SOULARDARITY

Let There Be Light

Building a Brighter Future in Highland Park

www.soulandarity.nationbuilder.com
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Let There Be Light: Building a Brighter Future in Highland Park

VISION STATEMENT

It is March 2026, in Highland Park, Michigan. It is one of the first warm days after the winter. Walking down the streets of the historic districts, one hears birds chirping and sees people of all ages on their porches, enjoying the weather after a particularly difficult winter. Their front lawns have rain gardens, beautiful assemblages of local foliage making the city more beautiful and lowering the costs of the sewerage system. The arts and crafts houses - built in the Ford era and unmatched anywhere in the country for architectural diversity and beauty - have been restored. Vacant homes are occupied and critical preservation work has been done, including extensive weatherization to make the homes affordable for the families and seniors now sitting on their porches. The streetlights, elegantly designed to conform to the historical aesthetic, do not overwhelm the landscape, and there are no dangerous and disruptive overhead wires. The solar panels on each pole stand as a quiet testament to Highland Park’s resurgence from crisis to become a model community once more.

On Woodward Avenue, new and old businesses thrive. Nandi’s cafe and Red Hot’s Coney Island continue to serve the community, and arts and technology developments bring new life to the blocks. While many other cities have displaced their poor and working class people to promote development, Highland Park has made a commitment to the people who stuck it out through the hard times. The McGregor Library is restored. The Ford Building is a landmark to the history of innovation in this city. There are cafés and clothing shops, barbers and bakers, locally owned and building local wealth. Buildings new and old have been renovated to reduce energy usage, and the savings have helped business owners to stay in place and grow with the city. On many of their roofs there are solar panels, funded by community members, building wealth for businesses and residents.
Let There Be Light: Building a Brighter Future in Highland Park

The neighborhoods long afflicted by blight and neglect are coming back. Vacant lots are now parks, gardens, new affordable housing, and solar farms that generate power for the city and its surrounding communities. The solar-powered streetlights installed in 2017 continue to shine. The recent integration of wifi has allowed every resident of Highland Park to access affordable internet service. Civic participation is at record heights and climbing. Emergency response has improved due to community internet and emergency power generation at fire and police stations.

The city is still struggling, but it is growing. Every year, unemployment and poverty levels shrink as new jobs in weatherization, clean energy, and community-based industry expand. The City is a hub of energy innovation regionally and nationally. Highland Park’s legacy of technological and social innovation has extended, and is leading the cities of Southeast Michigan in developing clean and community-oriented energy economy that is a model worldwide. While other cities are devastated by power outages, extreme weather events, and spikes in the cost of coal from Wyoming and oil from Kuwait, Highland Park is not only unaffected - it is a source of stability, strength, and transformative vision for the region.

10 years ago today, the city decided to explore the possibility of solar-powered lighting with a small community organization and a regional advocate for municipal energy issues. In the spirit of its history, Highland Park made a choice to do something new, to try something outside the box. That choice is before you today.
Let There Be Light: Building a Brighter Future in Highland Park

EXECUTIVE SUMMARY

Everyone in Highland Park knows that more than one thousand streetlights were removed by DTE in 2011. This can happen when a city does not control or own their street lighting infrastructure, as is the case in most of Southeast Michigan. Cities that own their own lights pay much less to operate them than cities that lease them from their utility provider. When light poles are owned by the city or another public entity they can be used to provide and improve other community services to residents without waiting for DTE to approve and install the improvements.

Let There Be Light is a proposal to fully restore lighting to the residential blocks in Highland Park darkened by the 2011 repossessions. The lights utilize solar panels and battery banks, do not rely on the electrical grid, and require minimal maintenance. They will integrate smart controls for dimming, motion sensing, and the ability to add community services like emergency response and affordable internet. The lights will integrate sculptural bases and lighting fixtures to maintain consistency with the historic neighborhoods. Overall, this solution will give the City energy autonomy and local control, positioning Highland Park as a leader in energy innovation and community development and setting a new standard for community lighting in the region.

The lack of street lighting is a critical issue for Highland Parkers. A recent community survey* showed that 97.8% of Highland Park adults are concerned about the lack of street lighting and 71% described street lighting on their block as inadequate or nonexistent. Over 90% said that light was important or critically important to the functions of their daily life and related or highly related to feeling safe in their neighborhood at night. It is clear that this is an issue deeply felt by the people of Highland Park, who saw their light poles be removed and carted away.

In order to develop and finance Let There Be Light, Soulardarity is partnering with the Southeast Michigan Regional Energy Office. Through a combination of gift capital, social investment, tax credits, and non-extractive lending, over $5 million will be raised to fully light the city. Cutting-edge finance mechanisms will minimize
Executive Summary

long-term costs and financial risk to the city. The off-grid solar solution compares favorably with grid-tied LEDs perpetually owned and controlled by DTE, potentially saving millions of dollars over a 15 year life span. There are a variety of mechanisms to generate revenue while minimizing tax increases and, using Michigan’s crowd-funding legislation, up to $1 million of the cost can be raised from Highland Park residents and businesses.

The installation itself will generate over 3,000 hours of contract work**. The lights may be partially or entirely assembled in Highland Park as well, which would more than double the amount of local work hours generated. These installations will also serve as training opportunities for electrical contractors to move towards accreditation in solar PV installation, one of the fastest growing markets in Michigan. Soulardarity is developing a pipeline for community-based energy projects to create long-term employment opportunities beyond the installation.

In addition to providing high-quality, cutting edge lighting, Let There Be Light will engage community members in the process through community-driven planning. An iterative design process will be used to make this lighting system match up with community needs and grow a base of residents to engage with and support the city in further energy development projects.

In summary, a lighting system can be much more than a lighting system. Let There Be Light is a proposal to address many problems with one solution, lay the foundation for a brighter future, and build upon Highland Park’s legacy as a city that leads the world forward.

*Data from Highland Park Lighting and Energy Survey completed by The Cooperation Group and Soulardarity in 2015. There were 635 Respondents comprised 8% of adult residents of Highland Park, MI,

**Estimates based on previous Soulardarity installations and project data from streetlight manufacturers
LEAD ORGANIZATIONS

Soulardarity

Soulardarity is a community organization that works to build energy democracy in Highland Park and its neighboring communities. Since forming in 2012 following the Highland Park streetlight repossession, Soulardarity has installed six pilot streetlights in Highland Park, run educational programs that have reached hundreds of Highland Park youth and adults, and supported city-wide block clean-ups and planning efforts. In addition to this proposal for municipal solar lighting, Soulardarity is working to develop community solar, alley lighting, and home weatherization programs that Highland Park residents can use to build stability and prosperity. Soulardarity is a membership based non-profit with an elected board, which must be majority Highland Park members. Soulardarity’s work has been recognized through the Earth Island Institute’s Brower Youth Award and the EcoWorks Sustainable Communities Champion award.

Soulardarity’s role in Let There Be Light is to advocate for community needs in the process, assist with fundraising, and support the technical processes. As a community organizing group, it is our job to work for a solution to the lighting problem that is safe, affordable, reliable, aesthetically appropriate, and best matches what Highland Parkers want in their lighting system.

Southeast Michigan Regional Energy Office

The Southeast Michigan Regional Energy Office is a unique collaboration of nonprofits and local governments that offers tools for cities to become more energy efficient and reduce their global warming impact, transforming the region’s image from “Rust Belt” to “Green Belt.” By pooling resources at a regional scale, local governments can pursue efficiency improvements and renewable energy initiatives cooperatively, sharing both the costs and the benefits. To achieve this vision, the Michigan Suburbs Alliance, WARM Training Center (now EcoWorks) and the Michigan Municipal League established the Southeast Michigan Regional Energy Office, a coalition of communities and partners that is supported by full-time staff and a team of expert consultants and contractors. SEMREO has done work in Highland Park converting many of the lighting fixtures remaining after the repossession to energy efficient LEDs, and is currently leading a coalition of municipalities in a legal intervention against a DTE rate increase.

SEMREO is supporting Let There Be Light with legal and technical capacity, in addition to the support of the alliance of SE Michigan municipalities that participate in its programs. SEMREO will also create, issue, and sell a bond to finance the project and support the city in implementation of the RFP process and install.
PUBLIC BENEFITS

Highland Park could be characterized on the whole as experiencing profound economic hardship. The percentage of households living at or below poverty rate in Highland Park in 2013 was estimated at 51.1%. For children under 5 years old the most recent poverty rate was 58.6%. The median household income, at $18,981, represented 39% of the median household income for Michigan, which was $48,441 as of 2013. Per capita income in Highland Park in 2013 was $13,539. SEMCOG has projected that 54.6% of Highland Park’s population will be over the age of 65 by 2040. The city saw an 11% decline in population between 2010 and 2013, when the populations was 10,441. With foreclosures continuing in Wayne County in 2014 and 2015, it is safe to assume that rate of population loss has continued, putting the population of Highland Park at an estimated 9,702 as of 2015.* As Let There Be Light moves forward, it is critical to take these factors into account and maximize public benefits at the lowest possible cost.

Job Creation and Economic Development

A 2009 report from the University of Massachusetts, Amherst** showed that the job potential generated from investments in energy efficiency, clean energy, and public transit far exceeded that of fossil fuels. As the cost of coal, gas, and nuclear rises, clean energy is becoming central feature of our economy. The installation of the lights itself will generate over 3000 hours of work, all of which can be used as training*** in solar, helping Highland Parkers to gain accreditation in this growing field. This first-of-its kind lighting system will also position Highland Park as a global innovator, creating economic opportunities manufacturing, installation, and community ownership of clean energy.

Wayne County, and Detroit zip codes in particular, also suffer from high degrees of asthma, cancer, and other health issues related to fossil fuels. By embracing clean energy, Highland Park is reducing the health care costs of our residents and our neighboring communities and lighting the path forward.

Efficient, Affordable LED Lighting

The potential for LED technology is unprecedented: some industry experts predict that within 10 years LED lights, both indoor and outdoor, could deliver more environmental and economic benefits than any other clean technology including renewable power. LED lighting benefits include:

- Better, clearer, and more consistent light quality that makes streets safer
Public Benefits

- Fewer outages as LEDs have a life expectancy of 15 years, compared to 5-8 years for high-pressure sodium
- Better color rendering, leading to colors that seem more natural.
- Minimization of light trespass onto homes and businesses by the “aiming” of LED fixtures.
- More consistent distribution of light resulting in fewer dark spots.
- Up to 60 percent decrease in energy use and carbon emissions
- Life spans up to three times longer than traditional streetlights, reducing replacement costs significantly.

Smart Community Services

LED fixture electronics can also easily be configured to serve a wide variety of information and communication functions typically described as “Smart Urban Network” capabilities. In some downtown or retail districts, for example, cities now use LED fixtures to distribute public wi-fi services; but this service could also be provided in residential neighborhoods, reducing the need for residents to pay large monthly fees. Those same capabilities can be used to enhance response to emergencies. Lights can be programmed to flash in response to 911 calls, allowing emergency responders to better reach those in need of assistance. Because the lights are powered by solar and batteries, they will continue to work during a blackout. In a city with such a large population of senior citizens, the quality of emergency response during a blackout can be a matter of life and death. Lights can also integrate cameras and motion sensors that will improve safety & security for residents. Audio systems in the lights can be used for gunshot triangulation, allowing police to respond more effectively to violent crime. Civic engagement is another critical issue in Highland Park which can be helped through these services. The smart network can be used to provide a free internal community internet to Highland Parkers serving as a community message board, reminder system for city functions, and mechanism to solicit feedback on city issues. Our high-level cost assessment in the next section includes the baseline infrastructure needed to build these services in over time.

*Data from Soulardarity Feasibility Study completed by The Cooperation Group, 2015-2016
**http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/green_economics/economic_benefits/economic_benefits.PDF
***See attached letter from The Apprenticeship Institute on job training potential
HIGH-LEVEL COST ANALYSIS

Soulardarity worked with Solartonic, the Ypsilanti based solar manufacturer that installed four poles in Highland Park in December 2015, to prepare a cost comparison for the installation and 15 year operation of one thousand off grid solar street lights to be owned by the City of Highland Park and one thousand grid tied lights that would be owned by DTE. The cost estimates are based on DTE’s proposed 2017 tariff schedule, average urban area installation costs from US Energy Information Administration and Power Grid International, and direct experience installing solar lights in Highland Park.

Both installations include 24 foot poles with 35 watt LED bulbs 100 feet apart on residential streets. The community-owned solar solution includes photovoltaic panels mounted on the pole itself, a lithium ion battery with each light and programmable dimming with a motion detector, and a smart pole that can connect network, security, and emergency response technologies. The DTE projection includes underground electrical lines and a monthly tariff including electricity and pole rental. The cost projection assumes that the tariff charged by DTE will decrease in 2025. We are using DTE’s lowest cost scenario, though it should be noted that they attempted to raise rates for LED lights 15-20% earlier this year and would have been successful if not for SEMREO’s intervention. The community-owned solar solution includes one full replacement of the battery banks and ongoing maintenance.
The costs outlined above are for the equipment and infrastructure including installation. It shows that a solar solution is competitive to install and less expensive long-term. We believe that the solar-based solution will have a 20 year life span, whereas DTE assumes a 15 year life span. For a better comparison, we assumed a 15 year life-span for both, but the savings with community-owned solar may be even more in the following five years. In addition to the cost savings over time, off grid solar street lights continue to work in a blackout and are less likely to be damaged or lose functionality in a major storm.

The cost comparison does not include the cost of financing the equipment and installation, which are discussed further in the following section.
FINANCING AND OWNERSHIP MODELS

The first option, which we recommend, is a lease-purchase agreement. Southeast Michigan Regional Energy Office (SEMREO) has public body corporate status and can issue bonds to pay costs of this project. By taking advantage of federal interest-rate subsidies available under the Qualified Energy Conservation Bonds* (QECB) program, costs passed through to the city could be kept very low, close to or less than costs of paying tariffs on DTE-owned streetlights. This arrangement would constitute “off-balance sheet” financing for the city, and would require little or no up-front capital from the city. Any capital contributions the city could provide up-front, whether from municipal revenues or grants, would reduce payments going forward.

The city’s payments would be calculated similar to a mortgage payment, whereby the city gradually builds up equity in the asset and ultimately attains sole ownership. The financing period for QECB bonds can be up to 29 years, but we would likely suggest a shorter financing period for lease-purchase. We suggest that operation and maintenance costs be included in the contract, unless the city prefers to manage these functions in-house – and most don’t.

A second option is for a lighting purchase agreement wherein the city never builds up an ownership interest in the streetlights, and pays only for the services they provide. SEMREO would own, operate, and maintain the streetlights on behalf of the city. The city and SEMREO would negotiate a services agreement wherein the city receives street lighting and associated services but does not own or manage any physical assets. While this arrangement superficially resembles DTE ownership of streetlights, it should be recognized that SEMREO is a partnership among local governments, that Highland Park would take a place on its governing board, and that...
Financing and Ownership Models

SEMREO has no profit motive other than recovering its costs. An operating lease might be cheaper on an annual basis for the city mostly because it could use a longer financing period; but continuing interest and administrative costs could add up to more over the lifetime of the project.

The third option is municipal ownership, in which the city would arrange its own financing and directly manage contractors who install, operate and maintain the equipment. Unless the city can raise $5 million-$6 million to pay projects costs, however, doing so would require the city to arrange financing. Private financing would be costly. QECB financing might be available to Highland Park through the state Department of Treasury, but the city would have to take on the indebtedness and create capacity to manage the streetlights itself.

At this point, we recommend the lease-purchase agreement option as the best way to achieve municipal ownership of the street lighting while keeping financial and capacity costs low for the city.

HOW WILL THIS IMPACT HIGHLAND PARK RESIDENTS AND BUSINESSES?

Cities traditionally pay for street lighting out of general operating funds or with a special assessment. Highland Parkers are already paying high taxes and there is legitimate resistance to any increase in those costs. There are opportunities for state tax capture programs or improved property values as a result of the project that would generate the required revenue without increasing the tax burden for residents and businesses. It is also important to note that monthly costs would be very small if distributed over all households and businesses that would benefit from improved lighting. It is critical that we work with the city and community stakeholders to identify a revenue model that is fair and economically generative.
In closing, the opportunity for community-owned solar lighting expressed in the Let There Be Light Proposal is affordable, reasonable, and a model for southeast Michigan. Soulardarity and SEMREO would like to collaborate with the city to investigate the options for financing and managing this infrastructure. The most pressing opportunity is for SEMREO to issue Quality Energy Conservation Bonds (QECB) to pay to install the street lights. The application deadline for QECB is May 16, 2016. To move forward with this financing option, SEMREO needs a non-binding letter of intent from the city to support the application, which will require conversations with the administration and the city manager to assess the viability of financing and revenue.

While the QECB is a major near-term opportunity, it is not the last. There are many opportunities for grants and financing to explore. Attached to this proposal are letters of interest from partners interested in the financing and job training elements of this proposal, which indicate the broad interest in and potential of Let There Be Light. We look forward to your feedback, and working together to build a brighter future in Highland Park.
April 5th, 2016

Jackson Koeppel
Executive Director
Soulardarity
12511 Woodward Ave
Highland Park, MI 48203

Dear Mr. Koeppel,

The Working World (TWW) is pleased to provide this letter of interest for Soulardarity’s Let There Be Light proposal to install 1,000 solar streetlights in Highland Park, MI. TWW focuses on offering low-interest capital to community and cooperative ventures that would otherwise struggle to find financing. The effort to bring light back to Highland Park with resilient technology and in a way that empowers the community is admirable and fits our values of equity and inclusion in finance. This letter is a non-binding indication of interest. A commitment would rely on assessing factors of financial and technical viability and the high standards of positive community impact we seek in our investments.

The Working World has been financing worker and community-owned enterprises since 2004, starting in Argentina during major financial crisis. Despite dire predictions of investing in the chaotic groundswell of the Argentinian recovered factory movement, The Working World achieved a 98% return rate across over 715 loans, and all with repayments only from profit sharing and without guarantees. After this success, TWW opened a second branch in Nicaragua in 2009 and another in the United States in 2012. The same grassroots cooperative efforts have proven effective and provocative in the context of the US, where The Working World has already funded six cooperatives, including New Era Windows, the manufacturing cooperative that emerged from the infamous Republic Windows and Doors in Chicago.

TWW is excited to explore the possibilities of investing in this project and helping the City of Highland Park to achieve energy independence and sustainable economic development.

Please feel free to contact me.

Sincerely,

Brendan Martin
Executive Director
The Working World, Inc.
April 5th, 2016

VIA EMAIL

Jackson Koeppel  
Co-Director  
Soulardarity  
12511 Woodward Ave  
Highland Park, MI 48203

Re: City of Highland Park Off-Grid Solar Streetlight Project Financing

Dear Mr. Koeppel:

I am pleased to provide you with this letter indicating our interest in providing capital financing, subject to credit review and due diligence on the part of De Lage Landen (“DLL”), and agreed upon structure, for the procurement, installation, operations, and maintenance of approximately 1,000 off-grid solar street light systems.

DLL is actively seeking investments in these types of projects. Our financing vehicles are designed to provide third-party capital for community-scale clean energy and energy efficient projects at terms and rates that are fair and reasonable.

DLL finances projects that promote energy efficiency, alternative energy use, smaller carbon footprints and the sustainability of our natural resources. Including specialist solutions for products, services and processes that improve profit or performance while reducing costs, energy use, waste or pollution.

This is not a binding contract and should be viewed strictly as a letter of intent to begin discussions regarding finance for the aforementioned project.

Please feel free to contact me if I can be of any further assistance to you and your staff.

Sincerely,

Sean Atwell  
Account Executive  
DLL Financial Solutions  
www.dllgroup.com  
sean.atwell@dllgroup.com  
O - 610-386-5435
April 7, 2016

Jackson Koepel
Co-Director, Soulardarity
12511 Woodward Ave
Highland Park, MI 48203

Re: City of Highland Park Off-Grid Solar Streetlight Project Financing

Dear Mr. Koepel:

This letter serves to express interest by ARENA Investments LLC (“ARENA”) on a non-binding basis, to provide financing to Solartonic, LLC (the “Company”) to develop, own, operate and lease a proposed 1,000 off-grid solar streetlight project in Highland Park, Michigan (the “Project”). This letter is an indication of interest and not a commitment to provide financing to the Company or the Project. Such commitment would be contingent on a number of factors, including but not limited to the following:

- Satisfactory evaluation of the Project counterparty’s ability to pay for lighting services over time or sufficient credit support provided to make reasonable assurances of repayment
- Satisfactory evaluation of equipment performance demonstrated either through substantial historical performance data or through the issuance of a performance guarantee by a credit worthy guarantor
- Satisfactory completion of due diligence on the proposed Project including but not limited to analysis and confirmation of construction costs
- Satisfactory equity raise by Solartonic
- Completion of a detailed investment memo by ARENA and final credit approval from our investment committee

If the Project is structured in accordance with best practices in the project finance industry, and if the Company is sufficiently capitalized, an investment in the Company and the Project would meet our investment criteria, and make a positive environmental and economic impact within the community. This letter serves to communicate ARENA’s desire to continue discussions with the appropriate stakeholders with regards to possible investment in the Company to facilitate the Project.

ARENA was formed to invest in clean energy small businesses by providing flexible growth capital to U.S. companies engaged in energy saving activities as defined by the U.S. Small Business Administration (“SBA”). Among other things, such energy savings activities include projects that reduce energy and water consumption, fossil fuel usage, and air pollution.

Sincerely,

Jennifer von Bismarck, Managing Director
3-14-16

Mr. Jackson Koeppel, Executive Director
Soulardarity
12511 Woodward Avenue
Highland Park, MI 48203
313-349-1063

RE: Highland Park Streetlight Initiative

Dear Mr. Koeppel:

The Apprenticeship Institute strongly supports Soulardarity’s proposal to The City of Highland Park for the Let There Be Light solar streetlight initiative. The Apprenticeship Institute looks forward to assisting Soulardarity and other partners in creating an economic development initiative which incorporates employee-owned worker cooperatives, pre-apprenticeships and US DOL Registered Apprenticeships serving Youth and Adults with career on-ramps through renewable energy projects in Highland Park, Detroit and other communities.

The Apprenticeship Institute is working closely with the Great Lakes Renewable Energy Association, Wayne State University’s Transnational Environmental Law Clinic, The Cooperation Group, and Soulardarity on economic development and community wealth creation. We are focusing on sustainability initiatives such as Community Solar power plants which incorporate career training with employment opportunities for low-skill, low wage residents in the communities served. The Apprenticeship Institute in partnership with SER National recently submitted a US DOL proposal for rapid expansion of Registered Apprenticeship. We intend to incorporate this initiative into our project deliverables.

Through the Let There Be Light initiative, The Apprenticeship Institute looks forward to working with Soulardarity and its partners. We believe this initiative will be beneficial for Highland Park residents to promote economic development and wealth creation, as well as access to affordable and healthy energy sources, and we are willing to support Soulardarity’s efforts with best practices and in any other way we can. We are hopeful that the City of Highland Park supports this very important initiative through the planning and implementation phases of the project.

Cordially,

Karl Kaufman, Executive Director
Apprenticeship Institute