), a municipally owned water resource recovery facility located in Redwood City, CA. Through its proprietary pyrolysis process, BFT has proven it can successfully develop value-added beneficial products through the process of transforming biosolids into renewable energy and OurCarbon®.

Pyrolysis is the thermochemical decomposition of organic material through the application of heat without oxygen. Because no oxygen is present the material does not combust but instead the chemical compounds that make up the feedstock material thermally decompose into combustible gasses (syngas) and biochar. Given this unique approach to thermal conversion, regulatory authorities, including the U.S. Environmental Protection Agency, have formally recognized that BFT's pyrolysis process is not considered incineration. BFT continues to innovate and improve their technology and in early 2024, the newest generation of BFT's pyrolysis system will be installed and operating at full-scale in North America and Europe.

BFT Pyrolysis System
Please see “Section 8 – Additional Information” for a full overview of the BFT pyrolysis system.

GHG Emissions Reduction Potential

Biochar and the Climate Challenge
Fossil fuels are carbon positive; they add more carbon dioxide (CO2) and other greenhouse gasses to the air and thus exacerbate global warming. Ordinary biomass fuels are carbon neutral; the carbon captured in the biomass by photosynthesis will eventually return to the atmosphere through natural processes like decomposition. Sustainable biochar systems can be carbon negative by transforming the carbon in biomass into stable carbon structures in biochar which can remain sequestered in soils for hundreds and even thousands of years. The result is a net reduction of CO2 in the atmosphere.
Landfilling dried, anaerobically digested biosolids is highly carbon positive, estimated to emit approximately 1.0 Metric Tonne of C02eq/dry tonne (1 MT CO2e/DT). This estimate comes from the general characteristics of dried, digested sludge landfilled in Canada using the Biosolids Assessment Emissions Model (BEAM) that was developed for the CCME. The largest portion of the debit comes from fugitive methane generated and not captured by modern landfill gas collection methods.
Biochar beneficial use will be significantly carbon negative, primarily driven by the benefits of capturing carbon. The amount of carbon sequestration depends on the beneficial use scenarios. For agronomic uses, it is estimated that the carbon sequestered is approximately 0.25 - 0.50 MT CO2e/DT of input biosolids. Carbon in biochar can persist in soils over long time periods, estimated to be hundreds of years. The exact figures depend on many specifics related to the application and use.

For non-agronomic uses, such as in building materials or filtration media, the carbon emissions avoided can be even more significant, especially if the biochar is used in applications that displace fossil fuels as an ingredient, such as in the manufacture of biopolymers. Depending on the application, it is estimated that the carbon sequestered could be as high as 0.50 – 1.50 MT CO2e/DT of input biosolids.

The GHG reduction potential for the Bellingham’s biosolids is significant with conversion to biochar. Based on the wide range of estimates provided, at 4,650 dry tons of biosolids per year, there is the potential to reduce GHG emissions by 4,650 – 10,000 MT CO2e per year. More specifics about the potential reduction impact would need to be developed once there is more clarity around the project details.

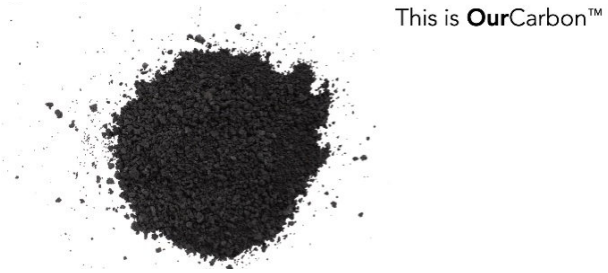
BFT completed a Greenhouse Gas Emissions Assessment in March 2021. A summary of those findings are included below.

Summary: “Results from Northern Tilth’s modeling of GHG emissions from BFT’s pyrolysis technology indicate that the technology provides a net negative carbon footprint for biosolids

management, similar to, and in some scenarios, lower than existing beneficial use options for biosolids. As with other beneficial use options, BFT's pyrolysis technology provides for the carbon benefits associated with sequestering carbon in soil and replacing chemical fertilizers with organic matter-derived soil fertility. Most significantly, BFT's biodrying process provides for an energy neutral process to allow for a moist material to be pyrolyzed and provide the benefits associated with both mass reduction and reduction of organic contaminants that are sometimes present in biosolids." Northern Tilth

Product Beneficial Use
BFT's pyrolysis technology will generate a high-quality OurCarbon® biochar that has multiple end-uses. In addition, excess energy is generated by the self-sustaining process, and may have beneficial applications depending on the location and scale of the facility.

Biochar
Biochar is a high-carbon, fine-grained residue that is produced through modern pyrolysis processes. In recent years, multiple universities have found that biochar offers significant agronomic benefit and carbon sequestration potential. In addition, there are non-agronomic uses for biochar which are proven or are emerging. All these uses have the potential to sequester carbon and combat climate change.



Agronomic Uses of Biochar
Biochar can be distinguished from charcoal, which is used mainly as a fuel. Biochar is best known for its benefits as an agronomic soil amendment to improve soil functions and to reduce emissions from biomass that would otherwise naturally degrade to biogenic greenhouse gasses. Carbon in biochar can persist in soils over long time scales. Beyond the carbon sequestered in the biochar itself, biochar incorporated in soils also offers numerous other potential climate benefits.

1) Soil Fertility: Biochar can improve soil fertility, stimulating plant growth, which then consumes more CO2 in a positive feedback effect.
2) Reduced fertilizer inputs: Biochar can reduce the need for chemical fertilizers, resulting in reduced emissions of greenhouse gasses from fertilizer manufacture.
3) Reduced N2O and CH4 emissions: Biochar can reduce emissions of nitrous oxide (N2O) and methane (CH4) - two potent greenhouse gasses - from agricultural soils.

4) Enhanced soil microbial life: Biochar can increase soil microbial life, resulting in more carbon storage in soil.
5) Reduced emissions from feedstocks: Converting agricultural and forestry waste into biochar can avoid CO2 and CH4 emissions otherwise generated by the natural decomposition or burning of the waste.

Non-agronomic Uses for Biochar

The precision of the BFT pyrolysis technology intelligent control system results in a premium carbon material BFT calls OurCarbon®. Markets for OurCarbon® have been built and developed by Bioforcetech's team so that BFT's clients can enjoy 100% off-take for the biochar produced by the BFT pyrolysis machine.

With applications ranging from building materials to high fashion, OurCarbon® is utilized to replace fossil-based materials in industry. For more info visit: https://madewithourcarbon.com

Biochar's unique properties make it an ideal candidate for many other uses, some of which are well proven, and others that are the focus of significant research. Proven applications include uses in water, wastewater, air filtration, as a component of livestock feed, and as a component of building materials.

Other applications that are commercially available include substitutes for carbon black, packaging and consumer applications.

Option 2 - Off-site Pilot Testing

BFT applauds the City's approach to collect data and information regarding potential biosolids beneficial use technologies as a critical first step to validating technology performance at a commercial scale. We strongly believe that our proposed solution is the right choice to meet the City's goals for long-term biosolids beneficial use and reduction of GHG emissions.

While we believe the direction is right, we also believe that design, permitting, construction, and operation of a short-term beneficial use pilot facility within the City's area is likely unnecessary

based upon data and information that may already exist, or may be obtained with a faster, far less costly approach that can meet the City's needs.

As a first step, BFT recommends a thorough review of information available from independent published research, BFT's own research, and/or from commercial installations using the BFT pyrolysis technology. If this body of information is insufficient to meet the City's needs, or there are specific data gaps that must be researched, we believe that information can be obtained in other effective ways. We also believe we can accomplish this well within the City's project timeline, helping Bellingham meet its stated goals more quickly. We recommend consideration of the following tiered approach to meet the City's data needs:

1. Complete a review of Existing Data & Information
2. Conduct Commercial Scale Pyrolysis Testing at an Operating Commercial Facility
3. Conduct Lab Scale Pyrolysis Testing Using Bellingham Biosolids

A hybrid of these Tiers might be employed where very specific data gaps are identified. For example, the City may determine that sufficient data already exists on the mass balance, energy balance and product quality, but some specific air emissions parameters lack enough data to meet the City's needs. Air emissions monitoring for those specific parameters could then be completed in a laboratory setting or at an operating commercial facility.
We envision the City would negotiate a contract with BFT to complete a negotiated scope of work for data collection and monitoring. BFT would oversee the logistics and commercial aspects of the agreed-upon program. All data collection and monitoring work, however, would be completely open to full City's involvement. We would view Bellingham as a project collaborator to ensure the full program transparency and data integrity.
A more detailed description of what might be included in each Tier approach is as follows:

1. Review Existing Data & Information
This approach starts with BFT and the City's representatives reviewing the current body of data and information related to all the environmental performance criteria including air emissions, energy balance, and product quality. This effort would seek to determine what available information meets the City's needs as well as identify gaps. We can then determine the right approach for collecting additional data. This is BFT's recommended first step based on the following:
• BFT has existing data and information which may answer many of Bellingham's basic information needs.
• Mass and energy balances can be calculated to a high confidence level based on our commercial experience once we have analytical information on Bellingham's biosolids.
• Extensive air emissions data is available from the BFT installation at Silicon Valley Clean Water (SVCW), a publicly owned water resource recovery facility in Redwood City, CA. The facility had to complete extensive air emissions testing to gain operating permits in one of the strictest air quality management districts in North America and is subject to on-going analysis for regulatory compliance purposes.

• BFT has extensive testing on finished OurCarbon® biochar quality, including analysis on nutrients, metals, organic compounds and compounds of emerging concern (including PFAS). We also have extensive information on the marketability of biochar, both proven markets as well as developing beneficial uses now being researched.
• BFT's knowledge and data sets can be supplemented with information currently available from other independent sources, including extensive published, peer-reviewed research studies.

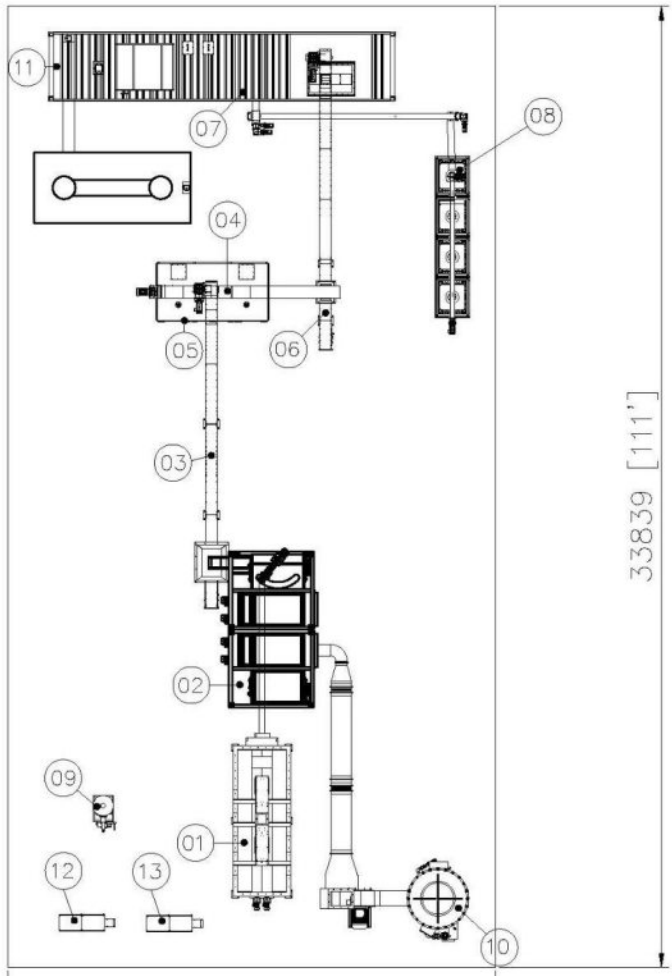
BFT would welcome the opportunity to meet with the City and its consultants and provide it with the information we have on air emissions, energy balance and product quality. Once this information is reviewed, we can focus on any information gaps and determine the right approach for collecting additional data.

2. Conduct Commercial Scale Pyrolysis Testing at an Operating Commercial Facility
Based on the data review effort in the first Tier, BFT can arrange for special testing at the SVCW tailored to address the specific data gaps or information needs that are not fulfilled under Tier 1. The pyrolysis equipment and ancillary systems are the same general design and configuration that we currently envision for Bellingham. We do not envision treatment of Bellingham's dried biosolids in this Tier, but collection of data from the existing biosolids feedstock and systems in place at SVCW.

3. Conduct Bench Scale Pyrolysis Testing Using Bellingham Biosolids
Should the City project team determine it is warranted to gain data specifically on the processing of the Bellingham's biosolids, BFT would then recommend testing be completed at BFT's state-of-the-art pyrolysis research facility. BFT has developed a bench scale pyrolysis unit that is located in the US that allows this kind of testing to be performed.

The BFT bench scale pyrolysis has a capacity of ~5 lb/h of dried biosolids. BFT envisions receiving dried biosolids from the City suitable for pyrolysis testing, or wet biosolids that BFT will dry on-site where the bench scale pyrolysis unit is located. Since the BFT bench scale pyrolysis unit has a limited throughput capacity/h, a small amount of the City's biosolids (wet or dry) will be required for this scope.

If the City determines more data is required specifically using Bellingham's biosolids, we strongly recommend using our bench scale pyrolysis unit to run initial tests. The controlled setting would ensure quality data is professionally collected. BFT would work with the City to design a collection and reporting program to fulfill the City's needs, and BFT would ensure that the pyrolysis process accurately reflects the operating conditions of the Bioforcetech equipment. We believe that this effort could be completed at an earlier schedule compared to hosting on-site pilot testing at the City's premises. BFT also proposes to the City to send its personnel during the tests with the pyrolysis bench scale unit to monitor the operations and data collection as needed.



01	Dewatered Solids Storage Tank
02	DLT120 Dryer
03	Chain Conveyor To Storage Tank
04	Screw Conveyor Dry Biosolids
05	Dry Biosolid Storage Tank
06	Chain Conveyor To Pyro
07	Pyrolysis
08	Biochar Bagging Station
09	Water Heater Skid
10	Wet Scrubber
11	Pyrolysis Control Panel
12	Dryer Control Panel
13	General Control Panel

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SCALE 1:200 | WEIGHT | SHEET 1 of 1

Section 5 – Proposed Fees/Costs

Bioforcetech is pleased to include in the following pages a detailed scope with associated fees and costs for Options 1 and 2 included in our RFP response. BFT and its team members will appreciate the opportunity to discuss these fees and costs further with the City of Bellingham.

BFT is in the business of providing sustainable systems for biosolids management. Our team believes that Option 1 will meet the City's goals and requirements of this RFP. Option 2 will provide a more economical solution while meeting some of the objectives of this RFP. BFT and its team would be pleased to discuss both of these Options with the City in order to understand which better suits the City's needs.

Option 1 plans for the pilot equipment to be installed on-site at the Post Point WWTP located at 200 McKenzie Ave, Bellingham, WA 98225. Bioforcetech proposes an equipment package complete with an operational team responsible for carrying on the tests until successful completion. BFT expects that tests will last up to 2 months post equipment installation, commissioning and start-up. BFT would be pleased with the opportunity to discuss our approach with the City to ensure that this approach meets the City's needs and objectives.

Below is a summary of the equipment proposed, with inclusions and exclusions to our scope.

Option 1

Proposed Equipment List:

- Conveyance (cake pumps or equivalent) from dewatering building to pilot installation site to feed the dewatered solids storage tank, up to 50ft
- Dewatered solids storage tank (up to 30 CY) to temporarily store wet biosolids (20-24% TS) and feed the first step of low temperature belt drying continuously and accordingly with dewatering schedules and the pilot equipment needs.
- Conveyance from dewatered solids storage tank to Centrisys DLT 120 dryer
- Centrisys low temperature belt dryer (DLT120), suitable to cover the solids load requirements of this pilot (up to 10% of actual plant system feed rate) and easily expandable to cover the ~ 4,650 dry tons per year of residual solids currently generated at Post Point.
- Wet scrubber (sulfuric acid based) with a dedicated blower to process the spent air from the belt dryer. An additional treatment step may be required depending on the City's biosolids composition and specific air permitting requirements. Our response and scope only includes the wet scrubber but BFT and its team members can provide additional solutions to meet air emissions requirements as needed.
- Air piping from the Centrisys belt dryer to the wet scrubber

- Natural gas hot water heater skid to provide the necessary hot water for the belt dryer system and to efficiently manage the hot water production from the pyrolysis system. This will be a hot water close loop. The Centrisys belt dryer will be able to beneficially utilize the hot water production for the pyrolysis system to reduce the needs of external energy to power the system. BFT anticipates the pyrolysis system to be able to provide ~50% of the overall heating requirements of the Centrisys belt dryer. More accurate information and data will be provided at a later stage after our team will have the possibility to review the City's biosolids specifications and analysis.
- Dried biosolids discharge conveyor from Centrisys dryer to dried biosolids storage tank.
- Dried biosolids storage tank (up to 500 CF) to store the dried biosolids the Centrisys belt dryer will produce and feed the BFT pyrolysis continuously and according to the pilot system operations.
- Conveyance from the dried biosolids storage tank to the BFT pyrolysis system.
- BFT pyrolysis system with integrated abatement devices (thermal oxidizer, GAC filter and NaOH scrubber). This unit is suitable to cover the solids load requirements of this pilot (up to 10% of actual plant system feed rate) and easily expandable with the addition of more units to cover the ~ 4,650 dry tons per year of residual solids currently generated at Post Point.
- Automated bagging station for the OurCarbon® material the BFT pyrolysis system will produce.
- Electrical and control panels (non-classified environment)

Services Included:

- Support to consulting engineering firm: 0 to 100% design or as needed
- Submittals
- Air Permitting support (BFT envisions the City will hire a local consultant to develop the necessary air permit steps. Our team has worked with Steve Nelson with Coal Creek Environmental on a previous project and we would recommend considering him and his firm for this job). BFT and its team will assist the permit consultant with everything that may be needed for a quick and successful air permit application.
- OurCarbon® management and off-take for the entire duration of the pilot tests, at no additional cost to the City so long as the product will be compliant with estimates and specifications
- Shipping to all equipment to Post Point WWTP, Bellingham with import and custom duties included
- Installation inspection, start-up, commissioning and training during pilot testing (includes travel, lodging and travel expenses.)

Exclusions:

- Process piping from the natural gas water heater to the Centrisys belt dryer and to the BFT pyrolysis system
- Construction, installation and site preparation
- Emission stack(s)
- Air permitting and any other permit that may be required for on-site pilot testing
- Air emission testing / stack testing / performance verification testing
- All utilities that are required for operation
- Unloading, uncrating, installation and installation supervision
- Readiness of the Equipment before requesting start-up service. Non-readiness may incur additional charges
- Compatibility of equipment materials of construction with process environment
- Piping, connections, ductwork, platforms, conveyance structures & supports, gratings and railings unless stated otherwise
- Bonding for the equipment
- Any other auxiliary equipment or service not detailed above
- Removal of the equipment from the site if needed
- Site cleanup
- Everything not included in the list above

Proposed Cost for the Equipment List Above: **$8,448,219.36 (sales tax included)**

BFT would like to engage with the City to consider the option of removing the dewatered solids storage tank in order to provide additional cost savings to the City. If the City can guarantee a constant feed to the Centrisys dryer, this piece of equipment may be removed from our scope.

BFT would provide a dedicated team on-site during the pilot testing process. Our selected team will be responsible for operating and maintaining the pilot system according to the requirements of this RFP. We propose that a weekly fee is associated with our services and that the City remains responsible for utilities and consumables of the pilot plant. The proposed equipment will carry a 12 months warranty post start-up.

- BFT team fees for O&M on site at the Post Point WWTP: **$20,000/week** (inclusive of travel, lodging and travel expenses)

BFT and its team envision that the pilot installation remains on-site at the Post Point WWTP for the duration of the tests and afterwards for a potential plant expansion. As described above, the major pieces of equipment can be adjusted/scaled for increased production should the City elect to do so. The City will be the owner of the equipment proposed under Option 1 so they will have the opportunity to decide to keep the equipment or to remove it. The City shall be responsible for the costs associated with keeping the equipment or removing it. BFT and its team would be

pleased to discuss with the City further, and perhaps extend our service agreement so that the BFT team can continue to run the equipment post pilot testing.

Option 2

BFT wishes to propose an alternative option in order to meet the City's objectives listed in the RFP. We listed in Section 4 of our response alternative ways to perform testing in a more economical and expeditious way. The price of Option 2 will depend on what the City elects to do and on the level of complexity of the data/analysis required. BFT and its team would appreciate the opportunity to discuss this Option with the City to refine our estimates for this alternative approach. We estimate that the overall cost would be in the range of $100,000 to $750,000 (or more depending on the scope of work). This estimated range includes the cost of transporting biosolids, data collection, data interpretation and reporting.

Section 6 – References

On the following pages BFT provides partial references for the CIty's review and consideration. Upon request, BFT and its team members can provide specific and additional references as well as any additional information and details that are not provided in this section to comply with confidentiality agreements with our clients. This redacted information includes final delivered cost to the end user, as well as operation and maintenance costs.

1. Silicon Valley Clean Water (SVCW), Redwood City, CA

The SVCW installation began operating in 2017 and was the first and only full scale BioDrying and pyrolysis plant in the United States using municipal biosolids as its feedstock. BFT engaged with SVCW (formerly SBSA) in 2013, and subsequently entered into an agreement to host the first BFT pilot testing. The pilot phase for this installation ran from 2013 until 2015 when SVCW decided to expand the BFT Scope of Work ("SOW"). The treatment plant awarded BFT with a contract to design, build, own and operate (DBOO) the first pyrolysis system in North America for municipal biosolids. BFT led the effort and successfully designed and permitted (EPA and BAAQMD) and operated the full-scale facility for the following two years, after which SVCW decided to purchase the installation after the successful completion of the BFT SOW. Between 2019 and 2022, BFT updated the SVCW installation with the most recent, state-of-art BioDryer and spent 12 months training SVCW personnel for proper operation and maintenance procedures. SVCW acquired full ownership of the plant at the end of 2022 after successful completion of training.

Plant Information	Silicon Valley Clean Water (SVCW) 1400 Radio Road, Redwood City, CA 94065
Contact Information	Teresa Herrera, P.E., General Manager (650)339-9110 THerrera@svcw.org
Feedstock	Anaerobically Digested Biosolids
BFT Scope of Work	Design, engineering, permitting, equipment supplier, contractor supervision and assistance for building scope, operation & maintenance, training, commissioning, start-up, OurCarbon® biochar management
Equipment Supplied	3 BioDryers, 1 pyrolysis system, all ancillaries equipment needed for a turn-key system
Processing Capacity	Up to 3,000 wet tons/year of biosolids at 17-20% solids

Output	~250 tons/year of OurCarbon®

2. Legends Casino Hotel, Toppenish, WA

BFT client Legends Casino Hotel, located in Toppenish, WA, has a small WWTP on site and worked with leadership to replace a newly purchased thermal dryer that was malfunctioning beyond repair. BFT supplied one BioDryer to process WAS only at 15% solids. BFT successfully completed the installation indoors with minimal available space and began receiving WAS at the low solids range of only 15%. The Legends installation has been operating the BFT system since January 2019 with great peace of mind. In 2019, BFT made improvements to this BioDryer's hardware and software system resulting in greater performance, lower energy impact and additional safety features. BFT performed these upgrades free of charge to ensure the client was able to benefit from the most state of the art features of the BFT system.

Plant Information	Legends Casino Hotels 580 Fort Rd, Toppenish, WA 98948
Contact Information	Kenneth Grasser, (509)945-5916 Kenneth_Grasser@legendscasino.net
Feedstock	Undigested dewatered sludge (WAS)
BFT Scope of Work	Design, engineering, equipment supplier, installation, training, commissioning, start-up, system upgrades
Equipment Supplied	1 BioDryers and ancillary equipment
Processing Capacity	Up to 600 wet tons/year of biosolids at 15% solids
Output	110 dryer tons/year of biosolids at 80% solids

3. Gruppo CAP, Milano, Italy

This installation in Milan was one of BFT's first in Italy. With more than 60 WWTPs under their authority in the northern region of the country, Gruppo CAP is one of Italy's largest owners and managers of municipal wastewater facilities. BFT successfully designed, engineered, supported the permitting process, supplied and installed the equipment while providing comprehensive services for operation and maintenance. The installation has been successfully running since the end of 2018, and more recently Gruppo CAP has procured six additional BioDrying units to be installed at the same facility to expand the system's capacity. Moreover, Gruppo CAP and BFT are working together to implement the first pyrolysis plant in Italy to transform their BioDried

biosolids into high quality OurCarbon® Biochar. The expansion phase is under final commissioning now.

Plant Information	Gruppo CAP, Robecco sul Naviglio WWTP
Contact Information	Stefano Della Vedova, +39(342)754-9478 Stefano.Dellavedova@gruppocap.it
Feedstock	Anaerobically Digested Biosolids
BFT Scope of Work	Design, engineering, permitting equipment supplier, installation, training, commissioning, start-up, recurring maintenance services
Equipment Supplied	7 BioDryers and ancillary equipment (pyrolysis future)
Processing Capacity	Up to 7,000 wet tons/year of biosolids at 25% solids
Output	2,235 dryer tons/year of biosolids at 75% solids

4. Brianzacque, Vimercate (MB), Italy

BFT's first Client in Italy was Brianzacque Srl, who is located in a suburb of Milan called Vimercate (MB). Brianzacque procured 4 BioDryers and ancillary equipment in 2018. Brianzacque was not yet ready to initiate the transition to the new dryers, but wanted to pre-procure the equipment to ensure it was on site for the scheduled startup date. BFT successfully designed, engineered, supported the permitting, supplied and installed the equipment and will provide comprehensive services for operation and maintenance. The installation was completed earlier this month and the plant was commissioned in October of this year. As part of the scope of supply, BFT will provide a pyrolysis system in the coming year to implement the production of OurCarbon® Biochar on-site.

Plant Information	Brianzacque, Vimercate (MB), Italy
Contact Information	Luigi Fernando Comi, +39(338)160-4056 luigi.comi@brianzacque.it
Feedstock	Undigested dewatered sludge
BFT Scope of Work	Design, engineering, permitting equipment supplier, installation, training, commissioning, start-up, recurring maintenance services

Equipment Supplied	4 BioDryers and ancillary equipment (pyrolysis future)
Processing Capacity	Up to 4,000 wet tons/year of biosolids at 25% solids
Output	1,335 dryer tons/year of biosolids at 75% solids

5. City of Redding, CA (Clear Creek WWTP)

In 2021 BFT secured the bid to supply three (3) BioDryers, one (1) pyrolysis system with ancillary equipment and services for the Clear Creek WWTP in Redding, CA. BFT won this competitive bid, which was issued by the city and Waterworks Engineers, and it is currently finalizing the manufacturing of the procured system. This installation will be completed and begin operating later in 2024. In 2023 the City of Redding procured additional three (3) BioDryers to expand the BFT system to accommodate the full biosolids production capacity of Clear Creek WWTP and the inclusion of solids produced from the second WWTP the city operates, Stillwater WWTP.

Plant Information	City of Redding (Clear Creek) 2200 Metz Rd, Anderson, CA 96007
Contact Information	Joshua Vandiver +1(530)224-6069 jvandiver@cityofredding.org
Feedstock	Anaerobically digested biosolids
BFT Scope of Work	Design, engineering, permitting assistance, equipment supplier, installation supervision, training, commissioning, start-up, OurCarbon® biochar off-take
Equipment Supplied	6 BioDryers + 1 pyrolysis and ancillary equipment
Processing Capacity	Up to 6,000 wet tons/year of biosolids at 22% solids
Output	280 tons/year of OurCarbon®

6. Ephrata Borough Authority, PA

BFT secured this project in 2021 to supply four (4) BioDryers, one (1) pyrolysis system with ancillary equipment and services for the Ephrata WWTP in PA. BFT equipment was

pre-produced by the city with the support of GHD as the consulting engineering firm. The project is scheduled for commissioning in early 2024 and the sludge processed will be a blend of undigested primary and secondary sludge, dewatered through Centrisys Corporation's centrifuges.

Plant Information	Ephrata Borough Authority, Plant #1 Henn Ave, Ephrata, PA 17522
Contact Information	Charles J. Winslow +1(215)892-4134 charles.winslow@ghd.com
Feedstock	Undigested sludge
BFT Scope of Work	Design, engineering, permitting assistance, equipment supplier, installation supervision, training, commissioning, start-up, OurCarbon® biochar off-take
Equipment Supplied	4 BioDryers + 1 pyrolysis and ancillary equipment

7. City of Brentwood, CA

BFT secured this project in 2023 to supply eight (8) BioDryers, two (2) pyrolysis units with ancillary equipment and services for the Brentwood WWTP in CA. BFT is now finalizing the submittal drawings. Manufacturing of the equipment should begin in early 2024. The project is scheduled for commissioning in 2025 and the sludge processed will be WAS only, dewatered through Centrisys Corporation's centrifuges.

Plant Information	City of Brentwood WWTP 2201 Elkins Way, Brentwood, CA 94513
Contact Information	Casey Wichert; 209.483.5525; cwichert@brentwoodca.gov
Feedstock	Waste Activated Sludge
BFT Scope of Work	Design, engineering, permitting, equipment supplier, contractor supervision and assistance for building scope, training, commissioning, start-up.
Equipment Supplied	Centrisys centrifuge + 8 BioDryers + 2 pyrolysis and ancillary equipment

Processing Capacity	Up to 7,900 wet tons/year of biosolids at 18% solids
Output	~575 tons/year of OurCarbon® biochar

8. Kenosha Water Utility, WI

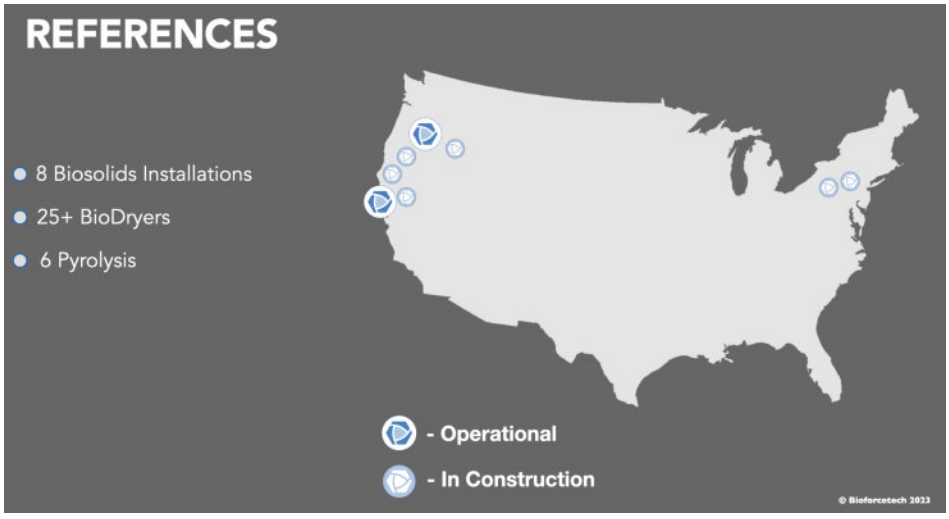
This is a Centrisys belt dryer project reference. The equipment installed at this site matches the characteristics and specs of what is being proposed to the City of Bellingham for this RFP.

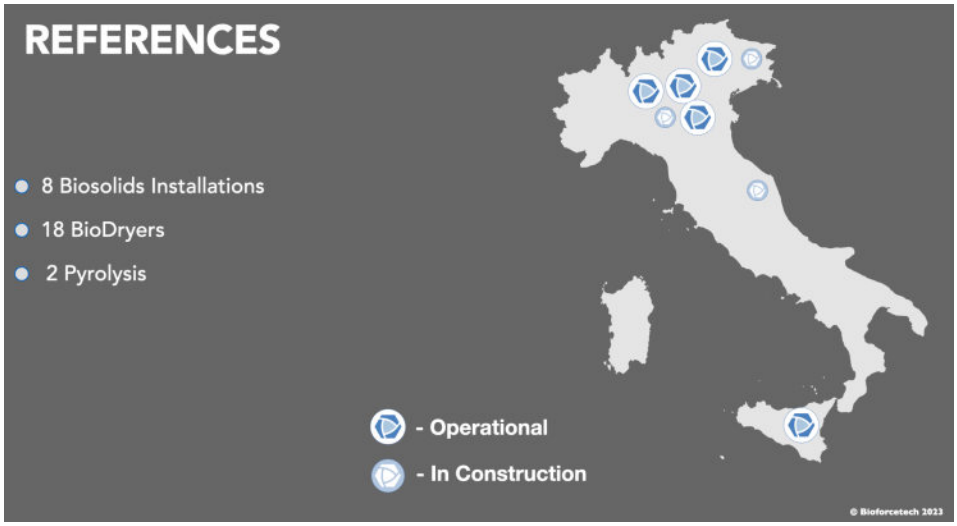
Plant Information	Kenosha Water Utility, 7834 3rd Ave, Kenosha, WI 53143
Contact Information	Katie Karow, Director Of Wastewater Treatment, (262) 653-4338, kkarow@kenosha.org
Feedstock	Anaerobically Digested Biosolids
Scope of Work (Centrisys)	Design Build, contracting engineering, permitting assistance, equipment supplier, contractor supervision, operation & maintenance training, commissioning, start-up
Equipment Supplied	Centrisys Dewatering Centrifuges, Centrisys THK WAS and Primary Thickeners, Low Temperature Belt Dryer, Pondus Thermochemical Hydrolisys, CHP units, gas conditioning, odor control
Processing Capacity	3,285 dry tons/year of biosolids

9. City of Seaside Oregon WWTP

This is a Centrisys belt dryer project reference. The equipment installed at this site matches the characteristics and specs of what is being proposed to the City of Bellingham for this RFP.

Plant Information	City of Seaside Oregon WWTP, Seaside, OR 97138
Contact Information	Tony Biamont, Wastewater Treatment Plant Foreman, (503) 738-6839, tbiamont@cityofseaside.us
Feedstock	Aerobically Digested Biosolids
Scope of Work (Centrisys)	Design Build, contracting engineering, permitting assistance, equipment supplier, contractor supervision, operation & maintenance training, commissioning, start-up
Equipment Supplied	Centrisys Dewatering Centrifuge, DLT420 Low Temperature Belt Dryer, odor control
Processing Capacity	1,435 dry tons/year of biosolids




REFERENCES
8 Biosolids Installations
18 BioDryers
2 Pyrolysis
- Operational
- In Construction
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Section 7 – Contractual Arrangement

Bioforcetech and its team are pleased to include additional information about our proposed Contractual Arrangement as well as an estimated timeline for the execution and completion of our Scope, specifically for Option 1.

Bioforcetech is in the business of providing sustainable systems to manage biosolids. Our standard and typical Contractual Arrangement provides a complete equipment package together with associated services to our Municipal Customers.

Municipalities contracted with us procure and pay for the equipment cost and services included in our package. The Utility will own the equipment and, depending on specific arrangements, they have the option of operating and maintaining the equipment or opting into a separate service agreement where BFT does so.

For both Options, the City of Bellingham is responsible for the costs associated with procuring the equipment and services and is in direct contract with BFT. The City shall also be responsible for costs associated with construction, installation, and the exclusions that are stated under our Section 5 Proposed Fees/Costs. **The proposed package is not part of a larger, regional solution. This scope and proposal have been tailored to meet the needs of the City of Bellingham specifically.**

Alternatively, BFT proposes that the City consider dividing the equipment procurement into two separate equipment agreements, one for Centrisys and one for BFT. Centrisys will be responsible for providing equipment and services from the dewatering building conveyance up to the discharge point of the DLT 120 dryer. Centrisys' scope will include the hot water heater skid, dryer odor control and air piping. BFT's scope will include equipment and services from the dryer discharge point up to the bagging of the OurCarbon® material. With this alternative contractual arrangement, BFT envisions the ability to provide additional cost savings for the City since pass through costs and markups will be reduced by dividing the scope/services in two separate agreements. Should this alternative contractual arrangement proposition be of interest to the City, the potential cost savings will be discussed and quantified at a later stage together with BFT, Centrisys and the City of Bellingham.

Should Option 1 be selected by the City, we understand our obligation, and agree, to obtain/maintain a City of Bellingham business registration as a requirement for performing these services/work.

Our team is pleased with the opportunity to present our enclosed proposal to the City. We are looking forward to advancing our discussions on the best path forward for the City to meet their sustainability goals.

Standard BFT terms for equipment procurement:
- 20% upon PO
- 30% upon approved drawings/submittals
- 20% upon shipping
- 20% upon delivery
- 10% upon completion but no longer than 90 days after delivery

Estimated Milestone Completion:
- Submittals: 12 weeks after receipt of PO
- Equipment delivery: 12-14 months after approval of shop drawings/submittals

Warranty Statement: standard BFT warranty is 12 months after installation and equipment acceptance.

Section 8 – Additional Information - Confidential and Proprietary.

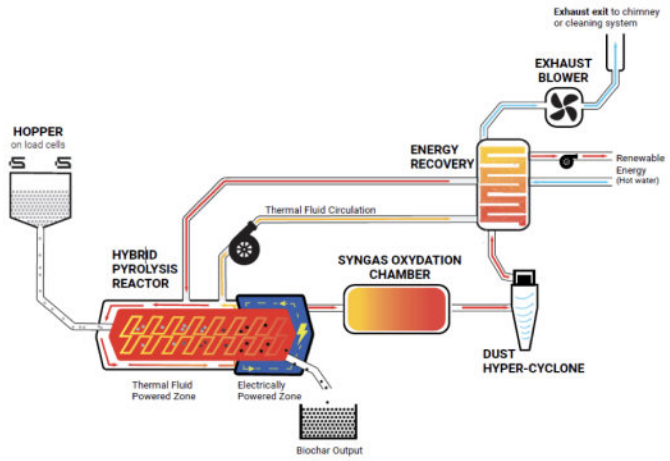
BFT pyrolysis units have been designed to ensure continuous operation, simplicity of use, and effortless installation. The primary advantages of this system include:

Design	Modular Units are easy to transport and can be coupled over time Compact Design (40 foot container)
Contaminants	Zero production of tars or bio-oil PFAS and contaminants of emerging concern removed from OurCarbon® output
Operation	Fully automated system control Automated feedstock variations adjustments +/= 3°F Pyrolysis temperature control precision
Energy	Low energy consumption High energy output (0.55 MMBtu/h hot water up to 205°F Automated energy optimization

The BFT pyrolysis machines have been designed to process many types of organic materials including biosolids, nut shells, wood chips, yard waste, paper waste, industrial sludges, manure, a multitude of agricultural waste, and more.

BFT's Hybrid Pyrolysis System

Hybrid Pyrolysis is a proprietary technology by Bioforcetech that allows for continuous organic waste carbonization at scale with scientific precision. The reactor's unique design receives heat from two sources: thermal fluid powered by the exhaust gas and electrical resistors. First, the thermal fluids provide heat by collecting energy from the waste exhaust gas produced in the pyrolysis process. This renewable energy brings the pyrolysis unit to minimum operational temperatures. Second, the electrical resistors elevate operating temperatures with precision so that exact parameters can be maintained. The combination of these two heating methods delivers a consistent temperature and residence time without demanding high levels of external energy.



Feedstock Requirements

BFT's pyrolysis system has been designed to process many types of organic materials including but not limited to biosolids, nut shells, wood chips, yard waste, paper waste, industrial sludges, manure, and a multitude of agricultural waste. To complete a successful carbonization process, the material input must meet the following characteristics:

- Maximum size of the input material: 1.5 inches in any direction*
- Energy content (material as received): > 5,000 Btu/lb **
- Sulfur content: < 4% on dry basis
- Particle size: 80% shall be > 0.5mm (Mesh #35)
- Moisture content: < 50% (< 30% for Biosolids)

* These parameters may vary depending on the feedstock. Different dimensions can be evaluated by BFT's engineering team.
** Lower values might be accepted.

Equipment Specifications, Utilities Required, and Dimensions

Process Type	Continuous Process (24/7)	Energy Production	Max 160 kW / .55 MMBtu (hot water at max 205°F)
Max Input Capacity	250 lb/h*	Temperature Set-point	500°F - 1200°F
Max Biochar Production	110 lb/hr*	Residence Time	5-30 min
Output Biochar Temperature	< 150°F	Electricity Consumption	0.03-0.06 kWh/lb input material
Bio-oil Production	None	Startup Fuel	Natural Gas or Propane
Operating Time Before Ordinary Maintenance	500 Hours	Startup Fuel Usage	Approx. 75 Therms/year (7.5 MMBTU/year)
Expected Yearly Operating Hours	7,500 Hours/year		

Utilities Required

All utility connections are conveniently located in one area of the pyrolysis unit, making it easy for system integrators to design piping and connections. The required utilities are the following:

Electricity	3 Ph, 480V, 60 Hz, 125A Breaker	Waste Water Discharge	2 in pipe. Max discharge flow rate 26 GPM, Max temp 140F
Water	¾ in NPT, 40-70 psi with guaranteed peak flow of 10 GPM	Natural Gas/Propane Connection	¾ in NPT. PRessure 20-40 inch of water (Nominal power 400 Mbtu)
Compressed Air	½ in NPT. Dry compressed air w/ pressure 90-115 psi (Max peak usage 1 cfm at 115 psi)		

Technology Scalability

The BFT pyrolysis systems are pre-assembled, wired and tested at BFT's manufacturing facility located in Italy. All BFT components are delivered in modular, customized shipping containers, minimizing custom construction on-site and allowing for rapid deployment.
Since BFT pyrolysis units are modular with a set capacity, multiple units can be installed in parallel to achieve higher feedstock throughout capability, much like the configuration of multiple centrifuges for dewatering operations. Since the basic pyrolysis method is the same, BFT can supply the exact number of units necessary to process the City's scale. This also provides for system redundancy and easy future expansion.
The modular approach allows customers to consider an initial, smaller installation, as is sometimes the case for demonstration projects to transition to higher processing capacities over time. To achieve the goals of the City's demonstration project, BFT recommends installing one BFT unit (approx. capacity of 2.75 dried tons per day) to demonstrate the viability of the

technology. This will allow the Parties to collect the required data as described in the RFP and demonstrate the benefits of the proposed system and the OurCarbon® product. Upon completion of the demonstration period, or upon request of the City's sooner, additional units can be installed in parallel to achieve 13 dry tons per day or great capacity.
Additionally, the next generation of BFT's pyrolysis system will have expanded capacity to reduce the overall number of units required. BFT can provide additional specs on these units if short-listed as a technology choice for the City of Bellingham.

Automation and Process Control

The BFT pyrolysis units integrate advanced industry 4.0 automation with IIoT. With more than 40 sensors, the process is controlled with scientific precision for maximum performance. The machine automation HMI can be accessed by a web-browser with secure local and remote access, allowing process control from any device like a smartphone, tablet, PC or Mac. The integrated data logging system records process data every second, generating charts and reports which can be used to analyze efficiency and perform predictive maintenance.
To facilitate integration with existing facilities, the BFT pyrolysis unit control system allows for SCADA connections with the most common protocols like ModBus and Profinet while also providing advanced and modern Restful API with JSON format.

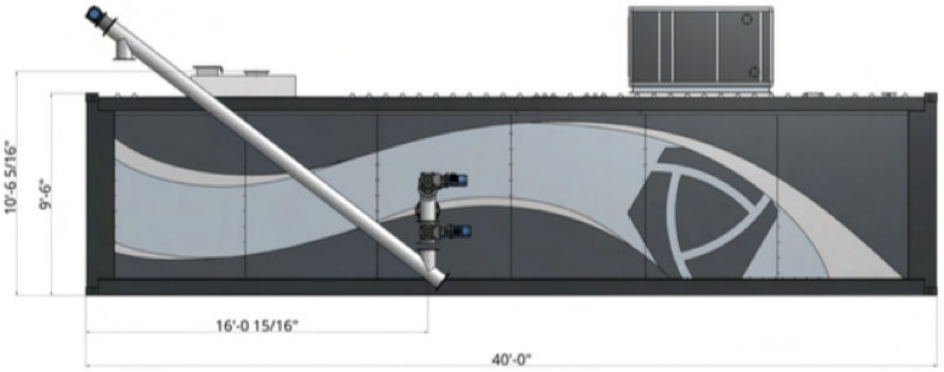
Emission Control
Ensuring cleaner emissions is crucial. The BFT's pyrolysis unit's efficient syngas oxidizer is designed for CO and NOx control, while the integrated high-temperature HyperCyclone ensures low particulate emissions. If other emissions control devices are needed (for example biosolids sulfur treatment), an additional treatment unit can be added to the machine.
Bioforcetech offers a treatment unit design specifically for municipal biosolids which includes a venturi evaporator, a caustic soda scrubber, and an activated carbon filter. This abatement system arrives on a skid and can be integrated seamlessly with the pyrolysis unit.

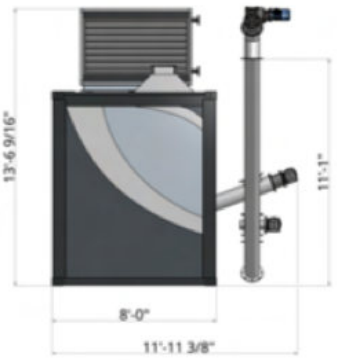
Contaminants of Emerging Concern

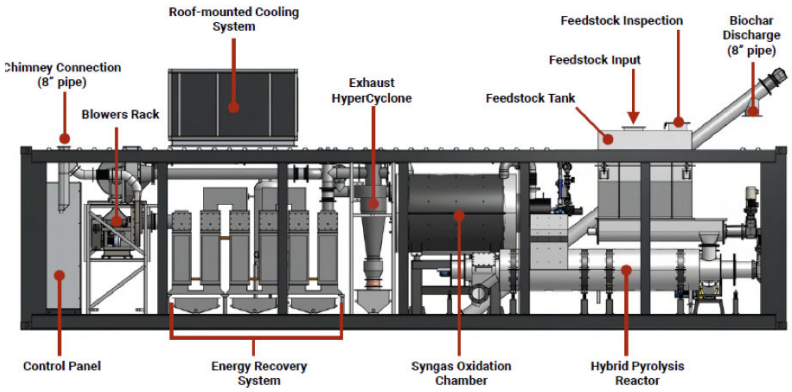
BFT believes that making Class A biosolids products using conventional technologies, such as drying alone, is rapidly becoming inadequate, and future regulations on contaminants of emerging concern will further restrict product marketing, public acceptance and raise long-term liability concerns.
In September of 2019, BFT published a report which evaluated 38 PFAS compounds, pre- and post-pyrolysis of biosolids. As described in BFT's report, aerobically digested biosolids (at 91% solid content) were provided to Vista Analytical Laboratory in El Dorado Hills, CA for analysis. The same sourced aerobically digested biosolids were processed through BFT's pyrolysis reactor at SVCWA and the resulting biochar was provided to Vista Analytical Laboratory for analysis.

The biosolids and biochar (before and after pyrolysis) analysis of 38 PFAS compounds are included below. Of the 38 PFAS compounds tested, about half were present at detectable concentrations in the dried biosolids prior to pyrolysis. All 38 PFAS compounds were non-detectable in the OurCarbon® product. Furthermore, In 2020 BFT partnered with the EPA's PFAS taskforce to confirm that our technology successfully removes PFAS, PFOA, and other CEC's to non-detectable levels. The results of this testing was published in the Journal of Air and Waste Management Association available at the link here.

Dimensions and Main Components







Section 9 – Conclusions

Bioforcetech Corporation is a proactive partner with proven results. Our work throughout North America is a testament to our professional approach and our commitment to long term innovation. We are deeply committed to commercializing innovative methods for biosolids beneficial use that protect human health and the environment. We genuinely look forward to this opportunity to collaborate with the City of Bellingham.

Bioforcetech Corporation has assembled a Project Team that is uniquely qualified to assist the City in the development and implementation of a state-of-the art biosolids beneficial use program to meet the City long-term goals. As we understand them, these goals include:

• A focus on environmental performance that protects human health and the environment.
• Employment of a beneficial reuse technology which can dramatically reduce the City's generation of greenhouse gas emissions, helping the City meet its goal of carbon neutrality.
• Development of long-term beneficial reuse options for processed biosolids which do not rely on landfill or land application.
• Meeting current and future regulations for PFAS and CECs.

We believe our proposed approach, using our proprietary pyrolysis technology, can meet all these goals. The Bioforcetech pyrolysis process converts dried biosolids to energy which allows the process to be self-sustaining, resulting in significant volume reduction, a net reduction of greenhouse gas emissions, the generation of renewable energy and the creation of a solid product with a wide range of beneficial uses. Bioforcetech is the first company in North America to successfully commercialize biosolids pyrolysis with its installation at a municipal water resource recovery facility in Redwood City, CA. With over 15 full-scale installations worldwide, all of which are dedicated to biosolids, our expertise and technology is unmatched.

We recognize that the City is investigating a pilot project to review and qualify technologies that may help the City meet its long-term goals. Although we could build and construct a pilot facility at the Post Point WWTP, we strongly believe this is not the most direct and cost-effective approach to gaining the information the City is seeking. We believe much of the data already exists through Bioforcetech and other sources. If there are information or data gaps, we believe these can be filled in a more expeditious, cost-effective, thorough manner, as outlined in our response.

BFT extends our appreciation to the City of Bellingham for allowing us to provide the enclosed qualifications and response package. We sincerely look forward to discussing our proposal and ideas with the City once they have had the opportunity to review our response.