



CITY OF GRAND RAPIDS AGENDA ACTION REQUEST

DATE: December 1, 2020

TO: Mark Washington, City Manager

COMMITTEE: Fiscal Committee
LIAISON: Molly Clarin, Chief Financial Officer

FROM: Alison Sutter, Sustainability and Performance Management Officer
Executive Office

SUBJECT: **Resolution approving Lake Michigan Filtration Plant Solar Equipment Service Contract with ES Services Company for an annual fixed cost of \$119,004 that equals \$2.86 million over 24 years and is estimated to reduce electricity costs by \$125,300 and achieve net savings of \$6,296 in in the first year and approximately \$1.2 million over 24 years.**

The Office of Sustainability and Performance Management in partnership with the Water Department requests authorization of a Solar Equipment Service Contract (“Service Contract”) with ES Services Company, a Michigan corporation. This Service Contract will result in ES Services Company investing approximately \$1.5 to \$2.0 million in construction and installation and an additional \$25,000 in annual operations and maintenance for a total investment of \$2.1 to \$2.6 million over 24 years to install and operate a nearly one megawatt (0.91MWac) solar array at the Lake Michigan Filtration Plant (“LMFP”).

The City will pay ES Services Company a fixed monthly rent of \$9,917 for an annual cost of \$119,004 and a total cost of \$2.86 million over 24 years. However, this Service Contract is expected to result in approximately \$125,300 in electricity savings in the first year, which will generate a net savings of \$6,296. On average, the project will result in an estimated annual net savings of approximately \$49,000 over the course of 24 years, totaling estimated savings of \$1.2 million for the Water Department.

While ES Services Company cannot guarantee savings based on solar output, the referenced estimates of potential electricity savings are based on 2019 energy usage of the LMFP, weather normal solar generation, and an estimated 2.5% electricity rate increase over the course of 24 years. It is important to note that this is the first solar proposal that the City has reviewed in three years that provides financial savings in addition to health and environmental protections. All other solar options have resulted in net costs to the City.

One of the core values in the City's Strategic Plan is sustainability. Installing solar does not just result in environmentally beneficial outcomes, but also results in fiscal savings and health benefits for the community. The first objective under the Health and Environment priority in the Strategic Plan is to reduce carbon emissions and increase climate resiliency. One of the strategies is to reduce the carbon footprint of City operations and as the LMFP alone consumes approximately 16% of all of the energy consumed by City operations and generates 14% of all City carbon emissions, reducing the carbon footprint here has significant benefits. The replacement of 1.5 million kilowatt hours of electricity with renewable energy will eliminate the generation of between 700 and 1,000 metric tons of carbon dioxide equivalents (MTCO_{2e}) each year, which is the equivalent of removing between 150 and 200 passenger vehicles. This project will also increase the City's renewable energy performance from 37% to 41%.

Over the last couple of years, the Office of Sustainability and Performance Management worked with the U.S. Department of Energy's National Renewable Energy Laboratory and Cadmus, a national energy and sustainability consulting company, through the SolSmart program to evaluate the technological feasibility and economics of installing solar on City properties. The modeling for a request for proposal for a developer to install, operate and maintain a solar array for a 1.4 megawatt rooftop installation at the LMFP produced a net present value cost of \$400,000 over 25 years, which was not an attractive option.

In late September 2020, CMS Energy and the City's Sustainability and Performance Management Officer met to explore the opportunity for the City to partner with ES Services Company, to install a behind-the-meter solar array at the LMFP. The Office of Sustainability and Performance Management met with the Water Department to discuss this opportunity. The Water Department was supportive of this approach and emphasized their desire for a ground mounted array and to partner with an experienced solar developer that was locally based who would be responsible for all operations and maintenance of the system. The desire for a ground mount solar array versus a roof mount array was to avoid jeopardizing the roof and structures over the open water filtration processes at the LMFP. As the Water Department provides life sustaining potable water to many communities and businesses, they also wanted to partner with a company that is locally based and could respond immediately to any needs onsite.

ES Services Company completed an initial "desktop" assessment of the solar opportunities on October 7, 2020, that included reviewing LMFP's current energy consumption, land availability and prevailing electric rates. ES Services Company proposed a service contract where ES Services Company would design, install, own, operate and maintain the solar array for 20 years and would completely finance all upfront capital expenses. In return, the City would pay ES Services Company a monthly rent that would be less than the anticipated electricity savings. As the solar array will be generating electricity consumed by the LMFP, the Water Department will not need to purchase as much electricity from Consumers Energy.

This preliminary assessment concluded that an approximately two-megawatt solar installation could be installed on 8.1 acres at the LMFP that would generate an estimated 3.2 million kilowatt hours per year and potentially save the Water Department \$15,000 per year and approximately \$500,000 over 20 years. The Sustainability and Performance Management Officer and ES Services Company presented this opportunity to the City's Energy Advisory Committee (EAC) on October 12, 2020. The EAC was very supportive of this approach and advised the City to move forward with this project. Next, on October 21, 2020, the City and ES Services Company executed a Site Access and Due Diligence Agreement providing ES Services Company access to the LMFP site to conduct further analysis and to generate a refined cost and benefit estimate.

Then, the Sustainability and Performance Management Officer presented these preliminary results at the October 27, 2020 Committee of the Whole Commission meeting. Later that same day, ES Services Company completed its onsite assessment in partnership with the Water Department. Based on this additional analysis, ES Services Company revised their estimates on November 6, 2020, to include a 0.91 megawatt solar array on 4 acres that is anticipated to produce 1.5 million kilowatt hours per year, which is equivalent to 10% of the plant's total electricity consumption. The array is planned for the northwest corner of the property near the intersection of Lakeshore Avenue and Lake Michigan Drive in an area that will only require the removal and replanting of a handful of trees.

ES Services Company is investing between \$1.5 and \$2.0 million in upfront capital costs to design and install the solar array. The City and the community are receiving this benefit while avoiding having to finance the upfront costs. In addition, ES Services Company estimates that the array may potentially decrease electricity costs by \$125,300 in the first year. The savings cannot be guaranteed because they are based on assumptions about expected solar generation, prevailing electric rates, and LMFP's energy consumption. The expected solar generation is based on historical weather normal conditions that are reasonably reliable.

The annual rent will be \$119,004, or \$9,917 per month, and therefore the Water Department is estimated to save \$6,296 in net electricity costs in the first year. The annual net savings should increase each year due to an expected 2.5% annual increase in electricity rates and it is estimated that over the full 24 years, the Water Department will net savings of approximately \$1.2 million.

Fiscal Year	Electric Bill		Electric Bill Savings	Solar Lease Rent	Estimated Net Bill (Increase), Decrease	Estimated Solar Generation, kWh
	Without Solar PV	With Solar PV		Fixed Rent	Fixed Rent	
2022	\$ 1,254,900	\$ 1,129,600	\$ 125,300	\$ 119,004	\$6,296	1,535,330
2023	\$ 1,286,273	\$ 1,157,840	\$ 128,433	\$ 119,004	\$9,429	1,534,102
2024	\$ 1,318,429	\$ 1,186,786	\$ 131,643	\$ 119,004	\$12,639	1,532,874
2025	\$ 1,351,390	\$ 1,216,456	\$ 134,934	\$ 119,004	\$15,930	1,531,648
2026	\$ 1,385,175	\$ 1,246,867	\$ 138,308	\$ 119,004	\$19,304	1,530,423
2027	\$ 1,419,804	\$ 1,278,039	\$ 141,765	\$ 119,004	\$22,761	1,529,198
2028	\$ 1,455,299	\$ 1,309,990	\$ 145,310	\$ 119,004	\$26,306	1,527,975
2029	\$ 1,491,682	\$ 1,342,739	\$ 148,942	\$ 119,004	\$29,938	1,526,753
2030	\$ 1,528,974	\$ 1,376,308	\$ 152,666	\$ 119,004	\$33,662	1,525,531
2031	\$ 1,567,198	\$ 1,410,716	\$ 156,483	\$ 119,004	\$37,479	1,524,311
2032	\$ 1,606,378	\$ 1,445,984	\$ 160,395	\$ 119,004	\$41,391	1,523,091
2033	\$ 1,646,538	\$ 1,482,133	\$ 164,404	\$ 119,004	\$45,400	1,521,873
2034	\$ 1,687,701	\$ 1,519,186	\$ 168,515	\$ 119,004	\$49,511	1,520,656
2035	\$ 1,729,894	\$ 1,557,166	\$ 172,727	\$ 119,004	\$53,723	1,519,439
2036	\$ 1,773,141	\$ 1,596,095	\$ 177,046	\$ 119,004	\$58,042	1,518,223
2037	\$ 1,817,469	\$ 1,635,998	\$ 181,472	\$ 119,004	\$62,468	1,517,009
2038	\$ 1,862,906	\$ 1,676,898	\$ 186,009	\$ 119,004	\$67,005	1,515,795
2039	\$ 1,909,479	\$ 1,718,820	\$ 190,659	\$ 119,004	\$71,655	1,514,583
2040	\$ 1,957,216	\$ 1,761,790	\$ 195,425	\$ 119,004	\$76,421	1,513,371
2041	\$ 2,006,146	\$ 1,805,835	\$ 200,311	\$ 119,004	\$81,307	1,512,160
2042	\$ 2,056,300	\$ 1,850,981	\$ 205,319	\$ 119,004	\$86,315	1,510,951
2043	\$ 2,107,707	\$ 1,897,256	\$ 210,452	\$ 119,004	\$91,448	1,509,742
2044	\$ 2,160,400	\$ 1,944,687	\$ 215,713	\$ 119,004	\$96,709	1,508,534
2045	\$ 2,214,410	\$ 1,993,304	\$ 221,106	\$ 119,004	\$102,102	1,507,327
		Average	\$ 168,889		\$ 49,885	
		Total	\$ 4,053,334	\$2,856,096	\$ 1,197,238	

While the City retains the option to cancel the Service Contract, given ES Services Company's investments, this would trigger the City's obligation to either pay ES Services Company's unamortized costs of the array, cost of relocating the array to another ES Services Company site, and 10% of the unamortized cost of the array and unpaid rent, or pay ES Services Company's costs to relocate the project to another comparable property to service another City building. As an example, if the City were to cancel the contract after five years, it would cost the City \$1.96 million. And if the City were to cancel the contract after 15 years, it would cost the City \$654,500.

In addition to the term, the Service Contract also requires ES Services Company to install decorative fencing around the solar array with security lighting and plant pollinator species. ES Services Company has also agreed to install a solar power generation monitoring device along with educational signage within the LMFP as well as at the site of the solar panels to help educate visitors and staff about the project. The Water Department will highlight this project in any LMFP tours, and the Office of Sustainability and Performance Management will partner with ES Services Company and the Water Department on any solar panel specific educational opportunities. And finally, the Office

of Sustainability and Performance Management will continue to monitor the performance of the array and include this performance in all energy, renewable energy and carbon emissions calculations.

ES Services Company has submitted a special land use application for consideration by the Grand Haven Township Planning Commission (“GHTPC”) and a variance application for consideration by the Zoning Board of Appeals (ZBA) for use of the front yard for the solar installation. The ZBA will review this request for a variance at their December 15, 2020 meeting. Presuming the variance is approved, the GHTPC will consider the project application at one of their January 2021 meetings. The GHTPC’s decisions are final on special land use applications and take effect immediately. As the GHTPC’s approval will occur after the City Commission meeting, the Service Contract has been drafted such that it is contingent upon ES Services Company obtaining all zoning, land use and building permits, consents, and approvals required to construct, install, operate and maintain the Solar Equipment, including GHTPC’s approval.

If the ZBA does not approve the variance, then the City and ES Services will have to revisit the project. Other areas surrounding the LMFP were evaluated for ground mount solar, but would require the removal of a significant amount of trees and therefore are not preferred.

It is also important to note that the Sustainability and Performance Management Officer presented this project to the Utility Advisory Board on November 19, 2020. There were no concerns or comments made during the meeting.

To ensure the 26% 2020 Federal Tax Incentives are secured, ES Services Company will safe-harbor solar panels for this project, provided the Service Contract is fully executed no later than December 20, 2020. If safe-harbor of solar panels is not accomplished this year, then the project would only qualify for 22% Federal Tax Incentives in 2021, which would impact the net cost savings identified for this project.

ES Services Company will complete a Phase 1 environmental assessment, wetland delineation (if required) and geotechnical work (if required) as soon as possible. Provided that this Service Contract is fully executed no later than December 20, 2020, then ES Services Company will begin construction as soon as they are able after receiving all zoning and GHTPC approvals. ES Services Company expects that operations will begin in the summer of 2021 if zoning and GHTPC approvals are received by the end of January 2021.

This project would not have been possible without the collaboration and speed of ES Services Company, the Water Department and our Legal Department. This project is a great example of how we can achieve sustainability outcomes – cost reductions for the Water Department, reduced air pollution and carbon emissions associated with traditional electricity consumption and natural resources protection.

YOUR FISCAL COMMITTEE recommends adoption of the following resolution approving a Solar Equipment Service Contract with ES Services Company at the Lake Michigan Filtration Plant.

WHEREAS:

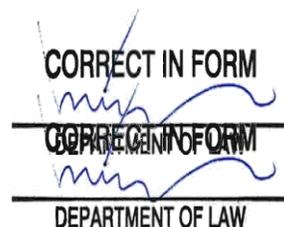
1. The City is committed to reducing its carbon footprint and increasing the amount of renewable energy used for municipal operations.
2. The Lake Michigan Filtration Plant consumes 16% of all energy and generates 14% of all carbon emissions across the City.
3. ES Services Company has completed a preliminary and onsite analysis of the solar potential and an economic analysis.
4. The City's Energy Advisory Committee is in support of this project.
5. The Utility Advisory Board did not share any objections to this project.
6. ES Services Company is willing to design, install, own, operate, maintain and finance a 0.91 megawatt ground mounted solar array on four acres at the Lake Michigan Filtration Plant that will generate approximately 1.5 million kilowatt hours a year, which is 10% of the City's total electricity consumption, via a Solar Equipment Service Contract.
7. The addition of this solar array will increase the City's renewable energy performance from 37% to 41% and will eliminate the generation of between 700 and 1,000 metric tons of carbon dioxide equivalents in the first year, which is equivalent to removing between 150 and 200 passenger vehicles.
8. A very minimal number of trees will either be relocated onsite or ES Services Company will plant new trees to offset any trees that need removal.
9. The Solar Equipment Service Contract is for a twenty-year term with two two-year renewals for a total of 24 years.
10. The fixed monthly rent will be \$9,917 for an annual cost of \$119,004 and a 24-year cost of \$2.86 million for the Water Department.
11. ES Services Company estimates that the Water Department may potentially net savings of \$6,296 in the first year and approximately \$1.2 million over 24 years based on an annual 2.5% electricity rate increase.
12. If the City elects to cancel the Solar Equipment Service Contract before the initial twenty-year term, the City will trigger additional financial obligations.

13. ES Services Company has filed a special land use application with the Grand Haven Township Planning Commission and a variance application with the Zoning Board of Appeals.
14. This Solar Equipment Service Contract is contingent upon ES Services Company obtaining all zoning, land use and building permits, consents, and approvals required to construct, install, operate and maintain the Solar Equipment, including the Grand Haven Township Planning Commission's approval.
15. To qualify for the 2020 Federal Tax Incentives of 26% for solar installations, which result in the above described cost savings, this Solar Equipment Service Contract must be finalized no later than December 20, 2020.
16. If the City approves this Solar Equipment Service Contract, ES Services Company will begin construction as soon as possible with full operations estimated to begin in the summer of 2021.

RESOLVED:

1. That the City of Grand Rapids is hereby authorized to enter into a Solar Equipment Service Contract ("Service Contract") with ES Services Company for an annual fixed cost of \$119,004 with estimated net savings for the Water Department of \$6,296 in the first fiscal year and \$1.2 million over 24 years; and
2. That the initial term of the Service Contract is twenty years with two two-year renewals for a total of 24 years; and
3. ES Services Company estimates operations will begin in the summer of 2021; and
4. That this Service Contract is contingent upon ES Services Company obtaining all zoning, land use and building permits, consents, and approvals required to construct, install, operate and maintain the Solar Equipment, including the Grand Haven Township Planning Commission's approval; and
5. That the Mayor is authorized to execute said Service Contract, and other related documents, in a form approved by the City Attorney; and
6. That the City Comptroller is hereby authorized and directed to make payment, in amounts and to said payees in connection with this Service Contract.

Prepared by Alison Sutter



Prepared by Alicia Bernt and Alison Sutter

~~CORRECT IN FORM~~
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DEPARTMENT OF LAW