Memorandum

To: Wallingford Solar, LLC – Project File

Date: January 18, 2019

Project #: 58034.00

From: Lucy Thayer, Landscape Designer, and Michael Willard, LEED AP, Senior Landscape Architect

Re: Supplemental Section 248 Aesthetic Impact – Wallingford Solar, LLC

At the request of Wallingford Solar LLC ("Wallingford Solar"), VHB prepared this memorandum and its attachments in order to supplement VHB's Aesthetics Report (Exhibit WS-MW-2) submitted in the section 248 proceeding for the Wallingford Solar Project ("Project"). The supplement responds to requests for additional information from the Department of Public Service's ("DPS") aesthetic consultant.

## 1. Updated Viewpoint Photographs

VHB returned to the Project site on January 11, 2019, and took photos with a 35 mm (with 50-55 mm focal length) camera from the following vantage points:

- The same locations as the photos contained in Exhibit WS-MW-2 (Revised Viewpoints 1 through 8);
- From the Project site looking south and east across the valley (Viewpoint 9);
- From the Project site looking south and east to residences on Elm Street (Viewpoint 10);
- The bottom of Hillside Road (Viewpoint 11);
- The north end of Prospect Street (Viewpoints 12 and 13); and
- The upper portion of Nash Drive (Viewpoint 14).

The photographs from Viewpoints 1-14 are provided in Attachment 1, and a Revised Context Map including all Viewpoints in Attachment 2.

## 2. Local and regional documents concerning the suitability of the Project site as a location for a solar energy generation facility.

DPS requested that Wallingford Solar provide documentation of the suitability of the Project site for a solar energy generation facility, as discussed in the original Aesthetics Report. As discussed below, VHB is providing the following documents: letter from the Wallingford Town Selectboard, excerpts from the Wallingford Town Plan, Current Wallingford Zoning Map, and excerpts from the Rutland Regional Plan.

### 2.1 Letter from the Wallingford Selectboard

On October 5, 2018, the Wallingford Selectboard submitted to the Public Utility Commission its comments on the Project (Attachment 3). The letter sets forth the Selectboard's unequivocal support for location of the Project, stating in pertinent part: "[The Project] is located in a former industrial site – gravel quarry and hot asphalt mix plant – and is thus an ideal location for a renewable energy project."

40 IDX Drive, Building 100
Suite 200
South Burlington, Vermont 05403

Memorandum

### 2.2 The Wallingford Town Plan and Current Zoning Map

As set forth in the Wallingford Town Plan (adopted June 4, 2018) (relevant excerpts included in Attachment 4), "[t]he town of Wallingford designates the industrial district as the one suitable district for commercial scale solar."

More specifically, the Town Plan concludes that energy generation facilities are considered "light manufacturing" and that "[t]he industrial area in East Wallingford might appropriately be designated Light Industrial, as well as the manufacturing area near the intersection of Maple Street and River Street. This designation is appropriate for most of the areas that are now zoned industrial."[1]

The Project parcel is adjacent to the intersection of Maple Street and River Street and is currently zoned "IN-Industrial" as shown by the Current Wallingford Zoning Map attached hereto as Attachment 5. Thus, as described by the Town Plan, the Project site is designated as a suitable commercial scale solar site.

### 2.3 The Rutland Regional Plan

The Rutland Regional Plan (adopted June 19, 2018) (relevant excerpts included in Attachment 6) Energy Chapter identifies statewide "Preferred Areas" for energy generation which include gravel pits and quarries. This supports the Project proposal to build a solar generation facility on this former gravel pit.

"Statewide preferred areas are rooftops (and other structures), parking lots, previously developed sites, brownfields, gravel pits, quarries" (page 19).

The Regional Plan further identifies "Preferred Areas for New Renewable Generation". Specifically, the plan notes these areas should be targeted for future solar generation. The targeted areas include earth resource extraction sites, like the former use on the Project parcel.

"These suggested preferred locations are merely a partial list and it is anticipated that municipalities will add to the following list: Impervious Surfaces / Rooftops / Former landfill sites / Brownfields sites with Environmental Site Assessment / Earth resource extraction sites (sand pits, gravel pits, rock quarries) / Surface parking lots / Impervious areas within Industrial Parks" (page 19).

The Regional Plan has mapped the primary and secondary solar resources in the county, and identifies these areas on the Regional Solar Resource Area Map (page 23). The Project parcel has both primary and secondary solar resources identified. This supports the Project parcel being an ideal site for a solar generation facility.

"The RRPC has developed renewable energy resource maps for four renewable energy resources: solar, wind, hydro and biomass, existing renewable energy generation, and regional constraints and preferred areas. Through the creation of these regional energy resource maps, the RRPC is planning for the development of additional renewable generation facilities in the region" (page 18).

[1] The Town Plan's "Wallingford Future Land Use and Zoning Map" would place the Project Parcel in the "Forest and Recreation" and "Agricultural and Rural Res" Districts if the zoning regulations were revised in the future. The Zoning Map currently in effect, provided as Attachment 5, identifies the Parcel as "IN-Industrial."

Memorandum

To: Wallingford Solar, LLC – Project File

Date: January 17, 2019

From: Britta Tonn, Preservation Planner, and Michael Willard, LEED AP, Senior Landscape Architect

Project #: 58034.00

Re: Section 248 Aesthetic Impact – Wallingford Solar, LLC

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**Photographs**

**Rev. Viewpoint 1**. Views from the intersection of River Street and Elm Street looking northwest. The southeast corner of the Project solar array is approximately 770 feet northwest from this location.

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Suite 200
South Burlington, Vermont 05403

**Rev. Viewpoint 2**. View from approximately 85 River Street looking northwest. The eastern edge of the Project solar array is approximately 575 feet northwest from this location.

**Rev. Viewpoint 3**. View from the intersection of Maple Street and the railroad crossing, looking west. The eastern edge of the Project solar array is approximately 955 feet west from this location.

**Rev. Viewpoint 4**. Panoramic view from the intersection of the Project access road and River Street looking southwest. The northeast corner of the Project solar array is approximately 860 feet southwest from this location.

**Rev. Viewpoint 5**. View looking north along River Street at the Ames True Temper Corporation wood manufacturing facility.

**Rev. Viewpoint 6**. View looking south along River Street at the Wallingford Department of Public Works Town Garage.

**Rev. Viewpoint 7**. View looking southwest from within the Project site towards an existing building. The eastern most boundary of the Project solar array is approximately 300 feet west of this location.

**Rev. Viewpoint 8**. View looking northwest from within the Project site towards existing former quarry buildings on the Project site. The western edge of the Project solar array is approximately 300 feet west of this location.

**Viewpoint 9**. View looking east towards River Street from the edge of the plateau within the Project solar array.

**Viewpoint 9**. View from the project site looking south-southeast towards River Street from the edge of the plateau within the Project solar array.

**Viewpoint 9**. View from the project site looking southeast towards River Street from the edge of the plateau within the Project solar array.

**Viewpoint 10.** View from the Project site looking south towards 284 Elm Street from the southern edge of the Project solar array.

**Viewpoint 10.** View from the Project site looking south towards 286 Elm Street from the southern edge of the Project solar array.

**Viewpoint 11.** View looking northwest along Hillside Road from the vicinity of 101 Hillside Road. The central portion of the edge of the plateau within the Project solar array is approximately 0.61 miles from this location.

**Viewpoint 12.** View looking northwest from Prospect Street, just south of Hull Avenue. The central portion of the edge of the plateau within the Project solar array is approximately 0.46 miles from this location.

**Viewpoint 13.** View looking northwest from the intersection of Prospect Street and Hull Avenue. The central portion of the edge of the plateau within the Project solar array is approximately 0.44 miles from this location.

**Viewpoint 14.** View looking west along Nash Drive from the vicinity of 119 Nash Drive (at far right). The central portion of the edge of the plateau of the Project solar array is approximately 0.39 miles from this location.

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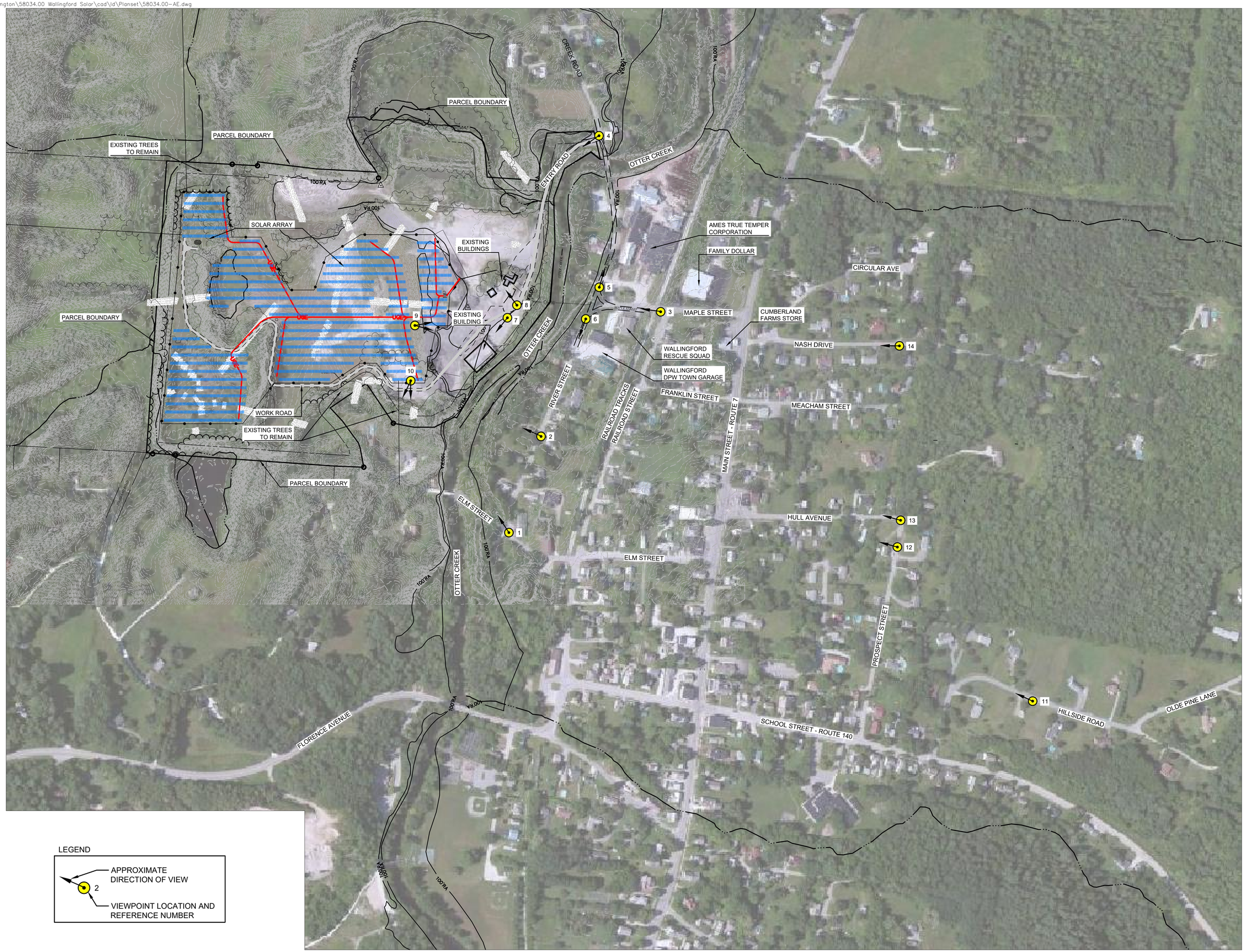



LEGEND

APPROXIMATE DIRECTION OF VIEW

2

VIEWPOINT LOCATION AND REFERENCE NUMBER

vhb.com

vhb

40 IDX Dr
Building 100 Suite 200
South Burlington, VT 05403
802.497.6100

0 100 200 400Feet

# Wallingford Solar, LLC.
# 2.2MW Photovoltaic Array

West Creek Rd
Wallingford, Vermont

| No. | Revision | Date | Appvd. |
|---|---|---|---|
| 1 | Discovery - Added VP Locations | 01/17/2019 | MKW |

Designed by CJH | Checked by CAF

Issued for: Section 248 Permitting | Date: Aug. 10, 2018

Not Approved for Construction

Drawing Title: Context Map

Drawing Number: AE-1

Sheet 1 of 1

Project Number: 58034.00

Saved Thursday, January 17, 2019 10:53:54 AM MWILLARD Plotted Thursday, January 17, 2019 11:26:03 AM Willard, Michael

JW

OCT 5 12 49:14
PUBLIC UTILITY COMMISSI

October 1, 2018,

Ms. Judith C. Whitney, Clerk
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

Re: PUC Case No. 18-3084-PET
Proposed Wallingford Solar Project – Letter of Support

Dear Ms. Whitney:

The Town of Wallingford Selectboard is in receipt of Wallingford Solar, LLC's 45 Day Notice Letter and Section 248 Petition for the Wallingford Solar Project, to be constructed on a parcel located at 139 Creek Road in Wallingford, Vermont. The Selectboard reviewed the Project at a duly-noticed Selectboard meeting held on September 17th, 2018.

The Selectboard wishes to express its support for this Project. It is located in a former industrial site – gravel quarry and hot asphalt mix plant – and is thus an ideal location for a renewable energy project. It will not be visible from most abutting properties with the exception of some backyards once leaves are off trees. It will not have negative impacts on the village core of Wallingford.

The Town Of Wallingford previously sent the Public Service Board a featuring the Town's Motion to Intervene in the above referenced project. The Selectboard confirms that the Town wishes to maintain party status.

Sincerely,
The Wallingford Selectboard:

Bill Brooks, Chair

Gary Fredette, Vice Chair

Rose Regula

Mark Tessier

Nelson Tift

Excerpt

# Wallingford Town Plan

## Formally Adopted • 2018 • on June 4

# Land Use

Residential land uses are the predominant use of non-federal land in Wallingford. Privately owned woodland is the next most extensive land use recorded in the town, followed by farms and miscellaneous buildings and lots. Despite their significant economic impact, commercial and industrial activities occupied a relatively minor portion of the Town's taxable land area.

## Districts

**Neighborhood Commercial**
This district contains the downtown village/historic district. The commercial uses that are present and/or desired in this district include retail store, business office, personal service business, community center, residential dwellings, hotels, and educational facilities.

**Residential 15000**
This residential district encompasses the downtown neighborhood commercial district, and is suitable for all residential uses, professional residence/office use, home occupations, and enclosed accessory building uses.

**Multiple Residential**
This residential district is nestled alongside the neighborhood commercial and the residential 15000 district, and is suitable for multiple family dwellings, as well as all residential uses. Additional acceptable uses include professional residence-office use, home occupations, and enclosed accessory building uses.

**Agriculture and Rural Residential**
The remaining residential areas of the town generally have soils with low septic suitability, steep slopes or poor access to roads. This district is suitable for low density and low intensity residential, agricultural, and forest related uses. Planned Residential Development would be encouraged where soils are suitable, to encourage preservation of farm fields, viable forestry operations, or natural areas, and to avoid areas with steep slopes, wetlands or poor roads.

**Forest and Recreation**
This large land district of town encompasses the Green Mountain National Forest as well as other large forest blocks in town. This district is suitable for large scale uses such as agriculture, forestry, recreation, wildlife refuge, and energy/telecommunication facilities.

**Industrial**
This district is appropriate for manufacturing facilities which are enclosed, and which store the majority of raw materials and finished product under cover. These should be uses that do not regularly emit noxious fumes, or generate high levels of noise.

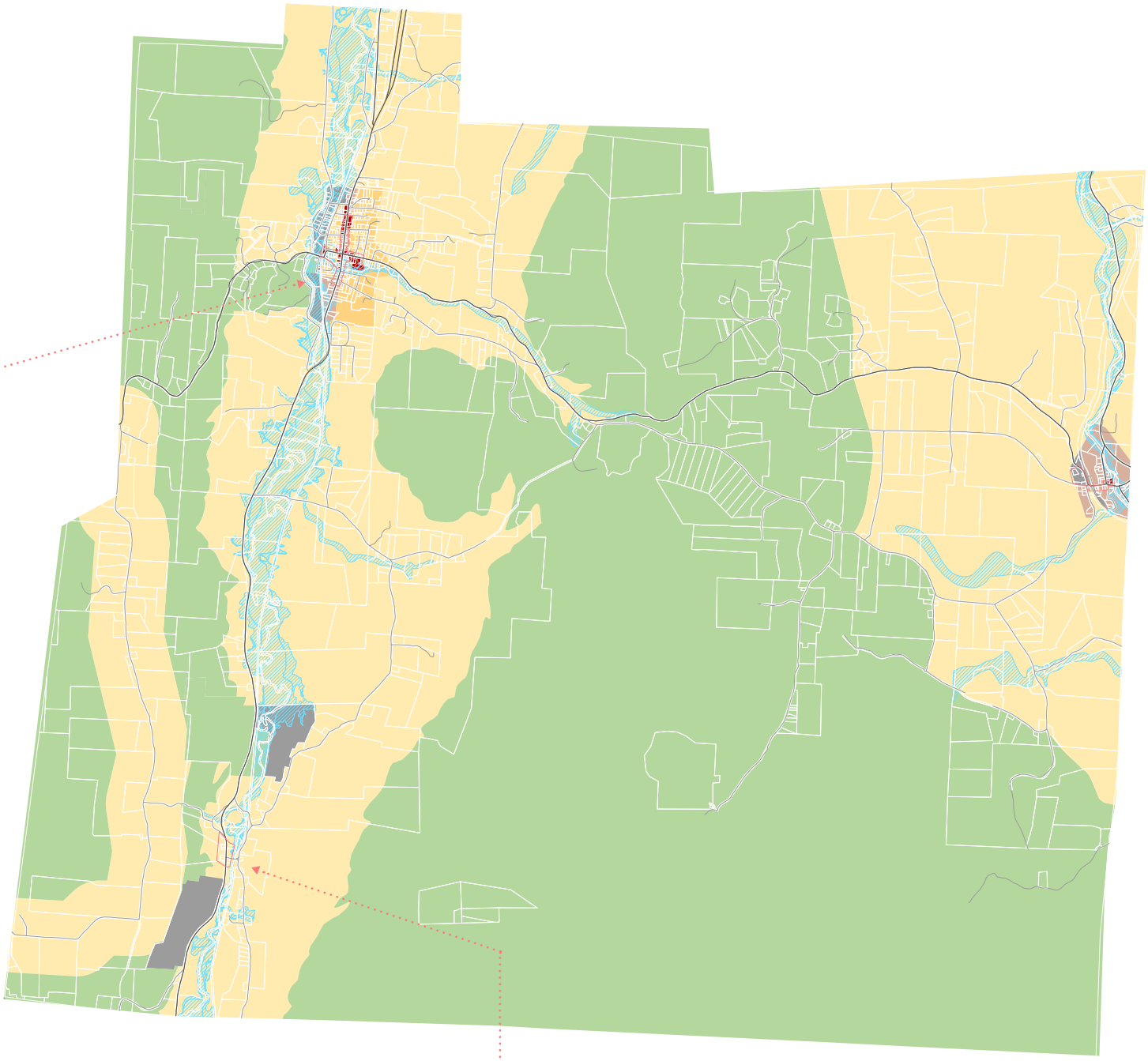
The industrial area in East Wallingford might appropriately be designated Light Industrial, as well as the manufacturing area near the intersection of Maple Street and River Street. This designation is appropriate for most of the areas that are now zoned industrial.

Examples of heavy industrial uses are exemplified by the former Pike operation and the quarry in South Wallingford. When another sector is opened, the applicant would be required to have a hearing on a site plan to determine if the prior sector was reclaimed, and what the impacts of the new sector would be on adjacent landowners and on transportation facilities.

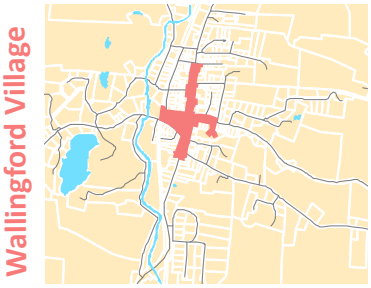
Light manufacturing is defined as parts assembly or woodworking; research and development laboratory; multiple family residential (over 2 units); enclosed warehouse; 1-family and 2-family dwellings; manufactured homes; enclosed service and repair establishments; public garage; public utility substation; car wash; quarry; dairy manufacturing; accessory building use; energy generation facilities and infrastructure and telecommunications facilities. The town of Wallingford designates the industrial district as the one suitable district for commercial scale solar.

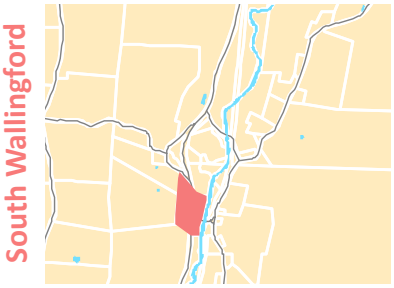
**Floodplain Region**
The Floodplain District includes all lands shown on the Federal Flood Insurance Maps within the 100 year floodplain. Development is prohibited within the floodway (the channel or area of moving water during the 100-year flood). Development may be permitted within the floodway fringe (the area of water ponding or storage during a 100-year flood) provided that the Town has adopted floodplain regulations that are consistent with federal guidelines.

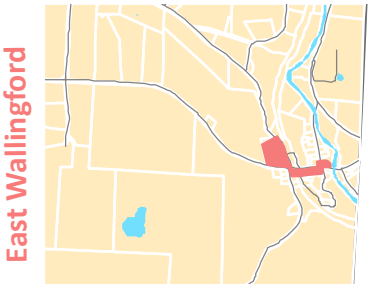
## Wallingford Future Land Use and Zoning Map



Forest and Recreation
Agriculture and Rural Res
Residential 15000
Multiple Res
Neighborhood Commercial
Industrial
100 Year Floodplain
Designated Village Centers



# Wallingford, Vermont
# Zoning Districts

CLARENDON

SHREWSBURY

TINMOUTH

MOUNT HOLLY

DANBY

MOUNT TABOR

## Legend

### District

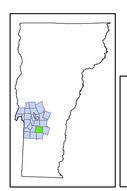
- ARR - Agricultural & Rural Residential
- FR - Forest & Recreational
- IN - Industrial
- MR - Multiple Residential
- NC - Neighborhood Commercial
- R15 - Residential 15,000
- Rail ROW
- Road ROW
- Water
- Wallingford Parcel Boundaries

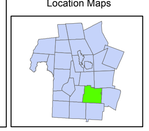
Miles

0 0.5 1 1.5 2 2.5 3

N W E S

Location Maps





Date: 6/22/2015

VCGI

TLAND REGIONAL PLANNING COMMISSION

Document Path: E:\RRPC\WALNGFRD\wal zoning comparison14.mxd

Excerpt

# Rutland Regional Plan

Adopted June 19, 2018

Re-Adopted June 19, 2018

# Energy Resource Maps

The Vermont Public Utility Commission (PUC) has jurisdiction over all energy generation facilities that are part of the public electrical grid.

The RRPC has developed renewable energy resource maps for four renewable energy resources: solar, wind, hydro and biomass, existing renewable energy generation, and regional constraints and preferred areas. Through the creation of these regional energy resource maps, the RRPC is planning for the development of additional renewable generation facilities in the region (using the LEAP model targets as the basis) and providing clarity regarding regional land conservation and specific policies for the siting of renewable energy facilities. **The RRPC has excluded industrial wind facilities from planning for regional energy generation.**

The fundamental element of the energy resource maps is the natural existence of potential for each of the energy resources. The analyses used to produce maps of wind and solar resource areas were done by the Vermont Center for Geographic Information. These are the same analyses featured on the Community Energy Dashboard.

### Prime Resource Areas

These are areas with high resource potential and no identified constraints (Known or Possible).

### Secondary Resource Areas

These are areas with high resource potential and no Known Constraints, but where at least one Possible Constraint exists.

## Mapped Renewable Resource Areas

### Solar Resource Area

These are areas where there is likely to be sufficient solar radiation for solar energy development. The GIS-based analysis factored in direction, slope and location of land to maps areas with high solar radiation potential.

RRPC is projecting to help meet its renewable energy generation target with mostly non-utility and non-Standard Offer Program scale solar (≤ 500 kW). Because of the rapid pace of technological advances in the field of PV solar, it is expected that residential, commercial and industrial scale projects will dominate the region's solar generation by 2050. For that reason, in addition to mapping solar resources for the town (as described above), RRPC included impervious areas in the regional Preferred Locations map which included parking lots rooftops, sand and gravel pits, disturbed land (under construction), industrial areas, quarries, farm complexes, transfer stations, and junk yards.

The mapping analysis showed that there are 14,373 acres of impervious surfaces in the region, which does not include residential rooftops. This should be more than enough area to accommodate small scale solar and meet the region's renewable energy generation target. The impervious data layer available from VCGI is a subset of the National Land Cover Database 2001 and includes rooftops and paved areas.

### Wind Resource Area

These are areas where there is likely to be sufficient wind at a specified height for industrial scale wind energy development. The analysis used digital wind speed at various heights (30, 50, and 70 meters) and identified areas with the highest wind speeds at each of those heights.

The RRPC has decided not to include industrial scale wind in its renewable energy generation targets, so it is looking at areas other than the wind potential areas identified that can accommodate residential scale (less than or equal to 10kW) and commercial scale turbines or windmills (less than or equal to 100 kW). Due to anticipated technological advances, residential and commercial scale wind generation is projected to be feasible throughout most of the region at lower elevations in High and Medium Density Areas, as shown on the RRPC Future Land Use Map.

### Hydro Resource Area

These are areas most feasible according to the natural conditions. Existing, powered and existing non-powered dam sites where a generator could be installed or existing hydropower sites where equipment could be upgraded or expanded to provide additional generation (with potential production) were mapped. Considerable time and expense would be involved with permitting hydropower projects, which are reviewed at the federal level.

### Biomass Resource Area

Locations with high woody biomass potential and where renewable energy generation would likely be most feasible according to the natural conditions of an area.

Certain areas where development was not possible – such as rivers and roads – were removed. The mapping also considers various other conditions, such as ecological zones that may impact the feasibility of renewable energy development. These conditions are known as constraints.

## Preferred Areas

### Preferred Areas

Statewide preferred areas are rooftops (and other structures), parking lots, previously developed sites, brownfields, gravel pits, quarries, and Superfund sites and include many of the regional Impervious Surfaces. The impervious data layer available from VCGI is a subset of the National Land Cover Database 2001 and includes parking lots, rooftops, sand and gravel pits, industrial areas, disturbed land (under construction), quarries, farm complexes, transfer stations and junk yards.

### Preferred Areas for New Renewable Generation

The RRPC has determined that several types of locations in the region should be targeted for future solar generation. These locations are not shown on the solar generation maps, yet are considered "preferred locations" by the RRPC. These suggested preferred locations are merely a partial list and it is anticipated that municipalities will add to the following list:

**Impervious Surfaces / Rooftops / Former landfill sites / Brownfields sites with Environmental Site Assessment / Earth resource extraction sites (sand pits, gravel pits, rock quarries) / Surface parking lots / Impervious areas within Industrial Parks**

These sites are typically underutilized (e.g., former land-fill sites, brownfield sites, and earth resource extraction sites) or are already heavily developed (e.g., rooftops and parking lots). Solar siting should be prioritized in these locations. There currently is a lack of geographic data that accurately shows parking lots, former landfills, existing and abandoned quarries and potential brownfield locations in the region. RRPC is actively working to develop this data to help provide additional guidance for future development of solar facilities.

In the Rutland Region, solar generation is the preferred method of renewable generation. Solar will have to meet generation levels higher than the targets set by the LEAP model to make up for the expected lack of hydro and wind generation facilities in the region. However, the generation targets remain feasible. The development of other types of renewable generation (e.g., wind, hydro, biomass) is also possible in the region, and the regional generation maps in this section provide guidance on how those types of renewable energy generation facilities should be deployed in the region.

The maps along with accompanying statements and analyses provide comprehensive and clear directions with direction RRPC's regional land use policies on renewable energy generation.

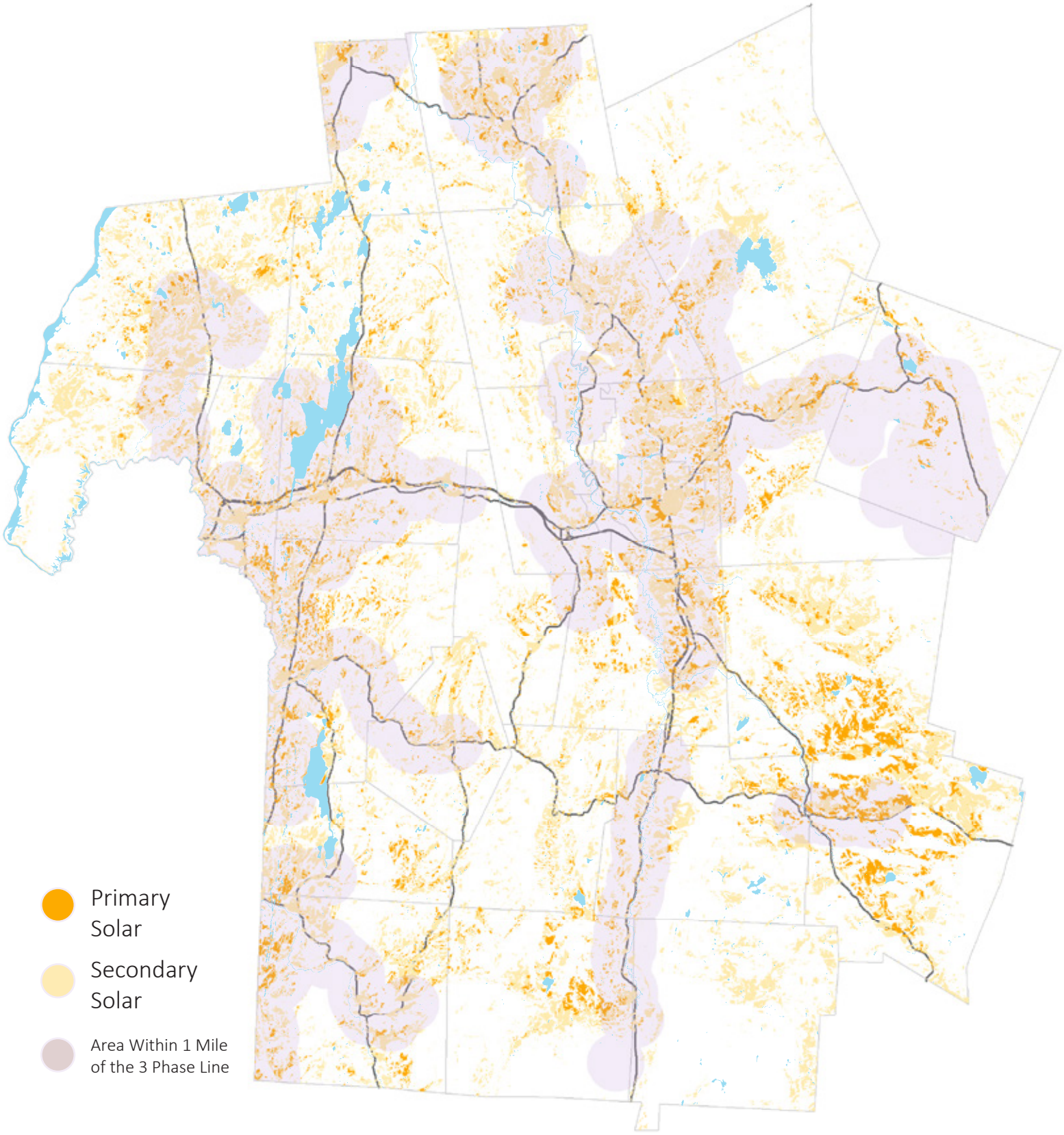
RRPC supports all kinds and scales of renewable energy generation; the only exception being industrial scale wind facilities. The reason for excepting industrial wind is because it generally does not conform with regional land use constraints in low density development designated areas in the regional plan and the region's Future Land Use map that discourage ridgetop and steep slope development. In addition, many Rutland Region municipal plans prohibit development in high elevations.

The Rutland Region has more than enough land to meet its 2050 target for renewable energy generation - even after subtracting the acreage included in the Regional Known and Possible Constraints- Current Use and Additional Conserved/ Protected Areas.

Using the most conservative calculation for acreage needed per MW, 60 acres per MW, the Rutland Region needs 17,010 acres with Prime and Secondary Solar and Wind resources to meet its target. Even if all 169,173 acres in Current Use and 176,354 acres in Additional Conserved/Protected Areas in the region are in Prime or Secondary Solar and Wind resource areas (which is not likely), the region still has 185,657 acres remaining in Prime and Secondary resources for potential generation after deducting for the Regional Constraints.

After adding the 14,372 acres of impervious surfaces in the region (the state's Preferred Areas), there are 200,029 acres with solar and wind potential. This is more than 11 times more than what is needed to meet the regional target.

The numbers are even more favorable for the region meeting its target considering that the acreage estimate for Current Use is inflated because it includes data already accounted for in the state's Possible Constraints layer for prime, state and locally important soils. At this point, there is not a way to separate the state's Possible Constraints layer from that for all Current Use lands.

Also, even though the region considers utility-scale wind as unsuitable, the acreage numbers for Prime and Secondary Wind include 30-meter hub heights which means the data accommodate residential and commercial-scale wind projects. As mentioned earlier, since the region anticipates that smaller-scale solar and wind, residential and commercial, are going to dominate the region's renewable generation in the coming decades, this means much less acreage will be needed to meet the regional target than indicated by the data in the preceding figure. The maps along with accompanying statements and analyses provide comprehensive and clear direction.

Regional Solar Resource Areas