

**May 17, 2021**

**TO:**

**Fort Collins City Council and Fort Collins Stormwater Utility  
Larimer County Commissioners**

**RE: [Cleaning the Cache la Poudre River through Fort Collins and using the river as a conveyance for water delivery downstream, instead of pipelines](#)**

Proponents of the “Northern Integrated Supply Project” (NISP) and the “Thornton Pipeline” have claimed that they cannot run their Poudre River water rights through Fort Collins due to the water quality in the river. Both Northern Water (the proponent of NISP) and the City of Thornton (proponent of the Thornton Pipeline) have initiated permit processes with the City of Fort Collins, Larimer County, the State of Colorado, and the U.S. Army Corps of Engineers requesting pipeline routes north and east of Fort Collins to avoid running water down the Poudre River through Fort Collins.

**Question:** Is there an economically, environmentally, and technologically reasonable water-quality control alternative available that would result in less or no degradation of water quality if that water was run down the Poudre River through Fort Collins?

**Answer:** Yes

**Background:**

Historically, municipal water districts in the Poudre River basin have adopted the practice of diverting water as high in elevation, and from as clean a location, as is practically feasible. While this practice is well established, this approach fails to consider several beneficial-use aspects, particularly along the Cache la Poudre River, which have become critical priorities for the Larimer County and Fort Collins community over the past several decades. Such aspects include quality-of-life for residents, preservation of the environment and natural habitat along the Poudre River corridor, maintaining or increasing flows for recreation including at the new downtown Fort Collins Whitewater Park, and water quality and cleanliness in the Poudre River.

These four aspects are of particular concern when projects are proposed to divert this precious river resource, via pipelines, away from the biologically diverse watershed and recreational

venues in Fort Collins. Further and importantly, the cost of implementing the upstream diversions and pipelines are exorbitant given available options to improve the surface water quality in the Cache la Poudre River through Fort Collins.

Various manufacturers have developed and validated solutions and products to reduce urban contaminants from water – typically from stormwater which collects on impervious surfaces and conveys pollutants from roofs, parking lots, streets, etc., and which ultimately enter a “receiving water body” i.e. stream, river, or lake. Typically, most of these devices are used to protect storm drainage *inlets*, the point at which storm water flows from impervious surfaces and enters an engineered conveyance network. Within a given urbanized watershed, it is not difficult to imagine hundreds or even thousands of inlets to a pipe conveyance system, and for this reason, typical “inlet” control is not a viable economic option to significantly improve existing outfalls to receiving water bodies such as the Poudre River.

There are however, innovative technologies, methodologies and techniques aimed at a more holistic solution improving not only performance but operational efficiencies applicable to the challenges identified with the Cache la Poudre River. Some of these options provide not only a cost-effective alternative but a less environmentally intrusive solution to the proposed upstream diversions and massive pipelines through residential neighborhoods.

### **Technologies to Clean the Poudre River through Fort Collins that would allow Thornton and NISP to use the River as a Conveyance:**

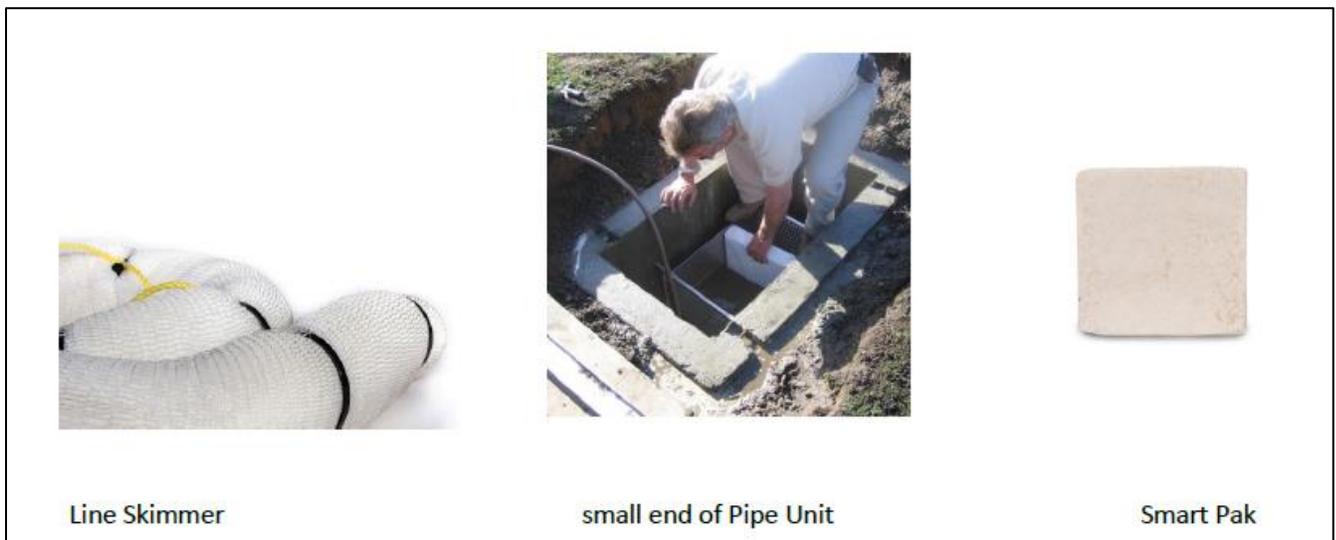
Save The Poudre contacted one company, AbTech Industries (<https://www.abtechindustries.com/>), to get overall guidance, information, and approximate pricing for technology to clean up the stormwater pollutants in the river through Fort Collins. Below are three options – described by Abtech – that represent readily available proven technologies which should be considered to further improve water quality for recreation, quality of life, habitat, and drinking water purposes. These technologies could be installed in stormwater facilities – including at stormwater outfalls (canals, pipes, ditches) – draining into the Cache la Poudre River through Fort Collins (see Appendix A for a map of outfalls):

- “Hydrodynamic Separators” **enhanced** by appropriate filtration technologies – a combination of “separation” devices and filtration technologies deployed at outfall locations along the river will achieve a significant removal of urban contaminants.
- “Separator Baffles” **enhanced** by appropriate filtration technologies - Similar to those used for onsite sanitation or grease separation, baffle systems are also an applicable stormwater technology which provides opportunity to treat first-flush

flows effectively in a single engineered unit.

- Absorbent filter technologies used to remove a wide range of troublesome pollutants from water. Because these filter media are hydrophobic and oleophilic, they have been proven to remove hydrocarbons, heavy metals, phosphorus, bacteria and other contaminants from storm water without leaching and without possibility of “re-suspension”, *with removal efficiencies far exceeding other technologies.*

Option 3 above has been directly confirmed by independent validation as an effective and sustainable solution to the water quality challenges we face on the Cache la Poudre River through Fort Collins. As just one example and one company, “Smart Sponge” technology available from AbTech Industries has been proven to achieve very high pollutant removal capacities and has been deployed in 46 US states and 15 countries to address specific needs related to TMDL compliance and other cleanup priorities. (see images below)



AbTech filtration media can be customized to nearly any geometric shape in order to treat flows in existing storm drain utilities. A probable product to address existing stormwater outfalls is the “End of Pipe Unit” which essentially removes contamination at a singular point (or a few key in-line locations) which results in a greater construction and decontamination efficiency, optimization of maintenance requirements, and greater return on environmental and economic investment. Further, the product configuration allows easy transition to adopt different filter media types should the need arise at any time in the future.

According to publicly available demonstration reports, properly configured **End of Pipe Units** can remove:

- **90%+ Total Petroleum Hydrocarbons (TPH)**
- **90%+ Microbial Pathogens**
- **Up to 100% Trash and Debris (floatables)**
- **Up to 99% Total Suspended Solids (TSS)**
- **90%+ Total Phosphorus (Particulate and Soluble)**
- **90%+ Heavy Metals (Particulate and Soluble)**
- **(see image below)**



**AbTech End of Pipe Unit at Kearney Point, New Jersey**

In order to better qualify these options, further information is required to develop a complete assessment of the water quality issues. With better information about the pollutants in the stormwater outfalls draining into the Poudre River in Fort Collins, economic analysis for the treatment of outfalls and creation of a comparative narrative depicting alternative solutions verses diversion can be analyzed. Regardless, confidence that economically sustainable treatment options do exist is established and supported by successful projects around the United States.

At Save The Poudre's request, AbTech has determined approximate "unit" costs to treat contaminated stormwater flows. In the absence of field data for more specific analysis, AbTech

has provided the cost to treat flows of 1 Cubic foot per second (CFS). As hydrology and water quality studies are performed, these figures can be refined in order to project and budget a total project cost to treat first-flush flows at each appropriate outfall into the Poudre River. Based on other product deployments around the United States aimed to achieve similar outcomes, the following budgeting criteria were established:

Device Type	Flow Rate Treated	Filter Media Cost**	Vault Cost***	Installation Cost****	Total Cost	Filter Replacement Cycle
EOPU*	1.0 CFS	\$8,000	\$16,000	\$10,000	\$34,000	1-4 Years

\* “End of Pipe Unit” for outfall treatment

\*\* Based on treating first flush flow of 1.0 CFS

\*\*\* Vault Cost is highly variable by region, size, and material, this figure aims toward the more costly options.

\*\*\*\* Installation cost is highly variable due to variation in vault type and size, this figure aims toward a more costly option.

The above table is approximate. However, with additional detail (actual flow rates and anticipated pollutant loading, etc.) more accurate cost and replacement figures can be determined. Beyond the capability to remove pollutants, we view this type of technology and its implementation to be in harmony with the EPA’s “Green Infrastructure” objectives for the following reasons:

- Implementation of stormwater treatment devices provides the opportunity to allow the Cache la Poudre River to flow along its historical bed and deliver manageable drinking water downstream thus preserving natural habitat and reducing impacts,
- Utilizing treatment devices does not consume significant land resources; in many cases existing utility right-of-ways are sufficient for operation and maintenance purposes, and,
- Physical operation of these filter devices depends only on the sustainable effect of gravity without any energy consumption or byproduct. Spent filter media can be recycled, utilized at waste-to-energy facilities, or generally discarded in most landfills. The carbon footprint of this alternative is fractional compared to other options.

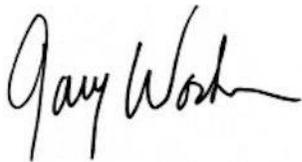
With the opportunity to consider viable alternatives now presented, Save The Poudre requests that the City of Fort Collins and Larimer County evaluate outfall pollution mitigation as a

preferred alternative to diverting the Cache la Poudre River upstream and placing its precious water into massive and intrusive pipelines north of Fort Collins.

Fort Collins is already doing some stormwater pollution mitigation using other methods and technologies, but significantly more can be done. Doing so will preserve well-established beneficial uses of instream flows while protecting water quality at outfall locations when storm events occur or wherever other “urban drool” occurs. Finally, the cost of implementing system-wide outfall treatment to assist the decontamination of first-flush flows and incidental urban drool is highly likely to prove vastly less expensive than pipeline options when considering both the up-front costs and long-term operation.

We are aware that additional companies also sell these products and perform these services. We offer information and education provided by AbTech Industries as just one option for public agencies to consider. We would be happy to bring AbTech representatives to Fort Collins to give a public presentation for the public and agencies to consider. Save The Poudre has no financial relationship with AbTech.

Sincerely,

A handwritten signature in black ink that reads "Gary Wockner". The signature is fluid and cursive, with a long horizontal stroke at the end.

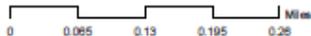
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# Fort Collins Stormwater Outfalls Northwest



Scale 1:8,516



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GEOGRAPHIC INFORMATION SYSTEM MAP PRODUCTS

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### Legend

-  swsOutfall
-  City Limits - Outline

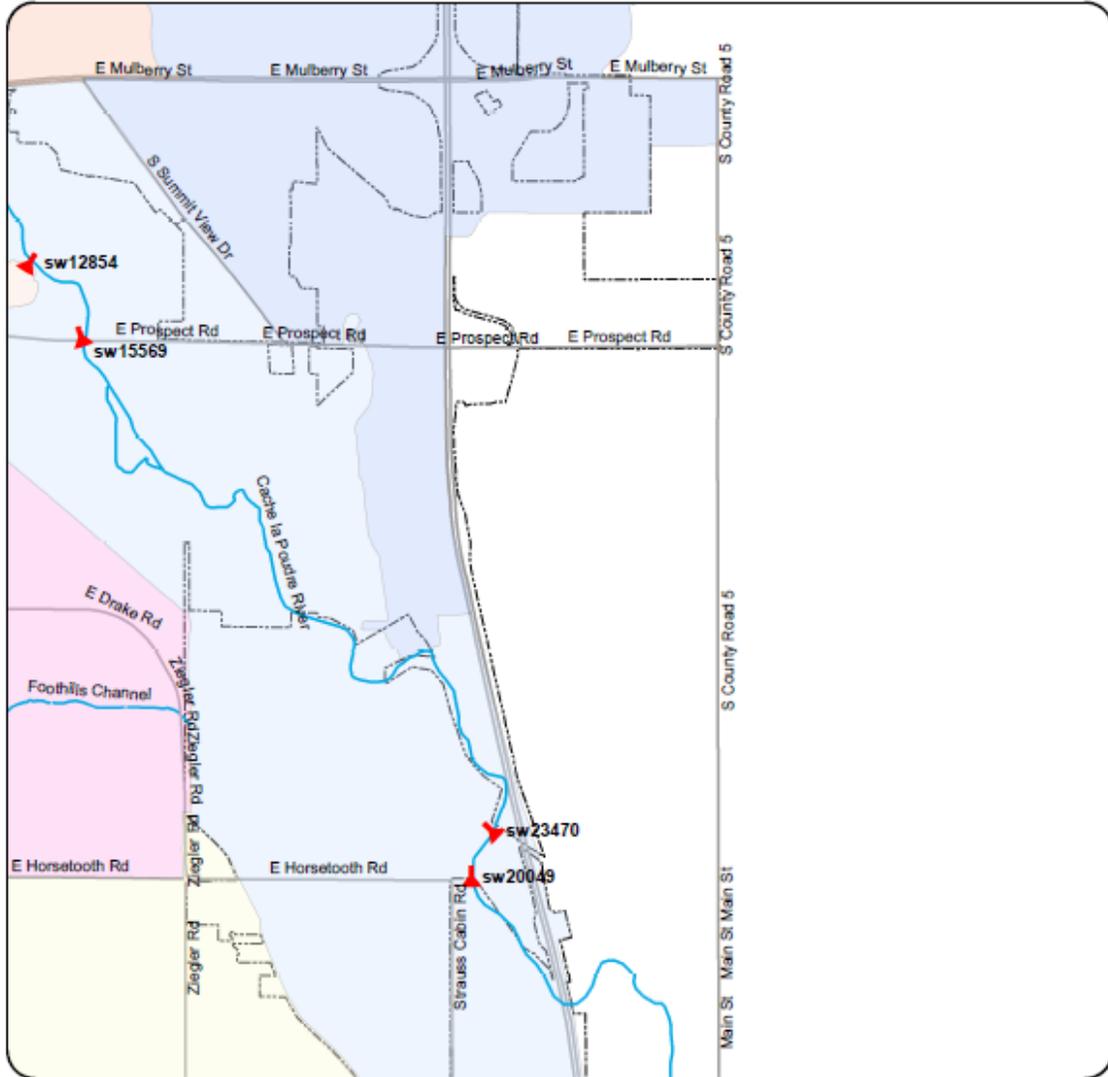


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# Fort Collins Stormwater Outfalls SouthEast



Scale 1:34,084



CITY OF FORT COLLINS  
GEOGRAPHIC INFORMATION SYSTEM MAP PRODUCTS

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**Legend**

-  swsOutfall
-  City Limits - Outline



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