

REUSE FRAMEWORK

Former GM Lansing Plants 2, 3 and 6

FINAL
NOVEMBER 2013



INTRODUCTION

The EPA Region 5 Superfund Redevelopment Initiative has sponsored a reuse framework for the former General Motors Plants 2, 3 and 6 located in Lansing Township and the City of Lansing, Michigan. Since the closure of the three plants in 2006, the City of Lansing (Plant 6) and Lansing Township (Plants 2 and 3) have conducted independent planning efforts for the former GM plants that outline goals for green industry and mixed-use development.

This EPA-funded reuse planning effort offers an opportunity to integrate planning goals into a unified redevelopment framework. This framework document includes reuse goals and principles, remedial considerations, a future land use plan, and a renewable energy screening to help align cleanup and future use planning.

SITE OVERVIEW

From 1910-2006, manufacturing operations at the three former General Motors properties helped to drive Lansing's economy. From components production to vehicle assembly, the former Lansing plants played key roles in the development of American auto brands such as Buick, Chevrolet, Fisher, Oldsmobile and Pontiac.

In 2005 and 2006, the former General Motors Corp. ceased operations at Plants 2, 3 and 6; and in 2011, the Revitalizing Auto Communities Environmental Response Trust (the RACER Trust) assumed ownership of the three properties as part of its mission to clean up and re-position inactive former GM properties for redevelopment.

Today, the RACER Trust is working to identify redevelopment options for the properties, in coordination with municipal planning and economic development authorities, including the City of Lansing, Lansing Township and Lansing Area Economic Partnership (LEAP).

Site assets include:

- Frontage and direct access to Saginaw Street Corridor
- Nearby access to I-69 and I-496
- Two on-site electric substations
- Steam lines and natural gas
- Access to Norfolk Southern rail yard
- Skilled workforce

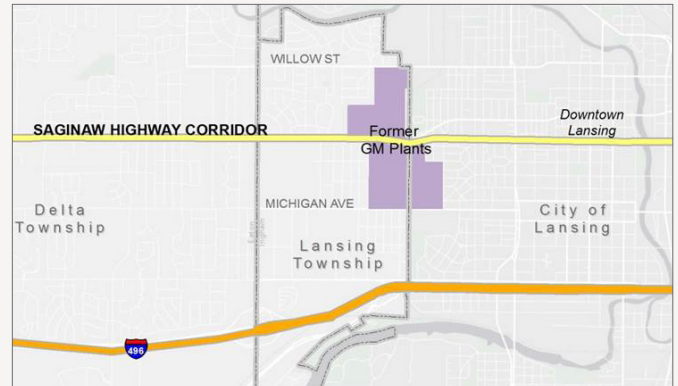


Figure 1. Context Map



Figure 2. Existing Land Use Map

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PLANNING PROCESS

The reuse planning process included stakeholder interviews, evaluating remedial considerations, identifying reuse zones, and conducting a renewable energy screening. Then in March 2013, stakeholders were convened for a working session to identify reuse goals and principles which are outlined below and on page 4. The working session also helped to clarify remedial constraints and reuse zones which are outlined to the right and on page 3. The working session was effective in developing momentum for an integrated redevelopment approach, resulting in a set of near-term strategies outlined on page 4 to help reposition the site for green industry and mixed-use development.

Reuse Goals

Shared reuse goals identified by stakeholders at the March 2013 working session include:

- Leverage site assets to support multiple uses across the three properties;
- Consider light industrial or commercial uses that generate high-wage jobs and contribute to the local tax base.
- Provide mixed-use neighborhood commercial center that compliments surrounding neighborhoods, businesses and schools; and
- Coordinate redevelopment and marketing efforts across jurisdictions.



Areas with few known development limitations, like the northern portions of Plant 3 (top) and Plant 6 (bottom) could potentially accommodate mixed-use redevelopment.

REMEDIAL CONSIDERATIONS

Future use of the former GM Plants 2, 3 and 6 will need to take into account RACER and MDEQ's cleanup approach. When the on-going corrective action measures are complete, RACER anticipates site contamination impacts will be addressed to ensure that the site is ready for industrial or light industrial use.

Key reuse considerations based on RACER's remediation and facility closure approach are summarized below and represented in the reuse zones map on page 3.

Areas with few known development limitations

The RACER Trust has identified various locations across the three properties where historic site uses are not likely contributors to site contamination and are likely to have fewer redevelopment constraints. These areas are primarily located on the perimeter of site properties with good visibility and frontage on Saginaw, Michigan and Willow. These areas can likely accommodate flexible mixed-use redevelopment, including but not limited to commercial, vertical residential, (second floor or higher), open space and light industrial uses. There may be opportunities to carve-out certain areas from the anticipated site-wide light industrial use restrictions to allow greater reuse flexibility.

Concrete slabs

The RACER Trust has identified certain concrete slabs that could serve as protective cover or remain in place to support future redevelopment. The identified concrete slabs encompass approximately 52 acres (20 percent of the total acreage); slab depths range from 12 inches to 2 feet. Lansing Township ordinances require slab removal as a permitting condition for demolition of the former Plant 2 and 3 facility structures. Both the Township and the City have indicated a preference for slab removal wherever possible and are working with the RACER Trust and MDEQ to coordinate slab removal with reuse priorities.

Subsurface foundations and structures

Subsurface foundations and structures, including the former Press Pit Basement (Area C at Plant 3) and various remaining subsurface structures (Area D at Plant 6), encompass approximately 20 acres and are likely to present barriers to near-term redevelopment in these locations. The municipalities are working with the RACER Trust to align facility closure conditions and reuse plans for these areas.

REUSE SUITABILITY ZONES

Zones highlight four categories of reuse suitability based on site features and the reuse considerations outlined on page 2. Suitability zones identify the most significant factors that are likely to influence future use. Remaining areas not included in the zones below are likely suitable for light industrial or non-residential uses.

Suitable for structural development (72 acres)

Potentially suitable for mixed-use, vertical residential (second floor or higher) or light industrial uses. Areas with few known development limitations.

Suitable for development with concrete slab considerations (52 acres)

Suitable for light industrial use; concrete slabs could potentially remain in place as protective cover or to support reuse.

Suitable for development with subsurface structure considerations (20 acres)

Potentially suitable for light industrial use. Former press pit basement located at Plant 3 and subsurface foundations and structures at Plant 6.

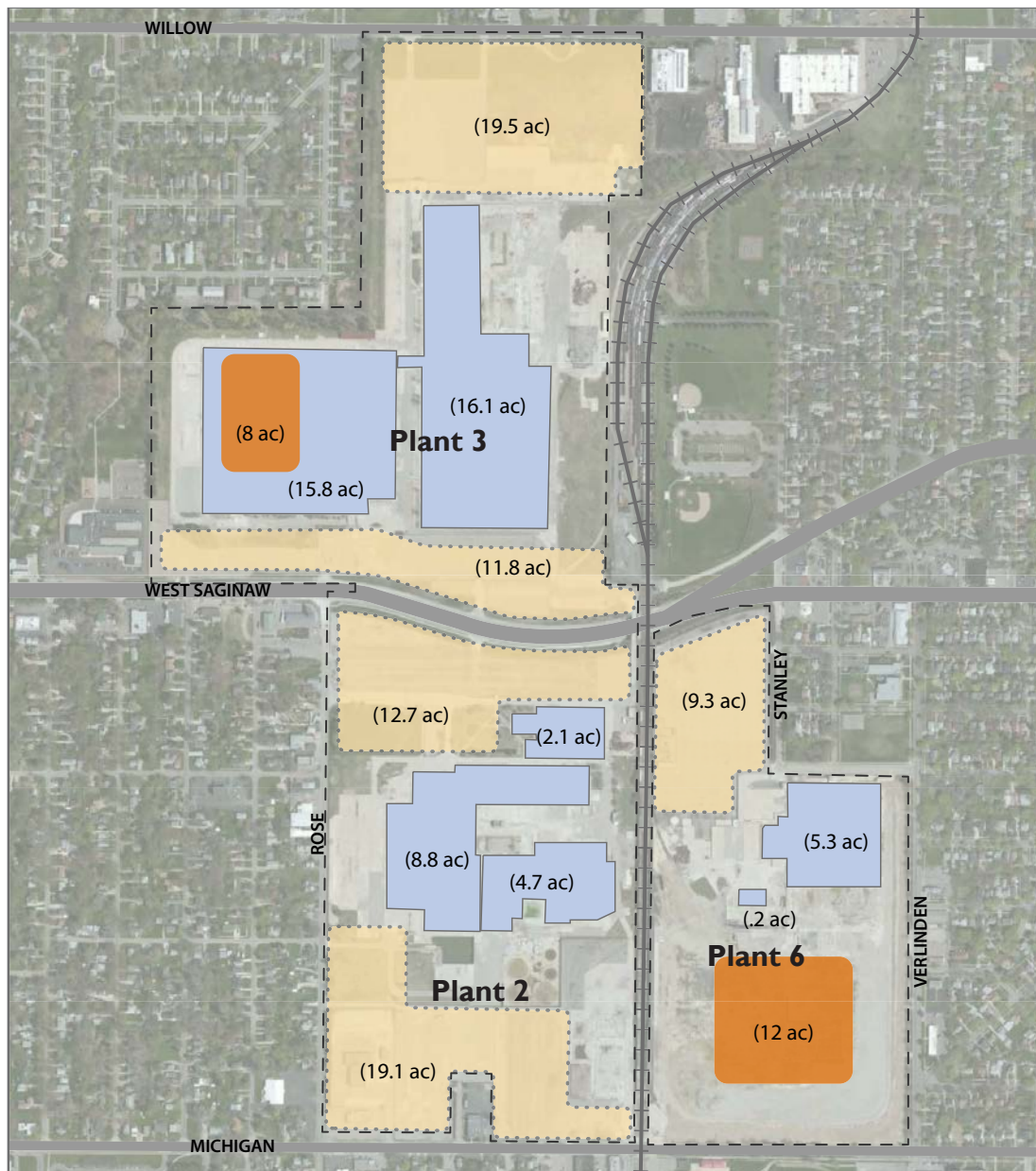




Figure 3. Reuse Suitability Zones Map





REUSE PRINCIPLES


Stakeholders at the March 7 reuse working session outlined the following general principles to help guide redevelopment efforts.


 Define the three properties as a “community neighborhood center.”


 Pursue commercial uses along Saginaw Corridor.

 Consolidate light industrial and intense commercial uses in interior areas.

 Ensure a balance of higher density mixed-use with appropriately-scaled buffer uses around the perimeter.

 Integrate green infrastructure stormwater management and “complete streets.”

 Increase auto connections to and through site properties (existing entrance points illustrate potential connections).

 Increase pedestrian connections to and through the site properties to support adjacent schools and neighborhoods.

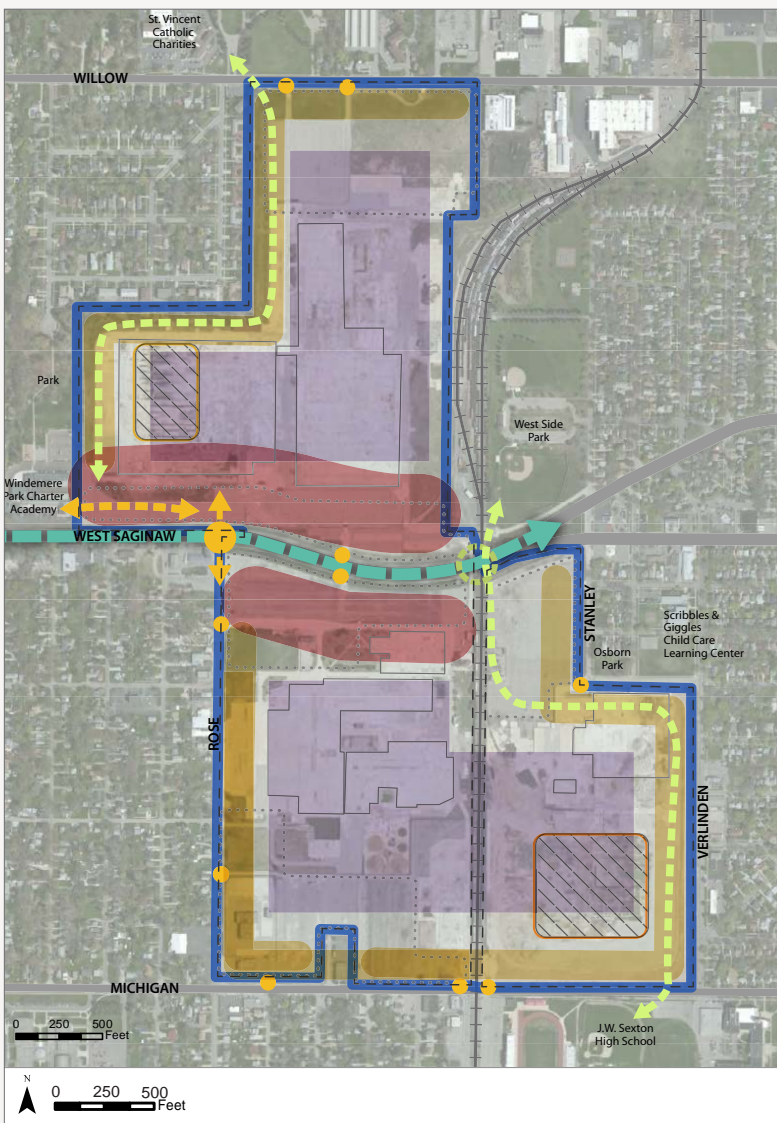
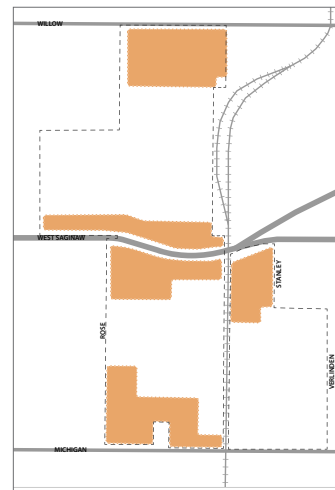


Figure 4. Working Session Reuse Principles

RECOMMENDATIONS

The future use framework on page 5, along with the remedial and reuse suitability considerations outlined on the previous pages can help to inform prospective developers and local government partners about key site conditions and redevelopment opportunities. Strategic planning activities and recommendations to advance reuse at the three properties are outlined below.

1. Carve-out Zones



Consider separating areas with few known development limitations from anticipated site-wide use restrictions to allow for commercial uses and mixed-use development with a residential component in appropriate areas. Establishing the carve-out zones would enhance the site’s potential to accommodate a mixed-use redevelopment approach.

Figure 5. Potential Carve-out Zones

2. Formation of a Joint Planning District

Lansing Township and the City of Lansing have identified an opportunity to establish a joint planning district spanning the three properties that would allow future development processes to be coordinated across jurisdictions. Formation of a joint planning commission could help streamline the development process and allow future uses to be located in areas most suitable for the type of redevelopment program. The two municipalities have also identified a potential joint Brownfield Tax-Increment Financing District as a dedicated funding source for additional remediation and infrastructure improvements necessary to support end-uses across municipal boundaries.

3. Market Analysis

The following types of market analysis could align regional markets with reuse framework opportunities:

- Identify target or niche retail opportunities for a 45-acre mixed-use corridor on West Saginaw (Zone A).
- Consider demand for market-rate or mixed-rate residential as part of mixed-use development scenario (Zone B).
- Evaluate sectors and industry types that could benefit from site assets and potential for co-location in a Business Park.

FUTURE LAND USE FRAMEWORK

The future land use framework integrates reuse suitability and reuse principles to support local planning and redevelopment.

A Commercial mixed-use - 45 acres
(retail, professional office)

B Mixed-use with a residential component - 9 acres
(second story residential or higher)

C Light industrial/Business Park - 78 acres
(manufacturing, technology, renewable energy)

D Industrial - 28 acres
(bulk materials, transportation/warehousing)

Potential Community Amenities

- ➡ Planned access improvements
- ➡ Potential trail connection linking nearby community uses

Industrial Reuse Considerations

- ➡ Potential rail connection
- ➡ Potential to maintain buffer of smaller scale uses or open space adjacent to residential areas

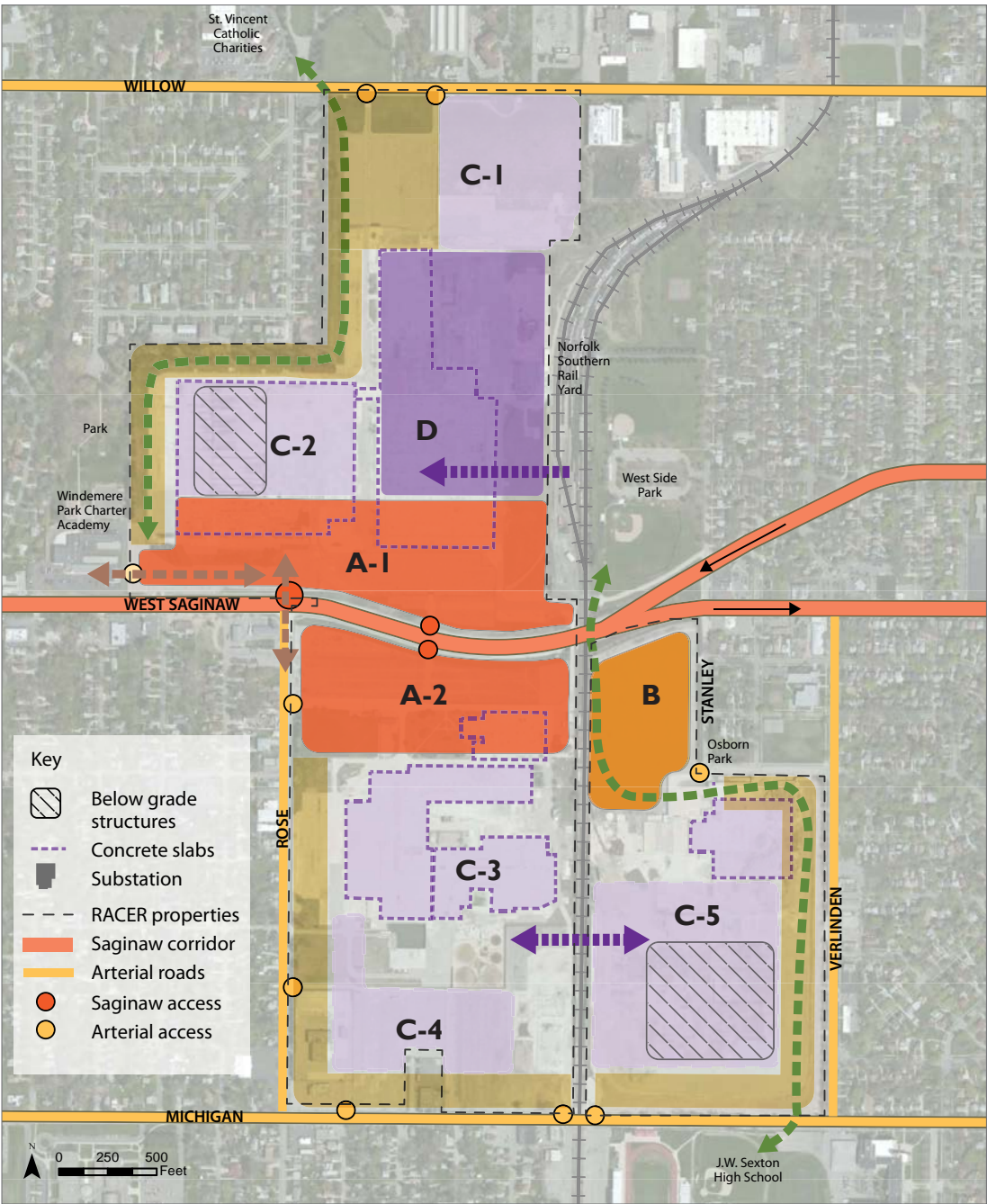


Figure 6. Future Land Use Framework

RESOURCE AVAILABILITY SCREENING

Reuse priorities of the City of Lansing and Lansing Township include consideration of renewable energy generation and manufacturing as potential future site uses. The most important location-related requirements for renewable energy projects at a site are sufficient availability of a renewable energy resource, site topography, compatible site infrastructure and transmission access.

Given the location, topography and available renewable energy resources for the site, the screening analysis focused on the most promising renewable resources for former GM Lansing plants: biomass energy, wind energy and solar energy. Resource availability assessments are based on information supplied by the U.S. Department of Energy.



Biomass feedstocks



Wind turbines



Solar photovoltaic (PV) panels

BIOMASS

The greater Lansing area has average availability of biomass feedstocks compared to other areas of the state.

Biomass describes many different fuel types from sources such as trees, construction, agricultural wastes, fuel crops, sewage sludge and manure. Energy is harnessed from the combustion of the biomass fuel sources and can be used as a thermal heat source or for electricity generation.

Biomass Reuse Considerations:

- **Potential Bioenergy Opportunity:**
Located ½ mile to the north of Plant 3, the City of Lansing waste water treatment plant generates approximately 6000 dry tons of biosolids each year. Additional processing or drying of biosolids could allow for extraction of methane from these biosolids. Preliminary estimates suggest this source could generate approximately 23,000 MBTU of energy annually for conversion to electricity generation or direct use as a thermal heat source.
- **Potential Biomass Technology Cluster:**
Former Plant 3, located adjacent to active industrial uses and the Norfolk Southern rail yard, could serve as a location for a biomass feedstock packaging, processing, storage or warehousing facility. There may be an opportunity to develop a light manufacturing cluster around emerging technologies in the biomass sector.

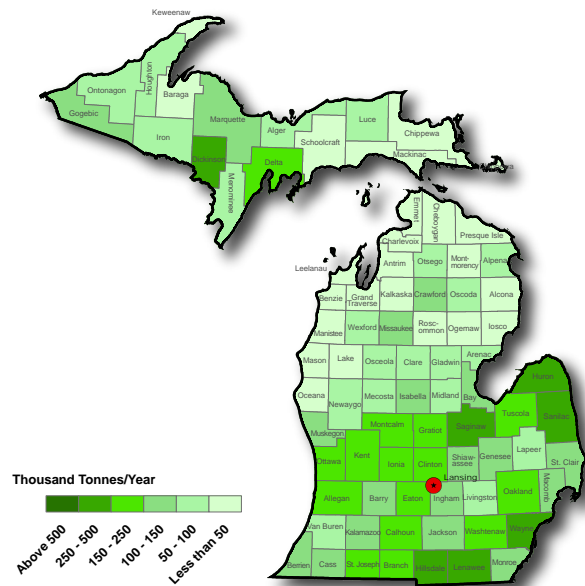


Figure 7. Biomass Resources (Source: National Renewable Energy Laboratory [NREL] Sept. 2007)

WIND

The wind resource available within the greater Lansing area falls within the Class 1 to 2 category, which suggests a poor to fair wind resource relative to other areas of the state. Classes 3 to 7 are considered suitable for utility-scale wind power development.

Wind power density is the effective power of wind and a key factor for determining the potential wind energy development. The map below categorizes areas of Michigan into seven classes of wind power density.

Reuse Considerations:

- **Small-Scale Wind:** The greater Lansing area's relatively poor wind resource would not likely support utility-scale wind power generation. Future site reuse configurations could potentially incorporate small-scale wind power generation for on-site use (wind systems with power capacities ranging from 500 Watts to 100 kilowatts (kW) in size).
- **Manufacturing:** Beyond wind power generation, wind turbine component manufacturing has been considered as a potential redevelopment opportunity for many former auto manufacturing facilities. The City of Lansing has indicated that one turbine manufacturer considered the former Plant 6 property as a potential location for a production facility.

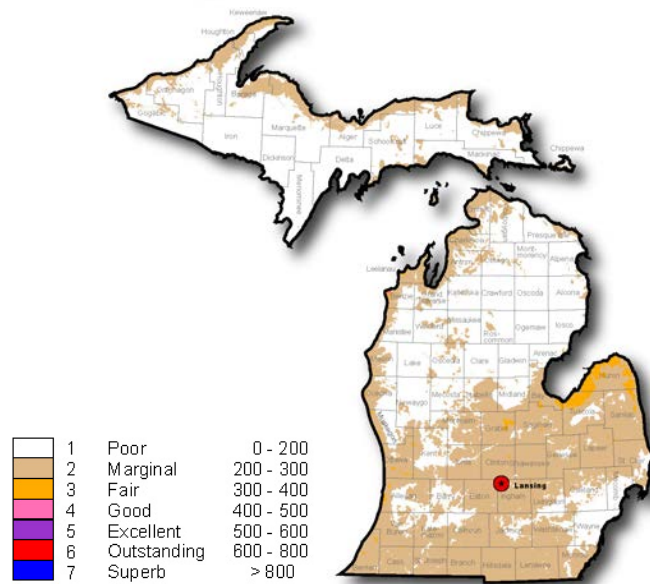


Figure 8. 50m Wind Resource (Source NREL Sept. 2007)

SOLAR

Michigan and the greater Lansing area have relatively good solar energy resources as measured by irradiance level (4kWh/m²/day). Irradiance levels of 6kWh/m²/day and higher are considered excellent.

The key factors in evaluating the potential for utility-scale solar photovoltaic (PV) are topography, acreage, available incentives and utility interest/capacity to purchase power.

Reuse Considerations:

- **The Lansing area's solar resource** may be sufficient for a solar photovoltaic (PV) project.
- **Suitable Areas:** Locations in the interior of the three properties, such as remaining slabs, could accommodate solar PV projects ranging in size from 2 to 5 megawatts (MW) with a 10 to 20-acre footprint. Plants 2 and 6 provide on-site access to a substation.
- **Utility Considerations:** Lansing Board of Water and Light representatives have indicated that the utility is willing to work with developers and the RACER Trust to evaluate power purchase options for a solar project at this location.
- **Stakeholder Goals:** Stakeholder input suggests that utility-scale solar PV is not a desirable long-term use. Typically, upfront capital costs associated with a solar PV project limit the financial feasibility of solar PV development as an interim use.
- **On-site Use:** Based on stakeholder reuse goals and solar resource, there may be potential for small-scale solar PV integrated with on-site uses (e.g., roof-top solar PV).

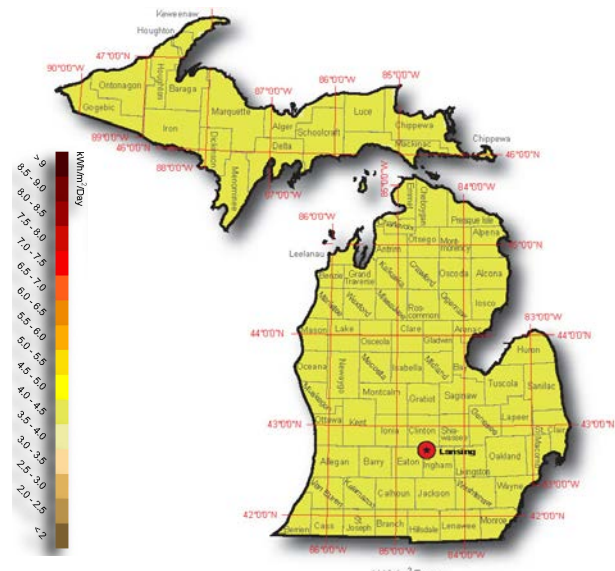


Figure 9. Solar Radiation (Source NREL Sept. 2007)

IMPLEMENTATION RESOURCES

The following funding programs could assist in repositioning the sites for redevelopment.

Community and Economic Development Funding Resources

Community Reinvestment Fund

Non-profit organizations and local governments in the region can apply for capacity building mini-grants (\$500-\$5,000) to help promote engagement of under-represented stakeholders in community planning and economic development discussions.

Community Revitalization Program (CRP)

Michigan Economic Development Corporation (MEDC) provides CRP grants (up to \$1,000,000) and loans (up to \$10,000,000) for developer-driven revitalization projects. <http://www.michiganadvantage.org/cm/Files/Fact-Sheets/ommunityRevitalizationProgram.pdf>

Business Development Program (BDP)

MEDC provides BDP performance based loans and grants to businesses undertaking economic development efforts expected to generate 50 jobs or more. <http://www.michiganadvantage.org/cm/Files/Fact-Sheets/anBusinessDevelopmentProgram.pdf>

Brownfield Cleanup and Funding Resources

Brownfield Tax Increment Financing Program (Brownfield TIF)

Enrolling a site in a Brownfield TIF allows a local governmental to receive existing taxes on the property, capture the increased tax revenue resulting from a redevelopment project, and use that incremental tax revenue to offset the costs of environmental and non-environmental eligible activities. <http://www.michiganadvantage.org/Brownfield-Redevelopment>

Brownfield Revolving Loan Fund (RLF)

MDEQ administers the statewide RLF, which provides local brownfield redevelopment authorities with access to funds for capitalization of individual loan funds. Two types of funding are available to support planning, site assessment and remediation activities tied to economic development:

- Grants capped at \$1,000,000 (\$15,000,000 available)
- Loans, capped at \$1,000,000 / year, are financed interest free for 5 years with a rate of 1.5% thereafter (\$50,000,000 available)

ACKNOWLEDGEMENTS

The following organizations and entities contributed to the development of the reuse framework:

- City of Lansing Planning Department
- City of Lansing Economic Development Corporation
- Delta Township
- Lansing Charter Township Steering Committee
- Lansing Charter Township Offices of Administration and Planning
- Lansing Area Economic Partnership
- Lansing Board of Water and Light
- Lansing Automakers Federal Credit Union (LAFCU)
- Michigan Department of Environmental Quality
- Michigan Economic Development Corporation
- RACER Trust
- Tri-County Regional Planning Commission
- Westside Neighborhood Association
- Westside Commercial Association
- EPA Region 5



Stakeholders toured the former GM Lansing properties to identify opportunities.

CONTACT INFORMATION

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