



Scenic Hudson's Solar Mapping Tool for Your Hudson Valley Community

Data Layer Sources

Updated February 9, 2021

The Solar Mapping Tool is a regional tool for the Hudson Valley, and as such relies on broad-scale datasets that cover the entire region, state, or country. Such datasets, by their nature, may contain inaccuracies and omissions. Scenic Hudson has attempted to gather the most up-to-date datasets practicable. In some cases, datasets in the Solar Mapping Tool will automatically update when their source data is updated; other datasets must be a snapshot in time. Below are the sources and associated information for each dataset as presented by each source. **For ease of reference, the layers are presented in the same order as the datasets are in Part III of the Tool.**

The Solar Mapping Tool is intended for educational purposes only. Scenic Hudson cannot guarantee the accuracy of any dataset, and users must rely on local knowledge and site visits to verify the accuracy of data.

Step 1: Assess Existing Development Patterns

Land cover

Updated: Jun 18, 2019

Description

The National Land Cover Database (NLCD) provides nationwide data on land cover and land cover change at a 30m resolution with a 16-class legend based on a modified Anderson Level II classification system. NLCD 2016 represents the latest evolution of NLCD land cover products focused on providing innovative land cover and land cover change data for the Nation.

You can find a powerful and flexible version of these data as an ArcGIS Image Service here: <https://www.arcgis.com/home/item.html?id=3ccf118ed80748909eb85c6d262b426f>. And you can read an excellent post about that service here: <https://www.esri.com/arcgis->

blog/products/arcgis-living-atlas/mapping/mapping-two-decades-of-landcover-change-in-the-u-s/.

The U.S. Geological Survey (USGS), in partnership with several federal agencies, has developed and released four National Land Cover Database (NLCD) products over the past two decades: NLCD 1992, 2001, 2006, and 2011.

These products provide spatially explicit and reliable information on the Nation's land cover and land cover change. To continue the legacy of NLCD and further establish a long-term monitoring capability for the Nation's land resources, the USGS has designed a new generation of NLCD products named NLCD 2016.

The NLCD 2016 design aims to provide innovative, consistent, and robust methodologies for production of a multi-temporal land cover and land cover change database from 2001 to 2016 at 2–3-year intervals. Comprehensive research was conducted and resulted in developed strategies for NLCD 2016: a streamlined process for assembling and preprocessing Landsat imagery and geospatial ancillary datasets; a multi-source integrated training data development and decision-tree based land cover classifications; a temporally, spectrally, and spatially integrated land cover change analysis strategy; a hierarchical theme-based post-classification and integration protocol for generating land cover and change products; a continuous fields biophysical parameters modeling method; and an automated scripted operational system for the NLCD 2016 production. The performance of the developed strategies and methods were tested in twenty World Reference System-2 path/row throughout the conterminous U.S. An overall agreement ranging from 71% to 97% between land cover classification and reference data was achieved for all tested area and all years.

Results from this study confirm the robustness of this comprehensive and highly automated procedure for NLCD 2016 operational mapping.

A compliant implementation of WMS plus most of the SLD extension (dynamic styling). Can also generate PDF, SVG, KML, GeorSS

Credits (Attribution)

MRLC, Yang, L., et al. (2018). "A new generation of the United States National Land Cover Database: Requirements, research priorities, design, and implementation strategies." ISPRS Journal of Photogrammetry and Remote Sensing 146: 108-123.

<https://www.mrlc.gov/data/nlcd-2016-land-cover-conus>

Step 2: Opportunity Areas for Solar Development on Existing Development and Previously Disturbed Areas

Rooftops of Buildings with Large Footprints

Updated: Jan 6, 2020 (updates automatically from ESRI)

Description

Microsoft recently released a free set of deep learning generated building footprints covering the United States of America. In support of this great work and to make these building footprints available to the ArcGIS community, Esri has consolidated the buildings into a single layer and shared them in ArcGIS Online. The footprints can be used for visualization using [vector tile format](#) or as hosted feature layer to do analysis. Learn more about the Microsoft Project at the Announcement Blog or the raw data is available at [Github](#).

Credits (Attribution)

This data is licensed by Microsoft under the Open Data Commons Open Database License (ODbL). Web layer published by Scenic Hudson, Inc.

Pre-Screened Re-Powering America Sites

Updated: Jan 6, 2020 (updates from EPA automatically)

Description

This layer shows location and attribute data for a national set of contaminated lands, landfills and mine sites that have pre-screened favorably for solar (PV) resource potential. It includes data that covers the United States and U.S. territories. The site data comes from EPA program offices and 16 states. The data were last updated in September 2018. Detailed information about data sources, screening criteria and screening methodology can be found in the Data Documentation file found here: <https://www.epa.gov/re-powering/mapper-technical-documents>.

The U.S. Environmental Protection Agency (EPA) Office of Land and Emergency Management (OLEM), Office of Partnerships, Communication and Analysis (OCPA) created the RE-Powering America's Land Initiative to demonstrate the enormous potential that contaminated lands, landfills, and mine sites provide for developing renewable energy in the United States. To that end, the Initiative developed the RE-Powering Mapper tool. The tool is a publicly available spatial database of more than 130,000 sites that have been evaluated for renewable energy potential. This document details the screening process and data underlying the Mapper.

EPA developed national-level site screening criteria in partnership with the U.S. Department of Energy (DOE) National Renewable Energy Laboratory (NREL). The most recent screening occurred in August 2018. Described in this document, the screening criteria demonstrate the potential to reuse contaminated land for solar, wind, biomass, and geothermal energy production based on resource availability, acreage, and distance to transmission lines and roads. Although these sites have been preliminarily screened for renewable energy potential based on a number of technical considerations, many other factors should be considered in order to determine a project's ultimate feasibility. Renewable energy developers and/or relevant stakeholders usually conduct rigorous site-specific analyses to verify both technical and economic feasibility.

For the purposes of this screening, site status in terms of clean-up or potential contamination status has not been considered. Sites may or may not have been assessed and/or remediated. The Mapper database includes a link from each site to a source with more information about the site's environmental conditions.

The federal- and state-tracked sites included in this screening represent a subset of nationwide contaminated lands, landfills, and mine sites. The inventory includes sites that are tracked at the national level through EPA remediation and grant programs, as well as datasets provided from 17 state partners. Many additional sites are tracked at the state and local level, but have not been screened as part of this effort. State brownfield and response programs can be found in the 2017 State Brownfields and Voluntary Response Programs report.

Credits (Attribution)

EPA RE-Powering America's Land Initiative. Web layer published by Scenic Hudson, Inc.

Mined Lands

Updated April 23, 2020

Description

The database contains most mines permitted since 1983 but only a limited number of mines from before 1983.

Coordinate locations are approximate. The latitude and longitude are in the NAD83 datum. Longitudinal values are negative (-) to reflect the correct geographical coordinate quadrant. [an example for decimal longitude: -73.23541].

The version of the database has not been completely error checked. Some errors in location or attribute values may exist.

The data set may contain multiple points at a single location.

Mines in the database that lack coordinates, or that have grossly incorrect coordinates, do not appear in the data set.

Accuracy: Mines have areal extent but are shown as points. The locations in the coverage were obtained from a number of sources. Locations have generally been scaled from USGS 7½ minute topographic maps provided by the applicant. The location may be either the approximate centroid of the mine or the point where the mine access road enters a public road. This data has not been field verified but is expected to be within 100 meters of the actual facility location. The data should not be used for precise determination of facility buildings, property or mine entrances. It is most useful for determining general locations of mines.

<http://www.dec.ny.gov/lands/5374.html>

Credits (Attribution)

Division of Mineral Resources 625 Broadway, 3rd Floor Albany, NY 12233-6500
dmn.info@dec.ny.gov Mining and Reclamation [www.dec.ny.gov/lands/5020.html].
Web layer published by Scenic Hudson, Inc.

Step 3: Identify locations for solar that minimize negative impacts to valued resources

Protect Agricultural Resources

Farmland Soils

Updated Jan 10, 2020

This dataset is a digital soil survey and generally is the most detailed level of soil geographic data developed by the National Cooperative Soil Survey. The information was prepared by digitizing maps, by compiling information onto a planimetric correct base and digitizing, or by revising digitized maps using remotely sensed and other information. This dataset consists of georeferenced digital map data and computerized attribute data. The map data are in a state-wide extent format and include a detailed, field verified inventory of soils and miscellaneous areas that normally occur in a repeatable pattern on the landscape and that can be cartographically shown at the scale mapped. The soil map units are linked to attributes in the National Soil Information System relational database, which gives the proportionate extent of the component soils and their properties.

Credits (Attribution)

Soil Survey Staff. Gridded Soil Survey Geographic (gSSURGO) Database for New York. United States Department of Agriculture, Natural Resources Conservation Service. Available online at <http://datagateway.nrcs.usda.gov/>. 20180905 (FY2019 official release). Web layer published by Scenic Hudson, Inc.

Agricultural Districts

Updated: Jan 16, 2020

A Geographic Information System file intended to represent the lands within agricultural district. Please note that boundaries may be generalizations; precise information can be obtained from the county or town tax parcel information.

Credits (Attribution)

Cornell IRIS maintains the county produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. In 1996 the maps on file at Cornell IRIS (then CLEARs) were scanned at the NYSDEC as the initial step in creating a digital database of Ag District Boundaries. Web layer published by Scenic Hudson, Inc.

Avoid Important Wetlands and Floodways

National Wetlands Inventory

Updated: Feb 20, 2020

Description

This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the United States and its Territories. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetlands Inventory was derived by retaining the wetland and deepwater polygons that compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. Additionally, the data are supplemented with hydrography data, buffered to become polygonal features, as a secondary source for any single-line stream features not mapped by the NWI and to complete segmented connections. Wetland mapping conducted in WA, OR, CA, NV and ID after 2012 and most other projects mapped after 2015 were mapped to include all surface water features and are not derived data. The linear hydrography dataset used to derive Version 2 was the U.S. Geological Survey's National Hydrography Dataset (NHD). Specific information on the NHD version used to derive Version 2 and where Version 2 was mapped can be found in the 'comments' field of the Wetlands_Project_Metadata feature class. Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery. By policy, the Service also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin et al. definition. Contact the Service's Regional Wetland Coordinator for additional information on what types of farmed wetlands are included on wetland maps. This dataset should be used in conjunction with the Wetlands_Project_Metadata layer, which contains project specific wetlands mapping procedures and information on dates, scales and emulsion of imagery used to map the wetlands within specific project boundaries.

Terms of Use

None. Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities. Acknowledgement of the U.S. Fish and Wildlife Service and (or) the National Wetlands Inventory would be appreciated in products derived from these data.

Credits (Attribution)

U.S. Fish and Wildlife Service. Web layer published by Scenic Hudson, Inc.

New York State Wetlands

Updated Feb 19, 2020

Description

To provide a faithful representation of official New York State regulatory freshwater wetlands maps for GIS resource analysis at scales equal to the 1 to 24,000 scale of original mapping or smaller scales (e.g., 1 to 100,000 scale).

Regulatory maps consist of mylar versions of New York State Department of Transportation 1 to 24,000 planimetric maps on which wetland boundaries and wetland identification codes are drawn. Planimetric maps are generally congruent with and have the same quad names as United States Geological Survey 7.5 minute topographic maps; a few of the Department of Transportation quads have extended borders. Regulatory wetland maps are prepared by NYSDEC and filed as required by the Freshwater Wetlands Act (Article 24 of the Environmental Conservation Law). Associated with the maps are Classification Sheets that list the Wetlands Identification Code, the municipality in which the wetland occurs and the regulatory class of each wetland. Preparation and filing dates vary by county. As amendments to the official maps occur, the coverages are updated so that the GIS information reflects the regulatory maps currently in use. Archive copies of county coverages with previous versions of the official maps are kept. An important feature of the official maps is that the lines indicate only "the approximate location of the actual boundaries of the wetlands" (ECL Section 24-0301(3)). For a final determination of the actual location of a wetland it is necessary to contact the NYSDEC office for the region in which the wetland occurs. For a sample of what a county coverage looks like, see <<http://cugir.mannlib.cornell.edu/SAMPLES/001fwa.gif>> (Note Example is for Albany County).

Terms of Use

1. The documentation in the Entity and Attribute Overview section of the metadata, and the README referred to in that section, are integral parts of the Regulatory Freshwater Wetlands data. Failure to use the documentation in conjunction with the digital data constitutes a misuse of the data.
2. The digital freshwater wetlands data provided are not a legal substitute for the official Regulatory Freshwater Wetlands maps maintained by the Department of Environmental Conservation pursuant to Environmental Conservation Law Section 24-0301. Should a discrepancy exist between the digital data and the official maps, the official maps are the correct source of information.
3. The official regulatory freshwater wetlands maps may be amended from time to time; digital data obtained at an earlier date may therefore become obsolete. Digital data also may be altered independently of official map amendments in order to make improvements. These digital data cannot be relied on as a definitive statement of the location of freshwater wetlands. Wetland boundaries are subject to delineation by Department of Environmental Conservation regional personnel.
4. The borders of wetlands shown on both the official maps and the digital data are approximate at a scale of 1 to 24,000. Traditional cartographic or digital comparison of the wetland maps to mapped information that is collected and digitized at a larger scale than 1 to 24,000 is not cartographically acceptable and is subject

to error. 5. It is inappropriate to make further distributions of the data, because digital wetlands data are not official regulatory maps and are subject to change. All requests for the digital wetlands data should be referred to the Cornell University Geospatial Information Repository <<http://cugir.mannlib.cornell.edu>> or to the Habitat Inventory Unit, New York State Department of Environmental Conservation, 625 Broadway, 5th Floor, Albany, New York 12233-4754, telephone (518)402-8961.

Credits (Attribution)

New York State Department of Environmental Conservation
(NYSDEC), <http://cugir.mannlib.cornell.edu/bucketinfo.jsp?id=444>

100-yr Flood Zones

Updated: Feb 19, 2020

Description

100 yearflood data parsed from the original FEMA DRIFM and Q3 datasets.

Flood zone categories are as follows: A - Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. AE - The base floodplain where base flood elevations are provided. AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. AO - River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. VE - Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

Process: Multiple counties queried for 100 year floodplains and then merged together.

100 yr flood data parsed from the original FEMA dataset. The Q3 Flood Data are derived from the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA). The file is georeferenced to the earth's surface using the Universal Transverse Mercator (UTM) projection and a zonal coordinate system (units in meters). Specifications for the horizontal control of Q3 Flood Data files are consistent with those required for mapping at a scale of 1:24000

Terms of Use

None. Acknowledgment of FEMA would be appreciated in products derived from these data.

Credits (Attribution)

Federal Emergency Management Agency. Dutchess County DFIRM 2012, Ulster County DFIRM 2009, Orange County DFIRM 2009, Westchester County DFIRM 2007, Rockland County Q3 data 1996.

500-yr Flood Zones

Updated: Feb 19, 2020

Description

500 yr flood data parsed from the original FEMA Dataset. The Q3 Flood Data are derived from the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA). The file is georeferenced to the earth's surface using the Universal Transverse Mercator (UTM) projection and a zonal coordinate system (units in meters). Specifications for the horizontal control of Q3 Flood Data files are consistent with those required for mapping at a scale of 1:24000. ***Must be used with the 100 yr data to show complete areas inundated by 500 yr floods***

Terms of Use

None. Acknowledgment of FEMA would be appreciated in products derived from these data.

Credits (Attribution)

Federal Emergency Management Agency. 1996

Protect Biodiversity and Habitat

Important Areas for Biodiversity

Updated: Feb 7, 2020

Description

The Important Areas for Biodiversity data layer in the Solar Mapping Tool is a compilation of Natural Heritage Important Areas (IAs), a product of the NY Natural Heritage Program. Important Areas are lands and waters that support the continued presence and quality of known populations of rare animals and rare plants, or of documented examples of rare or high-quality ecological communities. Important Areas include the specific locations where the animals, plants, and/or ecological communities have been observed, but go beyond these to also include additional habitat for the rare animal and plant populations, including areas which may be used by rare animals for breeding, nesting, feeding, roosting, or over-wintering; and to include areas that support the natural ecological processes critical to maintaining the habitats of these rare animal and plant populations, or critical to maintaining these significant communities. IAs are generated using GIS Important Area spatial models (IA models) applied to occurrences of rare plants and animals and significant natural communities in the New York Natural Heritage database, or applied to observation locations of other species obtained from other sources. IA models are specific to a species or species group, and are based on the life histories and habitats of that species or species group; for communities, models are based on the community type's size and natural ecological processes. The Important Areas for Biodiversity layer in the Solar Mapping Tool compiles several groups of species into a single layer.

Terms of Use

Natural Heritage Important Areas are not intended for regulatory purposes, and do not replace a review of listed species impacts by NYSDEC. Note that Important Areas do not always coincide precisely with the screening areas for listed species used by NYSDEC in regulatory and permitting reviews, including for solar projects.

The New York Natural Heritage Program shall not be held liable for improper or incorrect use of the data described and/or contained herein. These data and related graphics are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. The data are not better than the original sources from which they were derived. It is the responsibility of the data user to use the data appropriately and consistent within the limitations of geospatial data in general and these data in particular. The related graphics are intended to aid the data user in acquiring relevant data; it is not appropriate to use the related graphics as data. The New York Natural Heritage Program gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. It is strongly recommended that these data are directly acquired from a New York Natural Heritage Program server and not indirectly through other sources which may have changed the data in some way. Although these data have been processed successfully on a computer system at the New York Natural Heritage Program, no warranty expressed or implied is made regarding the utility of the data on another system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

Credits (Attribution)

New York Natural Heritage Program. Web layer published by Scenic Hudson, Inc.
<https://www.nynhp.org/important-areas>

Core Forests

Updated: Jan 6, 2020

Description

This layer represents the results of applying the Landscape Fragmentation Tool v2.0 (<http://clear.uconn.edu/tools/lft/lft2/download.htm>) to forest patches within and immediately adjacent to the counties of the Hudson River Estuary Watershed. The patches were based on the 2016 National Land Cover Database. They represent continuous patches of forest unfragmented by major roads, railroads, and non-forest habitat. The forest patches were converted from polygons to a 10 meter raster for proper application of the tool. Any pixels that were not inside a polygon were treated as fragmenting habitat. The output of the Landscape Fragmentation Tool assigned each pixel to one of six classes. Patch forest, edge forest, perforated forest, and three classes of core forest based on size. Patch forest: Patch forests are small forested areas that are surrounded by non-forest land cover. In some cases, edge pixels were misclassified as patch forest due to the reduction in resolution when converting from polygon representation of a forest patch to a 10 meter raster representation. These pixels were re-classified as edge pixels in the final output. Patch forest was classified as a forest fragment in this layer. Edge forest: Edge forest pixels were any forest pixels that fall within the 100 meter

boundary between core forest and non-forested landscape. Perforated forest: Forest pixels that fall in the interior boundary between core forest and small forest openings. For our purposes, perforated forest pixels were considered part of the forest core and reclassified as core before calculating the core area. Core forest: Core forests are forested areas that are surrounded by a buffer of at least 100 meters of forest.

Credits (Attribution)

New York Natural Heritage Program, DEC Hudson River Estuary Program, Cornell University.
Web layer published by Scenic Hudson, Inc.

<https://www.nynhp.org/forest-patches>

Preserve the Integrity of Historic, Recreation, and Protected Sites

NYS National Register of Historic Places listings

Updated: Apr 7, 2020 (updates automatically from NYS Parks)

Description

The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966 ([Federal Regulation 36 CFR 60](#)) the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archaeological resources. To be considered eligible, a building, district, structure or object must meet the [National Register Criteria for Evaluation](#). This involves examining the property's age, integrity, and significance.

Is the property old enough to be considered historic (generally at least 50 years old) and does it still look much the way it did in the past? Is the property associated with events, activities, or developments that were important in the past? With the lives of people who were important in the past? With significant architectural history, landscape history, or engineering achievements? Does it have the potential to yield information through archaeological investigation about our past? Registered properties and properties determined eligible for the Register receive a measure of protection from the effects of federal and/or state agency sponsored, licensed or assisted projects through a notice, review, and consultation process. Owners of depreciable, certified historic properties may take a 20 percent federal income tax credit for the costs of substantial rehabilitation as provided for under the Tax Reform Act of 1986. Municipal and not-for-profit owners of listed historic properties may apply for matching state historic preservation grants. There are no restrictions placed on private owners of registered properties. Private property owners may sell, alter or dispose of their property as they wish.

For additional information on National Register listings and current information, please visit the [NYS Cultural Resource Information System](#)

Terms of Use

Up to date and additional information can be found online at: cris.parks.ny.gov

Credits (Attribution)

Michael P. Schiferli, HP Program Analyst

US Protected Areas Database

Updated: Dec 11, 2019 (updates automatically from ESRI)

Description

The [USGS Protected Areas Database of the United States](#) (PAD-US) is the official inventory of public parks and other protected open space. With more than 9 billion acres in more than 350,000 holdings, the spatial data in PAD-US represents public lands held in trust by thousands of national, State and regional/local governments, as well as non-profit conservation organizations.

These statistics summarize the complete 2.0 database – fee lands, overlapping designations, easements, proclamation boundaries and marine areas. Manager Type provides a coarse level land manager description from the PAD-US "Agency Type" Domain, "Manager Type" Field (for example, Federal, State, Local Government, Private).

This map is based on the PAD-US 2.0 Combined Proclamation, Marine, Fee, Designation, Easement feature class.

PAD-US is published by the [U.S. Geological Survey \(USGS\) Science Analytics and Synthesis \(SAS\), Gap Analysis Project \(GAP\)](#). GAP produces data and tools that help meet critical national challenges such as biodiversity conservation, recreation, public health, climate change adaptation, and infrastructure investment. See the [GAP webpage](#) for more information about GAP and other GAP data including species and land cover.

Dataset Summary

Phenomenon Mapped: This layer displays protected areas symbolized by manager type.

Coordinate System: Web Mercator Auxiliary Sphere

Extent: 50 United States plus Puerto Rico, the US Virgin Islands, the Northern Mariana Islands and other Pacific Ocean Islands

Visible Scale: 1:1,000,000 and larger

Source: [U.S. Geological Survey \(USGS\) Science Analytics and Synthesis \(SAS\), Gap Analysis Project \(GAP\)](#) PAD-US version 2.0

Publication Date: September 2018

Attributes included in this layer are:

- Category
- Owner Type
- Owner Name
- Local Owner
- Manager Type
- Manager Name

- Local Manager
- Designation Type
- Local Designation
- Unit Name
- Local Name
- Source
- Public Access
- GAP Status - Status 1, 2, 3 or 4
- GAP Status Description
- International Union for Conservation of Nature (IUCN) Description - I: Strict Nature Reserve, II: National Park, III: Natural Monument or Feature, IV: Habitat/Species Management Area, V: Protected Landscape/Seascape, VI: Protected area with sustainable use of natural resources, Other conservation area, Unassigned
- Date of Establishment

The source data for this layer are available [here](#).

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- Sign in with an account that is a member of an organizational subscription
- Sign in with a developer account
- [Register an application](#) and use your application's credentials.

If you don't have an account, you can sign up for a [free trial of ArcGIS](#) or a [free ArcGIS Developer account](#).

Credits (Attribution)

U.S. Geological Survey, Gap Analysis Project (GAP), September 2018, Protected Areas Database of the United States (PADUS), Version 2.0 Combined Feature Class

Step 4: Assess Solar Feasibility and Interconnection Potential

Surface Topography – Landform Solar Feasibility

Updated: Feb 5, 2020

Description

Landform solar development feasibility layer. Based on slope and aspect, calculated from USGS NED 1/3 arc-second DEM (resampled to 30ft cell size).

Criteria for landform feasibility:

- Value = 0, Infeasible, Slope > 30 deg

- Value = 1, Most Feasible, Slope < 5 deg
- Value = 2, Somewhat Feasible, Aspect >= 135 and <= 225 (south facing) and Slope > 5 deg and <= 15 deg
- Value = 3, Least Feasible, Aspect >= 135 and <= 225 (south facing) and Slope > 15 deg and <= 30 deg

Terms of Use

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Credits (Attribution)

Scenic Hudson, Inc.

Hosting Capacity

Updated: Sep, 2020 (updates automatically from each electrical utility)

Description

Hosting capacity is a vital aspect of preliminary feasibility assessment for a distributed solar project. These datasets are provided by each electrical utility serving the Hudson Valley, via the Joint Utilities of New York. Hosting capacity is estimated through Hosting Capacity Analysis, detailed below. These analyses are updated every twelve months.

Hosting Capacity Analysis Methodology and Assumptions

The analyses presented in these displays provide the sub-feeder level hosting capacity for the distribution circuits evaluated. Hosting capacity is an estimate of the amount of DER that may be accommodated without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades. Please note that this analysis was conducted under current configurations, and prior to infrastructure upgrades such as: installing a recloser or remote terminal unit at the point of common coupling; replacing a voltage regulating device or controller to allow for reverse power flow; substation-related upgrades

including ground fault (or zero-sequence overvoltage (“3V0”) protection; or other protection-related upgrades.

For the Stage 3 displays, each circuit’s hosting capacity is determined by evaluating the potential power system criteria violations as a result of large solar PV systems with an AC nameplate rating starting at and gradually increasing from 300 kW interconnecting to three-phase distribution lines. The analyses represent the sub-feeder level hosting capacity only and do not account for all factors that could impact interconnection costs (including substation constraints). The Stage 3 hosting capacity maps are displayed at the sub-feeder level, according to the heat mapping breakpoints noted in the map legends. Stage 3 hosting capacity efforts also incorporates the impacts of installed DER into the analysis.

Circuits that appear in light pink illustrate portions of the circuit that are either Single or Two Phase. This does not indicate that there is no ability to host DER in these areas; rather, these values need to be calculated as part of a traditional engineering study completed pursuant to the Standard Interconnection Requirements process. It should be noted that no values presented in this portal should be considered a substitute for traditional engineering screens.

Furthermore, please note that issues related to circuit protection require further analysis to make a definitive determination of hosting capacity. This data is being provided for informational purposes only and is not intended to be a substitute for the established interconnection application process. Additional displays with tabulated data have been included in the form of data pop-up displays to indicate that the hosting capacity may be lower at any given location. For example, anti-islanding concerns may limit the overall circuit hosting capacity. For this reason, anti-islanding criteria were calculated as part of the analysis, but not included in the heat mapping criteria. This was intended to avoid potentially conveying misleading information about the circuit’s sub-feeder level hosting capacity, as anti-islanding solutions are typically considered a significant interconnection upgrade cost. The estimated hosting capacity value corresponding to the anti-islanding criteria has been included in the data pop-up displays as a separate item for this reason.

As a rule of thumb, the minimum hosting capacity value is indicative of the available hosting capacity across the length of the feeder segment and most often defined by the hosting capacity value located at the most downstream node within each breakpoint. The maximum hosting capacity value is indicative of the available hosting capacity at a specific location across the feeder segment, most often located at the most upstream node within each breakpoint. The load zone represents the [NYISO Load Zone](#).

Existing DER is considered in this stage of the hosting capacity analysis. However, as additional DER systems will continue to be installed after this hosting capacity analysis has been performed and queued DER systems are not considered in the hosting capacity analysis, the data pop-ups are intended to provide additional context to the displays. For these reasons, the installed and queued DER values as well as the DER installed since the last hosting capacity refresh are included in the data pop-ups and will be updated on a monthly basis.

Credits (Attribution)

The Joint Utilities of New York

Transmission Lines

Updated: Feb 6, 2020

Description

This feature class/shapefile is for the Homeland Infrastructure Foundation Level Database (HIFLD) (<https://gii.dhs.gov/HIFLD>) as well as the Energy modelling and simulation community. This feature class/shapefile represents electric power transmission lines. Transmission Lines are the system of structures, wires, insulators and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV, and are capable of transmitting large quantities of electricity over long distances. Underground transmission lines are included where sources were available. The following updates have been made since the previous release: 8,653 features added, geographic coverage expanded to include Guam, Northern Mariana Islands, and Virgin Islands.

Credits (Attribution)

Homeland Infrastructure Foundation-Level Data (HIFLD) Subcommittee. Web layer published by Scenic Hudson, Inc.

Utility Service Areas

Updated: Mar 23, 2020

Description

Key Attributes of Data

- Full utility company name
- Shorthand/abbreviated company name
- DPS company ID
- Date that a feature was last modified
- Notes - including former name of utility (if applicable; blank if no notes provided)

The state of New York is served by 56 electric utilities, which are comprised of 7 investor owned and 49 municipality owned utilities. For natural gas, the state is served by 15 gas utility companies.

The list of gas and electric utilities rarely change. After Superstorm Sandy, the Long Island Power Authority (LIPA) switched their service provider from National Grid to PSEG (referred to as PSEG Long Island), but their service footprint did not change.

A list of electric utilities that are regulated by DPS can be found at <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/03627EFC626529EE85257687006F39CD?OpenDocument>

A list of gas utilities that are regulated by DPS can be found at <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/AF91A30E4F00289785257687006F3A53?OpenDocument>

In general, for electric service, PSEG-LI serves Long Island, Con Edison serves most of Westchester County and all of NYC, O&R serves Orange and Rockland Counties, Central Hudson serves the Hudson Valley, RG&E serves the Rochester area and parts of Allegany, Livingston and Wyoming Counties, National Grid serves large parts of the Capital Region, the Adirondacks and Western NY, and NYSEG serves large parts of the Southern Tier, Finger Lakes Region, Clinton County and small pockets in Westchester, Putnam, Dutchess, Columbia, Rensselaer, and Washington Counties.

For gas service, there are some general trends, though not as obvious as electric service: National Grid-LI serves Long Island, Con Edison serves most of Westchester County and large parts of NYC, Central Hudson serves the Hudson Valley, O&R serves large parts of Orange and Rockland Counties, National Grid (upstate) serves the Capital Region and the Mohawk Valley, St. Lawrence Gas serves large parts of St. Lawrence County and parts of Lewis and Franklin Counties, RG&E serves the Rochester area and National Fuel Gas serves the Buffalo area and large parts of the Southern Tier. Other gas companies' service areas can be seen on the map.

Data Collection Methodology

NYS Gas Service Territories for Companies Regulated by NYSDPS. Company service territories were derived from the Northeast Gas Association Regional Natural Gas System Map of NY (2015) down to the municipality level with additional data and some boundary clarification provided by DPS staff (2016). Base municipal boundary data created from the NYS Civil Boundaries GIS data provided by the NYS GIS Program Office.

NYS Electric Service Territories for Companies Regulated by NYSDPS. As part of an existing DPS application that monitors statewide electric outages (Electric Outage Reporting System – EORS) the 7 investor owned utilities submit outage data to DPS at the municipality level (town, village, and/or city). These utility reported municipalities were used to create the electric service territory dataset. Intra-utility areas change from time to time (last update was Spring 2016). Base municipal boundary data created from the NYS Civil Boundaries GIS data provided by the NYS GIS Program Office.

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New York State Department of Public Service. Web layer published by Scenic Hudson, Inc.

NYISO Load Zones

Updated: Nov 20, 2018

Description

The New York Independent System Operator (NYISO) is at the heart of New York State's electric system, operating the high-voltage transmission network, administering and monitoring the wholesale electricity markets, and planning for the state's energy future. The NYISO is responsible for the reliable operation of New York's nearly 11,000 miles of high-voltage transmission and the dispatch of over 500 electric power generators. In addition, the NYISO administers bulk power markets that trade an average of \$7.5 billion in electricity and related products annually. This feature service is intended to be used as an interactive basemap for an operation dashboard being designed by Energy Resource Management staff.

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David Etere

Reference Layers

NYS Civil Boundaries (County, Town, City, and Village layers)

Updated: Jan 17, 2020

Description

Publication Date: June 2019. Updated as needed. Current as of the Publication Date.

This service has polygon layers for the following boundary types: State, Counties, Cites, Towns, Cities and Towns combined, Villages, and Indian Territories. In addition, there are separate shoreline layers for the State layer and the County layer. Boundaries are at 1:24,000-scale positional accuracy except for the shoreline in State_Shoreline and Counties_Shoreline which is being adjusted to 1:24,000-scale positional accuracy as part of ongoing work. Boundary changes

are made as needed and based on authoritative sources. See metadata for each layer for additional information.

Additional metadata, including field descriptions, can be found at the NYS GIS Clearinghouse: <http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=927>.

This map service is available to the public.

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NYS Office of Information Technology Services GIS Program Office (GPO). Primary Contact: GPO, GISBoundaries@its.ny.gov, 518-242-5029. Web layer published by Scenic Hudson, Inc.

Tax Parcels

Updated: Feb 19, 2020

Description

Publication Date: July 2019

Polygon data for missing counties added by James P. Mudd, Conservation GIS Manager, Scenic Hudson, Inc. from data provided by counties in 2019. Attribute data joined from statewide parcel data (NYS_Tax_Parcel_Centroid_Points) published by NYS OITS in July 2019.

This file contains primarily 2018 parcel data only for NY State counties which gave the NYS GIS Program Office (GPO) permission to share this data with the public. Work to obtain parcel data from additional counties, as well as permission to share the data, is ongoing. To date, 21 counties have provided the GPO permission to share their parcel data with the public. Parcel data for counties which do not allow the GPO to redistribute their data must be obtained directly from those counties. The GPO’s goal is to eventually include parcel data for all counties in New York State.

Parcel geometry was incorporated as received from County Real Property Departments. No attempt was made to edge-match parcels along adjacent counties. County attribute values were populated using 2018 Assessment Roll tabular data the GPO obtained from the NYS Department of Tax and Finance’s Office of Real Property Tax Services (ORPTS). This tabular data was joined to the county provided parcel geometry using the SWIS & SBL or SWIS & PRINT KEY unique identifier for each parcel. New York City attribute data comes from NYC MapPluto (<https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-pluto-mappluto.page>) Thanks to the following counties that specifically authorized the GPO to share their GIS tax parcel data with the public:

Cayuga, Chautauqua, Cortland, Erie, Genesee, Greene, Lewis, NYC- Bronx, NYC- Kings (Brooklyn), NYC- New York (Manhattan), NYC- Queens, NYC- Richmond (Staten Island), Ontario, Orange, Rensselaer, Sullivan, Tioga, Tompkins, Ulster, Warren, and Westchester.

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Contributing counties, NYS Office of Information Technology Services GIS Program Office (GPO) and NYS Department of Taxation and Finance’s Office of Real Property Tax Services (ORPTS).