



**To:** Virginia Bartos, Survey & National Register Unit  
Robyn Sedgwick, Technical Preservation Services  
New York State Office of Parks, Recreation and Historic Preservation  
(NYSHPO)

**From:** Grant Johnson, Senior Project Manager – Historic Preservation  
Environmental Design & Research, Landscape Architecture, Engineering &  
Environmental Services, D.P.C. (EDR)

**Date:** June 21, 2022

**Reference:** Facility Layout and Viewshed Update  
Heritage Wind Project, Town of Barre, Orleans County, New York  
NYSHPO Project Review Number 18PR01833  
ORES Project Number 21-00026

Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) is assisting Heritage Wind, LLC (the Applicant) with permitting for the Heritage Wind Project (the Facility). In 2019, EDR conducted historic resources surveys on behalf of the Applicant for the Facility (EDR, 2019). Following review of these surveys, the New York State Office of Parks Recreation and Historic Preservation/State Historic Preservation Office (NYSHPO) determined that the Facility would result in an adverse visual impact to historic resources, and requested preparation of a mitigation plan (NYSHPO, 2019). A *Historic Resources Mitigation Plan* was submitted to NYSHPO on November 19, 2019, which proposed six mitigation projects and \$103,940 in offset funding. In a letter dated December 9, 2020, the NYSHPO issued a letter stating that the mitigation plan is an appropriate framework for the mitigation of the adverse effects associated with this undertaking (NYSHPO, 2020).

Following this most recent correspondence with NYSHPO regarding the Facility, Heritage Wind, LLC received a Major Renewable Energy Facility Permit (Permit) to construct an approximately 184.8-megawatt (MW) wind powered electric generating facility in the Town of Barre, Orleans County, New York. On January 13, 2022, the Office of Renewable Energy Siting (ORES) issued the Permit, which includes Site Specific Conditions and applicable Uniform Standards and Conditions that must be met during construction and operation of the Facility. Subsequent to the permit issuance, the Facility has been revised. Therefore, the purpose of this memorandum is to summarize the Proposed Facility Layout and any potential changes in visual effects to historic properties from the minor layout change and confirm that no additional historic resources surveys or revisions are required to the approved mitigation plan.

## Facility Layout Update

Since the issuance of the Permit, modifications were made to further minimize resource impacts, and optimize the design of the Facility. The Proposed Facility Layout and design presented in the Permit Modification is outlined below as it pertains to above ground components with potential for visual impacts. The Facility layout associated with the Permit Modification is henceforth referred to as the “Proposed Facility Layout ” and the layout considered in the *Historic Resources Survey Report* (EDR, 2019) is referred to as the “Permitted Facility Layout”.

### Description of Permitted Facility Layout

The Permitted Facility Layout consisted of up to 33 utility-scale wind turbines with a maximum model height of approximately 675 feet above ground level, and a total maximum nameplate capacity of 184.8 MW to be located in the Town of Barre (see Figure 1). Two permanent meteorological (met) towers were also proposed. Approximately 13 miles of gravel-surfaced roadways with a typical width of 16 feet were proposed to provide permanent access to the Facility. A collection substation and point of interconnection (POI) substation connected by an overhead transmission line less than 200 feet long were proposed adjacent to an operations and maintenance (O&M) facility that would include two buildings totaling approximately 4,000 square feet. Approximately 37 miles of buried collection lines were proposed to deliver power from the wind turbines to the collection substation.

### Description of Proposed Facility Layout

The Proposed Facility Layout consists of up to 31 utility-scale wind turbines with a maximum model height of approximately 656 feet, and a total maximum nameplate capacity of up to 200.1 MW, to be located in the Town of Barre (see Figure 1). Up to two permanent meteorological (met) towers are also proposed, with a potential reduction to a single tower. Approximately 11.6 miles of gravel-surfaced roadways with a typical width of 16 feet were proposed to provide permanent access to the Facility. Approximately 22.7 miles of buried collection lines were proposed to deliver power from the wind turbines to the collection substation. A collection substation and POI substation connected by an overhead transmission line less than 200 feet long were proposed adjacent to an O&M facility that would include two buildings totaling approximately 4,000 square feet. Up to three power performance towers have also been proposed but are temporary in nature and therefore will not be evaluated in this analysis.

## Viewshed and Visual Effects of the Proposed Facility Layout on Historic Properties

To evaluate changes resulting from the Proposed Facility Layout, an updated lidar viewshed analysis (which, per the NYSHPO *Guidelines for Wind Farm Development Cultural Resources Survey Work* [NYSHPO, 2006] considers the screening effects of topography only in the existing landscape) was developed based on the position and maximum height of the turbines. The viewshed analysis determines the availability of a direct line of sight to any portion of the Proposed Facility Layout from within the five-mile historic resources study area (HRSA) and serves as the Area of Potential Effect (APE) for Visual Effects. The viewshed analysis methodology is described in detail in the *Historic Resources Survey Report* (EDR, 2019). The updated viewshed results were then compared to the equivalent viewshed data presented in the *Historic Resources Survey Report* and a viewshed comparison map (Figure 2) was developed to illustrate the anticipated changes in the Proposed Facility Layout visibility.

It is also important to note that a total of 27.8 square miles will no longer have potential views of the Proposed Facility Layout, a 12 percent decrease in overall visibility (the APE for Visual Effects for the Permitted Facility Layout is 128,651.2 acres, and 112,445.1 acres for the Proposed Facility Layout).

#### **New Areas of Visibility – Proposed Facility Layout**

Per the NYSHPO *Wind Guidelines*, the APE for visual impacts on historic properties for wind projects is defined as those areas within five miles of proposed turbines which are within the potential viewshed based on bare-earth topography of a given project (NYSOPRHP, 2006). The five-mile HRSA for the Proposed Facility Layout as well as areas of anticipated visibility are depicted on Figure 2.

The viewshed analysis, which considers topography, only indicates 2.5 square miles (approximately 1.4 percent) of newly visible area (i.e., areas are within the five-mile HRSA for the Proposed Facility Layout). Several of these new visibility areas for the Proposed Facility Layout occur in narrow bands within undeveloped or agricultural fields, or in forested areas with no apparent above-ground historic resources (i.e., buildings or cemeteries) (see Figure 2).

The viewshed analysis for the Proposed Facility Layout indicates that the only significant area of new visibility is located along the northernmost edge of the HRSA, approximately 4.5 to 5 miles from the proposed new turbines (see Figure 2). At these distances, views of the turbines are anticipated to be largely screened by distance, topography, vegetation, and intervening structures.

It is important to note that screening provided by buildings and street/yard trees, as well as characteristics of the proposed new turbines that influence visibility (color, narrow profile, distance

from viewer, etc.) are not taken consideration in the viewshed analyses. Therefore, being within the viewshed does not necessarily equate to actual Proposed Facility Layout visibility. Field review of potential Proposed Facility Layout visibility conducted as part of the historic resources survey verified that visual screening provided by existing buildings, yard trees, and other objects limit views from many areas where viewshed mapping suggests potentially visible, especially within village and hamlet settings.

### Summary and Conclusions

Based on a review of the Proposed Facility Layout and corresponding viewshed analysis:

- The number of wind turbines included in the Proposed Facility Layout has been reduced from 33 to 31.
- The total height of the turbines is decreasing by 19 feet (from 675 feet in the Permitted Layout to 656 feet in the Proposed Facility Layout).
- The viewshed analysis, for the Proposed Facility Layout, which accounts for topography only and is therefore considered a conservative analysis, does not indicate any new significant areas of visibility.
- The analyses conducted herein indicate that the Proposed Facility Layout will result in a reduction in overall visibility or visual impact. The viewshed analysis shows a 12 percent decrease in potential Facility visibility within the five-mile HRSA (see Figure 2).
- Based on the reduced number of turbines and decrease in visibility within the five-mile study area for the Proposed Facility Layout, in the opinion of EDR, no new historic resources surveys or additional historic resources visual effects analysis will occur from the Proposed Facility Layout. Therefore, no changes to the previously approved *Historic Resources Mitigation Plan* are recommended.

If you have any questions/concerns or would like to discuss the Proposed Facility Layout described herein, please contact Grant Johnson ([gjohnson@edrdpc.com](mailto:gjohnson@edrdpc.com)), or (315) 471-0688.



Grant Johnson

Senior Project Manager – Historic Preservation

Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C.

**Attachments:**

- Figure 1. Facility Layout Comparison
- Figure 2. APE for Visual Effects Comparison

**REFERENCES**

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR). 2019. *Historic Resources Survey Report, Heritage Wind Project, Town of Barre, Orleans County, New York*. Report submitted to NYSHPO by EDR, Syracuse, NY.

EDR. 2020. *Historic Resources Mitigation Plan, Heritage Wind Project, Town of Barre, Orleans County, New York*. Report submitted to NYSHPO by EDR, Syracuse, NY.

New York State Office of Parks, Recreation and Historic Preservation (NYSHPO). 2006. *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work*. New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

NYSHPO. 2019. Re: PSC/DEC/Heritage Wind Project/33 Turbines/655' Tall/200 MW/Albion, Barre, and Shelby, Orleans County: 18PR01833. Correspondence from John Bonafide (NYSHPO) to Doug Pippin (EDR). NYSHPO. October 31, 2019.

NYSHPO. 2020. Re: ORES//DPS/DEC/Heritage Wind Project/33 Turbines/655' Tall/200 MW/Albion, Barre, and Shelby, Orleans County: 18PR01833/DPS#16-F-0546. Correspondence from John Bonafide (NYSHPO) to Grant Johnson (EDR). December 9, 2020.



## Figure 1. Facility Layout Comparison

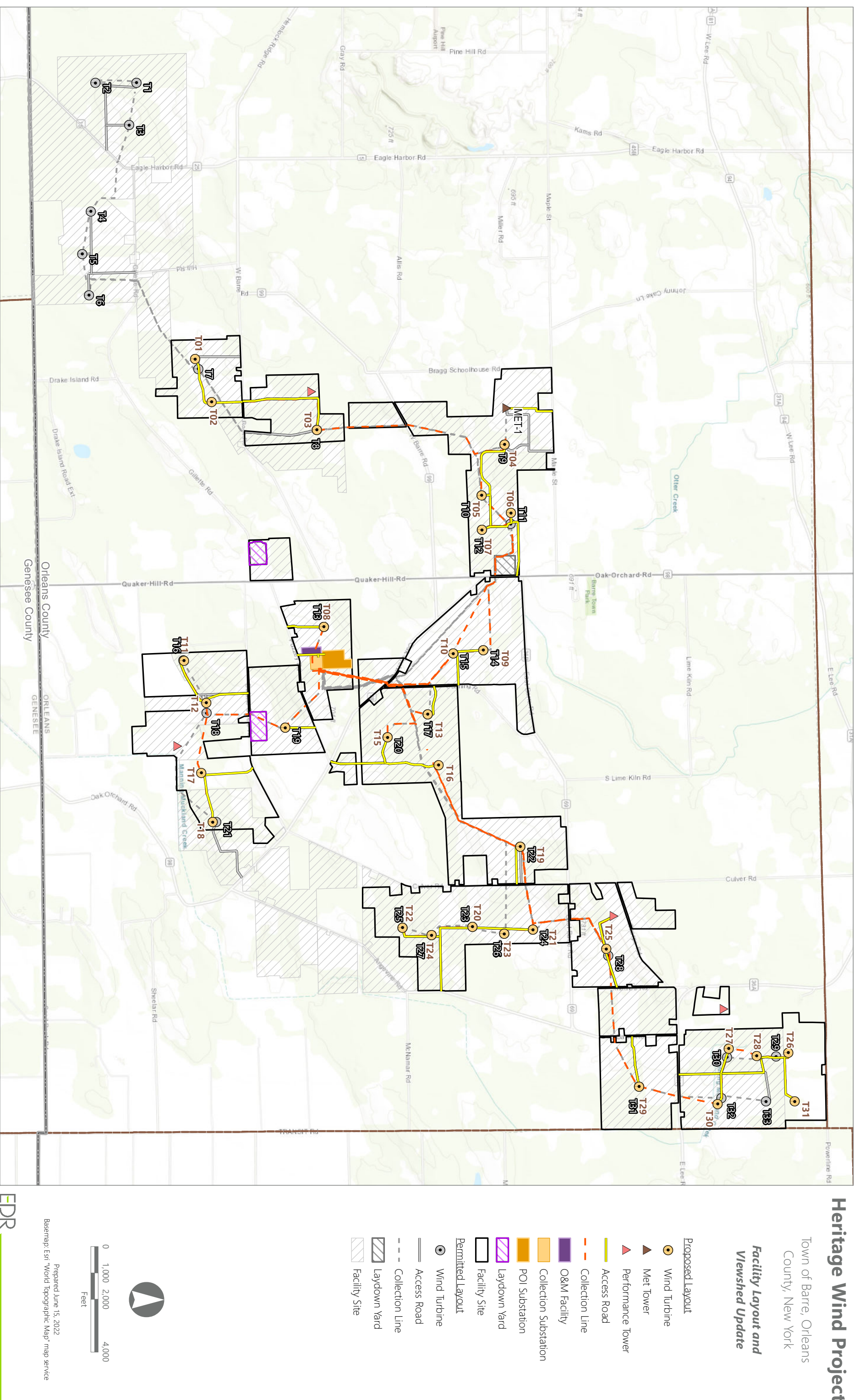
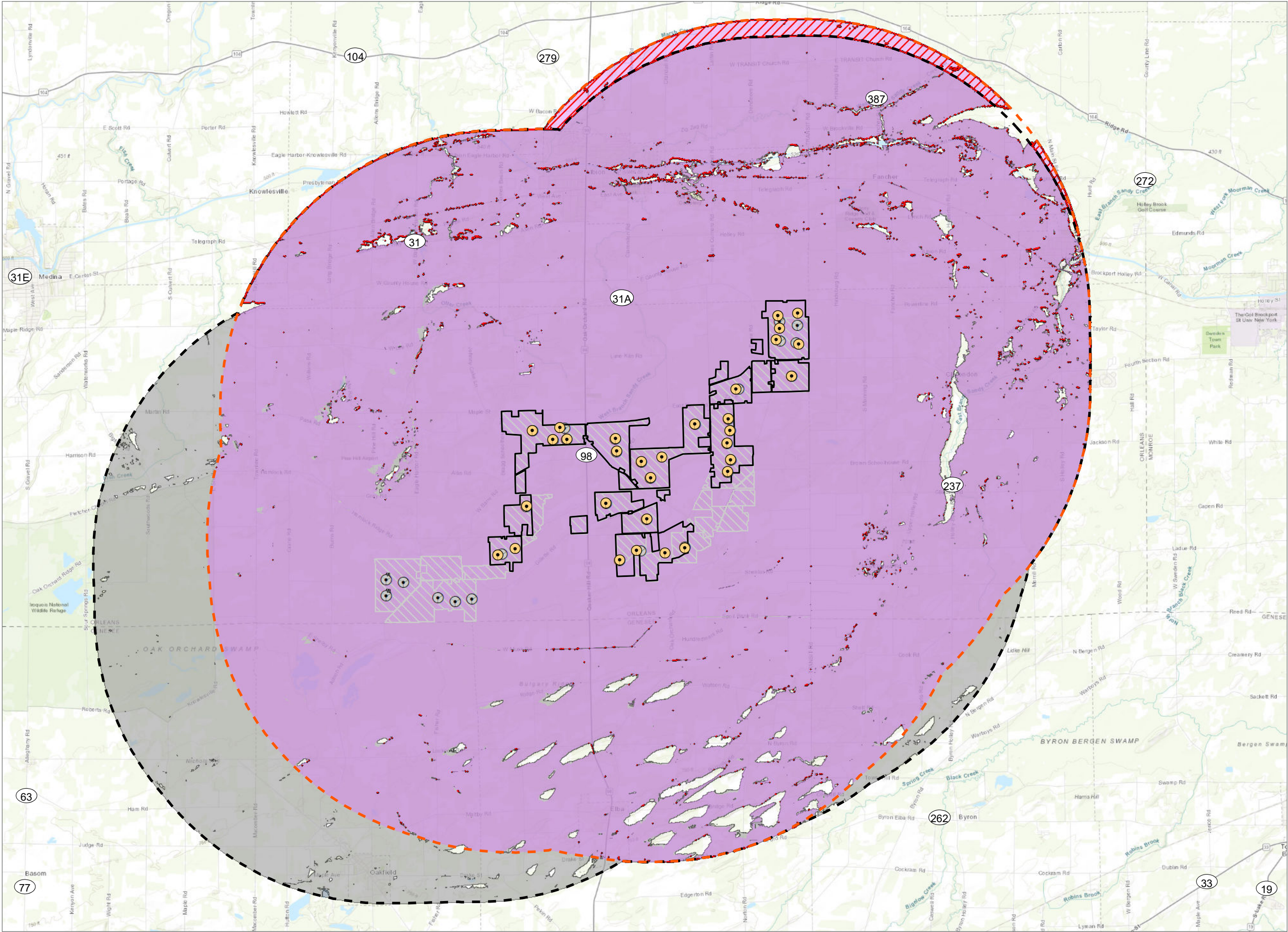




Figure 2. APE for Visual Effects Comparison



## Heritage Wind Project

Town of Barre, Orleans  
County, New York

### Facility Layout and Viewshed Update

#### Proposed Layout

- Wind Turbine
- Area of New Visibility
- APE for Visual Effects
- Facility Site
- Historic Resources Study Area

#### Permitted Layout

- Wind Turbine
- APE for Visual Effects
- Facility Site
- Historic Resources Study Area

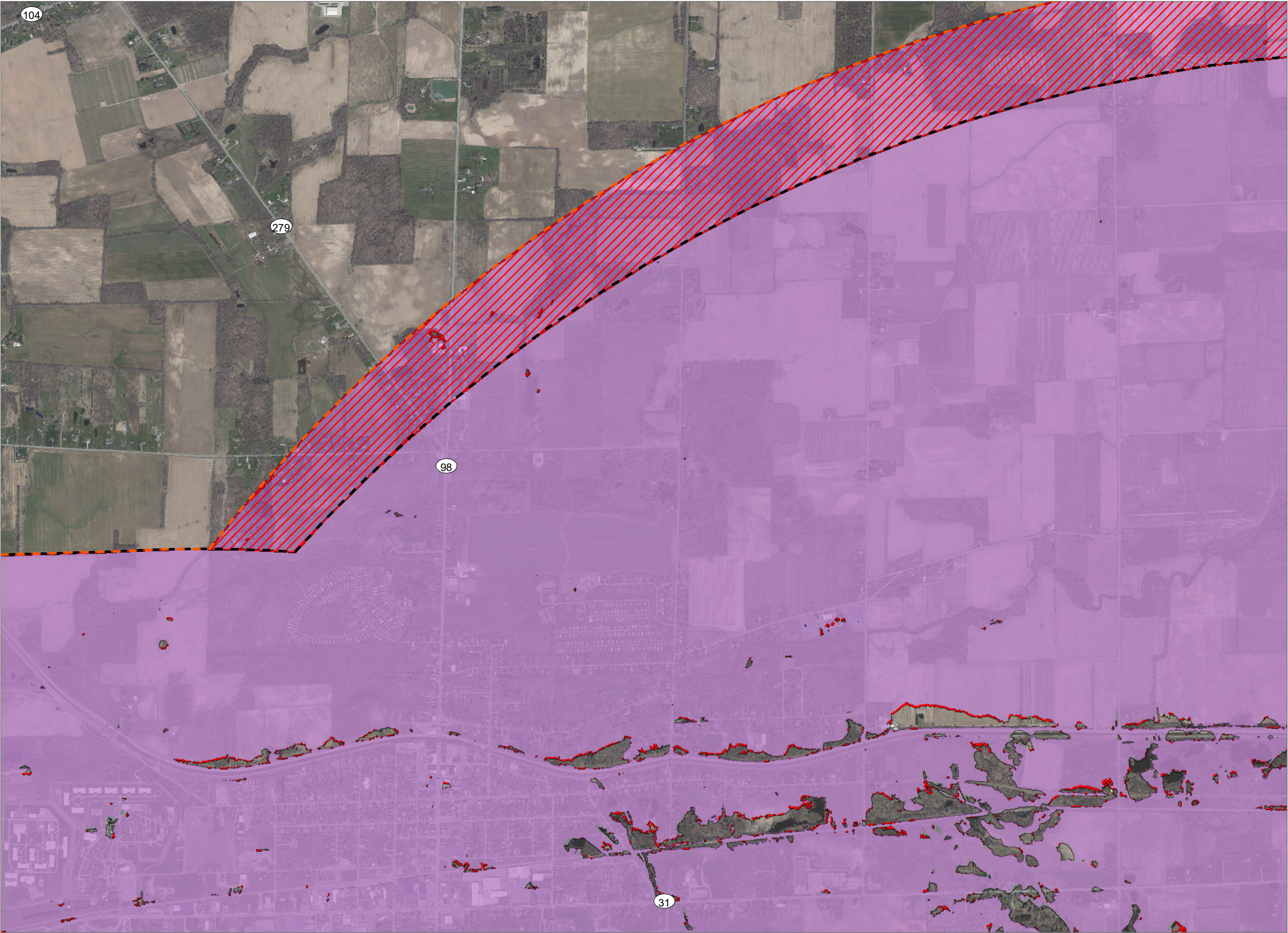


0 0.5 1 2  
Miles

Prepared June 15, 2022  
Basemap: Esri "World Topographic Map" map service



Figure 2. APE for Visual Effects Comparison



Heritage Wind Project

Town of Barre, Orleans  
County, New York

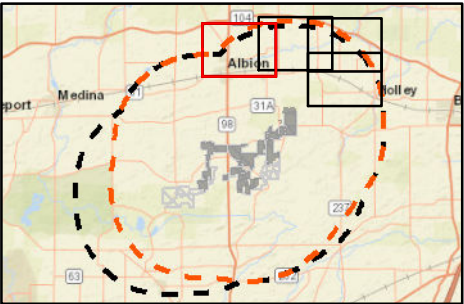
Facility Layout and  
Viewshed Update

Proposed Layout

- Area of New Visibility
- APE for Visual Effects
- Historic Resources Study Area

Permitted Layout

- APE for Visual Effects
- Historic Resources Study Area



Sheet 1 of 4

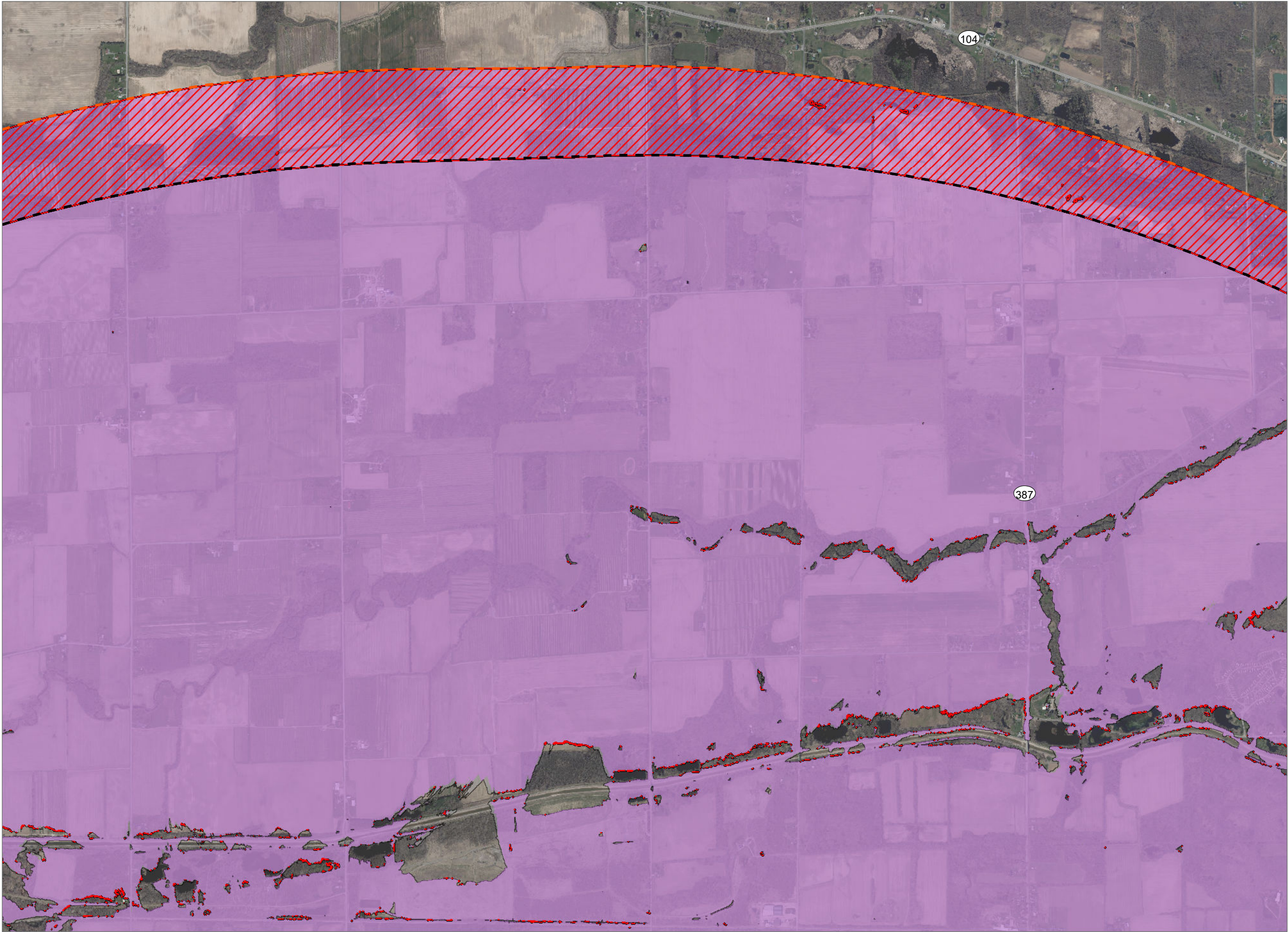


0 500 1,000 2,000  
Feet

Prepared June 15, 2022  
Basemap: NYSDOP "2020" orthoimagery map service



Figure 2. APE for Visual Effects Comparison



Heritage Wind Project

Town of Barre, Orleans  
County, New York

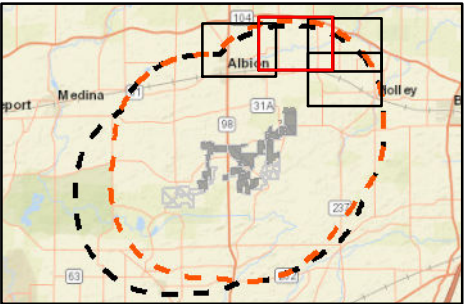
Facility Layout and  
Viewshed Update

Proposed Layout

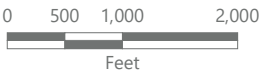
- Area of New Visibility
- APE for Visual Effects
- Historic Resources Study Area

Permitted Layout

- APE for Visual Effects
- Historic Resources Study Area



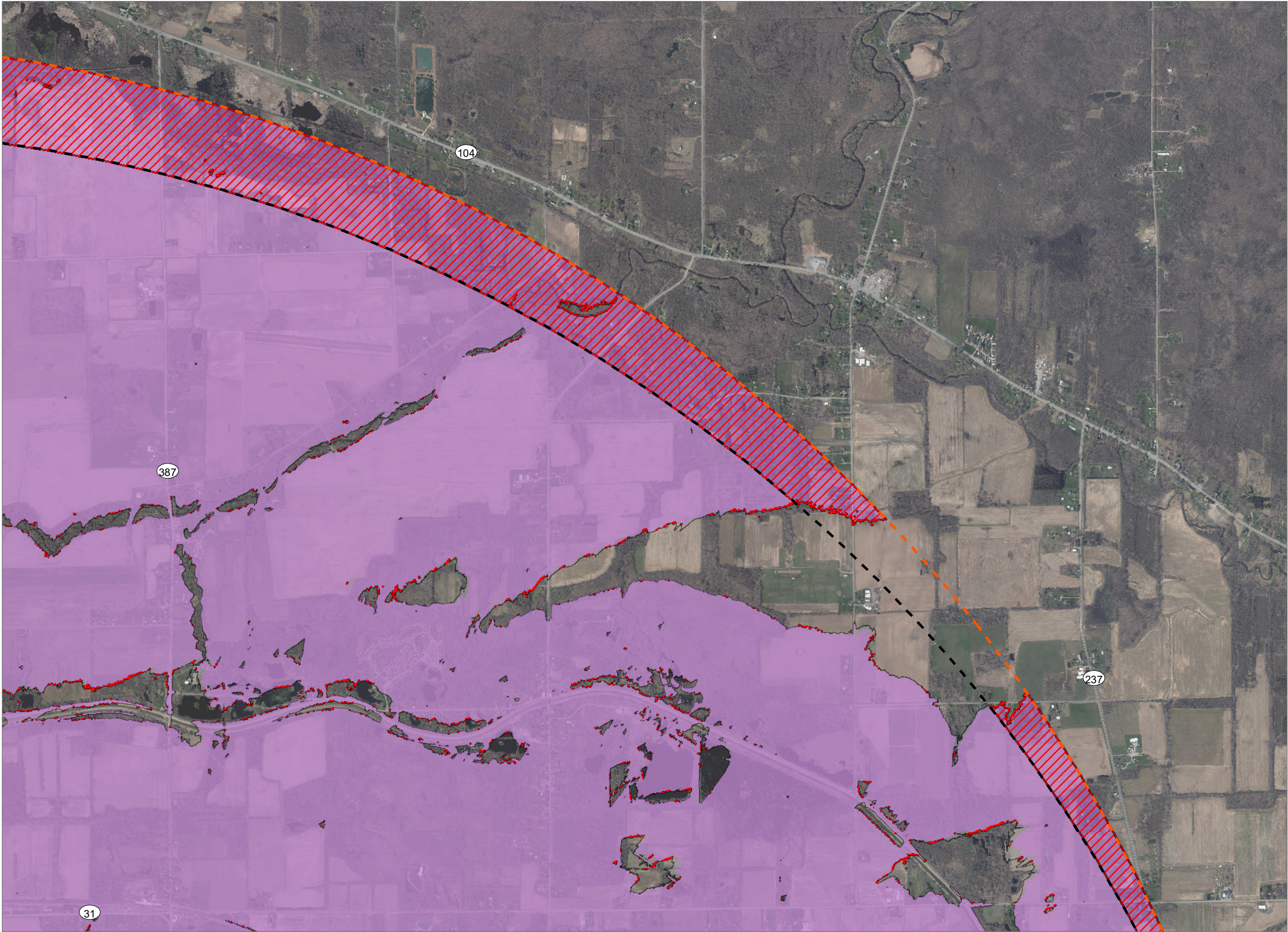
Sheet 2 of 4



Prepared June 15, 2022  
Basemap: NYSDOP "2020" orthoimagery map service



Figure 2. APE for Visual Effects Comparison



Heritage Wind Project

Town of Barre, Orleans  
County, New York

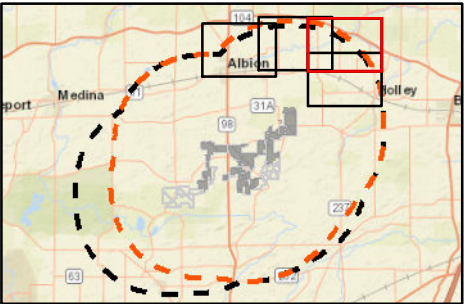
Facility Layout and  
Viewshed Update

Proposed Layout

- Area of New Visibility
- APE for Visual Effects
- Historic Resources Study Area

Permitted Layout

- APE for Visual Effects
- Historic Resources Study Area



Sheet 3 of 4

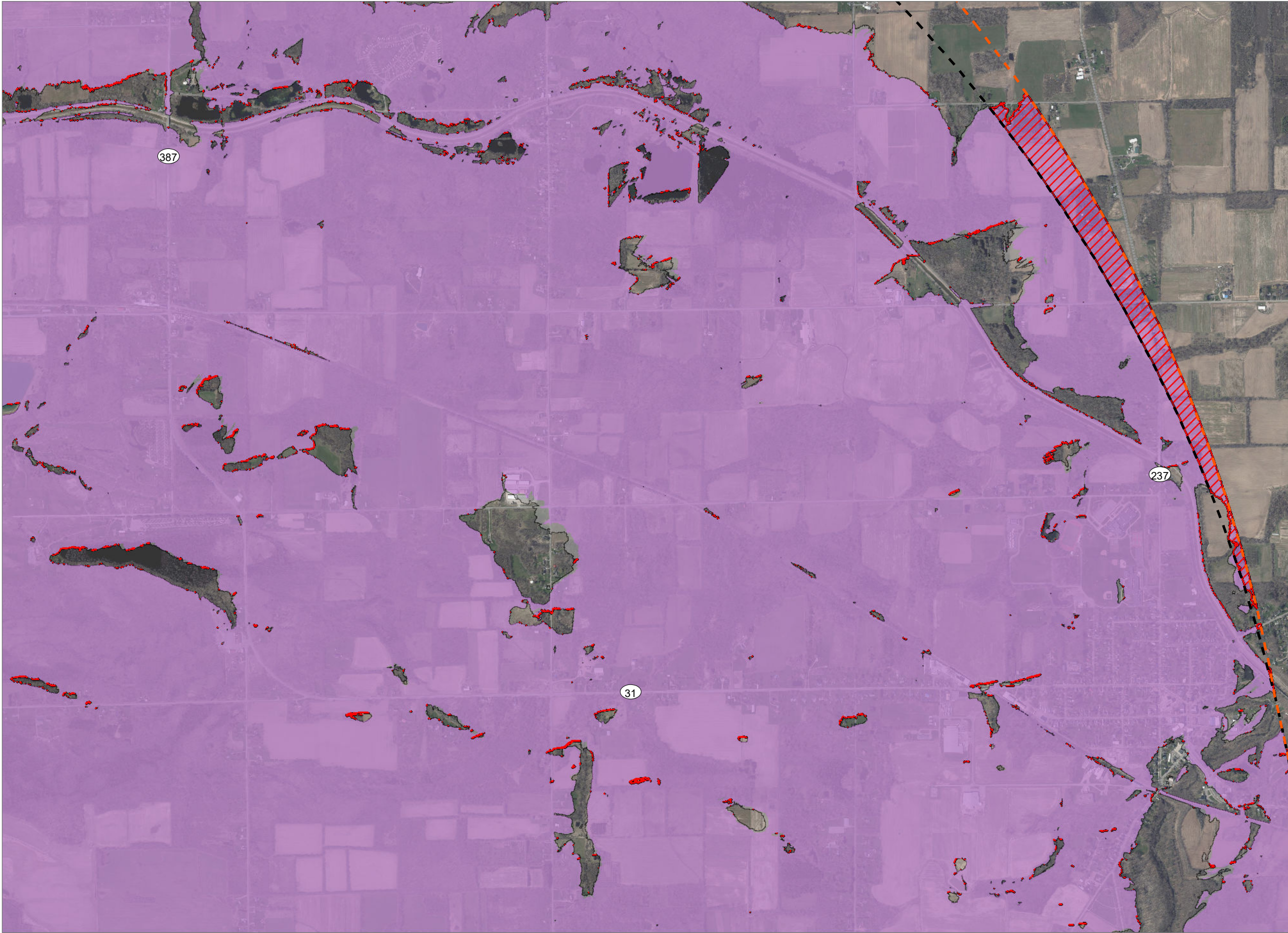


0 500 1,000 2,000  
Feet

Prepared June 15, 2022  
Basemap: NYSDOP "2020" orthoimagery map service



Figure 2. APE for Visual Effects Comparison



Heritage Wind Project

Town of Barre, Orleans  
County, New York

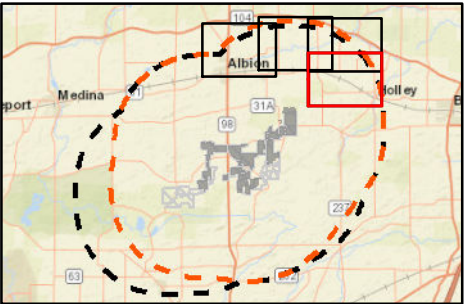
Facility Layout and  
Viewshed Update

Proposed Layout

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Permitted Layout

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Sheet 4 of 4



0 500 1,000 2,000  
Feet

Prepared June 15, 2022  
Basemap: NYSDOP "2020" orthoimagery map service





**Parks, Recreation,  
and Historic Preservation**

**KATHY HOCHUL**  
Governor

**ERIK KULLESEID**  
Commissioner

July 14, 2022

Mr. Grant Johnson  
Cultural Resources Project Manager  
Environmental Design & Research, Landscape Architecture, Engineering & Environmental  
Services, DPC  
217 Montgomery Street  
Suite 1000  
Syracuse, NY 13202

Re: USACE  
Heritage Wind Project/34 Turbines/655 Feet/185MW/35,300 Acres  
Albion, Barre and Shelby, Orleans County  
18PR01833  
Case No. 16-F-0546

Dear Mr. Johnson:

Thank you for your continued consultation with the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

We have reviewed the submission received on June 22, 2022, including the Facility Layout and Viewshed Update report dated June 21, 2022. Based on that review, we concur that no new historic resources surveys or additional historic resources visual effects analysis are necessary at this time. We further concur that at this time, no changes to the approved Historic Resources Mitigation Plan are necessary. Please note: consultation with our Archaeology Unit on the Phase 1B survey report and Site Avoidance Plan must continue.

If you have any questions, I can be reached at 518-268-2170.

Sincerely,

Robyn Sedgwick  
Historic Site Restoration Coordinator  
e-mail: [robyn.sedgwick@parks.ny.gov](mailto:robyn.sedgwick@parks.ny.gov)

via e-mail only

cc: C. Vandrei – DEC  
K. Primeau – ORES  
M. Connerton – USACE  
CRIS List