Solar Project Overview

Public Health & Safety Committee

July 2024

CITY OF DETROIT

TAKE PART

Opportunity Rising

Project Overview

Why Solar Inside the City of Detroit

Detroit is committed to reducing emissions through green energy investments. The City is proposing the innovative approach of building solar in neighborhoods for these reasons:

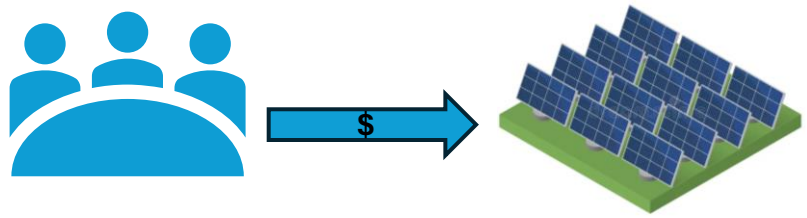
- Responding to neighborhoods' requests to reduce blight while providing community benefits in the form of home improvements to the adjoining neighborhood.
  $15-25,000 in energy efficiency upgrades that will lower their energy bills and add to their home equity.
- Investing in Detroit neighborhoods will stabilize the areas and increase property tax values.
- *O'Shea saw a 68% growth in assessed value after the solar park from Tax Year 2017 to 2023. In same period, the properties within the current 8 finalist areas saw 16% growth in assessed values*
- By generating green energy locally instead of far away, the renewables are more likely to "push out" energy from polluting coal plants.
  Increased reliability of grid by locating energy generation locally and creates jobs for Detroiters
- Investing in clean energy to replace "dirty" energy has wide reaching public health benefits through cleaner air and reduced emissions.

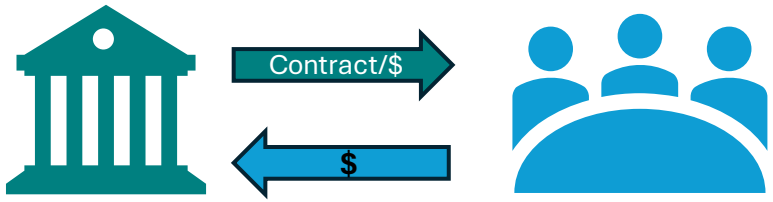
"Detroit can take real action to fight climate change and address some of the worst blight in the City," Mayor Duggan said. "Detroit is now becoming the center of Michigan's fight to address climate change."

Overview of the Solar Neighborhood Project

The City acquires land under the Resolution of Necessity and demos remaining structures. The city will continue to own the land while making it available to the solar developer.

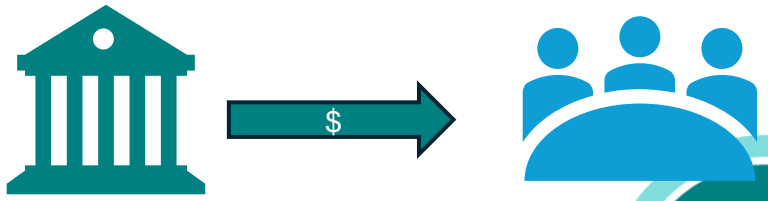
The solar developer builds and funds the solar facility on the City's land and will continue to own and operate the facility. The solar developer also pays for energy efficiency benefits in the neighborhood.





The City and developer enter into agreements whereby the City pays for all generated energy once the solar systems begin generating. The price will be set at the start of generation; the City will receive credits from energy sales into the markets as well as Renewable Energy Credits (RECs)

The City will have opportunity to purchase the asset at the end of the contract or potentially at certain years during the project.



Resolution of Necessity

A resolution for the acquisition of private property in each of the three neighborhoods to assemble the land needed for the proposed solar arrays.

- In the 104 acres in Phase 1, extensive neighborhood and legal outreach has identified only 21 owner-occupied homes. All 21 homeowners have indicated their desire to move from the neighborhood and all have signed option contracts for an agreed-upon price.
- Renters in the Phase 1 area will receive the cost of relocating and 18 months free rent in their new home.
- Condemnation will be used to acquire the property of landlords and vacant landowners, who will be paid fair market value for their property pursuant to Michigan condemnation law.
- Utility Conversion Fund to be appropriated to fund the solar projects.

Utility Conversion Fund

The Utility Conversion Fund are funds set aside for decommissioning the coal-fired plant, Mistersky, and should be used for clean, renewable energy development such as the solar project

The following costs will be paid using the Utility Conversion Fund:

Real Estate Services	$ 2,099,124
Legal/Advising	$ 3,075,000
Land Acquisitions	$ 4,566,500
Demolition	$ 2,750,000
Soft Costs	$ 1,280,955
Relocation Benefits	$ 271,300
Total Upfront Site Costs	**$ 14,042,879**

Equity Fund

- To address the uncertainty the 31 homeowner occupants living in five remaining solar array finalist areas may be experiencing, the City will create an equity fund of $4.4M that would allow the voluntarily purchase of these homes during Phase 1 and demolition of those properties.

Summary of Phase 1 Areas

Only 5% of the properties are privately held homes; 95% is vacant land or structures

	Phase 1			
	Lightstar State Fair	*Lightstar* Gratiot/ Findlay	*DTE* Airport B/Van Dyke Lynch	Phase 1 Total
PRE #	5	9	7	**21**
Private Occupied #	8	2	1	**11**
Private Vacant #	6	7	4	**17**
Private Vacant Lot #	124	9	53	**186**
Commercial	6	2	-	**8**
DLBA Owned	6	27	11	**44**
DLBA Lots	186	155	319	**660**
City Owned Lots	1	2	-	**3**
Total	**342**	**213**	**395**	**950**

Key Structural Terms

Lightstar

- Structured as 7 Agreements (1 Master + 3 per site)
  - Master contract
  - Site based VPPA Agreements for 25 years
  - Lease Agreement for 35 years plus construction and decommissioning
  - Neighborhood Agreements
- City to pay Lightstar a monthly "Settlement Price", which is difference between a Fixed Price for each kWh generated and a Floating Price for the energy sold
- City receives all Renewable Energy Credits (RECs) for 25 years with option to purchase in remaining 10 years
- Exploring Agrivoltaics
- Final price determined by delivery date and will be within the below ranges:

	Minimum Fixed Price	Initial Fixed Price	Maximum Fixed Price
State Fair	$ 141	$ 149	$ 158
Gratiot Findlay	$ 136	$ 153	$ 170
Annual inflator		2%	

DTE

- Structured as 3 Agreements
  - Master contract
  - Lease Agreement for 35 years plus construction and decommissioning
  - Neighborhood Agreement
- City to pay DTE a monthly subscription charge and will receive credits for subscribed buildings
- City receives all Renewable Energy Credits (RECs)
- Price will be:

	Levelized Cost of Energy
Van Dyke Lynch	$ 175
Annual inflator	None

Phase 1 Pricing (BASE PPA PRICE)

	Acres	Community Benefits	Production (MWh)*	MW	PPA Price**	Annual PPA	Projected Revenue	Projected Annual Net
State Fair	39.80	950,000	10,728.29	7.27	$ 148.90	$1,597,442	$ (643,697)	$ 953,745
Gratiot/ Findlay	23.20	585,000	6,269.00	3.89	$ 153.00	$ 959,158	$ (376,140)	$ 583,017
Airport/Van Dyke Lynch	40.90	1,275,000	16,651.74	9.90	$ 175.00	$2,914,055	$ (999,104)	$ 1,914,950
Phase 1 Total	**2,810,000**	**33,649.03**	**21.05**	**$ 162.58**	**$5,470,654**	**$(2,018,942)**	**$ 3,451,712**

Estimate Annual Savings for service and cost reductions for departments across the City **$ 2,388,939**

Net Annual Cost to the City **$ 1,062,773**

Upfront Cost for Phase 1 **$14,042,879**

Equity Fund **$ 4,395,000**

DPW
- Trash Pick up
- Illegal Dumping/ Disposal
- Plowing Streets Road Repairs

BSEED
- Building Inspectors
- Code Enforcement

DPD/DFD
- Calls for service
- Enforcement
- Neighborhood, Police Officers
- Illegal Dumping
- Monitoring/Investigation

DWSD
- Repairs
- Maintenance
- Replacement

DLBA
- Board up
- Maintenance
- Mowing (GSD)

GSD
- Tree planting
- Tree Maintenance
- Tree removal
- Animal control

Property Taxes Gain (Developers) (y1-10 avg)

Property Taxes Losses (existing properties) (y1-10 avg)

Energy Efficiency Benefits

The homeowners selected the boundaries of the adjoining community benefits zones. Those 159 homeowners will receive home improvements ranging from $15,000 to $25,000 (depending on the number of solar acres).

- Windows
- Repairing roofs
- Residential solar panels
- Energy-efficient appliances
- Home insulation and air sealing
- Energy-efficient furnaces and hot water heaters
- Installing smart thermostats
- Energy-efficient lighting
- Battery backup

A $2.81 million investment!

Thank You

Appendix

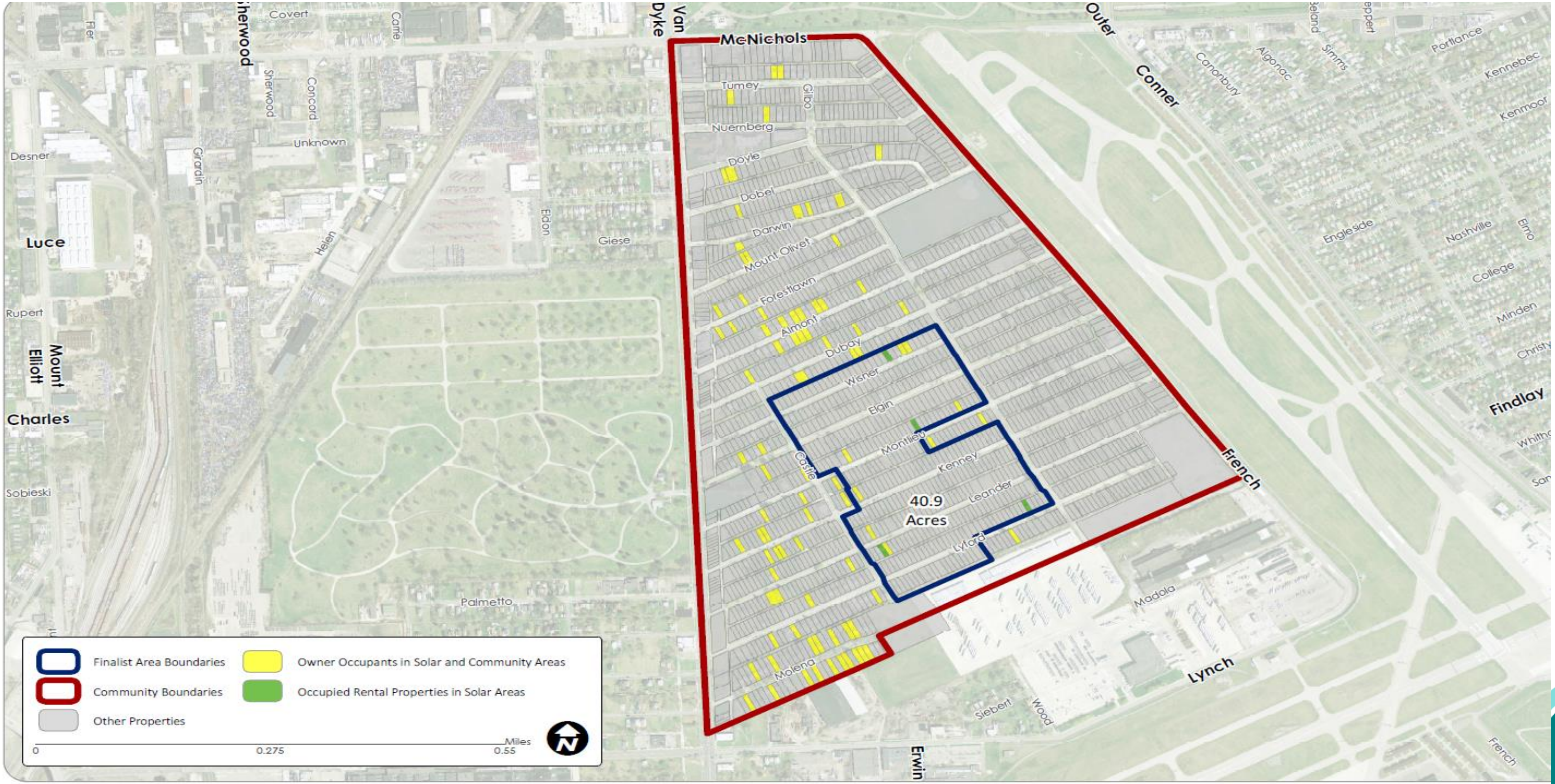
Definitions

- **Solar Facility:** the collection of solar panels at a site
- **Megawatt (MW):** a measurement of the size of the solar facility. 1 Megawatt = 1 thousand kilowatts = 1 million watts
- **Megawatt-Hour (MWH):** a measurement of electricity produced or consumed. 1 Megawatt-hour = 1 thousand kilowatt-hours

  Note: 1 MW of solar panels can generate 1 MWH per hour in clear sunlight

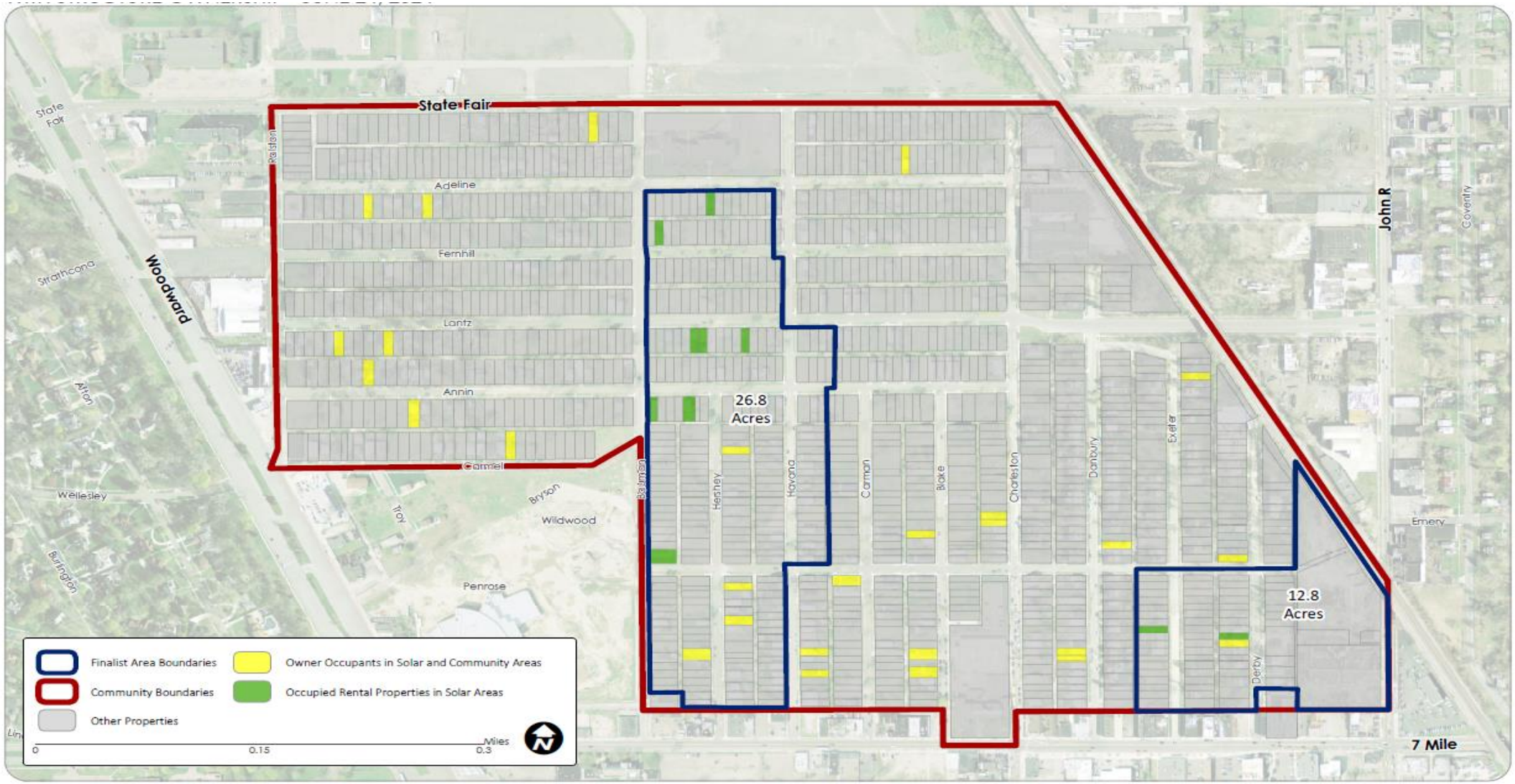
- **Virtual Power Purchase Agreement (vPPA):** when solar can't be directly consumed by a site, a VPPA agreement is created to virtually sell the rights to the solar electricity while selling the electricity into the grid
- **Renewable Energy Credit (REC):** a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource.

Van Dyke Map



McNichols
Van Dyke
Outer
Conner
Turney
Gibo
Nuernberg
Doyle
Dobel
Darwin
Mount Olivet
Forestlawn
Almont
Dubay
Wisner
Elgin
Montlieu
Kenney
Leander
Lyford
Castle
Molena
French
Lynch
Madola
Siebert
Wood
Erwin
Palmetto
Covert
Sherwood
Concord
Unknown
Girardin
Desner
Luce
Helen
Eldon
Giese
Rupert
Mount Elliott
Charles
Sobieski
Canonbury
Algonac
Simms
Portlance
Kennebec
Kenmoor
Engleside
Nashville
Elmo
College
Minden
Findlay
40.9 Acres
Finalist Area Boundaries
Community Boundaries
Other Properties
Owner Occupants in Solar and Community Areas
Occupied Rental Properties in Solar Areas
0
0.275
0.55
Miles
N

State Fair Map



Gratiot Findlay Map