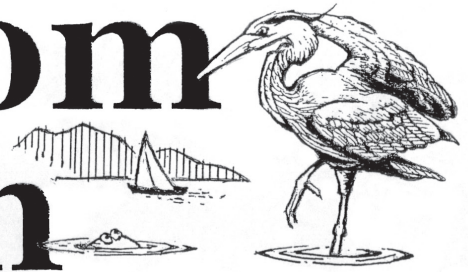




# Whatcom Watch



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## City Leaders and the Community Struggle With Sewage Waste

by Michael Lilliquist and Rick Eggerth

The City of Bellingham is on the cusp of major decisions and an enormously expensive public works project that will have repercussions for decades to come. The sewage treatment plant at Post Point has reached the end of its useful life and needs to be replaced and modernized.

Bellingham leaders had reached a decision on replacement in 2017, but the decision is being re-evaluated in light of new environmental concerns. Any new facility will impact public health, the health of our environment, and greenhouse gas emissions that contribute to climate change. This deserves the attention of both city leaders and concerned citizens.

One group of concerned citizens, informally known as the “The Citizens



A portion of the sewage treatment plant at Post Point.

courtesy photo: City of Bellingham

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Group,” has been working for the last 20 months to turn the focus to the key issue of biosolids disposal. At times, city leaders have been at odds with The Citizens Group, but, more recently, a degree of shared outlook has been achieved. This new common ground has led to general agreement on a possible path forward.

That’s why we chose to cowrite this article. One of us is a City Council member, and the other is a member of The Citizens Group and also volunteers with several environmental organizations in the region. Our goal is to raise the level of public understanding and engagement regarding biosolids disposal, and to mini-

mize “taking sides.” We do not agree on all aspects of the sewage treatment plant replacement, but, with regard to biosolids, we want to find unity in what could be a divisive issue. We all want what is affordable, realistic, and safe not only for the community, but also for those outside the community who could be affected by our decisions.

### A Toxic Legacy

In 2012, the city completed a major upgrade and expansion of the “liquids” portion of sewage waste treatment. It was

*Continued on next page*

a huge \$70 million undertaking. Now, the “solids” handling portion of the treatment plant is in dire need of similar upgrades. The city’s sewage treatment plant currently relies on two aging and outdated incinerators that are increasingly difficult to keep operational and are a major source of greenhouse gas (“GHG”) emissions.

Since 2008, the city has been considering plans to replace the “solids” treatment with something new and better. The price tag for the selected replacement and modernization is staggering — over \$230 million, and perhaps much higher. That includes not just replacing the incinerators with digester tanks, but also modernizing other major components of solids handling and plant operations. Some of that work could have been done in 2012, but it was put off due to concerns about the rate increases it would have brought. But these changes cannot be put off any longer.

Weighing some of the costs and benefits of various waste treatment technologies, city staff and consultants zeroed in on anaerobic digestion, or “biodigestion,” in early studies as far back as 2012. The City Council formally endorsed biodigestion as the best option in 2017. Design and planning work has continued ever since.

Biodigestion is an established technology. It is also supported by state-level policies and regulations. But, that rosy regulatory view has come under heightened scrutiny primarily due to land application of the digester end products (or biosolids) as fertilizer, which contain residual contaminants and toxins.

Until the last few years, biodigestion was generally seen as an environmentally sound way to generate energy and reusable organic material from treated sewage, recovering rather than wasting resources. In some cases, this may still be true. But, while biodigestion of clean waste products, such as cow manure or clean agricultural waste, can indeed produce valuable end products safe for applying to the land or mixing with soils, municipal sewer waste is a different matter. Put simply, some contaminants and toxins in municipal waste are not eliminated by biodigestion, and wind up in the biosolids end product.

The question is whether land disposal of biosolids from municipal waste is a good idea. We think it is not, as land spreading of municipal biosolids raises serious environmental and public health concerns, and potential social justice problems, and we are not alone in our concerns.

There is increasing awareness in many quarters about the presence of persistent toxic compounds in the biosolids. This includes things like, for instance, heavy metals, pharmaceuticals, and man-made chemicals. A class of man-made chemicals known as Per- and Polyfluoroalkyl Substances (PFAS) has drawn particular concern. PFAS compounds, of which there are thousands, have been widely used in everyday products such as waterproof clothing, carpet treatment, food packag-

## **The price tag to upgrade the Post Point sewage treatment plant is over \$230 million.**

ing, nonstick coatings, and household cleaners, to name only a few, and were also used in many products in industry, and in firefighting foam and fire retardants. These chemicals are toxic and damaging to living creatures.

In addition, PFAS compounds are also very difficult to break down and neutralize. They have earned the unhappy nickname of “forever chemicals” because their strong chemical bonds are hard to break. They do not break down in composting or biodigestion. While many have been banned and others are being phased out of use (in some states, like Washington), they have spread far and wide due to years of persistent use in thousands of products. PFAS levels can be found in the bloodstream of most people in America, as the result of years of exposure.

Because PFAS are in our homes and in our bodies, they also make their way into our municipal sewer waste. Sometimes, local industries are the source of the

problem. But PFAS do not have to rely on major industrial centers to get into our sewers. Even without heavy industries in Bellingham, there are countless sources from PFAS use in our businesses, schools, hospitals, and homes. It is possible that circulating levels may drop in the future, but the problem of “forever chemicals” is with us now and for the foreseeable future.

## **Searching for a Solution**

Although health standards exist for PFAS in drinking water, the EPA recently announced that it is considering making them far more stringent than they have been. And while there are yet no standards as all for biosolids use in soils, it stands to reason that when such standards are addressed, they could be similarly stringent. The science is evolving and incomplete. The EPA is currently evaluating what regulations may be necessary, but this work will not be complete for at least two to three years. Similarly, state-level policies and regulations have not caught up with current science. But, we know that terrible harm has occurred.

In parts of Maine and Michigan, for example, biosolids highly contaminated with PFAS waste were applied to farmland, and that land is toxic beyond use. Well-water contamination has forced some farms in Maine (at least) to close. Other states have similar problems. Maine recently became the first state to ban land spreading of biosolids, as have many counties across the country. Other states are looking at the issue.

The measured level of PFAS currently found in Bellingham’s municipal waste is much lower than the screening standards in Maine, but that doesn’t mean we should relax. While land application of Bellingham’s waste biosolids may be legal and permitted, we don’t yet know that it’s safe. For instance, besides knowing that PFAS are in our waste stream, biodigestion may serve to concentrate contaminants, as excess water and gas are removed.

Perhaps most important for purposes of this article, though, the authors believe that it’s *not* safe.

The city of Bellingham’s original plans





*courtesy photo: City of Bellingham*

*Clarifiers at Post Point Wastewater Treatment Plant with Bellingham Bay in the background. The middle ground, including trees housing approximately 40 heron nests, was recently purchased by the City of Bellingham.*

to generate biosolids that could be land-applied generated stories that the city wants to poison Whatcom County farmland — which is not true! Less hysterically, the Citizens Group and RE Sources in particular have raised genuine concerns. And, some elected officials in City Hall have echoed those concerns.

No one wants to poison Whatcom County's farmland, or any other farmland, but we need to modernize sewage waste treatment, and must find a way to dispose of the tons of treated waste solids produced daily. Business as usual is not an option.

### **Weighing the Costs, Benefits and Risks**

Are there alternatives that address PFAS and other persistent chemicals in municipal waste solids?

The key to eliminating PFAS and similar chemicals is high-heat or high-energy conditions that break the chemical bonds at the core of the molecules. One simple way to do this is with incineration, but this not only releases GHG up the waste stack, it may also release PFAS. And incineration is polluting and fossil fuel gas intensive.

Other high-heat or high-energy pro-

cesses are possibilities. Both gasification and pyrolysis are well understood processes, but their technology has not yet been widely applied to municipal waste. The City Council rejected these options in 2017 as less known and unproven. But,

## **Maine recently became the first state to ban land spreading of biosolids.**

health and environmental concerns about PFAS were not part of the city's original evaluation, which would have weighed in these technologies' favor.

An advantage of thermal processes like pyrolysis and gasification is that they create much of the energy needed for continued operation. In essence, they use the waste product as their own fuel. The process gives end products (which can vary from some form of synthetic oil to charcoal-like biochar to ash) that are considerably reduced in bulk and weight.

More to the point, preliminary evidence indicates that they eliminate all or nearly all "forever chemicals" by breaking them down to simpler compounds. Importantly, biodigestion can work in tandem with thermal processes.

Gasification and pyrolysis can also be expensive and complex operations, which, like any major public works project, bring their own challenges and uncertainties. Biodigestion also brings similar expense and challenges, although with a longer track record to draw upon. But no new technology will be easy or inexpensive. Utility rates will increase to pay for any solids handling improvements.

Still, there is hope for a safer, better outcome. Just as the science of PFAS in biosolids is an active area of investigation, high-temperature treatment technology for municipal waste is also an active field. Many companies are developing new processes, and testing and selling them. The city of Edmonds, for instance, is constructing a small-scale gasification facility this year. King County is considering a possible gasification and thermal drying solution. And, it is technically straightforward to add a high-temperature thermal unit at the end of the biodigesters.

Some have suggested that Bellingham patch up the failing incinerators until a better solution can be identified. Others have suggested that the city leap into all-thermal process technologies now. Like biodigestion, both options have risk and costs.

The 40-year-old incinerators are on their last legs. Repairing the incinerators would be a stopgap, as keeping them running is already a challenge. And, it would take a couple years to build replacements, during which time failure would not be an option. We can't kick the can down the road forever.

On the other hand, thermal process technologies also present risks. Bellingham would be building a large thermal-process facility. This introduces uncertainty — which must be carefully managed for a basic service, like sewage handling that operates 24/7/365. But, as already noted, *any* system new to Bellingham, including biodigestion, introduces risk and uncertainty.

## Course Correction

The Bellingham City Council decided to chart a middle course.

At a recent meeting, the council voted to continue toward biodigestion, which will take a few years to build. At the same time, the council accepted staff's recom-

### **The city's consultants will look for and recommend alternatives to land application of the biosolids.**

mendation to have the city's consultants look for and recommend alternatives to land application of the biosolids. This report and recommendation is due in six to nine months. As a fallback plan, if an alternative is not ready in time, the biosolids can temporarily be run through the old incinerators until a better alternative is ready. But, as noted, this is a stopgap, and incineration is not the plan. It buys a little more time to chart a course correction away from land spreading biosolids.

## Next Steps

The final outcome is yet to be decided. We believe the re-evaluation should emphasize public health and environmental concerns raised by PFAS and other biosolid contaminants.

As part of the re-evaluation, the city will seek input and guidance from both experts and the public. That's where you come in. To reach the best decision in the public interest, City of Bellingham leaders must weigh risks and benefits from the standpoints of community values, affordability, health, and safety, not necessarily in that order. This project will affect our entire community, and perhaps beyond. We must find the right path.

Together, we invite you to educate yourselves and get involved, and to help guide the next big step. Expect more news, surveys, open houses, and information as the city website is updated soon. **Ww**

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