

Land Use and Demographics Report

New Market Solar Project
Clay and Whiteoak Townships
Highland County Ohio

August 2020
Terracon Project No. 49187638A

Prepared for:

Hecate Energy Highland 4 LLC
Hecate Energy Highland 2, LLC
Chicago, Illinois

Prepared by:

Terracon Consultants, Inc.

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

August 2020



Ms. Patti Shorr
Hecate Energy Highland 4 LLC
621 W Randolph Street
Chicago, IL 60661

Re: Land Use and Demographics Report
New Market Solar Project
Clay and Whiteoak Townships
Highland County, Ohio
Terracon Project Number: 49187638A

Dear Ms. Shorr:

Terracon Consultants, Inc. is please to submit the Demographics and Land Use Report for the above-referenced project. The report was prepared for use with the Ohio Power Siting Board Standard Application

Please review the enclosed report and contact me at your convenience with any questions or comments. We appreciate the opportunity to be of service to you on this project. You may reach us by phone at 770-623-0755.

Sincerely,
Terracon Consultants, Inc.

Savanna Sapp
Staff Scientist

Emily Kosmalski
NEPA Resource Manager

Attachment: Demographics and Land Use Report

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	DEMOGRAPHIC PROFILE.....	1
2.1	Population	1
2.2	Employment.....	3
3.0	REGIONAL DEVELOPMENT IMPACTS.....	4
3.1	Housing	4
3.2	Commercial and Industrial Development.....	5
3.3	Transportation.....	5
3.4	Local and Regional Plans	6
3.5	Concurrent or Secondary Uses.....	7
4.0	LAND USE	8
4.1	Highland County	8
5.0	CONCLUSION.....	8

TABLES

Table 2-1 Population within 5 Mile Radius of Proposed Project	2
Table 2-2 Population Projections	2
Table 2-3 Employment - Current and Previous	3
Table 2-4 Employment - Current and Previous	4

APPENDIX

References	A
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1.0 INTRODUCTION

This Land Use and Demographics Report has been prepared to support the proposed New Market Solar (Project), a solar-powered generating facility in Clay and Whiteoak Townships in Highland County in the State of Ohio. The Project consists of an array of ground-mounted photovoltaic (PV) modules, supervisory control and data acquisition (SCADA) station, direct current collection routing electrical systems, and access roads. The Project Area includes private land located in Highland County, Ohio. The Study Area includes Highland County and five townships (Clay, Hamer, Salem, Whiteoak, and Green).

This report is intended to analyze anticipated impacts to the land use generated from the construction and operation of the Project and discuss demographics of the Project and Study Areas.

2.0 DEMOGRAPHIC PROFILE

2.1 Population

The population of an area has the potential to present a “snap-shot” of land use within that area. United States Census categorizes and defines urban and rural areas. Urban areas are areas “comprising all territory, population, and housing units located in urbanized areas and in places of 2,500 or more inhabitants outside of urban areas”. Based upon the population data gathered and presented in Table 2-1, each township does not meet the definition of an urban area and is considered rural. To define whether or not a county is rural or urban, a different metric must be used, due to the size of constituents and the area. Urbanized areas are defined as “continuously built-up area with a population of 50,000 or more. It comprises one or more places—central place(s)—and the adjacent densely settled surrounding area—urban fringe—consisting of other places and nonplace territory.” Both Highland and Brown counties do not meet the definition of an urbanized area. Therefore based on the definition of the areas, the Proposed Project and the Study Area are considered to be within rural area.

Table 2-1 Population within 5 Mile Radius of Proposed Project

County/Township	2000 Population	2010 Population	2018 Estimated Population	Increase/ Decrease in Population from 2000-2018	Increase/ Decrease in Population from 2010-2018
Highland County	40,875	43,589	43,052	5.3%	-1.2%
Clay Township	1,219	1,431	1,397	14.6%	-2.4%
Hamer Township	699	680	670	-4.1%	-1.5%
Salem Township	682	780	799	17.2%	2.4%
Whiteoak Township	1,374	1,371	1,357	-1.2%	-1.0%
Brown County	42,285	44,846	43,570	3.0%	-2.8%
Green Township	3,389	3,652	3,489	3.0%	-4.5%
Total Study Area	7,363	7,914	7,712	4.7%	-2.6%

Source: United States Census 2016.

As noted above within the past eighteen years, an overall increase in population within the area has occurred. The increase in population occurred between 2000 and 2010; however, since the increase in population in 2010, the population has been decreasing, with Salem Township as the exception. The increase in population is less than the percentage change in the United States Population from 2000 to 2016, which is 14.6 percent but greater than 2.2 percent in Ohio (US Census 2018). Ohio is located within the Snow Belt, which is experiencing an out-migration potentially due to employment opportunities and favorable housing markets (Bahrampour 2017). Based on the Ohio Development Services Agency information, Highland County is anticipated to have a stagnant population and Brown County is projected to have a decrease of eight percent in population by 2040 (ODSA 2018a). If this trend continues, the Study Area would experience an overall decrease in population, where the Project Area would not. See Table 2-2 below for projected population, based upon increase/decrease observed from 2010 to 2018.

Table 2-2 Population Projections

County/Township	2020 Projection	2025 Projection	2030 Projection	2035 Projection	2040 Projection
Highland County	41,840	41,530	41,150	41,340	41,740
Clay Township	1,252	1,211	1,172	1,134	1,097
Hamer Township	677	675	673	671	669
Salem Township	656	635	614	594	575
Whiteoak Township	1,417	1,440	1,463	1,486	1,510

Land Use and Demographics Report

New Market Solar Project ■ Clay and Whiteoak Townships, Ohio
August 2020 ■ Terracon Project No. 49187638A



Brown County	42,350	41,100	40,070	39,280	38,700
Green Township	3,465	3,390	3,317	3,245	3,175
Total Study Area	7,498	7,381	7,268	7,159	7,054

Source: ODSA 2018a

It is anticipated that based upon the regional and state trends that population will continue to decrease regardless as to whether the proposed project is constructed and under operation. Within the study area, between 2020 and 2030, it is anticipated that the population will decrease 3.0 percent; while Brown County will experience a decrease in 5.0 percent, Highland County 1.6 percent in, and the state of Ohio an increase of 0.3 percent which is negligible growth.

2.2 Employment

Due to the rural nature of the Project Area and the Study Area, the opportunity for employment opportunities is minimal. Historically, unemployment rates are higher within rural areas than urban areas and are slower to recover during period of growth (USDA 2017). Table 2-3 details the current employment and unemployment rate as well as two years previous.

Table 2-3 Employment - Current and Previous

County/Township	Labor Force (2018)	Employed	Unemployed	2018	2017	2016
State of Ohio	5,780,700	5,521,700	259,100	4.5%	5.0%	5.0%
Highland County	17,138	16,194	944	5.5%	5.9%	6.3%
Brown County	19,445	18,403	1,042	5.4%	5.7%	5.8%

Source: Ohio Labor Market Information 2020

Within the Study Area, manufacturing, retail; arts; entertainment, recreation; and educational services including health and social services are the largest employers. These industries are also the largest employers within the state. Employment by industry within the Study Area is noted in Table 2-4. Even though the land use and population is rural and promotes agriculture, due to the efficiency associated with heavy equipment, planting practices, and scientific engineering, the industry does not require a high number of employees. Due to the proximity of the Study Area to a larger metropolitan area, it can be assumed that some of these employment opportunities are associated with the economy of Cincinnati.

Table 2-4 Current Industries and Percent Employed Per Industry

Industry	Ohio	Brown County	Highland County
Agriculture, forestry, fishing, hunting, and mining	1.0%	1.9%	4.8%
Construction	5.5%	8.5%	7.2%
Manufacturing	15.0%	16.9%	20.0%
Wholesale Trade	2.6%	1.9%	1.9%
Retail Trade	11.4%	9.6%	11.1%
Transportation and Warehousing	5.3%	5.1%	7.8%
Information	1.6%	1.1%	1.3%
Finance, Insurance, and Real Estate	6.4%	6.5%	3.9%
Professional, Scientific, Waste Management Services	9.8%	7.4%	6.6%
Educational Services , Health Care, and Social Services	24.2%	23.1%	20.6%
Arts, Entertainment, Recreation, Accommodation and Food Service	9.1%	8.9%	7.5%
Other Services	4.4%	4.0%	4.0%
Public Administration	3.8%	5.1%	3.3%

Source: United States Census, 2018.

3.0 REGIONAL DEVELOPMENT IMPACTS

The Study Area has a rural economy, influenced by a larger metropolitan area, Cincinnati, to the west. The proximity to the metropolitan area has allowed the Study Area to manage its decline in population, without the opportunities afforded elsewhere within the region and the increase in efficiency with agricultural practices, the decrease in population could be faster and the unemployment rate could be higher. Highland and Brown counties are attempting to capitalize on the opportunities that the proximity to Cincinnati provides, while ensuring the character of their communities remains intact.

3.1 Housing

It is estimated that there are approximately 19,326 housing units in Highland County and 20,048 housing units in Brown County; with approximately 13% vacant. Brown County has a higher percentage of these units as owner-occupied, 87%, while Highland County has 86%; both

counties are below the state percentage of 89.7%. Brown County has a lower homeowner vacancy rate than both Highland County and the state, with an estimated rate of 1.3; Highland County has a rate of 1.7 and Ohio has a rate of 1.6. The homeowner vacancy rate reflects the availability of homes available for purchase, indicating there are less homes available in Brown County, potentially increasing the cost of homes. The rental vacancy rates are higher than the homeowner vacancy rates; however the trend is similar to that of the homeowner vacancy rate; Highland County has a rate of 2.1, Brown County has a rate of 5.8, and Ohio is 5.6.

Within the Study Area, the median home cost is \$126,050 (Highland County has a median cost of \$123,400), below the state average of \$149,300; the average median monthly gross rent value is \$683.00, below the statewide average of \$788.00 (US Census 2016).

Given the availability of housing units and the potential decrease in population within the area, a negative impact on the regional housing market is not anticipated. It is not anticipated that during construction and operation of the facility that housing units will be needed due to the proximity of the project site to Hillsboro.

3.2 Commercial and Industrial Development

As of March 2020, 282.47 megawatts (MW) of solar generating materials have been installed within Ohio and 1,761.72 MW are anticipated to be available over the next five years. There are currently 238 solar companies in operation. Of these companies, 99 manufacture goods across the supply chain, and those companies have generated 7,282 positions for employment, creating an overall \$728.14 million investment within the state (SEIA 2020). Within the United States, Ohio ranks 29th in installed solar capacity, 7th for solar jobs and 12th for solar growth projection (Solar Foundation 2018).

Within the Study Area, Highland County's industries include Candle lite, Weastec, Inc., PAS Technologies, Huhtamaki Plastics, Seal-tite, Greenfield Products, Waddell/Ghent Manufacturing, Greenfield Research and Illinois Tool Works/Hobart Corp; which are more numerous than those in Brown County which includes Milacron LLC, Stanley Black & Decker, and Surgical Appliance Industries. These companies manufacture equipment, components of larger pieces of equipment (including electronic components), or personal items such as candles. These industries employ approximately 18% of all workers within the Study Area (ODSA 2018b). There are no known new industries anticipating moving into the area.

Based upon the existing industries and the lack of new industries anticipated within the Study Area, no impacts are anticipated on the existing commercial and industrial developments except for the potential for those existing facilities to have reduce utility expenses.

3.3 Transportation

The Study Area has two modes of transportation in and out of the region: roadway and rail line.

Land Use and Demographics Report

New Market Solar Project ■ Clay and Whiteoak Townships, Ohio
August 2020 ■ Terracon Project No. 49187638A



One US Highway is within the area, US Highway 62, which connects to State Highway 321 (immediately to the south of the project site). US Highway 62 runs from the US-Mexico border in El Paso, Texas to Niagara Falls, New York. Additional State Highways within the project area include State Highway 134 (runs north/south west of the site) and State Highway 138 (runs southwest to northeast to the northwest of the site). Within the site township numbered roads that travel through the site and connect other portions of the site with State Highway 321 and 134 are present. State Highway 138 leads from Buford, OH to Hillsboro, OH and continues northeast to west of Circleville, OH where it terminates into US Highway 22. State Highway 321 connects Buford, OH to US Highway 62 and State Highway 134 that is from Sardinia, OH to State Highway 124. It is assumed that workers associated with the construction and operation of the project will travel to and from the site utilizing State Highway 138. The existing roadways should be sufficient to manage the number and type of vehicles associated with the construction and operation of the project. It is anticipated that the construction will require traditional construction equipment and the components of the solar site itself are not large; therefore the project should not have direct impacts on the existing roadways.

A rail line, approximately three miles to the south of the project site, within the Study Area, runs through Sardinia, OH and the Village of Mount Orab, OH. The rail line is owned and operated by Norfolk Southern, as part of the Cincinnati District. The rail line travels east/west connecting Cincinnati, OH to Portsmouth, OH. The rail line has the potential to be used during the construction of the project; however, the project should not have an direct impacts on the line.

A public airport (Highland County Airport) is present; however, it is approximately 13 miles to the northeast of the Project Area. The airport includes a 3,520- foot primary runway and a full parallel taxiway. The most frequent operations include corporate flights, flight training, military exercises, and recreational flying (ODOT 2018).

3.4 Local and Regional Plans

Due to the rural nature of the area, very few local and regional plans have been prepared. Within the Study Area, one plan has been drafted, the Highland County Comprehensive Plan. The Project Area is located within Highland County. The plan was drafted in 2003 and has not been updated since. The plan provides guidance on land use, environmental issues, transportation, community investment, community character, open space, and land preservation. The plan focused on five priority actions:

- 1) Develop a protocol for review and approval of development proposals
- 2) Modify subdivision regulations to support managed growth
- 3) Discourage random driveway cuts and intersections along major thoroughfares
- 4) Support the agricultural economy and preserve valuable farmland
- 5) Zone in a manner that reflects the needs of the county.

A Land Evaluation Site Assessment model was developed to assist with future land use

development. Principles including critical resources such as woodlands, stream buffers, steep slopes, and endangered species habitat; agricultural preservation; development within existing urban areas; and creation of mixed-use (residential and limited commercial) areas were considered when developing the model. Twelve future land use categories were established:

- Agricultural 1 - Recommended for the highest possible level of protection in the County. Land uses appropriate for this category include farmsteads, single-family homes, and agricultural uses associated with traditional farming activities.
- Agricultural 2 – Farmlands that have been designated as viable agricultural resources. Designation may also include environmentally sensitive lands such as woodlands and wetlands.
- Rural Residential – Areas outside of the designated growth and agricultural preservation areas; provide a transition between the most viable farmland and more urban land uses.
- Recreational Residential – Single family residences as well as seasonal use housing. Also included in this category is service and tourism related commercial uses.
- Suburban Residential – Established to accommodate higher density residential uses for lands inside or adjacent to future growth areas. Density should be dependent on the availability of water and sewer service.
- Village Cluster – Accommodates a mixed use/higher density residential community within the boundaries of an existing hamlet settlement or planned development.
- Commercial – provides for the convenient shopping and service needs. These facilities provide community retail, office, and highway oriented commercial services situated along highways and at major intersections.
- Airport Commercial – Includes both the County airport and surrounding commercial enterprises that serve the airport and its users
- Industrial – Areas either currently within the existing or proposed growth areas designated within the County. This land use has been assigned to areas within close proximity to major transportation linkages such as airports, rail spurs, or state highways.
- Open Space – Lands set aside to conserve and protect valuable natural features and recreational areas.
- Incorporated - Incorporated municipal boundaries within the county.

3.5 Concurrent or Secondary Uses

At this time, the Project Area will only be used for the generation and distribution of solar energy. The area will have restricted access and include a perimeter fence with at least one locked access point. Do not enter notifications will be placed along the fenced area as well as signs stating that high-voltage equipment is present throughout the Project Area. Perimeter fences should be topped with barbed wire.

4.0 LAND USE

4.1 Highland County

The project site is only located within Highland County. Highland County includes approximately 357,000 acres, 553.3 square miles. Within Highland County, 60.25 percent is utilized for agricultural purposes and 33.89 percent is undeveloped (forested, water, or shrub/grasslands). Within the project area, approximately all of the land parcels are currently designated as part of the Current Agricultural Use Value (CAUV) program. None of the land is classified as an agricultural district. Landowners may choose to remove their land parcels from agricultural districts following a five-year period or incur a penalty to remove their land parcels during the five-year period. Following decommissioning of the solar project, agricultural activities as a listed agricultural district may resume; therefore, there are no intended long-term impacts to the integrity of the agricultural district.

The surrounding areas immediately adjacent to the project site are also designated as agricultural. The only urban area is the unincorporated community of Buford, OH approximately 570 acres. Within the urban area are single family homes (49.8 acres), agricultural areas (511 acres), cemetery and religious facilities (0.75 acres), park and township property (2.8 acres), commercial structures (0.5 acres), churches (0.75 acres), and educational buildings (5.46 acres).

Based upon the Highland County Comprehensive Plan, agricultural zoning is meant to encourage orderly growth which should enhance aesthetics and minimizing the cost of public services and protect environmentally sensitive wetlands and protect water and air quality. The construction and operation of the proposed project has the potential to minimize the cost of electricity within the area, reduce air emissions due to the lack of fossil fuels used to generate electricity, and the facility will not be constructed on sensitive wetlands. The proposed project is consistent with the comprehensive plan, therefore no negative impact on the existing agricultural lands surrounding and within 5 miles is anticipated.

5.0 CONCLUSION

Both the Project Area and the Study Area are rural areas, consisting of predominately agricultural land uses. The Proposed Project will modify the existing land use of the Project Area, from agriculture to industrial/energy development; however, the modification in land use is anticipated to not impact surrounding areas uses and will not contradict the principles of future development outlined in the Highland County Comprehensive Plan.

APPENDIX A

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Summary: Exhibit Application Exhibit H electronically filed by Ms. Karen A. Winters on behalf of Hecate Energy Highland 4 LLC