CITY COUNCIL AGENDA ITEM NO. I.2
12/10/2024

SUBJECT: Receive update and provide direction on implementation of the Solid Waste Organics Diversion project.

DEPARTMENT: Public Works

STAFF: Casey Wichert, Director of Public Works
Vatsal Patel, Engineering Manager

TITLE/RECOMMENDATION

Receive update and provide direction on implementation of the Solid Waste Organics Diversion project, Capital Improvement Program (CIP) Project No. 542-54021.

FISCAL IMPACT

The Solid Waste Organics Diversion, CIP Project No. 542-54021 ("Project"), is included in the amended 2024/25 – 2028/29 CIP. The Project budget currently has $1,459,000 in approved funding. That funding has allowed phase one of the Project to proceed to the 30% design stage. The preliminary estimate for phase two of the Project now far exceeds staff's prior estimates, at a total cost of $116M - $158M, depending on which version of the Project is selected.

Provisions of the Inflation Reduction Act (IRA) would allow the Project to be eligible for an investment tax credit (ITC) of 30% – 50%. This could result in a cost savings of approximately $36.3M – $79.7M. However, based on the outcome of the recent national election, uncertainty exists about the future availability of the ITC. In the event the full ITC credit is not realized, or is not available at Project completion, the Solid Waste and Wastewater Enterprises would have to fund the extra $36.3M – $79.7M which would result in significant rate increases.

This Project would result in the production of renewable energy, which is estimated to generate annual revenue of between $4.8M – $5.6M from the sale of renewable natural gas. An additional revenue source estimated to be $1.3M – $2M annually would also be available from tipping fees generated by the acceptance of high strength organic waste from food manufacturers. These revenue numbers are also subject to some level of uncertainty.

The Solid Waste and Wastewater Enterprise rate studies adopted in 2023 included debt service costs for a $40M loan beginning in the third year of the studies. After

taking into account the ITC savings, the Project would need a loan of $68.7M – $73.2M, with annual debt service of$6.4M – $7.9M annually. At this level most, if not all of the annual revenue from the sale of natural gas produced by the Project would have to be used entirely for debt service. If the amount of revenue generated is not enough to cover the debt service, rate increases would be needed to meet the required debt payments.

The combination of tax credit uncertainty, significant short term borrowing costs and future revenue uncertainty greatly increase risks with the Project and likely make the Project infeasible.

Should this Project not go forward, there will be additional ongoing operational costs associated with hauling and disposal of organic waste, but there will be no change necessary to the approved Solid Waste rates. The debt service initially projected in the rate study is sufficient to cover the additional Solid Waste costs that would be incurred.

However, the Wastewater Enterprise would need to provide an additional $30M in funding to complete the installation of the biosolids dryers and pyrolysis equipment. This cost is much higher than anticipated due to delays and cost escalations associated with the Wastewater Treatment Plant (WWTP) Expansion – Phase II project. Staff anticipates developing a financing plan that would not impact rates until the next rate study (spring 2028) at which point a rate increase of approximately 2% per year of the study relating to these costs could be expected.

BACKGROUND

In January 2024, the City Council adopted a resolution authorizing City staff to enter into phase one of an agreement with W.M. Lyles Co. to develop the Project to the 30% design stage, which would allow for a guaranteed maximum price for the Project to be established.

When this decision was made, the revenues generated from the Project were anticipated to be well in excess of the debt service required to fund the project. Staffed worked with vendors, contractors, engineers, bond counsel, and financial consultants, and performed extensive analysis to determine the actual costs and implications of the Project. In the end, staff ultimately concluded the Project cannot be recommended due to the prohibitively high cost of financing and political uncertainty related to the continued availability of tax credits. That analysis is summarized in this report. It is important to note that a decision is necessary now because eligibility for the tax incentives are tied to a deadline of December 31, 2024.

Following up on work done in the Anaergia project Feasibility Study, which determined the most economic option to be one where the City combined the wastewater biosolids, the organic fraction of solid waste, the digestible portion of yard waste, and additional high strength organic waste from external sources, W.M. Lyles Co. and City staff have developed the Project to a point where there are three options for the final size, scope, and cost of the Project outlined below in the Cost Summaries section.

Project Overview

In 2016, California enacted Senate Bill (SB) 1383, which required the state to reduce organic waste (such as food waste, green waste, paper products, etc.) disposal by 75% by 2025. A number of jurisdictions, including Brentwood, were allowed to extend their compliance dates by creating corrective action plans. The purpose of the law was to reduce methane gas emissions: landfilling organic waste leads to its anaerobic breakdown, which creates methane gas, a "super pollutant" that contributes significantly to climate change.

This Project was conceived as the SB 1383 compliance option with the least impact to residents and a safeguard against future PFAS (per- and polyfluoroalkyl substances) regulations, with the added bonus of new revenues. The Project can be broken into three separate components:

1. Municipal Solid Waste (MSW) processing equipment. This is the new equipment that would physically remove the organic material from the garbage waste stream. It requires the construction of an expansion of the existing transfer station to house the new equipment.

2. Anaerobic digestion/biogas upgrading. This is a large tank and associated equipment where the organic material is stored, mixed, and processed to produce biogas, which is then cleaned and purified to meet natural gas quality requirements before being injected in the PG&E transmission line.

3. Biosolids dryers/pyrolysis equipment installation. This equipment is required to process the remaining biosolids after the digestion process is complete. The majority of this equipment has already been purchased as part of the WWTP Expansion project but installation/construction plans were delayed to determine if: a) additional equipment was needed due to the digestion process, and b) if the installation/construction would qualify for the ITC tax credit.

When the design process was initiated in January 2024, the estimated cost for the Project was $90M. During the design process, cost estimates escalated from $90M to $255M. It has since been determined that less additional biosolids dryers/pyrolysis

equipment are needed than originally anticipated, and other portions of the Project were modified in order to reduce the price of the Project. The current estimated cost for the entire Project is $157.8M, with a smaller version of the Project estimated to be $116.1M.

MSW Processing Equipment

This portion of the Project would bring the City's Solid Waste operations in compliance with SB 1383. This equipment physically separates the organic material from the garbage, processes it, and makes it suitable for digestion. The equipment necessary to do this requires: the existing Solid Waste Transfer Station to be enlarged (doubled in size), the construction of a new area for handling yard waste, the purchase of additional equipment (front end loaders and forklifts), and additional personnel to operate the equipment. This portion of the Project is $41.7M of the total Project cost.

Anaerobic Digestion/Biogas Upgrading

This portion of the Project is what converts the organic material to biogas. The production of biogas is critical, as this is the basis for the ITC credit. Without the digestion and biogas upgrading system, the new revenue from the renewable natural gas (RNG) sales would not be available. It is also the majority of the remaining total Project cost at $81.9M. The equipment associated with this portion of the Project also comes from the MSW equipment manufacturer, Anaergia. The anaerobic digestion system includes the installation of additional tanks and pumps and allows the City to receive high strength waste (HSW) from third parties. HSW is food waste that is beneficial to the digestion process, as it increases the biogas production, which in turn increases the revenue from RNG. As designed, the City would accept as much external HSW as necessary to create the maximum amount of RNG that can be exported to PG&E. The size of the PG&E gas line limits the amount of RNG that can be exported.

In addition to the revenue from RNG sales, the City can charge "tipping fees" to accept the HSW. Revenue from the tipping fees is expected to be between $1.3M – $2M annually assuming 10-15 trucks deliver HSW each day.

Biosolids Dryers/Pyrolysis Equipment

This portion of the Project is $32.2M and involves the installation and construction of biosolids dryers/pyrolysis equipment that has already been purchased as part of the WWTP Expansion CIP project. Tax consultants have confirmed this equipment would qualify for the ITC credit, provided it is installed along with the anaerobic digestion system. In addition to the $32.2M in installation costs, $19M has already been spent purchasing the biosolids dryer and pyrolysis equipment. The initial cost segregation analysis estimates 75% of the biosolids equipment would be eligible for the ITC

credit. When the equipment was purchased, the City also hired an engineer to design the construction and installation of the equipment as part of the WWTP Expansion CIP project. When the SW Organics Project was conceived, engineering design work for the biosolids equipment was paused in the hopes the construction would be eligible for the ITC credit and could be funded and constructed as part of the SW Organics Project. Since this has now been confirmed, it would result in an additional savings of $5.1M - $7.1M. The details of the ITC credit is explained in a later section.

New Revenues

New revenues realized from this Project would include RNG sales and HSW tipping fees.

RNG Volume	160,000 MMBTU/Year
$30/MMBTU	$4.8M/year
$35/MMBTU	$5.6M/year

HSW Tipping Fees	$0.10/Gal
10 trucks/day	$1.3M/year
15 trucks/day	$1.95M/year
20 trucks/day	$2.6M/year
25 trucks/day	$3.25M/year

While getting contractual guarantees for the revenue before the Project is initiated is not possible, there are drivers that provide assurances. The California Public Utilities Commission (CPUC) (through SB 1440 and CPUC decision 22-02-025) established biomethane procurement targets for PG&E. PG&E is procuring RNG to meet these targets. This Project helps PG&E meet the CPUC requirements. PG&E has indicated willingness to accommodate the Brentwood SW Organics Project and enter into an RNG purchase agreement. Typical agreements have 15 year terms, and current market conditions have established an RNG value of $30 - $35/MMBTU.

HSW tipping fees also have no guarantees and are a market-based decision for businesses that need to dispose of HSW as a waste product. The largest outlet for HSW is currently the Wastewater Treatment Plant operated by East Bay Municipal Utilities District (EBMUD) in Oakland. They currently charge $0.13/gallon for HSW. Offering disposal at a lower price than EBMUD would be a direct cost savings for businesses that need a disposal outlet. The City could offer a price of $0.10/gal, which is a lower price than EBMUD, and would be a direct cost savings for businesses that need an outlet for HSW. It is anticipated this cost savings could lead to ample demand for capacity in this Project.

Investment Tax Credit (ITC)

As part of the Inflation Reduction Act, a tax credit is available for energy projects like this one. At a base level, the ITC offers 30% off of qualifying projects, with an additional bonus of 10% for projects in an "energy community." Tax consultants with Baker Tilly have confirmed that the City qualifies for the "energy community" 10% bonus, which brings the base level credit to 40%. Another 10% bonus exists for projects that meet rigorous requirements for domestic steel content. Meeting the domestic steel bonus condition makes the Project eligible for a base credit of 50% of all eligible portions of the total cost of the Project. Only those portions of the Project that are deemed essential to the production of biogas and meet other compliance requirements are considered "qualifying" for the credit. Things like office buildings, bathrooms, ancillary equipment, and others are not qualifying. Initial cost segregation analysis has determined that an estimated 95% of the $157.8M Project and 75% of the $19M of previously purchased biosolids equipment are eligible for the ITC credit.

There are also factors that reduce the available ITC credit. If the bond funds the City would use is tax-exempt, the available ITC credit is reduced by 15%. In this case, taxable bonds would be required, so the 15% penalty is avoided.

If the Project does not meet the domestic steel content bonus, there is a 10% penalty, so in addition to only being eligible for a base rate of 40%, this penalty would further reduce the ITC credit to 36%.

The end result is the Project would be eligible for an ITC credit of between 36% - 50% of the qualifying portions of the Project, resulting in an overall credit of between $43.5M and $79.7M.

Tax Exemption

A portion of the equipment supplied by this Project is eligible for a sales tax exemption from the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA). Details of the program can be found at: https://www.treasurer.ca.gov/caeatfa/meeting/schedule.asp. The CAEATFA savings for the Project are estimated to be $4.5M for the MSW, HSW, and digestion equipment. An additional $1M in savings is estimated for the biosolids equipment already purchased. Applications are submitted bi-annually in a competitive process with the state typically allocating $100M/year in tax offsets.

AB2313

Assembly Bill 2313 provides financial reimbursements to offset RNG developer pipeline interconnection costs. These reimbursements can be up to 50% of the interconnection costs or $3 million per project, whichever is lower. Interconnection

costs included in this Project are estimated to be $800,000, so the Project would see a savings of $400,000.

Cost Summaries

Option 1: Option 1 represents the SB 1383 compliance options with the least impact on residents. Residents would see no changes to the garbage collection service for those scenarios. This option looks at the entire Project and assumes it meets the ITC 10% bonus requirements for domestic steel content, which results in an overall credit of $79.7M.

Option 1 Complete Solid Waste Organics Project With 10% Domestic Steel Bonus		
Total Complete Project Cost	**$157.8M**	
Biosolids Dryer/Pyrolysis Installatio	$32.2M	
Anaerobic Digestion/Biogas Upgrading	$81.9M	
MSW Processing Equipment	$41.7M	
Project Management	$2.0M	
Sales Tax Exemption	($4.5M)	
50% of Interconnection Costs	($0.4M)	AB2313
Amount Eligible for ITC Credit	**$152.9M**	
ITC Tax Credit	($72.6M)	95% eligibility at 50%
ITC Credit for Biosolids Equipment	($7.1M)	75% eligibility at 50% of the $19M BDPS equipment already purchased.
Short-Term Bond Financing Costs	$21.1M	
Long-Term Bond Financing Costs	$6.9M	
30 Year Bond Amount	**$106.1M**	
New Revenues Available	$6.1M - $7.6M	
Annual Bond Debt Service	($7.9M)	
Additional SW O&M Expenses	($0.5M)	
Project Net Revenue	**($.8M - $2.3M)**	

Option 2: The second option considers a scenario to lower the overall Project cost by removing the MSW processing portion of the Project. While this would lower the overall cost of the Project, it would place additional burden on residents by requiring them to follow strict guidelines for disposal of household organic material. City staff would also have to enforce these requirements, which is undesirable for staff and residents. It would also mean higher operating costs to comply with SB 1383 since hauling and disposal savings associated with digesting the organic material would not be available, and additional garbage collection routes would be required. Solid Waste annual O&M costs could increase by approximately $1.5M (an additional truck and driver, increased hauling and disposal fees, public outreach and enforcement, and

more). The new revenues from RNG sales and HSW tipping fees would still be available with this option because the anaerobic digestion system would still be built, which is the necessary component to secure the ITC credit. The additional SW O&M expenses could be partially offset by an additional $1M in revenues above the HSW tipping fees and RNG sales revenues already being contemplated, since the digester would have additional capacity for HSW if the MSW organics are not being processed. This option would also result in the ITC credit decreasing to 36% because the 10% domestic steel content bonus would not be available, and the equipment that justifies the waiver for the 10% penalty would not be a part of the Project.

Option 2 Reduced Organics Project		
Project Cost Without MSW System	**$116.1M**	Removing this portion of the Project requires an alternative method of compliance for SB1383 for the Solid Waste Enterprise.
Biosolids Dryer/Pyrolysis Installation	$32.2M	
Anaerobic Digestion/Biogas Upgrading	$81.9M	
Project Management	$2M	
Sales Tax Exemption	($3.5M)	
50% of Interconnection Costs	*($0.4M)*	*AB2313*
Amount Eligible for ITC Credit	$112.2M	
ITC Tax Credit	($38.4M)	95% eligibility at 36%
ITC Credit for Biosolids Equipment	($5.1M)	75% eligibility at 36% of the $19M BDPS equipment already purchased.
Short-Term Bond Financing Costs	$9.3M	
Long-Term Bond Financing Costs	$5.3M	
30 Year Bond Amount	**$83.3M**	
New Revenues Available	$7.1M - $8.6M	
Revenues Needed to Cover Bond Debt	($6.4M)	
Additional SW O&M Expenses	($1.5M)	
Project Net Revenue	**($-0.7M–$0.8M)**	

Option 3: A third option is to not move forward with this Project, and is staff's recommendation. The City would proceed to a resident driven organic waste "source separation" method to comply with SB 1383. The Solid Waste O&M costs would increase approximately $1.5M/year to cover the increased hauling and disposal costs, additional equipment, and personnel needed by this option. Revenues already built into the solid waste rates for the anticipated debt service on the original Project would cover most of this cost and would not require a rate increase.

If this Project does not move forward, the Wastewater Enterprise will be negatively impacted. The biosolids dryer and pyrolysis equipment still needs to be installed, and absent installing this equipment as part of the SW Organics project, the

Wastewater Enterprise will need to identify an additional $30M in funding with no ITC tax credit available to offset this cost. Options 1 and 2 include the installation of the biosolids dryer and pyrolysis equipment in order to take advantage of potential ITC credits. The ITC credits for installation of this equipment could result in a net savings of $16.1M - $22.4M. These savings would be lost if the SW Organics Project does not move forward, and these increased costs were not contemplated in the most recent Wastewater rate study.

Funding and Bonding Costs

Options 1 and 2 are both attractive until the cost of financing for the projects are included. Despite receiving a credit of $43.5M – $79.7M and generating annual revenues of $6.1M – $7.6M, the cost of the financing ($14.6M – $28.0M) necessary to complete the Project and get the ITC credit are prohibitive and negate the revenues generated by the Project.

There is also speculation in the energy sector that the incoming Federal Government may rescind provisions of the IRA that provide for the ITC tax credit. Without the ITC credit, this Project is not feasible. This uncertainty adds additional risk to the Project.

Conclusion and Staff Recommendation

While the Project remains an attractive way for the City to comply with SB 1383 and future-proof its operations against continued market inflation related to landfill disposal and composting operations, uncertainty about the ITC tax credit availability, and the financing costs, make the Project unattainable. Staff's recommendation is to terminate this Project (CIP No. 542-54021) and transition to a source separated organics collection process in order to comply with SB 1383.

Staff's recommendation to abandon this project will not result in a rate increase. The previously adopted rate study anticipated higher costs of service whether it be from debt service for this project, or from higher O&M costs if the project did not move forward, so the solid waste funding levels are adequate as is.

The Wastewater Enterprise would need to provide an additional $30M in funding to complete the installation of the biosolids dryers and pyrolysis equipment. Staff anticipates developing a financing plan that would not impact rates until the next rate study (spring 2028) at which point a rate increase of 2% per year of the study relating to these costs could be expected.

CITY COUNCIL STRATEGIC INITIATIVE

Focus Area 1, Goal 2.a - Water, Wastewater and Solid Waste Services: Provide safe and sustainable water, wastewater and solid waste services for the build-out of the City per the City's General Plan. Combat climate change through organics management.

PREVIOUS ACTION

Previous Action by the City Council is included on Attachment 1.

DATE OF NOTICE

Not Applicable.

ENVIRONMENTAL DETERMINATION

Not Applicable.

ALTERNATIVE OPTION(S)

1. Direct staff to proceed with the entire Project as envisioned and pursue the maximum ITC credit.
2. Direct staff to proceed with a smaller version of the Project that eliminates the MSW processing portion of the Project.

ATTACHMENT(S)

1. Previous Action
2. Amended CIP Sheet