

**Stevens County Solid Waste**

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**Application Type:** Individual

**Funding Requested:** \$9,999,998

**Application Title:** Solid Waste Greenhouse Gas Revamp & Composting Facility Program

Stevens County intends to incorporate our landfill with a landfill gas microturbine generator, which will allow us to minimize emissions and power our facilities with collected greenhouse gas as well as power 300+ homes. Additionally, we aim to build a composting facility which reduces the amount of organic waste dumped in landfills and reduces greenhouse gas production. They will work together by using the energy generated from the microturbines to power our composting facility.

**Sector:** Waste, Water, and Sustainable Materials Management Sector

**Expected Total Cumulative Greenhouse Gas Emission Reductions:** 2,144,728 Metric Tons (CO2 equivalent)

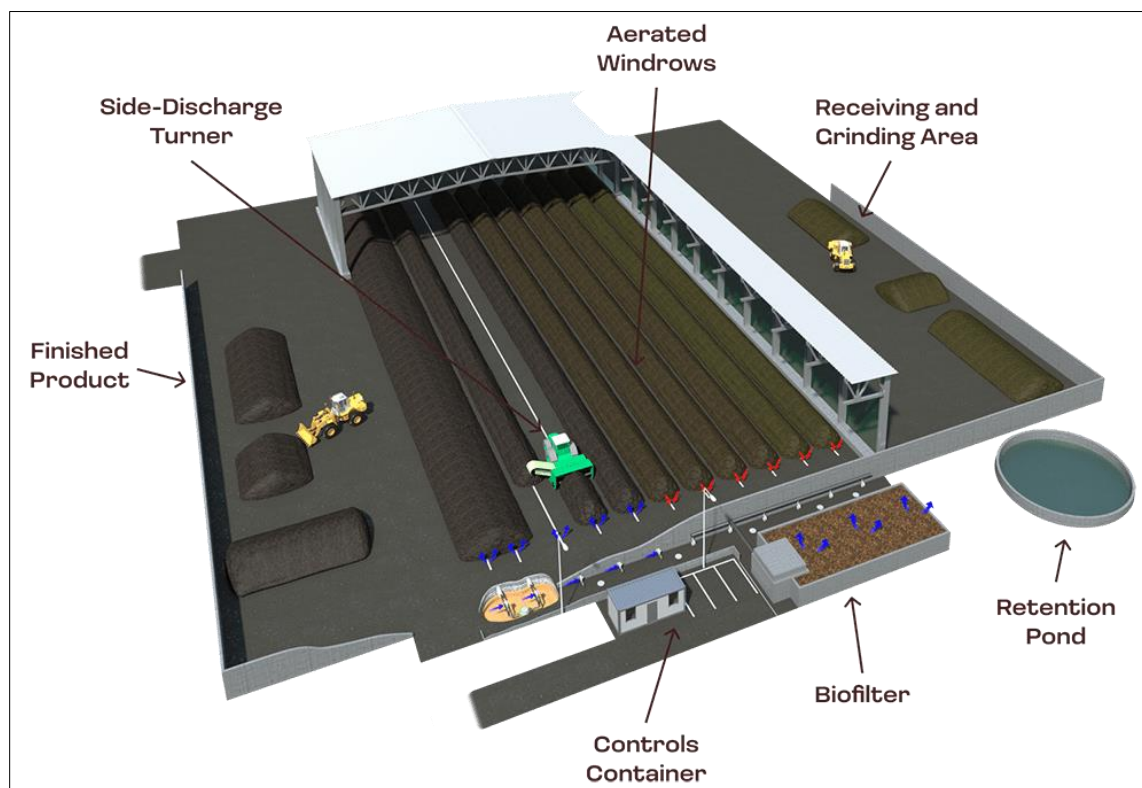
**Locations:** Stevens County, Washington

**Applicable PCAP References:** Washington State Department of Commerce PCAP 2024

## Description of greenhouse gas reduction measures

### **PROJECT 1: Compost Facility**

Our first project would be to create a composting facility at our landfill property in Kettle Falls. We plan to partner with a company called Green Mountain Technologies, based in western Washington State. They specialize in composting facilities and create plans to implement them at different locations. The plan we propose to implement would be their “Turned Aerated Pile,” which can process 2,000–10,000 tons of organic waste per year! The illustration below shows what the facility would look like once finished.



Some of the major features of our composting facility would include aerated windrows, a compost biofilter, a control container, a retention pond, and equipment. The aerated windrows play a key role in the methane reduction, as the cold air creates an environment too cool to produce many emissions in, therefore reducing them before they begin. Anaerobic digestion composting does not include air, unlike in the illustration above. Without air, the microorganisms have the ideal conditions to produce greenhouse gases and odors. These conditions include heat, microbes, pH, and moisture, all of which create ideal circumstances for excess emissions. The lack of air integration in this process might lead to the growth of odors that are hazardous to the environment and human health. Additionally, the lack of air integration might result in ineffective decomposition of organic waste, which prolongs the composting process and reduces its overall effectiveness in producing nutrient-rich compost.

The aerobic technology we chose for our site is shown above in the illustration. It incorporates air into the facility's flooring to pump fresh air into the windrows, minimizing odor and preventing greenhouse

gas production before it occurs. This helps to maintain optimal breakdown conditions and promotes the growth of beneficial microbes. When air is supplied, it cools the windrows, preventing anaerobic microbes and bacteria from forming. This is ideal because when piles are excessively hot, the breakdown of materials is less efficient and timelier than if the temperature is maintained throughout the process. Not only is it less efficient, but when windrows are too hot, extreme odors can be produced. This air integration encourages the growth of aerobic bacteria, which are required for the breakdown of organic matter and the formation of high-quality compost. Also, by preventing the release of odors, the aerobic system helps to maintain a clean and healthy environment for both workers and nearby communities.

The biofilter would take what little methane was produced and direct that through woodchips, hay, dirt, etc. to scrub the remaining emissions from the facility. This works by reversing the air probes in the windrows to siphon gas into the biofilter and scrubbing the little methane that was able to be produced. The control container is the place where we can adjust the air temperature, check the decomposition stage, check the water content, etc. Having a control room gives us the ability to monitor the compost from the outside, even when the facility is closed for the day. Within the facility, there is a gravity-fed leachate pond, which removes excess moisture from the piles and creates a water source to add to the compost when it is too dry. Keeping the windrows wet allows them to stay cool and minimize emissions while also making sure that fire danger is low.

The last of the major features would be the equipment. We plan to equip the facility with a chipper, trommel screens, a tractor-led windrow turner, and a loader. The chipper is the first machine, and it is used to break down larger organic items like wood debris to a scale small enough to compost. Once chipped, the materials go into the windrows, where they are watered, turned with the tractor-led windrow turner, and temperature controlled to ensure that the breakdown is as efficient as possible. After about 7–21 days in the windrows, the compost gets moved to our trommel screens, where they separate any materials that are too big or didn't break down properly. Those materials can be put back into windrows or discarded. The materials that are the correct size get put into curing piles. The loader is used when there is finished compost that needs to be moved or when we have incoming materials that need to be separated.

**The major tasks are as follows:**

- Designing and permitting. This could take a year or more to complete.
- Run power to the facility. This will be tied into the grid, so our power source will need to be moved to the appropriate area.
- Run water to the facility. There will need to be water access to the facility in case of a fire or a lack of leachate.
- Grading and subgrating 75,000 square feet
- Asphalt: 50,000 square feet
- Aeration pipes: these will be built into the asphalt and will provide cool air for the windrows.
- Retention pond: we will need to build a pond for leachate that will be gravity-fed from the windrows.
- Procure equipment: Equipment consists of a grinder, trommel screen, tractor, windrow turner, and loader that need to be purchased. This can take around a year to get all the equipment needed.
- This would be the control center, gas probes, and any other miscellaneous tasks that need to be completed.

There is always risk when permitting a highly regulated facility. However, I don't think we have much to worry about when it comes to permitting. The most common issues are proximity to others regarding smell, wildlife, etc. We wouldn't have to worry about these issues because we plan to place the facility on our landfill property, which sits on around 500 acres. Not only is the spacing not an issue, but the use of air in the windrows minimizes odors as well as methane, like two birds with one stone. Generally speaking, there could be issues when talking about leachate and the management of that. However, we already have two leachate ponds, which would work similarly to the new one. Leachate management is something our team does really well at, and because of our extensive experience and knowledge regarding leachate, the problems that we do encounter with the new pond would be easily fixed.

Designing and permitting, equipment hold-ups, power installation, and water line routing are all examples of potential delays or interruptions to the plan. Due to the extent of the project, we can assume that designing and permitting can take upwards of a year. During this time, we would focus on procuring equipment. When ordering new equipment, it takes a long time to manufacture and transport it, therefore we may expect these parts to be operational in around a year. This would fit well with the timeframe because the one-year mark is when we would be able to begin composting. If the equipment took more than a year, we would have problems. However, if everything is ready to go in a year and we have to wait a few months for equipment to arrive, that is fine. Rerouting the power would be simple because our power runs parallel to the proposed composting site. The hold-up would be caused by Avista if they required transformers or other parts that could take a long time to obtain. While speaking with our representative from Green Mountain Technologies, he stated that the transformers required to operate power had previously been a difficulty, and in the example, he was referring to, the parts took nearly a year to arrive. Water line route would not cause a significant delay unless there were unforeseen weather circumstances or part shortages. Assuming neither of these were an issue, the water lines wouldn't be a problem.

All greenhouse gas emissions would be affected by the risks listed above. For example, if we have trouble getting equipment, we can't compost, therefore creating emissions by not diverting the waste. The same goes for design and permitting, power, water, etc. Creating this solution to our long-lasting issues always comes with risks, but the benefits of renewable energy and organic waste diversion far outweigh those risks. I'm confident that if given the opportunity, our organization will ensure that this process is done right and in a timely manner.

## **Project 2: Microturbines**

We plan to use a microturbine system to capture our landfill gas and convert it to energy. The process starts with the pipes, which get layered into the landfill in between the garbage levels to effectively capture as much gas as possible. In our current system, we use these pipes as well, and we would be able to tie our existing pipe system into the new one. Due to upcoming regulations, we are unable to continue using our candle stick flare system, so we have to pivot. As the landfill grows, we continue to integrate pipes between layers of garbage and cover material. Doing so ensures that we can collect as much gas as possible. Some of the major features of our microturbine project would be the capstone C600 (microturbine). This machine is the main piece of the puzzle, and it turns our gas into electricity. Microturbines work by turning the chemical energy from landfill gas into mechanical energy. This happens when landfill gas and filtered, temperature-controlled air are blown into the compressor. The compressor squeezes the air to high pressure before sending it to the combustion chamber. The ignition of landfill gas in the combustion chamber creates a high-temperature, high-pressure gas that drives the

turbine blades, ultimately generating electricity through the connected generator. Before the gas gets to the Capstone C600, it has to be conditioned and properly pressurized. This means that the landfill gas we generate has materials in it that we cannot have, such as siloxanes. These materials need to be conditioned out of the gases before they hit the microturbine and then pressurized to enter the capstone properly. Another important feature would be the continuous pipes that need to be laid as the landfill grows. This ensures that we collect as much gas as possible, and as the landfill grows, so will our power capacity. These pipes run from the landfill into the gas conditioner, then to the capstone microturbine to create renewable energy. The last important feature would be the power grid equipment. Avista would need to come out and ensure that the power we generate has an outlet on the grid and can be transported as efficiently as possible.

**The major tasks are as follows:**

- Design and Permitting: this can take around a year to complete.
- Procure equipment: This would be the Capstone C600 and landfill gas conditioner.
- Install equipment for power generation; this would be in conjunction with Avista and their ability to implement the power grids in a timely manner.
- Grading and subgrating: around 75,000 square feet.
- Asphalt / concrete: around 50,000 square feet.
- Control center: this would be needed to gather the data to run the system as well as for reporting requirements.
- Lay pipes: this would be a continuous process as we lay more pipes throughout the landfill as it grows. We currently have pipes to integrate but we would need to purchase more to complete the project.

Based on our current candle stick flare gas collection system data, we can assume that the energy produced once installed would be enough to power the entire facility plus 200–300 homes. As the landfill grows, so does the energy output.

One of the milestones for this program would be to have the facility designed and permitted. After that we can do grading, subgrating, and asphalt for equipment to sit on. The next milestone would be the installation of the correct power grid equipment to accept the excess power we generate. Once those are done, we can implement the equipment. This would be rerouting the existing pipes, adding new ones, and installing the gas conditioner as well as the microturbine. The control center would need to be installed, as would any tracking software on our computers. We would also need to establish a working relationship with Avista and decide how much we have to do on their end to make it all work.

Potential delays could be power. Depending on where we put our facilities on the property, power may need to be installed in that location. This takes some time, and the type of electrical infrastructure required to collect energy differs greatly from simply redirecting a power line. Another holdup we could potentially experience would be a delay in the gas conditioner and the microturbine. These are very specialized pieces of equipment that are made to order and have a long wait time. Depending on when those pieces are done, we can start with the land preparation and the power setup while the equipment is being made. All greenhouse gas emissions would be affected by these risks because, without the collection system, we would continue to use open flares, which are not as efficient as microturbines.

## **Demonstration of Funding Needed**

### **PROJECT 1: Compost Facility**

An organic facility is something that we have tried to get funded for years. We recently applied for the Recompete Pilot Program grant, which enables communities to significantly increase infrastructure and connections to good jobs. This grant had over 550 applications, and unfortunately, we were not one of the chosen proposals.

In the past we have gotten grants that have portions of the funds available towards organics, but in the form of outreach and education. These funds would not be enough to finance the building portion of the project but would help once the facility is established with education and outreach.

The Inflation Reduction Act is an amazing tool to help with the struggles we face in Stevens County. Unfortunately, because of how the system works with reimbursements and tax breaks, it isn't enough to fully fund the composting facility project. We hope to be part of the inflation reduction tax credit in the future to help offset operation costs and pay for maintenance and upgrades to the facility. Structuring our budget this way makes the most sense for us as a county because, with the limited income from our disadvantaged county, it's hard to find the funds to implement a program of this size and cost.

With all that being said, it's important to look at the need for this program with our compostable waste projections listed below.

## **COMPOSTABLE WASTE PROJECTIONS**

Using a ten-year exposure time, we can see that Stevens County Landfill has taken in a total of 4,031 tons of compostable waste from 2014 to 2023.

Stevens County Landfill does not currently separate food wastes and other compostable waste materials due to not having a green waste program. These wastes are categorized as MSW waste and are not separately tracked or separated.

COMPOSTABLE WASTE BY YEAR				
YEAR	LBS	TONS	CHANGE	% CHANGE
2023	1,314,440	657	87	13%
2022	1,141,440	571	230	40%
2021	682,380	341	-32	-9%
2020	746,800	373	94	25%
2019	558,080	279	-206	-74%
2018	969,880.00	485	153	31%
2017	664,780.00	332	-277	-83%
2016	1,218,280.00	609	436	72%
2015	347,140.00	174	-35	-20%
2014	418,020.00	209		

Therefore 4,031 tons is a very conservative number to work with.

Looking at these numbers you can see an overall upward trend with a spike around 2016 which can most likely be attributed to major fires in our Tri-County area and the subsequent clean up and fire abatement

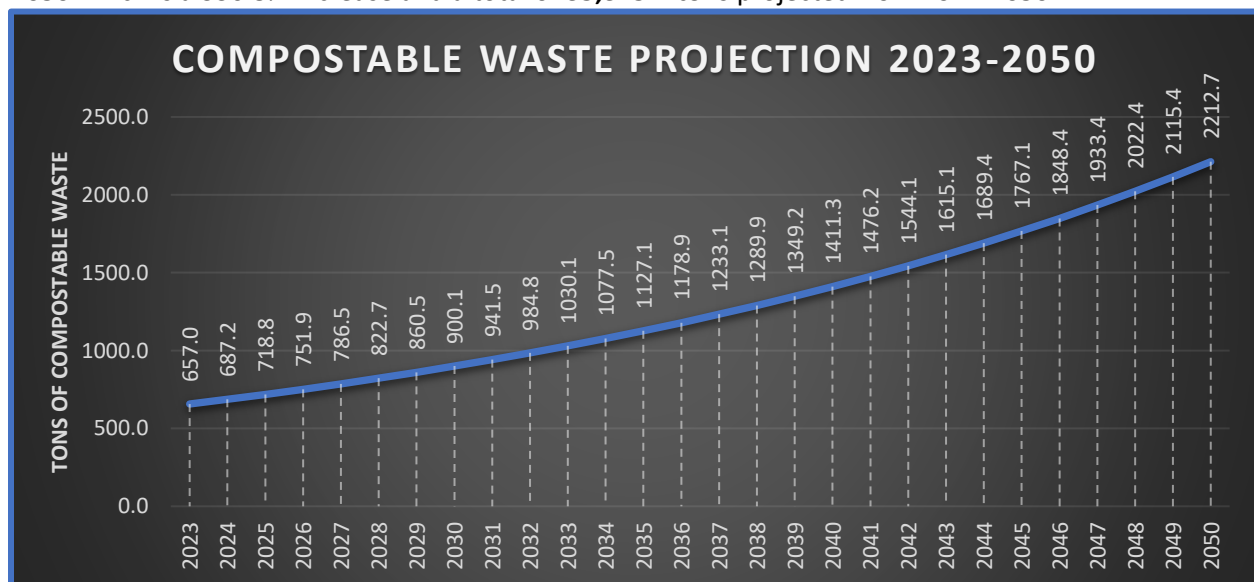


efforts the following year.

The mean average of change over the ten year period is 13%, which is a sharp incline further illustrated by a 23% increase in the last five year period (2019-2023) over the previous 5 year period (2014-2018).

Using the more conservative 23% change over the two 5 year periods we can arrive at a 4.6% per year rate of change for projected growth.

Doing so projects an increase from **657 tons** of compostable waste in **2023** to a projected **2212.7 tons** in **2050** which is a 336.8% increase and a total of **35,375.1 tons** projected from **2024-2050**.



Another pertinent factor to look at is the ratio of compostable waste to non-compostable waste going into our landfill. If we look at the last 5 years, we can see a sharp rise in compostable content in our annual waste in place. From 2019 to 2023 it has more than doubled rising from .89% of all waste in the landfill to 1.84% of all waste placed in the landfill.

YEAR	NON-COMPOSTABLE WASTE (TONS)	COMPOSTABLE WASTE (TONS)	TOTAL WASTE IN PLACE (TONS)	% COMPOSTABLE
2023	35,142.33	657.78	35,800.11	1.84%
2022	39,467.53	572.36	40,039.89	1.43%
2021	34,692.08	341.19	35,033.27	0.97%
2020	36,719.61	373.40	37,093.01	1.01%
2019	30,916.96	279.04	31,196.00	0.89%

In summary, using very conservative numbers we can see an upward trend not only in the amount of compostable waste being landfilled but in its proportion to other wastes. Removing this waste from the landfill stream and composting it would not only save an ever-increasing amount of space in our landfill but would also remove an ever-increasing source of greenhouse gas from our waste stream as well.

## **Project 2: Microturbines**

In Stevens County, we have used candle stick flares for around three years. These flares work well at destroying landfill gases, but they're not great for the environment and don't give us the opportunity to create renewable energy.

A new system costs millions, and saving millions takes a lot of time. The recompute pilot program grant, as mentioned above, also included the plans to make this microturbine project happen. Unfortunately, we were not one of the chosen applicants.

We have also considered going for a USDA Rural Development Loan, but that would be after we have exhausted all the funding and grants, we can apply for. The inflation reduction act would be a great addition to the funding from this grant because it saves us money from the grant to use later for things like equipment repair and replacement, infrastructure upgrades, raises, and so much more. The inflation reduction act, however, wouldn't be enough to fund the entire project.

The biggest reason we have not been able to get funding for this project is due to the fact that there has not been funding available until recently. Now that there are more opportunities for greenhouse gas emission grants, we will be applying for those.

## **Transformative Impact**

### **Project 2: Microturbines**

When we talk about the transformative impact, we should start with our microturbine project. This project would be one of the first in our area to turn landfill gas into renewable energy. Microturbine technology isn't widely adopted in Washington State, and the impact it would create for our facility



would be exponential. Based on the amount of gas we collected at the infant stage of the landfill, it's enough to power our facilities plus 200–300 homes. As the landfill grows, so does the gas production and the energy create from it. The way we plan to set up this system would be to create a working relationship with Avista. They would take the excess power we generate and give us credit for the difference between the usage at our facility and the power produced. Avista gives priority to renewable energy, and since we produce that, it's almost guaranteed that we would get credits from them every month. With the extra income from Avista, we would be able to use those funds to pay for maintenance on the microturbines, compost system, and other equipment. We may also be able to keep our tipping fees low and not raise them nearly as often. This saves our community a lot of money in the long run because they won't have to pay outrageous fees for disposal, whereas if they were to go to another facility, they would pay significantly more. Depending on the impact of this system, we could do even more, such as education and outreach about the program and why it is good for the community as well as the environment. We could supplement income from the microturbines to our recycling facilities or offset the costs of organic disposal. This program would give us the financial freedom to create real change in our disadvantaged community, and the possibilities that it creates are . We hope that by getting this grant and establishing this technology, it will show other small landfills that it is possible to create many avenues for positive change.

### **PROJECT 1: Compost Facility**

The impact that a composting facility would have on our community would definitely be transformative. If the finances allow, the composting facility would be priced significantly lower than our garbage rate. Doing this incentivizes the public to separate their loads to save as much money as possible. If we are able to power the facility with the funds from our microturbine project, we would be able to lower the price of organic disposal even more. Another way this program creates change is by providing clean, usable compost for our community's gardens and landscapes. This cuts down on costs for the public and creates an affordable option for the lower-income members of our community. If given this grant opportunity, we would become the first public organic disposal sites in the Northeast section of Washington State. Creating this facility would not only help our residents, but give other counties outlets for their organic waste, saving them money on transportation costs. The last way this would create a transformative impact would be through cleaner air due to better diversion. When we compost correctly, we eliminate most greenhouse gas emissions from the equation, which helps our county stay healthier, happier, and compliant. There are only a few locations in Washington State where they have implemented the type of composting facility we plan to build. We would be the very first location to offer these services in the Northeast part of Washington State. These facilities are highly sought-after because they do most of the work and science for you. Composting, without a doubt, is a science, and Green Mountain Technologies has spent many years perfecting that science. Being able to run the composting facility with little knowledge of the science behind compost is important because it gives our employees time to learn about the science behind composting while they work with it. Doing it this way allows us to provide technical training to employees on applicable problems they would see in day-to-day operations.

### **Magnitude of greenhouse gas reductions 2025-2030**

**Table 11** shows the total emissions with no improvements, along with the emissions resulting from the implementation of the proposed grant funded projects. The net (total) reduction in GHG emissions is also shown. All emissions are given in CO<sub>2</sub> Equivalents for the period beginning in 2025 and ending in 2030.

**Table 11 – Emissions Comparison with and without Project Improvements (2025-2030)**

Year	LFG System Generation (Metric Tons)	LFG System Generation (Reduced) (Metric Tons)	Turbine Generation (Metric Tons)	LFG System Capture (Metric Tons)	Net Emissions (Metric Tons)	Net Reduction (Metric Tons)
	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq
2025	73,366	43,156	24	32,367	10,813	62,553
2026	75,246	43,620	24	32,715	10,929	64,317
2027	77,097	44,091	25	33,068	11,047	66,049
2028	78,921	44,568	25	33,426	11,167	67,753
2029	80,720	45,052	26	33,789	11,289	69,431
2030	82,496	45,544	27	34,158	11,412	71,083
<b>Total</b>	<b>467,844</b>	<b>266,031</b>	<b>150</b>	<b>199,523</b>	<b>66,658</b>	<b>401,186</b>

The reductions listed above would be permanent.

### **Magnitude of greenhouse gas reductions 2030-2050**

**Table 12 – Emissions Comparison with and without Project Improvements (2025-2050)**

Year	LFG System Generation (Metric Tons)	LFG System Generation (Reduced) (Metric Tons)	Turbine Generation (Metric Tons)	LFG System Capture (Metric Tons)	Net Emissions (Metric Tons)	Net Reduction (Metric Tons)
	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq	CO <sub>2</sub> Eq
2025	73,366	43,156	26	32,367	10,815	62,550
2026	75,246	43,620	27	32,715	10,932	64,314
2027	77,097	44,091	28	33,068	11,050	66,046
2028	78,921	44,568	28	33,426	11,170	67,750
2029	80,720	45,052	29	33,789	11,292	69,428
2030	82,496	45,544	30	34,158	11,416	71,080
2031	84,251	46,042	30	34,531	11,541	72,710
2032	85,987	46,547	31	34,910	11,668	74,320
2033	87,706	47,059	31	35,294	11,796	75,910
2034	89,410	47,579	32	35,684	11,927	77,483
2035	91,099	48,105	33	36,079	12,059	79,040
2036	92,776	48,639	33	36,479	12,193	80,583
2037	94,442	49,180	34	36,885	12,329	82,113
2038	96,099	49,729	35	37,297	12,467	83,632
2039	97,748	50,285	35	37,714	12,606	85,142
2040	99,390	50,849	36	38,137	12,748	86,642
2041	101,027	51,420	36	38,565	12,891	88,135
2042	102,659	51,999	37	38,999	13,037	89,622
2043	104,288	52,586	37	39,439	13,184	91,104
2044	105,915	53,181	38	39,885	13,333	92,582
2045	107,542	53,783	39	40,337	13,484	94,057
2046	109,168	54,394	39	40,795	13,638	95,531
2047	110,796	55,012	40	41,259	13,793	97,003
2048	112,426	55,639	40	41,729	13,950	98,476
2049	114,059	56,274	41	42,206	14,110	99,949
2050	113,542	55,905	41	41,928	14,017	99,525
<b>Total</b>	<b>2,468,174</b>	<b>1,290,239</b>	<b>886</b>	<b>967,679</b>	<b>323,446</b>	<b>2,144,728</b>

## **Cost effectiveness of greenhouse gas reduction measure**

**Table 13 – Cost Effectiveness Comparison of the Proposed Reduction Projects (2025-2050)**

Ending Year	Net Emissions Reduction (Metric Tons of CO <sub>2</sub> Eq)	Cost	Cost Effectiveness (\$/Metric Ton)
2030	401,168	\$7,717,694	\$19.24
2050	2,144,728	\$9,461,718	\$4.41

Overall, greenhouse gas emissions will be reduced by an estimated 86% for the 2025 to 2030 timeframe and an estimated 87% for the 2025 to 2050 timeframe. Additionally, the projects implemented will continue to function and minimize greenhouse gas emissions for years into the future as the landfill continues to expand to meet the disposal needs of the community.

### **OUTPUTS**

The first output that we should focus on would be diversion numbers. By creating an organic facility, we are able to save landfill space, allowing us to keep our rates lower for longer. In addition to that, the rates for the organics facility would be lower than garbage rates, incentivizing the public to separate their loads.

The Second output would be employment. With the installation of these facilities, it takes employees to not only build it, but to work there once its ready to be operational. We plan to hire consultants, engineers, contractors, subcontractors, etc. as well as 2-3 full time employees once the projects are completed.

The third output would be renewable energy. We will install a microturbine at our facility to capture landfill gas to generate electricity, something we have never done before. Doing so allows us the potential to create revenue off landfill gas, further reducing our environmental impact and reliance on traditional energy sources. This innovative approach not only benefits the environment but also provides an additional revenue stream for our organization.

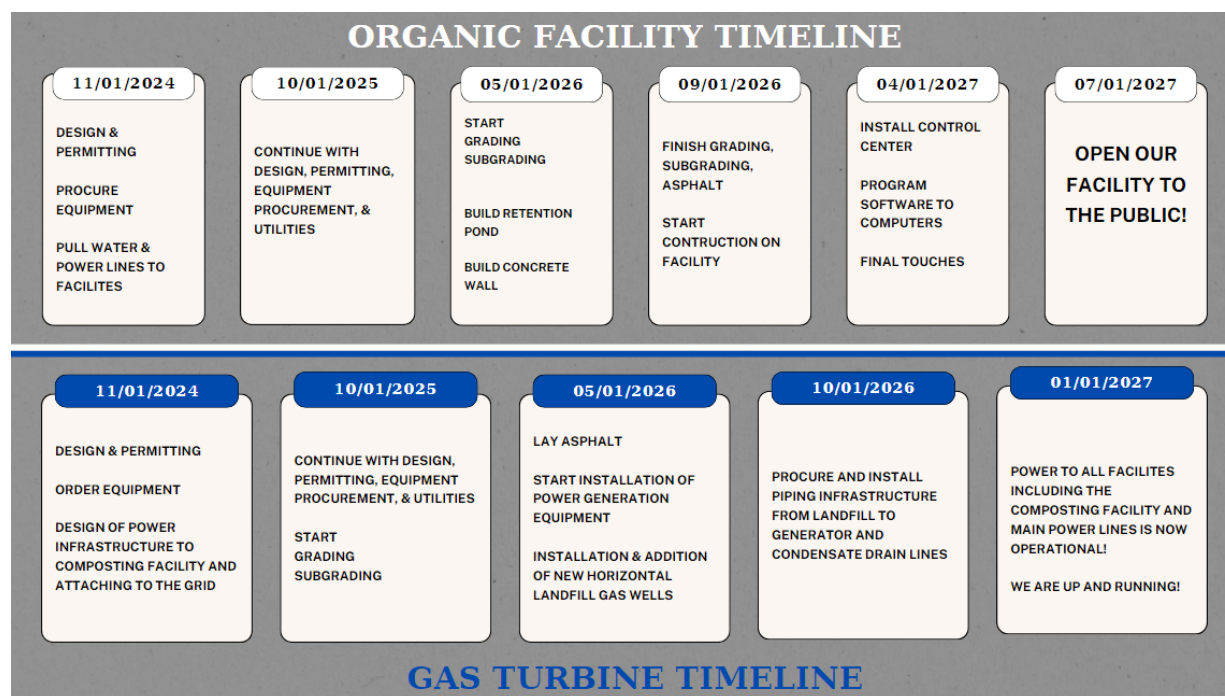
### **OUTCOMES**

Some of the outcomes from creating the organic facility would include increased organic loads due to the incentive to separate loads due to reduced costs and improved overall waste management practices within the community. This would lead to a decrease in landfill waste and a potential increase in the production of organic fertilizers for local agriculture. This is a win-win for everyone. The public saves money by separating loads, while also making the landfill last longer because of that diversion. Not only that but local farmers benefit from having access to organic fertilizers, leading to potentially higher crop yields and healthier produce for consumers. This creates a sustainable cycle of waste management and agricultural production that benefits the entirety of Stevens County.

Another outcome would be our employment opportunities. We would provide full time union covered positions to 2-3 employees. We would also pay prevailing wages for any and all workers who have a part in the project, from engineers to road crews, construction companies, etc. This access to work would boost our local economy and create meaningful careers. Furthermore, the establishment of these

employment opportunities would also contribute to the overall growth and development of our community by providing stable and well-compensated jobs. This would not only benefit the individuals directly employed, but also have a ripple effect on other businesses and services in the area.

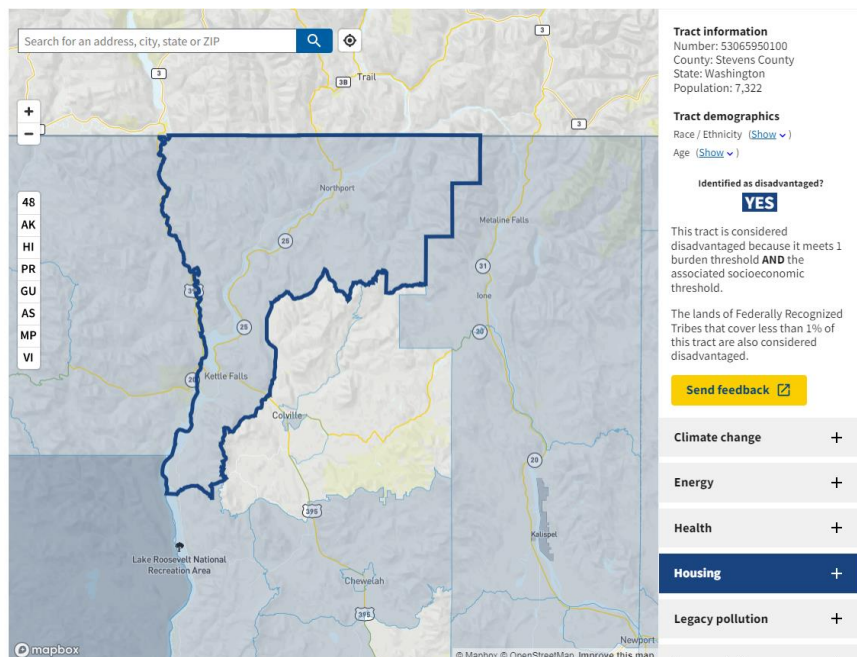
The last outcome would be power accessibility. If given the opportunity to implement the greenhouse gas reduction measures proposed we would be able to power the entire landfill facility, including 1 office, 1 scale house, 2 workshops, a composting facility, and more. With the excess power generated we will be able to use those funds to continue our programs, implement others, pay for equipment repairs and replacements, facility upgrades, etc. All in all, the ways our organization would grow with this grant would be exponentially beneficial for our disadvantaged community.



### Community benefit:

Incorporating the microturbine technology into our facility doesn't seem like it would do much for the community, but that's untrue. Installing the microturbines gives us the ability to create income from hazardous emissions that negatively affect our atmosphere. With that income, we plan to keep our landfill and composting fees as low as possible for as long as possible for the community. Stevens County is severely disadvantaged in comparison to a lot of areas, but specifically income. The United States Census Bureau shows that our income in Stevens County averages \$62,381, while the state average is \$91,306. Having such a large gap in those numbers is hard to budget for in the current economy. Being able to eliminate a place of worry for our residents by ensuring that our tipping fee and compost rates will stay significantly lower than most of the state would help out tremendously for our residents. Another way that the community would benefit from our grants would be from the jobs created by our proposed programs. The microturbines would need a full-time mechanic to ensure that there aren't issues with the equipment needed to generate electricity. We would also hire businesses in the community to prep our land and get it ready to place equipment on. The same goes for our composting facility, but that project would require a lot of prep work and land conditioning, which provides lots of

jobs, even if they are temporary. The composting facility would have at least 1–2 full-time employees when established. The Solid Waste Department in Stevens County were underpaid when compared to the same jobs in different counties. Over the last two years, our organization has been on a mission to ensure that all current and new positions are paid a state average for their position to help eliminate some of the economic struggles we face with income. This mission would also include engineers to road crews, construction companies, etc. Improving the income of our county employees and those who do work for us doesn't help the entire county, but we can make sure that the areas that we can affect in a positive way are treated as priorities. Another way that our programs would help the community would be in the form of community events. For example, we plan to do 1-2 free compost days once the facility is established. We may do this yearly or quarterly, depending on the response from the public and the cost-effectiveness of the idea. We would love to fix all the problems in Stevens County, but it's not possible. All we can do is make change on things we are able to change, and that is something we do well.



## Community engagement:

One of the best ways we keep our community informed is with our Solid Waste Advisory Committee (SWAC). The SWAC Committee is made up of representatives from the incorporated cities and towns of Stevens County, business representatives, agricultural representatives, local government representatives, health department officials, the Department of Ecology, citizens at large, and public interest groups. The role of a Solid Waste Advisory Committee is to provide informed advice to the legislative and administrative bodies of the county or city regarding waste management issues. We hold quarterly meetings to discuss the current issues, upcoming events, legislation, etc.

One way we can improve our community engagement is through our website. Currently, our website is not finished, and because of that, we struggle to keep everyone informed about our current events and general information. I would like to grow our website to become a better source of information for our community and somewhere they can go to have their questions answered. In addition to that, we would

like to create a Solid Waste Facebook page to further connect with the community and keep them informed about what we see and do here at Solid Waste.

Community engagement would be crucial to the longevity of our facility. We see hundreds of customers a day, and we take their opinions seriously. Our community engagement in greenhouse gas monitoring would be fairly minimal in terms of outreach. We would focus more of our efforts on education. This would be by getting the word out about our gas collection system, how it works, and how it benefits the environment and the county. Educating the community about why we make the choices we do is important because we want them to feel like the system is built for them. Everything that we do to improve our facilities is in the interests of the customers, making their experience as seamless as possible. Nobody likes to spend hours at the dump, so when we change things, we make sure that everything we do enhances the experience for our community while also ensuring that the system functions properly for us.

Organics, specifically, would need engagement in many forms. Some forms would be to get the word around that we have the facility in the first place to ensure that it's used to its fullest potential. We could do this by sending out informational flyers in the mail or online. Additionally, we would like to organize educational training events for organics in our local communities and schools to promote awareness and understanding of composting and waste management practices. These events would aim to educate individuals on the importance of reducing waste, recycling, and the benefits of composting for soil health and nutrient cycling. By involving the local community, we can foster a culture of environmental responsibility and encourage sustainable practices that extend beyond the landfill facility itself.

#### **Job Quality:**

All county jobs are sought after, and it's because they aren't available often and the benefits they provide are unmatched compared to other companies in the county. In solid waste specifically, we offer a lot of benefits and training opportunities to those who are interested in them. This is one of the reasons why solid waste jobs aren't available very often. Longevity of employment pays off exponentially compared to frequent new employees. We feel that having well-paid and trained employees pays off, and we are committed to continuing with that. For example, we offer both 8- and 24-hour hazardous waste training certificates, as well as flagger courses, first aid certification, cash handling training, etc. For those wanting to, the county will even pay for CDL school. For most of our positions, there are countless opportunities to grow and learn. We value knowledge, and having the opportunity to provide that for our employees is something we prioritize. When your employees know that they are paid well, valued, and have room to grow, they stay. Any new positions created with this grant would be treated and valued the exact same way. In addition to all the benefits we get, we are also protected by our union. Each member of Solid Waste, excluding the management team, is immediately a union member when starting a job for Stevens County, as each of those jobs are union positions. Within the Solid Waste Division, our union does a great job at making sure each voice is heard and concerns are taken seriously. This is another reason why we have such long-lasting employment. Solid Waste has specifically done a lot of work within the last two years to ensure that every single one of our employees gets paid the state average for their position. Previously, we were slightly underpaid, but both management and the union recognized there needed to be a change, and they put in the work to implement it.



## **Past Performance**

### 1. Local Solid Waste Financial Assistance Grant (LSWFA)

- **Project Title** – P&I Stevens County PW
- **Assistance agreement number** – SWMLSWFA-2023-StCoPW-00211
- **Federal funding agency & assistance listing number or CFDA** - State of Washington Department of Ecology
- **Brief description of the agreement:** The LSWFA grant allows our employees to operate the material recovery center at the Stevens County Recycle Center in Colville as well as recycling locations at Stevens County transfer stations, and various other Stevens County drop box locations to collect designated recyclable materials from residents since Stevens County is not served by curbside collection. Stevens County Landfill is also the drop off location for recyclable materials.
- **Contact from organization that funded the assistance agreement.**

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### 2. Community Litter Cleanup Program Grant (CLCP)

- **Project Title** – Stevens Co PW
- **Assistance agreement number** – SWMCLCP-2325-StCoPW-00108
- **Federal funding agency & assistance listing number or CFDA** – STATE OF WASHINGTON DEPARTMENT OF ECOLOGY -
- **Brief description of the agreement:** The Community Litter Cleanup Program is used to fund our cleanups for illegally dumped garbage and keep our county roads clean. Within those funds, it also includes reimbursement for adopt-a-roadway participants as well as opportunities for youth group fundraisers.
- **Contact from organization that funded the assistance agreement.**

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The Stevens County Solid Waste Department has applied for and managed grants for over 30 consecutive years.

One grant that we have here, is the CLCP grant, which stands for Community Litter Cleanup Program. This grant allows us the funds to keep our roadways clean, by picking up thousands of pounds of illegally dumped garbage each year. In the last five years, the CLCP grant has allowed us to pick up over 91,000 pounds of illegally dumped garbage. Not only that but we have given over 1,400 community service hours to those who need them. Our next move with this grant would be to create and manage a youth litter cleanup program. In the Summer, we plan to hire 3-6 students ages 16-18 (with an adult supervisor) to work on the roadways of our county, collecting litter. This program teaches our students about the process of getting a job, complete with a resume/cover letter and an interview. The pay for these jobs will be around \$18/hr. which helps provide them with good money for their hard work, as this is not an easy job. 2024 is our pilot program year, so if things go well, we may be able to expand the program, helping out the youth while also helping our community roadways. All in all, the CLCP grant has been a tremendous help for our organization, and we hope to continue the grant for as long as possible.

We also have the LSWFA grant, which stands for Local Solid Waste Financial Assistance and provides our organization the funds to operate our recycling program. With these funds, we pay for two full time employees at our recycle center. Tim and Ed work very hard at our facility, and they are able to process over a million pounds of cardboard each year consistently, which generates tens of thousands of dollars that we put back into the program. In the last five years, our recycling program has processed over five million pounds of cardboard, generating over \$100,000 for our organization.

### **Reporting requirements**

Stevens County Solid Waste has successfully submitted every report required for all grants. This is quarterly for both the LSWFA and CLCP grants we have now. Each year we look at the program and see what needs to be done to meet those reporting requirements and make adjustments as needed. This year with our youth crew we plan to put a lot of emphasis on roadways and illegal dump cleanups to help us meet the goals we have placed in the agreement.

### **Staff Expertise**

The Stevens County Landfill was built in 1992 and was operational by 1993. This started with a single cell, which has since grown to almost three cells. Those cells make up a total 33.88 acres of landfill and more to come with an organics cell. When the cell opened in 1993, we had around 5-8 staff members in our department. Since then, we've grown to 29 staff members as we have broadened our services to accept more waste. This growth has not come without challenges, but our admin team has done great work with taking on the challenges as they come up. Our admin team consists of five individuals.

Kevin Dionas is our Solid Waste Manager, and he has been working for the Solid Waste Department for over 12 years. Kevin started as a landfill operator and worked his way up to Solid Waste Manager. He is a great leader, and always finds a way to make sure that the project is finished when it should be. Kevin handled the reporting for our grants for over five years before it was handed off to our program's coordinator, so he's well versed in grant management as well. He works hard to oversee the department, and part of that is to stay updated on the legalities of our profession. This includes organic diversion, greenhouse gas emissions, water testing, and more. Kevin makes sure that we are updated on the laws and that our organization stays compliant with them. This is a big task, but also just a fraction of the work he does here in Stevens County.



Roger Kaiser is our Assistant Solid Waste Manager, as well as our Hazardous Waste Coordinator. Roger is excellent at his job; his 20+ years in Solid Waste and twelve years at the City of Spokane Waste to Energy Facility have given him the needed experience to thrive in his position. Roger oversees our hazardous waste program as well as greenhouse gas monitoring and water testing. Not only that, but he also conducts North American Hazardous Materials Management Association (NAHMMMA) certification classes to our staff and other counties on how to manage hazardous waste in their own areas.

Ash Comer is our Planning and Development Manager, and he plans for our further development. When projects are being proposed, he is the one making those ideas into real plans. He has taken on many projects with the county, one of which being our facility takeover. The takeover consisted of our three transfer stations and recycle center, which were previously contracted out by a third party. We took back control of those facilities, staffed them ourselves, and saved over \$350,000 each year by doing so.

Brandi Lopata is our Financial Coordinator, and she handles the finances. This includes statements, taxes, distribution of funds, customer complaints and so much more. Brandi also oversees the day to day operations at our scales. This includes eight employees as well as the finances for those four facilities. But this is nothing for Brandi, as she has over fifteen years of extensive knowledge and experience in accounting and management.

Olivia Young is our Programs Coordinator, which is also me, hello! I handle the departments programs which include recycling, litter control, organics, and outreach/education. I also apply for grants! My job is to oversee our programs, and ensure they are running in the direction we want them to. Two of my grant funded programs are listed above and show a small part of what we do here. My current goal is to find a way to fund our organics facility as the need only grows with time and the regulations only get stricter. This program is essential for the growth of our department and I'm confident that my team and I have the ability to execute this project if given the chance.

Green Mountain Technologies is a business located in Bainbridge Island, Washington, that has specialized in designing and building composting solutions since 1992. We have partnered with them to design and build our facility and have the upmost confidence that they can do the job right. They have a team of experts who work with clients to create customized composting systems that are efficient, cost-effective, and environmentally friendly. Their innovative approach has helped businesses and organizations across the country reduce waste and minimize their environmental impact. We trust that Green Mountain Technologies' experience and dedication to sustainability make them a reliable choice for any composting project. Their proven track record of success in creating effective solutions sets them apart as a leader in the industry.

Cal Microturbine is another business we have partnered with. They provide solutions for greenhouse gas capture and energy generation that are cutting-edge and reliable. Their commitment to sustainability and technological advancements makes them a valuable partner for any project focused on reducing carbon emissions and increasing energy efficiency. Cal Microturbine does business around the globe and has had over 8,000 microturbines installed worldwide with millions of hours of operating time, proving their expertise and reliability in the field. Their dedication to innovation and environmental responsibility makes them a top choice for businesses looking to reduce their carbon footprint while increasing energy efficiency.

All in all, the organic disposal facility would have a tremendous impact on our community and surrounding counties. Not only would it reduce landfill waste and promote sustainability, but it would also create jobs and stimulate the local economy. Additionally, the facility could serve as a model for

other communities looking to implement environmentally friendly waste management solutions. The microturbine project would provide us with the financial freedom to invest in upgrades and improvements to our organization, leading to increased efficiency and overall success. This project would not only benefit us in the short term but also set a positive example for other counties looking to incorporate sustainable energy solutions into their operations.

Thank you for taking the time to read our proposal, and we hope to be considered for funding to make this project a reality. We are confident that the implementation of these projects will not only benefit our organization but also contribute to the larger goal of promoting sustainability and environmental responsibility in our underdeveloped part of Washington State.