



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

Date: July 19, 2024

TO: Mary Sheffield, President, Detroit City Council

FROM: Trisha Stein, Chief Strategy Officer

RE: Request Regarding Neighborhood Solar Initiative Questions

I am requesting answers to the following questions regarding Detroit's proposed Neighborhood Solar Initiative:

1. Which, if any, other solar energy designs were considered? How were farms determined to be the best option?

Ground mounted solar was determined to be the best option to support the requisite amount of renewable energy to provide the emissions reduction needed to offset the current use at municipal facilities and comply with the GHG Ordinance. To achieve this goal will require roughly 200 acres to build 33 MWs and the City's rooftop space is insufficient to meet this need. The proposed solar project is the best option to meet the City's ordinance requiring a 35% reduction in emissions by 2024. Furthermore, rooftop solar on city facilities would not include any investment in neighborhoods. Investments that include \$15-25,000 of energy efficiency upgrades to 159 owner-occupied homes surrounding the arrays and the additional capacity to strengthen the grid in the neighborhoods that will come from upgrading the infrastructure and equipment needed to support the neighborhood solar facilities.

2. What will happen to the solar panels after this project ends? How will they be discarded? What is our plan to offset municipal energy after the project's expiration?

Per their contract, the solar developers are required to decommission the project (i.e., remove and properly dispose or salvage the solar panels within 12 months (DTE) and 6 months (Lightstar) from the termination of the contract and return the Solar Project Property, other than streets, alleys and utility infrastructure and easements, to a condition substantially similar to its predevelopment condition. The panels are recycled at general-purpose glass recycling facilities, where their glass — and sometimes their metal frames — are recycled, and the remaining components are thrown away or burned.

After project expiration, the City will need to assess its options for replacing the solar facilities or acquiring green energy through another method.

3. Why was public land chosen instead of approaching private commercial vacant landowners?

Public land was not chosen. The sites were selected by the residents who live there and are made up of a combination of private and public parcels.



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

4. Was vacant land at Coleman Young Airport considered for a solar farm? If not, why? Have any former industrial sites been considered?

The location of the solar project in VanDyke Lynch (and all of the proposed solar neighborhoods) was selected at the direction of neighborhood residents and the ability to assemble a large, congruent parcel of land while only having to relocate owner-occupants who were willing to move and accept the City's voluntary offer to purchase their home.

5. What data can be provided to show the impact these installations will have on surrounding home values? How have property values been affected in other comparable municipalities with solar fields?

While the actual impact to adjoining residential home values is uncertain, the homes near the O'Shea Solar Park neighborhood experienced a 68% growth in assessed values since the solar park there was started in 2017, compared to an average assessed value increase of 16% for homes in the eight finalist solar neighborhoods. We believe that converting what is currently mostly vacant land into a more productive use via solar development will work to stabilize and increase home values in the area.

6. What efforts are being made to ensure that we don't lose residents who are being relocated?

The City is actively working with residents to assist with their housing needs and provide relocation options. These options include Detroit properties. A comprehensive list of Detroit homes for sale are below:

[Listings at \\$90k-125K available to residents:](#)

my.flexmls.com/JillButerbaugh/search/email_links/20240711165915086428000000/listings?contact_id=20240708160015697485000000

[Listings at \\$80-90k:](#)

https://my.flexmls.com/JillButerbaugh/search/email_links/20240708155933363284000000/listings?contact_id=20240708160015697485000000

[Listings for \\$65-79k:](#)

https://my.flexmls.com/JillButerbaugh/search/email_links/20240708160919503430000000/listings?contact_id=20240708160015697485000000

7. Given the trends of increased population and homeownership, why does the administration choose to implement solar farms on viable land that could be used for infill housing, as opposed to placing panels on municipal buildings, DPSCD buildings, parking lots or other structures?

1) The city has in excess of 10,000 acres of vacant residential land. There has been virtually no demand from builders for land for affordable single-family homes. The solar fields will total 200 acres. In the event such a demand develops, there are more than 9,800 acres remaining for potential housing sites. The neighbors who have experienced decades of disinvestment and



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

abandonment are asking for the solar development now, not some speculative hope of sudden interest in building new housing in their area.

- 2) Generating 33 megawatts of solar power to offset the demands of 127 municipal buildings requires 200 acres of solar fields. All the city rooftops together would provide only a few acres of solar panels, nowhere near enough to provide the required renewable energy.

8. What research and studies have been completed to justify the placement of the solar farms in these specific areas?

The National Renewable Energy Laboratory (NREL) provides a tool to demonstrate the estimated solar exposure for exact locations. The tool can be used to compare solar development in different locations, as well as to estimate production for a given facility size:

<https://pvwatts.nrel.gov/pvwatts.php>. While the rest of the world thinks the sun doesn't shine in Michigan, we know that's not true. As you will see this tool shows there is more than adequate sunlight in Detroit to support solar.

9. The City currently has an open contract to develop a Master Plan, why does this project need to be installed prior to the completion of the Master plan? Does the City anticipate compliance or conformity with the developed Master Plan?

The residents in the selected neighborhoods have suffered decades of decline, dumping, crime and disinvestment. The City's Master Plan offers no protection against their continued suffering. The Master Plan process should not be an impediment to development. We can pursue and have continued development projects while working on the Master Plan. The Master Plan update process will incorporate the community feedback and efforts of the solar initiative. The planned and installed solar fields will be considered in the discussion of land use, infrastructure, and sustainability as the Master Plan develops city-wide policies.

The Planning and Development Department (PDD) sees the solar project as an opportunity to transform vacant land into a productive use, which will contribute to the City's climate goals and reduce blight within the surrounding neighborhoods. The adjoining residential neighborhood will benefit from contributions toward home improvements, which will not only improve their home values, but also make their homes more resilient and energy efficient.

The combination of blight reduction in the surrounding neighborhood, home improvements, and reducing vacant land has the potential to stabilize the neighborhood and improve home values over time.

10. The solar installation is proposed to be implemented on 100-200 acres of land, in order to provide a greater energy efficiency in 127 municipal buildings, how much acreage does the city have of vacant industrial land? Were industrial sites considered for implementation?



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

The sites that were considered were those chosen by the residents of Detroit. The application process encouraged residents to propose sites they felt were best for their community. Those sites could have included residential, commercial, or industrial parcels. It was the residents' decision that the blighted and abandoned residential property adjoining stronger residential neighborhoods receiving community benefits were the locations Detroit neighbors selected as the sites they wanted for solar fields.

11. How many residential houses can fit on the 100 acres of land proposed to be used in the first phase of solar farm installation?

There are 950 parcels in all of the Phase 1 areas, on which there are only 93 with structures. Approximately 850 houses could fit on those vacant parcels. Of course, no one has built a new house on them in more than 50 years, which is a large part of why the neighbors are strongly supporting the solar option. As noted in question 10, there is nearly 10,000 more acres of vacant residential land available in the city, which could support the construction of 20,000 – 40,000 new houses. At the current rate of 10-20 new single-family homes being built per year, the city has land to support decades of new housing construction outside of the solar zones.

12. How many homes were owner-occupied, or rented within the boundaries of the proposed installation? How many residences are choosing to sell their homes to the City, so that the project can be completed?

Within Phase 1, there are 21 owner occupied homes and 10 occupied rented homes. All 21 owner occupied homes have agreed to sell their homes to the City in return for total compensation for their property and for relocation expenses in an amount, not less than \$90,000, that will enable them to purchase and relocate to quality housing within the City. All renters who will be relocated by the solar project are being offered relocation assistance and up to 18 months of rent.

13. Please provide a rendering of what the proposed sites would be like visually, if implemented.

Included in both developer contracts, Lightstar and DTE have committed to negotiate and enter into a neighborhood agreement with the neighbors on the design of the solar arrays including the vegetation and fencing that will be surrounding the solar panels. This work will be done in coordination with the Department of Neighborhoods, Office of Sustainability, Planning & Development Department and City Planning Commission. Both developers have agreed to incorporate urban agriculture in and around the solar arrays, if this is something the community supports. Lightstar is a national leader in agrivoltaics and has included some examples of existing solar arrays that have included farming to show what could be possible. Please see attached.

14. Were windmills considered as a source of clean energy. If so, why were they not chosen?



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

Wind turbines are generally more disruptive to surrounding land uses than solar panels due to a wind turbine's large size, noise generated, and constant movement. Moreover, wind turbines are generally significantly louder than solar panels. While wind turbines may require less actual space on the ground, significant spacing between wind turbines is required to avoid impeding the efficiency of other nearby wind turbines. Solar panels are a more appropriate and efficient method of clean, renewable energy generation for the size and nature of the proposed projects.

15. Is there any concern about creating heat islands in the surrounding neighborhoods? What data can be provided on the local climate changes that residents may experience? Please provide any available environmental impact assessment done in preparation for this project.

Current research indicates that solar panels do not contribute to greater "heat island" effect than any other typical structures in a city, like roads, parking lots, and buildings, and can be less than similar sized buildings or asphalt or concrete surfaces. Photovoltaic solar cells are generally thin and have a low thermal mass, which does not store and radiate heat like brick, concrete, or asphalt surfaces do. Please see attached for additional information from Lightstar and the Detroit Health Department (DHD) re: heat islands and health impacts for solar developments.

16. What would be the impact of any potential damage due to weather conditions (hail, tornadoes, etc.)? Do damaged panels create any threat to the safety of residents? Are these panels covered under any warranty? What kind of maintenance plan is to be implemented for the farms?

Solar panels are at risk from extreme weather conditions like any other property. Per their contracts, the developers will own the panels and will be responsible for insuring them against damage and will be responsible for maintenance and replacements, as needed. Even if extreme weather events damage the solar panels, there would be no threat to the safety of residents as the solar panels will be on City-owned property that will not be open to the public. Maintenance performed by the developers will include routine mowing of grass within any setback areas and under the installed solar panels to control the growth of plants and weeds, and site security. Any specific maintenance concerns of the host neighborhoods (such as possible agrivoltaics) will be addressed in the Neighborhoods Agreements.

17. Please share any potential noise pollution that could occur as a result of this installation, even minimal levels.

Per the contract, all work performed by the developers are in connection with the construction and installation of the Solar Project shall be performed in accordance with all applicable federal, state and local laws, rules, regulations and ordinances.

18. Please outline any proposed Community Solar legislation at the state or federal level, and the impacts they could have on the scope of this project.



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

Mayor Duggan strongly supports community solar legislation, but it has no impact on this proposal. The City of Detroit is using 33 megawatts of traditional power to operate city buildings. The only way to offset the City's carbon footprint through renewable energy is to build 200 acres of solar fields. Community solar legislation in no way changes the need for the city to act to address its own power demands.

Senate bills 152 and 153 and House bills 4464 and 4475 have been introduced in the State Legislature, which Mayor Duggan has publicly stated he supports. If passed, the Mayor will propose to build small solar fields to help power homes for local neighborhoods where the neighbors request it. The prospects for passage of that legislation are uncertain, but it in no way affects this proposal. Even if community solar legislation is adopted, the City would still have the same need to build 200 acres of solar fields to offset power used by municipal buildings.

19. Please share any other urban areas that have had a solar installation of this size in their neighborhoods.

Other solar in urban areas include the solar array in Chicago (utility owned), Houston (Sunnyside neighborhood), and Coldwater (City owned) are located within the City limits.

20. How much do Lightstar and DTE expect to profit annually in return for this major expenditure on their behalf. Please share any possible profit source.

The bidders were selected through a national open, competitive bid process. 5 bids were submitted from around the country that were each evaluated and scored on their price, experience and proposal. More points were awarded to bids with the lowest cost to the City. The City of Detroit procurement ordinance does not require any bidder to disclose expected profits as part of the bid process.

What is known from the bid process are the annual revenues for each developer which are equal to the total PPA payments. Lightstar will receive an estimated \$2.56 million in annual PPA payments for the State Fair and Gratiot/Findlay sites, and DTE will receive an estimated \$2.91 million for the Airport/Van Dyke site. This sums up to the \$5.47m of annual PPA payments the Administration has shared.

21. What technology exists that would allow the City of Detroit to cut the middle man and directly power our buildings? Was this considered? If so, why was it not decided on?

In order to directly power our buildings, the solar generating source would need to be on or near the buildings in order to be located "behind the meter", meaning the electricity is consumed directly. Given that the 127 buildings are spread across the entire City, it would not have been feasible to construct solar behind the meter for all buildings using current technology. Moreover, many City facilities are not located near vacant land available for solar. Although rooftop solar is an available



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

technology, not all buildings are able to efficiently host rooftop solar given obstructed sunlight (such as from nearby buildings) or the design/condition of the roof. Plus, there is not adequate rooftop space available to meet the need.

- 22. Please provide a cost-benefit analysis for this project. This should include the potential tax revenue loss, the consequences of not meeting or exceeding the target 33MW, and any additional factors related to this project.**

An analysis can be found at this link: ([Cost Benefits Analysis.pptx](#))

- 23. Have you made contact with all owners of private vacant homes and lots? There has been a history of abandoned homes in Detroit. How many of these privately vacant homes and lots are slated to be condemned without us hearing back from the owner?**

Yes, the City is actively communicating with property owners and securing option agreements for privately owned parcels, such that it is too early to determine which parcels will be slated for condemnation. The City will take every legal step to notify property owners and persons with a beneficial interest in the property. Prior to filing condemnation complaints, any property owners who have not entered into an option agreement will receive a good faith offer from the City.

- 24. For all phase one privately owned vacant lots, what are the uses of these lots? Are there any community gardens or other neighborhood projects that will be removed?**

In the phase 1 areas, many of the privately owned vacant lots are currently being used for illegal dumping, blight, and criminal activity. To our knowledge, there are no community gardens or other neighborhood projects that will be eliminated.

- 25. How can we accurately estimate the value of the credit placed on our energy bills if it hasn't ever been calculated before? How can Council make an informed decision with the total cost being unknown and unestimated?**

The City has calculated, and included in its projections provided to City Council, the net annual cost of the City's purchase of energy generated by the proposed solar projects. This calculation includes an offset for the price of energy when the solar energy is transferred and sold onto the electric grid. City Council has been provided with reasonable estimates of what these costs and offsets will be at current market rates.

The only other potential, but yet to be defined or approved by the PSC, credit is the MiGreen Power Program's "avoided cost of compliance" credit. While the City and DTE are unable to give an estimate for the credit at this moment, any amount from the MiGreen Power Program's "avoided cost of compliance" credit is upside to the estimated cost to the City and would only further reduce the cost.



CITY OF DETROIT

COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.,
DETROIT, MICHIGAN 48226
WWW.DETROITMI.GOV

26. How does the profit DTE is slated to make from the solar renewable electricity compare to the amount that the city will no longer be paying for their electric bills?

The City will still have electric bills and pay for the cost of energy consumed at its municipal facilities. The annual cost of the proposed solar contracts can be thought of as cost to the City to generate solar energy that that will be sold to the grid. This additional cost is part of the cost of fulfilling the obligation City Council accepted in adopting the GHG Ordinance to reduce municipal emissions by 35% by 2024.

27. Is it common practice for municipalities to continue using their existing energy sources and offset them with solar projects? Are there other municipalities that directly use clean energy?

Yes, virtual Power Purchase Agreements are common for cities, as well as companies and non-profits, that seek to offset their emissions. In a vPPA agreement, the City receives Renewable Energy Credits (RECs) from the project to formally claim the offset while still consuming electricity from the grid as before. Here are some resources on why Cities commonly pursue PPAs:

- <https://www.c2es.org/wp-content/uploads/2018/09/how-cities-benefit-from-ppas.pdf>
- <https://scf.com/solar-news/why-cities-across-the-country-are-adopting-solar-with-ppas/>
- <https://bluehorizonenergy.com/articles/ppas-april-2023/>