



DANE COUNTY DEPARTMENT OF WASTE & RENEWABLES

County Executive
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Director
John Welch P.E.

TO: Personnel & Finance Committee
FROM: John Welch, PE
Director Department of Waste & Renewables
DATE: October 24, 2019
RE: 2020 Budget Summary and 2019 Accomplishments

The Department of Waste & Renewables (Department) has proposed a 2020 budget that complies with the County Executive's budget directives. It is important to note that the Department operates as an enterprise fund, meaning no GPR funds are used for any Department budget needs.

The Department was formed in January 2019 and as such, it has experienced significant change and growth in 2019. In addition to the creation and re-organization of the Department, the team made substantial progress on a number of major projects including commissioning of the County's Renewable Natural Gas (RNG) facility in April, 2019. This memorandum highlights key accomplishments of 2019 including progress made on equity and inclusion and sustainably and discussion about the challenges and opportunities that the Department will face in 2020.

Equity and Inclusion

In September 2020, the Department submitted a draft Equity and Inclusion Work Plan to the Tamara D. Grigsby Office of Equity and Inclusion. The draft Work Plan sets a number of goals related to organizational commitment, staff development, workplace culture, program innovation, collaboration, and resource mobilization. The Department plans to review the proposed Work Plan with the Racial Equity and Social Justice (RESJ) Committee in early 2020 and finalize our goals.

WANT YOUR STUDENTS TO LEARN ABOUT WASTE AS A RESOURCE AND SEE WHERE WASTE GOES?

ABOUT OUR FACILITY
The Dane County Department of Waste & Renewables operates an active landfill, household hazardous waste collection facility (Clean Sweep), construction and demolition waste recycling facility, and renewable gas plant at our location at 7102 USH 12 in Madison, WI (across from Yahara Hills Golf Course). Each year, we host nearly 750 students (of all ages) for tours of our facilities. Our tours offer an excellent opportunity for lessons in environmental stewardship, science, engineering, and technology.

250,000 TONS of waste is responsibly landfilled each year. This is equivalent to the weight of over 40,000 elephants!	3,000,000 GALLONS of renewable vehicle fuel will be produced each year from landfill gas. This is enough to power 6,000 cars for a year!
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BUS FEE WAIVER PROGRAM
The Department of Waste & Renewables will pay for transportation costs (up to \$250 per group) for schools that find transportation fees a barrier to visiting our site. The bus fee waiver is subject to the need of the school and preference will be given for schools with over 40% of students approved for free and reduced meals.

CONTACT US
Email jwelch@dane.wisconsin.gov for additional information about the program and to set up a tour.

Although the Department recently formalized our Equity and Inclusion Work Plan, the Department has been proactively working to increase our efforts in this area for some time. In 2019, the Department continued to foster opportunities for education through tours and guest presentations and we strive to increase accessibility to these learning opportunities to students of all backgrounds.

Each year, the Department provides tours to over 800 individuals, the majority of which are students. Although we reach a large number of students, the Department recognizes we can do a better job reaching a broader set of schools and organizations. One way we hope to achieve this is through promotion of our Bus Fee Waiver program.

Through the Bus Fee Waiver program, the Department will pay for transportation costs (up to \$250 per group) for schools that find transportation fees a barrier to visiting our site. Special consideration will be given for schools with a high population of students with free or reduced lunch. Information about this program was distributed to superintendents around the County via a flyer and information about the program will be included on the Department's website that is currently under re-development.

The Department is also partnering with the Wisconsin Energy Institute and has partnered on an application for a grant from Energy to Educate. We hope this grant will allow us to collaborate with the Institute to develop pre and post lesson plans for students visiting the site and allow us to tap into the Institute's network of educators.

We have also included an additional \$40,000 in our budget for education of the community and our staff, which aligns with our equity and inclusion initiatives focused on building a strong and diverse workforce and increasing engagement with students and the community.

In addition to our outreach efforts, we work are working to diversify our staff. We continue to partner with the County's Department of Public Works, the Urban League, and the Latino Academy of Workforce Development to offer our commercial drivers license (CDL) program. The goal of this program is to encourage minority members of our communities to train for and obtain their CDL which creates a pathway for permanent employment with the County.

Other steps the Department has also taken to diversify our workforce include reviewing job postings with Employee Relations and OEI to eliminate unnecessary requirements and certifications, increasing recruiting efforts to minority communities, and diversifying our hiring panels.

Major 2019 Accomplishments

RNG Facility Construction and Commissioning

Construction of the RNG plant began in summer 2018 and nine months later, pipeline quality natural gas was being produced and injected into ANR's pipeline. Since injection began in April, 2019, the RNG facility has converted landfill gas into hundreds of thousands of gallons of renewable vehicle fuel, which translates into significant GHG emissions reductions. In addition to the construction of a facility to produce RNG from landfill gas, a RNG offloading station was constructed so that other RNG producers, like manure digesters, can access the high BTU pipeline. Commissioning of the RNG offloading station is currently underway and is expected to be ready for use by late 2019. The Department is currently negotiating with several digester companies for use of the offload station.



Stage 4 and 5 Final Cover Installation



Construction of approximately 34 acres of final cover was completed on inactive phases of the Rodefild Landfill. The final cover system includes layers of compacted soil, a geosynthetic clay liner, and plastic geomembrane which minimize intrusion of water into the landfill and the amount of landfill gas that is released to the atmosphere. This major capping project will reduce the amount of leachate that is generated by the landfill and increase efficiency of the landfill gas collection system

reducing GHG emissions.

Native Prairie Planting

As part of the final cover installation for Stages 4 and 5, a native pollinator friendly seed mixture consisting of native grasses, forbs, and legumes was used to create habitat for butterflies and other pollinators. We are the first landfill in Wisconsin to install a large scale prairie cap. The seeding of nearly 100 acres of prairie on the final cover and at our clay borrow site occurred through the spring and summer of 2019. Although this native species seed mix takes longer than standard seed mixes to fully establish, the cover is coming in nicely and it will leave a habitat for pollinators and a potential place for recreation for generations to come.

Increased Control of Gas Migration and Continued Electrical Generation at Verona

A secondary landfill gas migration control system was installed at the closed landfill site in Verona. The new system gives the County greater ability to detect and control landfill gas migration from the site which minimizes risks to safety and the environment. Additionally, the landfill gas powered engines at Verona continue to offset nearly 100 % of the electrical needs at the County owned Badger Prairie Health Care Center campus.



Landfill Operations

The landfill operations crew continually works to improve efficiencies, maximize resources, and improve safety at the active Rodefild landfill site, Construction and Demolition Recycling Facility, and Clean Sweep. Various changes in filling and compaction have been implemented which have resulted in a 15% increase in waste compaction rates. Increasing compaction

maximizes site life and ensures environmentally sound and economical waste management options for the County.

Our Work on Climate Change

The RNG project was recognized by the American Association for the Advancement of Science (AAAS) as part of the organization's national "How We Respond" initiative that highlights ways communities across the United States are using science to respond to climate change. AAAS featured the project in a profile story that is available on their website:

<https://howwerespond.aaas.org/community-spotlight/dane-county-turns-waste-into-profit-and-reduces-greenhouse-gas-emissions/>

In 2019, the Department collaborated with the Office of Energy and Climate Change to draft portions of the Dane County Climate Action Plan which will be released in the coming months. The conversation about climate change directly affects the Department and we are proud to be an active part of the discussion and solution. Our work on climate change will continue to focus on renewable energies such as RNG and solar and the transition from traditional waste management programs to *resource* management systems in a circular economy which are aimed at eliminating waste and the continual use of resources.

The County Executive's office with the City of Madison Mayor's office, recently formed a group of municipal representatives ready to take action on climate change and other environmental topics. This group, Sustainable Leaders Collaborative of Dane County, held their first formal meeting in August 2019. The Department has taken a leading role in the Renewable Fuel and Municipal Fleets working group to share about our experience transitioning to CNG vehicles and help interested municipalities do the same.

Challenges and Opportunities for 2020

In 2019, the Department experienced a lot of change and completed several major projects. With these accomplishments comes new sources of revenue for the County but additional operating expenses. In addition, it is no secret that the current Rodefild landfill has a finite site life. In 2020, we will start the final stages of horizontal liner construction (Phases 11 and 12) and the Department has already begun the process of planning for the future. In addition to \$6 million for the construction of Phases 11 and 12, the 2020 budget includes line items for design and permitting of a landfill expansion and money for the design, siting, and purchase of land for a new landfill.

We have seen waste acceptance rates increase at the landfill and compared to this time last year, we are up nearly 2%. We promote responsible waste management, recycling, and diversion of wastes banned from the landfill such as yard waste and electronics, but the economy, population growth, and other factors continue to result in increased waste acceptance rates at the landfill. As a result, we anticipate 6-8 years of remaining site life at the active Rodefild Landfill if no additional steps are taken.

There is potential for increasing the capacity of existing landfill but to facilitate this, the Department needs to initiate the landfill expansion siting and design process with the Wisconsin Department of Natural Resources. The current site could accommodate a vertical expansion or an increase of the height of the easternmost portion of the landfill. This option is beneficial because it does not expand the footprint of the current landfill and minimizes the impact to

neighbors and the environment. The siting process is an extensive process that includes various opportunities for public comment and can typically take up to 5 years to complete. Considering the amount of airspace remaining, now is the time to begin this process and the 2020 budget includes \$300,000 for the design and permitting of the vertical landfill expansion.

There is no guarantee that a vertical expansion will be approved and even if approved, the vertical expansion will only extend the life of the existing landfill by 3-5 years. With this in mind, the Department is also working to identify a new site, or a greenfield site, for the next landfill. The Department however, has much more in mind than just a landfill for the next site. The site will preferably be home to a Sustainable Business Park that will incorporate the concept of circular economies and waste as a resource.

There are several examples of this concept in various stages of implementation across the country, but technologies that could be feasible for our region include: composting, digestion, on-site recyclers and up-cycling and then as a last resort, landfilling. Renewable energy would be a large focus of the development and will undoubtedly utilize renewable natural gas but infrastructure could be built around solar and geothermal energies as well. The park would also be designed as a destination for environmental education just as the current landfill is and recreational uses for the surrounding land and inactive portions of the landfill site, either prior to or after development, would be a focus of the master planning efforts.

There are limited areas in Dane County that would be suitable for such a development due to the extensive siting criteria for a landfill so when a viable opportunity presents itself, the County will



need to be ready to make a land purchase. For this reason, \$12 million has been reserved in the 2020 budget for land acquisition and an additional \$2 million has been reserved for engineering and design.

With any business, there are some areas of uncertainty that create challenges. For the Department a couple of areas of uncertainty include the market for RINs, or the main source of revenue from the sale of natural gas from the RNG plant, and uncertainty in the markets for recyclables. At the time the 2020 budget was prepared, the RIN values were artificially depressed due in large part to the

number of RIN waivers the EPA Administration granted to small oil refineries. The 2020 budget includes significant revenue from the sale of RINs. This budget assumes that the price of RINs will rise in 2020, as our consultants predict. This revenue is our best estimate and could be greater or smaller than anticipated.

We anticipate Construction & Demolition recycling revenues will be down in 2020, due to reduced C&D volumes coming to our facility. A local C&D recycling company was recently purchased by a waste company from Illinois, and they have started to divert more C&D materials to their own recycling facility.

Recycling markets and the state of the recycling industry also impact the Department's budget. We charge fees for materials such as tires and shingles that cover our costs to send the materials

to a recycling facility. In 2019, our expenses for tire recycling increased so the 2020 budget includes an amendment to Chapter 41 of the Dane County Code of Ordinances and an increase of \$25/ton (from \$175/ton to \$200/ton) in the fees we charge for tires.

The Department looks forward to working with the County Board in 2020 as we continue to increase our engagement with our County's minority communities, take action on climate change, improve the way waste is managed in the County, and influence how waste is managed in the region.