



CARPENTER HILL POWER · CHARLTON, MASSACHUSETTS · 980 CMR 15.10

Site Suitability Analysis

The anticipated scores for the site under the state's six suitability criteria, what sits behind each one, and how the criteria have shaped the site and the design so far.

Preliminary draft · v0.4

October 12, 2026

This is a preliminary draft prepared for the Citizen Advisory Committee and the public before the state's Site Suitability Mapping Tool is re-run on the correct 17.29-acre Facility Boundary. Every score in it is provisional. The final Site Suitability Report is filed with the Application, expected in early 2027, and every version of this report stays published.

Carpenter Hill Power, LLC. Docket: Not yet assigned (pre-filing). Prepared by Wes Shaffer, AICP, Director of Planning and Engagement, ESA Solar, on behalf of Carpenter Hill Power, LLC. The live version, the slides and every document this report rests on are at carpenterhillpower.com/reports/site-suitability.

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WHAT THIS REPORT FOUND

- 1. Five of the six state criteria carry a provisional score: burdens 4.0, carbon 3.7, biodiversity 2.9, agriculture 0.0, and no overlap with protected open space. Climate change resilience is not scored by the tool for an inland site.
- 2. The July 17, 2026 run scored a 5.7-acre pad footprint. The Facility Boundary the rule defines is 17.29 acres, so the tool is being re-run before the Pre-filing Notice.
- 3. The one score design cannot move is the 4.0 for burdens, set by the block group's MassEnviroScreen score of 80.9.
- 4. Beyond the criteria, the desktop screening found poorly drained soil under the pad, drainage south toward a small wetland, a 0.05-acre overlap with the wetland buffer zone, 0.11 acre of the pad above a draft slope limit, and two private wells about 0.4 mile downhill in the same drainage. Each is a desktop finding on published mapping, and each is assigned to a study.

WHAT THIS REPORT IS AND WHAT IT FOUND

1 Summary

The state scores every proposed clean energy site on six criteria before the Siting Board decides on it. This report gives the anticipated scores for the Carpenter Hill site, explains what sits behind each one, adds what the site screening found beyond the six criteria, and records how all of it has shaped the design so far.

3.59 ac

Fenced battery equipment area, inside a 15.26-acre leased work area

1.86 + 0.55 ac

Gen-tie easement and access driveway, both inside the existing transmission right-of-way. The rule adds all three into one 17.29-acre Facility Boundary

5.7 ac

Site area the July 17, 2026 tool run scored, so every score here is provisional

4.0 of 5

Social and environmental burdens score, fixed by the block group's MassEnviroScreen score of 80.9

The Carpenter Hill Power project is a Large Clean Energy Storage Facility, so the Executive Office of Energy and Environmental Affairs' Site Suitability Guidance applies to it under 980 CMR 15.10(1). The rule asks two things of the project before it files. First, run the state's Site Suitability Mapping Tool on the site to derive anticipated Criteria-specific Suitability Scores (980 CMR 15.10(2)). Second, share those anticipated scores with stakeholders during the pre-filing period. This report does the second. The final Site Suitability Report is filed with the Application for a Consolidated Permit under 980 CMR 15.10(3), and the scores in it are final unless the Director revises them on request or the Board applies a modifier.

The scale runs from 0.0, the most suitable, to 5.0, the least suitable. A high score is a reason for the Board to look harder at avoidance, minimization and mitigation, not a bar to approval. The Board considers the scores in its route and site scoring analysis and in its decision on whether to grant the permit (980 CMR 15.10(6)).

READ THIS FIRST

The July 17, 2026 run scored a 5.7-acre site area, the pad footprint at the time. The regulation defines the Facility Boundary as the outermost area of construction or disturbance, or the fence line, plus the edge of the right of way for linear components. Measured that way, the project is 17.29 acres. The tool is being re-run on the correct boundary before the Pre-filing Notice planned for December 2026, and the results will replace the provisional scores on this page. We would rather show the correction than have it turn up later.

The six criteria at a glance. Provisional scores from the July 17, 2026 run on a 5.7-acre site area.

Criterion	Provisional score	Will the re-run move it?
Social and environmental burdens	4.0 of 5	No. A lookup from the block group's MassEnviroScreen score.
Carbon sequestration and storage	3.7 of 5	Probably. The correct boundary adds about 11.6 acres, most of it forest.
Biodiversity	2.9 of 5	Probably, for the same reason.
Agricultural resources	0.0 of 5	Re-run rather than assumed. The boundary clips 0.009 acre of prime soil at the road.
Climate change resilience	0.0 of 3	No. This score comes from the state's Climate Resilience Design Standards Tool, not the mapping tool, and both flood hazards it counts return Not Exposed. Inland exposure is documented in Section 5.
Protected open space	No overlap	No. The boundary comes within 373 feet of protected open space without touching it.

980 CMR 15.10 AND THE SITE SUITABILITY GUIDANCE

2 What the rule requires

980 CMR 15.10 is short. It tells the project which guidance to follow, when to run the tool, when the scores become final, who can ask for them to be revised, and how the Board uses them. This section walks through it so a reader can check the rest of the report against the rule.

980 CMR 15.10, subsection by subsection, and where this project stands.

Subsection	What it says	Where this project stands
15.10(1) Applicability	The Site Suitability Guidance applies to large and small clean energy generating and storage facilities, and to transmission and distribution facilities only in newly established public rights of way.	Applies. The project is a Large Clean Energy Storage Facility. The gen-tie runs in a private easement, not a new public right of way, so it is scored as part of the facility rather than as a separate transmission facility. The project will confirm this reading with the Division of Public Participation.
15.10(2) Pre-filing	Use the Site Suitability Mapping Tool to derive anticipated Criteria-specific Suitability Scores before filing, and share them with stakeholders during pre-filing under 980 CMR 16.00.	Run on July 17, 2026 on a 5.7-acre site area. Shared with state agencies on September 4, 2026, with the Citizen Advisory Committee on September 10, and published here. Re-run on the 17.29-acre Facility Boundary due before the Pre-filing Notice.
15.10(3) File with Application	File a Site Suitability Report with the Application for a Consolidated Permit. The scores in it are final unless revised under (4) or modified under (5).	Prepared for the Application, anticipated February to March 2027.
15.10(4) Request for Score Revision	The applicant, a Local Government or any Key Stakeholder who believes a score rests on materially erroneous, incomplete or faulty data may ask the Director to revise it, naming the specific deficiency. The Director decides within 30 days.	Open to any reader of this report. Section 9 says how.
15.10(5) Score modifier	The Board may modify scores when the applicant agrees to provide certain social or environmental benefits described in the guidance, and only by mutual written agreement between the applicant and a Local Government.	A decision for the Town of Charlton and the project together. This report carries the 4.0 burdens score as it stands and does not count on a modifier.

Subsection	What it says	Where this project stands
15.10(6) Board consideration	The Board considers the Site Suitability Report in its cumulative impact analysis and its route and site scoring, uses the scores to assess avoidance, minimization and mitigation, and considers them in the permit decision. It may treat a Community Benefit Agreement as evidence of benefits.	The Cumulative Impact Analysis is a separate report, linked at the end of this one.

The six criteria and how each is scored

The state's tool scores the site footprint on a grid of cells and reports one number per criterion. Four criteria come from statewide index layers. One is a lookup from MassEnviroScreen. One is a yes-or-no overlap test. The tool's own report states the method for each.

Criterion	How the tool scores it	Scale
Social and environmental burdens	A band lookup from the highest MassEnviroScreen score of any block group the site overlaps: 0 to 10 percent scores 0.0, above 10 to 30 scores 1.0, above 30 to 50 scores 2.0, above 50 to 70 scores 3.0, above 70 to 90 scores 4.0, above 90 scores 5.0.	0.0 to 5.0
Carbon sequestration and storage	The mean of all Ecosystem Carbon Index values across the site.	0.0 to 5.0
Biodiversity	The mean of the top quarter of Biodiversity Index values across the site.	0.0 to 5.0
Agricultural resources	The mean of the top half of Agricultural Resource Index values across the site.	0.0 to 5.0
Climate change resilience	Not produced by the mapping tool. The guidance takes the higher of two exposure ratings from the state's Climate Resilience Design Standards Tool, riverine flooding and coastal flooding from sea level rise and storm surge: Not Exposed scores 0.0, Low 1.0, Moderate 2.0, High 3.0.	0.0 to 3.0
Protected open space	Whether the site overlaps mapped Protected Open Space. An overlap is an automatic 5.0.	Overlap or no overlap

WHAT THE SCORES ARE NOT

The scores compare this footprint with the state's index layers. They are not a field survey, they do not test whether any regulatory threshold is exceeded, and a high score on one criterion does not decide the permit. Section 7 lists what the field work still has to establish.

980 CMR 15.02, DEFINITION OF FACILITY BOUNDARY

3 The site and the Facility Boundary

Every score depends on what area the tool is asked to score. The regulation names that area the Facility Boundary. This section measures it from the current site plan, shows the three pieces that make it up, and records the two places the drawing and its title block disagree.

980 CMR 15.02 defines the Facility Boundary as the outermost boundary of the project site, such as a building or other structure or the outermost area of construction activity or disturbance, or the project fence line. For a linear component such as a transmission line, the Facility Boundary is the edge of the right of way. The Site Suitability Mapping Tool scores whatever polygon it is given, so the polygon has to be this one.

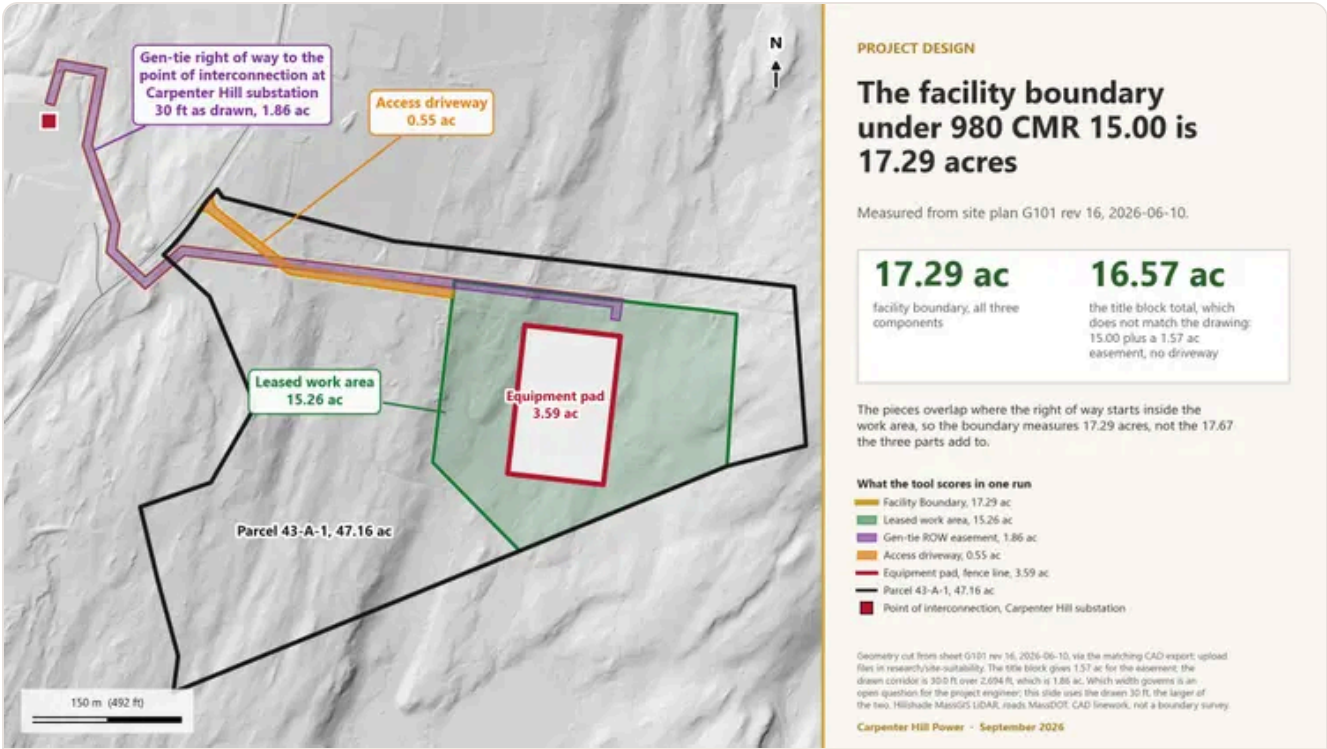


Figure 1. The 17.29-acre Facility Boundary: BESS project area, gen-tie right of way and access driveway, merged.

Facility Boundary components, measured from site plan G101 revision 16 (June 10, 2026). The pieces overlap where they meet, so they add to more than the total.

Component	Dimensions	Area measured	Title block
Parcel 43-A-1	131 Carpenter Hill Road, Charlton	47.16 acres	47.13 acres

Component	Dimensions	Area measured	Title block
BESS project area	The leased work area: rows of 136 battery units on a fenced gravel pad, a 26-foot fire lane around the equipment, 50 feet from equipment to fence, and the construction work limits	15.26 acres	15.00 acres
Battery equipment area	The fence line around the equipment itself	3.59 acres	not listed
Gen-tie easement	2,694 feet by 30 feet, overhead to underground at the road, ending 55 feet from the substation	1.86 acres	1.57 acres (68,229 square feet)
Access driveway	About 951 feet by 26 feet from Carpenter Hill Road to the project area, outside both the project area and the easement	0.55 acre	not listed
Facility Boundary, total	One merged polygon	17.29 acres	16.57 acres

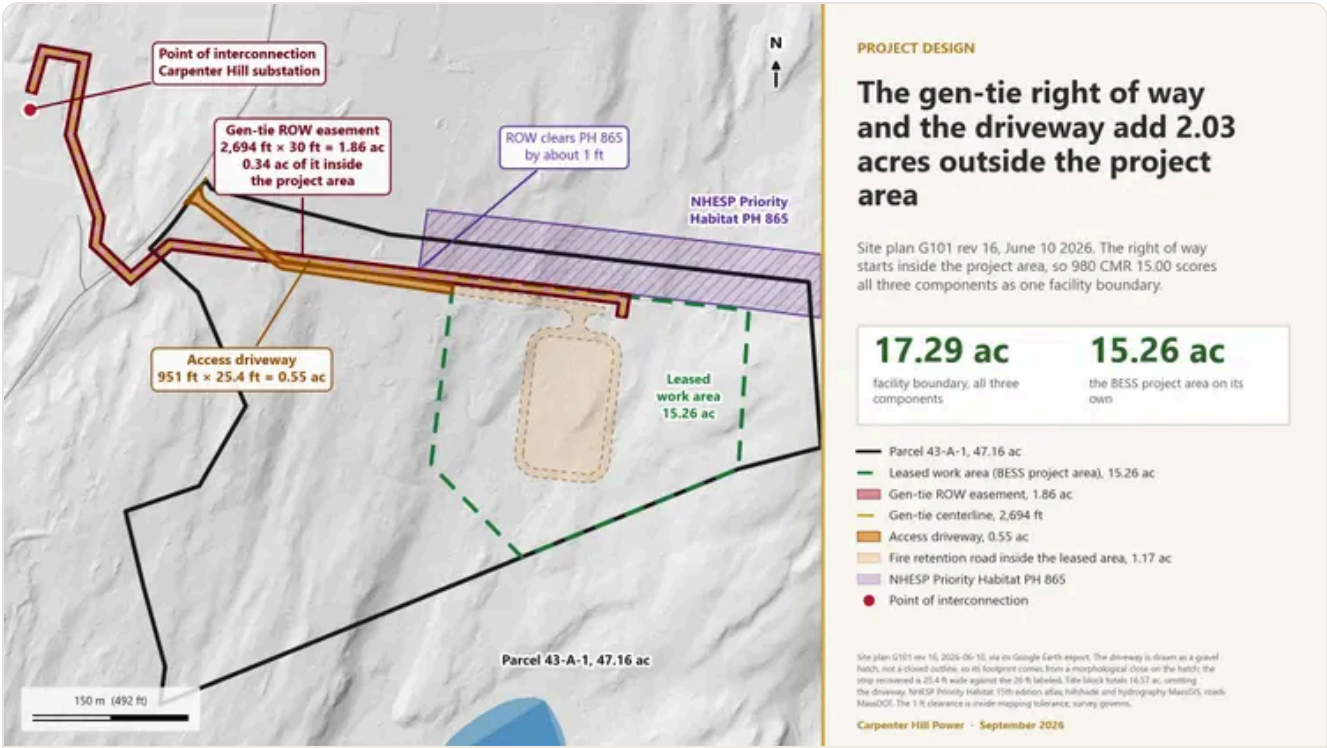


Figure 2. The two linear components: the gen-tie right of way to the substation and the driveway from Carpenter Hill Road.

Site plan G101 rev 16, 2026-06-10, via its Google Earth export. The driveway is drawn as a gravel hatch, not a closed outline, so its footprint comes from a morphological close on the hatch; the strip recovered is 25.4 ft wide against the 26 ft labeled. Title block totals 16.57 ac, omitting the driveway. NHESP Priority Habitat 15th edition atlas; hillshade and hydrography MassGIS, roads MassDOT. The 1 ft clearance is inside mapping tolerance; survey governs.

Two things the drawing and its title block disagree on

- The easement area. The polygon on the plan's perimeter layer is a clean 30-foot corridor over the 2,694-foot route, which is 80,866 square feet or 1.86 acres. The title block says 68,229 square feet, and that figure divided by the same route length gives a width of 25.3 feet. It reads like a title block carried forward from a narrower easement. The project engineer is confirming which width governs. The geometry here uses the drawn 30 feet, the larger of the two.
- The total. The title block's 16.57 acres is 15.00 plus 1.57 and leaves the driveway out. The driveway is ground disturbance outside both the project area and the easement, so under the definition it belongs inside the boundary.

The 15.26-acre project area is the leased work limit, not the clearing. Tree clearing outside the transmission right-of-way is held at or under 10 acres under a published commitment on the Commitment Tracker, and the fenced equipment area is about 5 acres or less. Nothing in the project record designates any part of the parcel outside the Facility Boundary for a particular use, and this report makes no such claim.

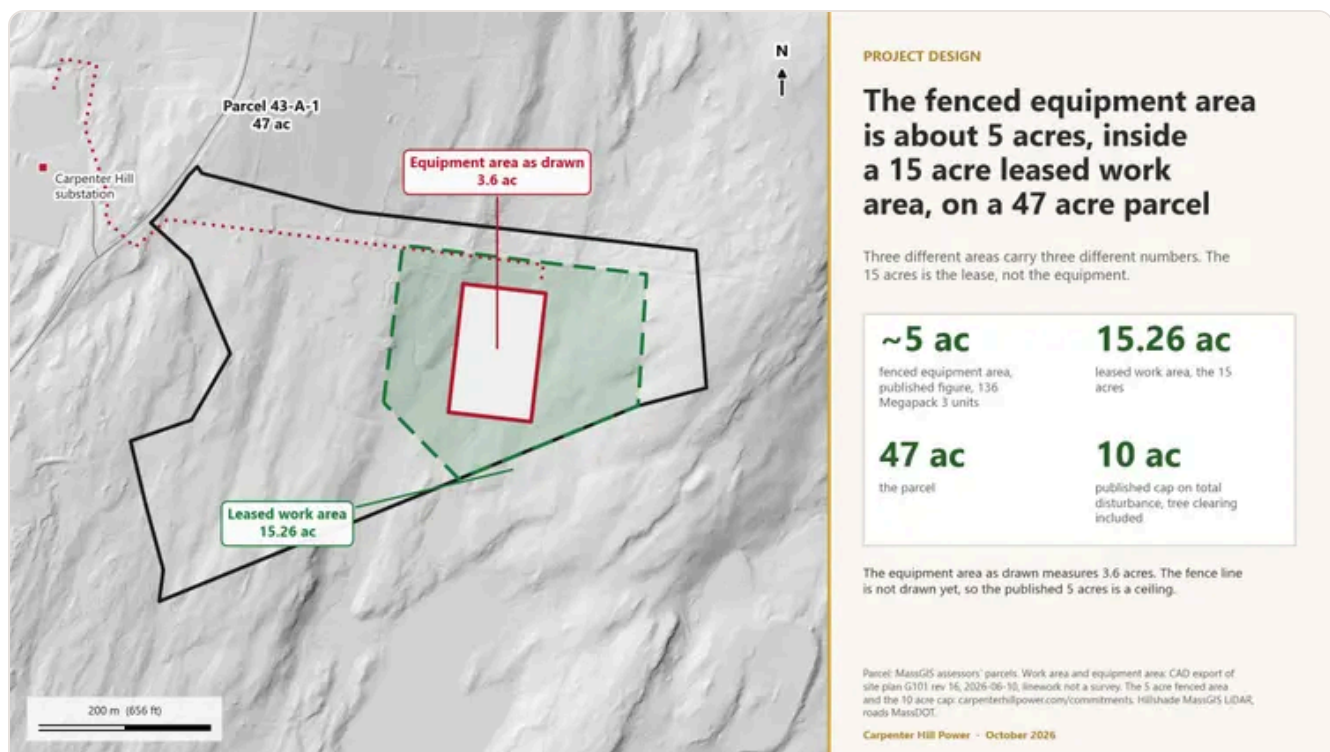


Figure 3. The three areas, nested: the fenced equipment area of about 5 acres or less, inside the 15.26-acre leased work area, on the 47-acre parcel. The 10-acre clearing cap is a commitment; the plan draws no clearing line.

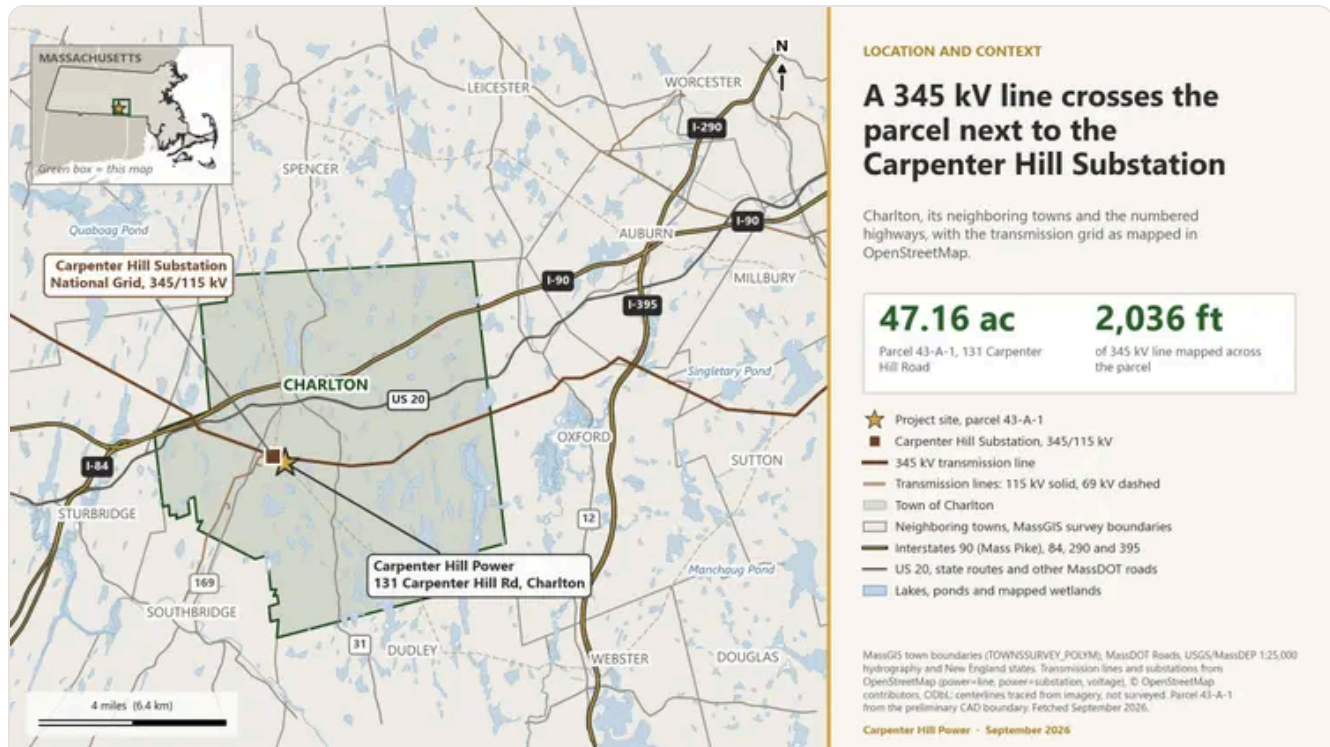


Figure 4. Regional locus. The 345 kV line built in 1967 crosses the parcel next to the Carpenter Hill substation.

MassGIS town boundaries (TOWNSSURVEY_POLYM), MassDOT Roads, USGS/MassDEP 1:25,000 hydrography and New England states. Transmission lines and substations from OpenStreetMap (power=line, power=substation, voltage), © OpenStreetMap contributors, ODbL; centerlines traced from imagery, not surveyed. Parcel 43-A-1 from the preliminary CAD boundary. Fetched September 2026.

980 CMR 15.10(2), JULY 17, 2026 TOOL RUN

4 Anticipated scores

These are the numbers the state tool produced for a 5.7-acre site area on July 17, 2026, with the statistics the tool prints beside each one. They are the anticipated scores 980 CMR 15.10(2) asks the project to share. None is final.

4.0 / 5.0	SOCIAL AND ENVIRONMENTAL BURDENS Band lookup from the host block group's MassEnviroScreen score of 80.9, which falls in the above-70-to-90 band. The tool takes the highest score of any overlapping block group; only one block group overlaps. This score does not move with the boundary or the design.
3.7 / 5.0	CARBON SEQUESTRATION AND STORAGE Mean of all Ecosystem Carbon Index values across 25 grid cells. The tool also reports a 25th percentile of 3.5 and a median of 3.9. Expected to move on the re-run: the corrected boundary adds about 11.6 acres, most of it forest.
2.9 / 5.0	BIODIVERSITY Mean of the top quarter of Biodiversity Index values across 25 cells. The mean of all cells is 2.6 and the median 2.5. Expected to move for the same reason. Mapped rare species habitat comes within about a foot of the corrected boundary without overlapping it.
0.0 / 5.0	AGRICULTURAL RESOURCES Mean of the top half of Agricultural Resource Index values. Every cell in the 5.7-acre area scored zero. The corrected boundary clips about 0.009 acre of prime farmland soil unit 305B where the gen-tie easement meets the road, so this one is re-run rather than assumed.
0.0 / 3.0	CLIMATE CHANGE RESILIENCE The mapping tool does not produce this criterion, so its report carries no climate page. The guidance scores it from the state's Climate Resilience Design Standards Tool, taking the higher exposure rating for riverine flooding and for coastal flooding from sea level rise and storm surge. The September 4, 2026 run returns Not Exposed for both, which scores 0.0. Charlton sits about 35 miles inland, and FEMA places the whole site in Zone X, minimal flood hazard. The inland hazards the criterion does not count, extreme precipitation and extreme heat, are documented in Section 5.

No overlap

PROTECTED OPEN SPACE
The tool reports that the site does not appear to overlap Protected Open Space. Measured on the corrected boundary, the nearest protected open space is 373 feet away. No automatic 5.0 applies on any criterion.

Scale runs 0.0 (most suitable) to 5.0 (least suitable); climate change resilience runs to 3.0. Sources: Clean Energy Infrastructure Site Suitability Report, official Site Suitability Mapping Tool, July 17, 2026 run, 5.7-acre site area; Climate Resilience Design Standards Tool, version 1.5, Project 55250, run September 4, 2026; FEMA FIRM panel 25027C0788F, effective June 21, 2023.

The MassEnviroScreen component scores the tool printed with the burdens criterion. The cumulative score is a statewide percentile; each component is scored 0 to 100.

Component	Score	What it measures
MassEnviroScreen cumulative burden score	80.9	Statewide percentile of the product of the two group scores below. The Burdened Area threshold under 980 CMR 15.04(1)(a) is 75.
Pollution and climate burden group	45.0	Environmental exposures 23.3, environmental effects 86.0, climate risks 47.6.
Population characteristics group	57.0	Sensitive populations 61.5, socioeconomic factors 52.4.

The site is not a brownfield, a landfill or previously developed land, so no development-potential modifier applies. The burdens score cannot be changed by design. Under 980 CMR 15.10(5) it may be modified only by mutual written agreement between the applicant and a Local Government, which is a decision for the Town of Charlton and the project together. This report carries the 4.0 as it stands.

SITE SUITABILITY GUIDANCE CRITERIA, READ AGAINST THE SEPTEMBER 2026 SITE SCREENING

5 Each criterion, and what sits behind it

A score is a number. This section says what is on the ground behind each one, using the state's own published layers pulled in September 2026, so a reader can see why the site scores as it does and what the re-run is likely to change.

5.1 Social and environmental burdens: 4.0

The site sits inside census block group 250277561012, Block Group 2 of Census Tract 7561.01, 2,525 acres with a population of about 1,525. Its MassEnviroScreen score of 80.9 places it in the above-70-to-90 band, which the tool scores 4.0. Of the block group's five component scores, environmental effects at 86.0 sits at the 99.7th percentile of the 5,109 Massachusetts block groups, while pollution exposure at 23.3 sits at about the 15th percentile, lower than most of the state. The effects component is a weighted count of cleanup sites, groundwater threats, solid waste sites, impaired waters and hazardous waste generators in and around the block group. What MassDEP maps inside it: six cleanup sites, three major regulated facilities, about 3.1 miles of Category 5 impaired stream, most of it Cady Brook, and the north edge of the Southbridge Landfill. None of these is on the parcel.

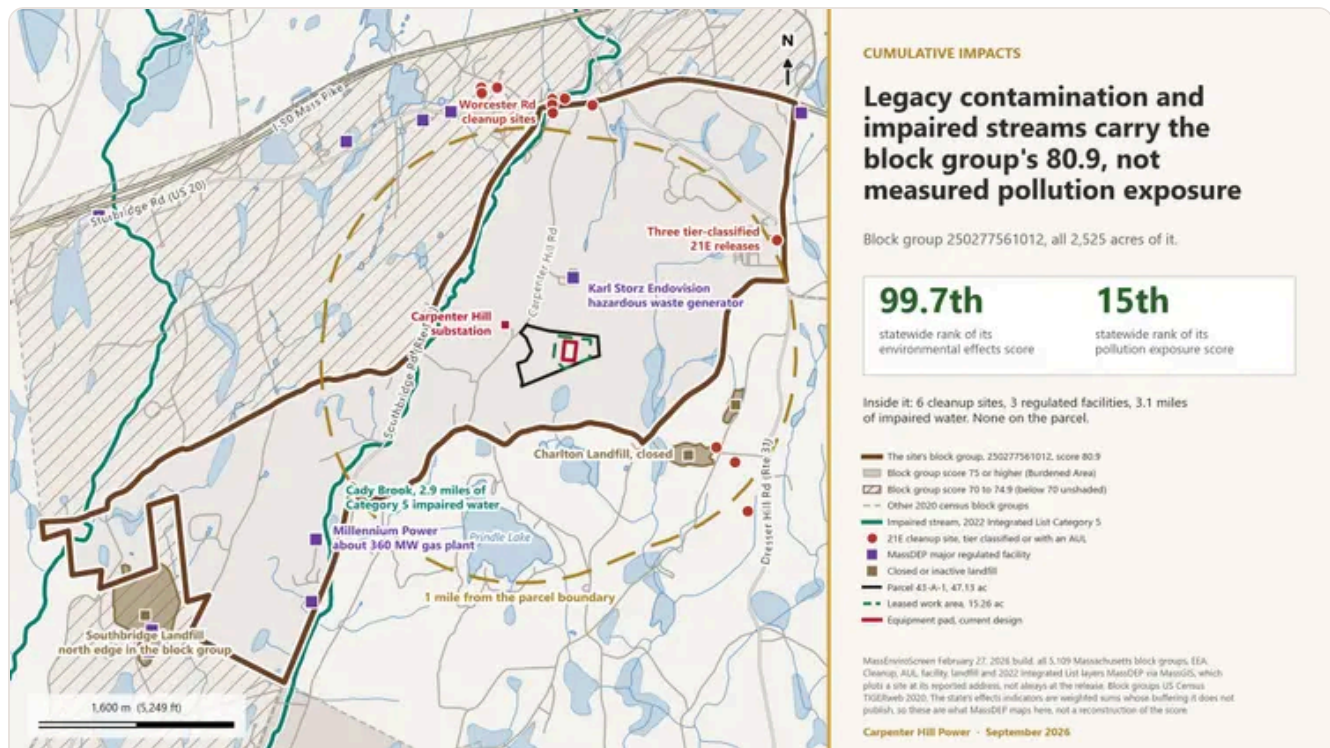


Figure 5. The site's block group, its MassEnviroScreen score, and the MassDEP features that sit behind the score.

Because the score is a property of the block group, the design cannot move it. What the project can do is show that it does not add to the burdens the score measures, which is the job of the Cumulative Impact Analysis, and

pursue a Community Benefits Plan, which the Board weighs separately under 980 CMR 15.11.

5.2 Carbon sequestration and storage: 3.7

The Ecosystem Carbon Index is high here because the site is forest. The 2016 MassGIS land cover puts evergreen and deciduous forest on 38.4 of the parcel's 47.1 acres, about 82 percent, and on 15.1 of the leased work area's 15.25 acres, about 99 percent. The equipment area is entirely forest. The corrected Facility Boundary adds the gen-tie easement and the driveway, both mostly wooded, so the re-run is expected to score at least as high.

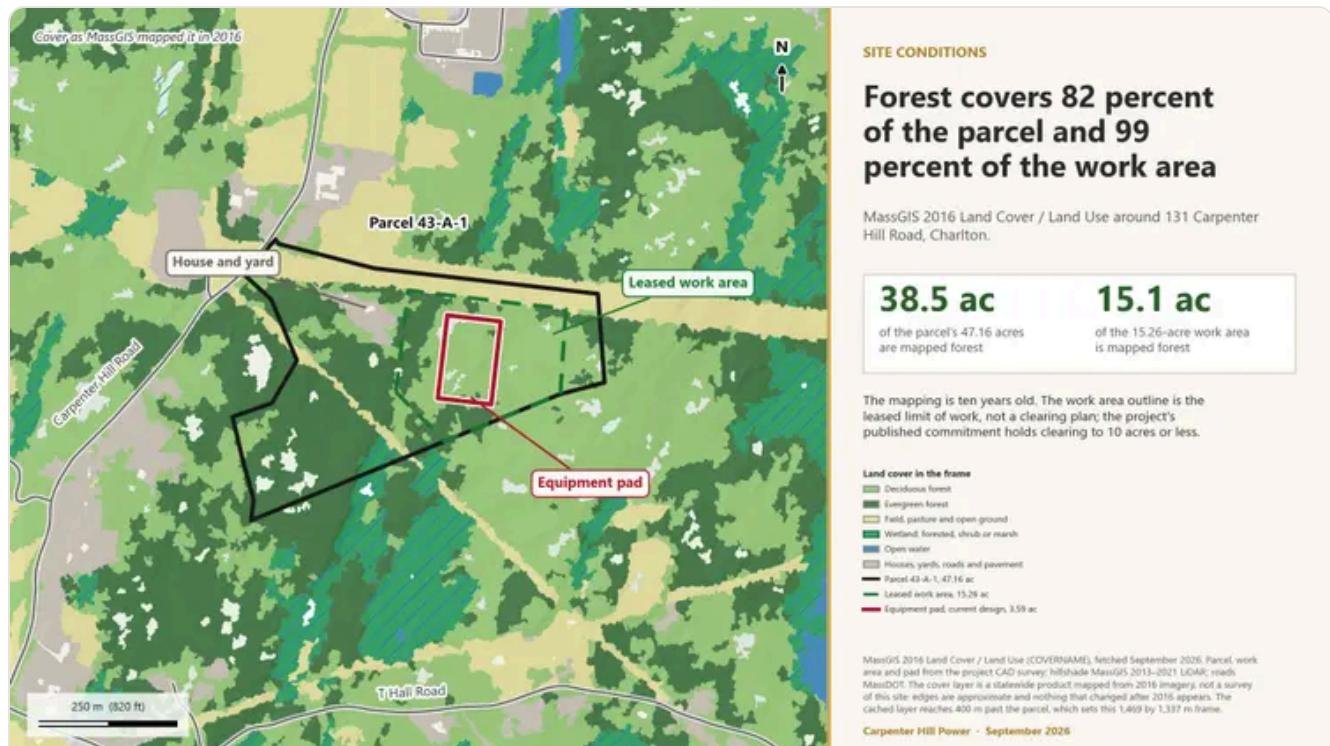


Figure 6. What is on the ground today. Forest covers 82 percent of the parcel and 99 percent of the leased work area.

The published commitment that answers this criterion holds tree clearing outside the transmission right-of-way at or under 10 acres. Corridor clearing outside the parcel stays inside the 1.86-acre right of way. The limit of work is drawn on the plans filed with the Application. Replanting to offset the acres cleared is on the Commitment Tracker, and its scope, funding and partners are set in the Community Benefits Plan. Whether the Board also sets a replanting condition is for the permit.

5.3 Biodiversity: 2.9

The Biodiversity Index across the 5.7-acre area is moderate, with a mean of 2.6 and a top-quarter mean of 2.9. The reason the re-run matters is at the parcel's northwest edge. NHESP Priority Habitat PH 865 and BioMap Rare Species Core 869 cover 2.89 acres of the parcel there. Neither reaches the leased work area or the equipment pad. Measured on the current drawing, the work area clears the habitat boundary by about 6 feet, the pad by about 125

feet, and the tie line by about 16 feet, but the access corridor runs within about a foot of it, with roughly 678 feet of the corridor inside 5 feet of the drawn edge. Those distances are finer than the layer's own mapping tolerance.

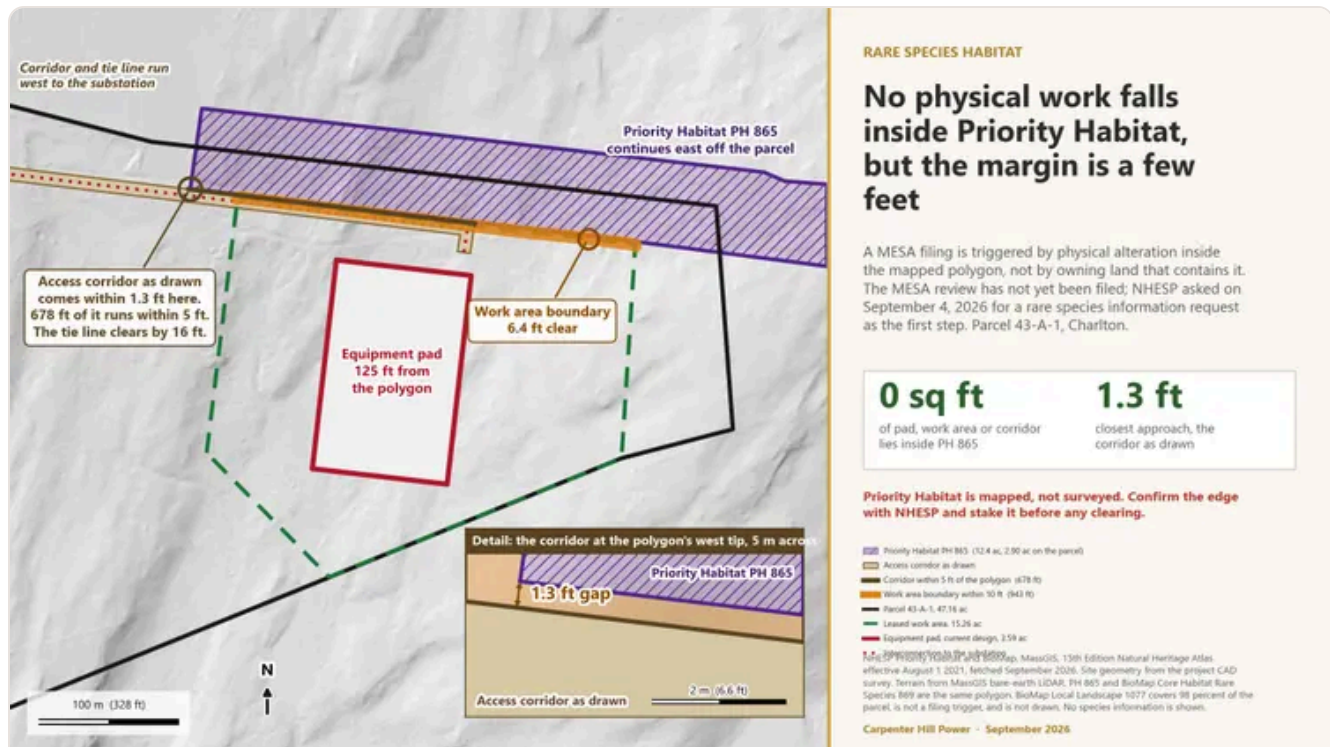


Figure 7. Rare species habitat and the work area. No physical work falls inside Priority Habitat, but the margin is a few feet.

- BioMap Local Landscape 1077 covers the whole work area, as it covers most of the surrounding upland. No BioMap Core Habitat or Critical Natural Landscape component touches the work area or the pad.
- No Estimated Habitat of Rare Wildlife lies within a mile; the nearest is 1.16 miles away. The nearest other Priority Habitat, PH 851, is 0.93 mile away.
- Vernal Pool Core 648 is 0.47 mile away, Wetland Core 3288 0.20 mile, and Aquatic Core 415 0.34 mile.
- The current design treats the PH 865 boundary as drawn as a no-disturbance line, staked by survey before any clearing. That reading is subject to NHESP's confirmation in the MESA review, which has not yet been filed. NHESP asked on September 4, 2026 for a formal rare species information request as the first step, and it is being prepared for signature. No rare species information is shared without NHESP's written approval.

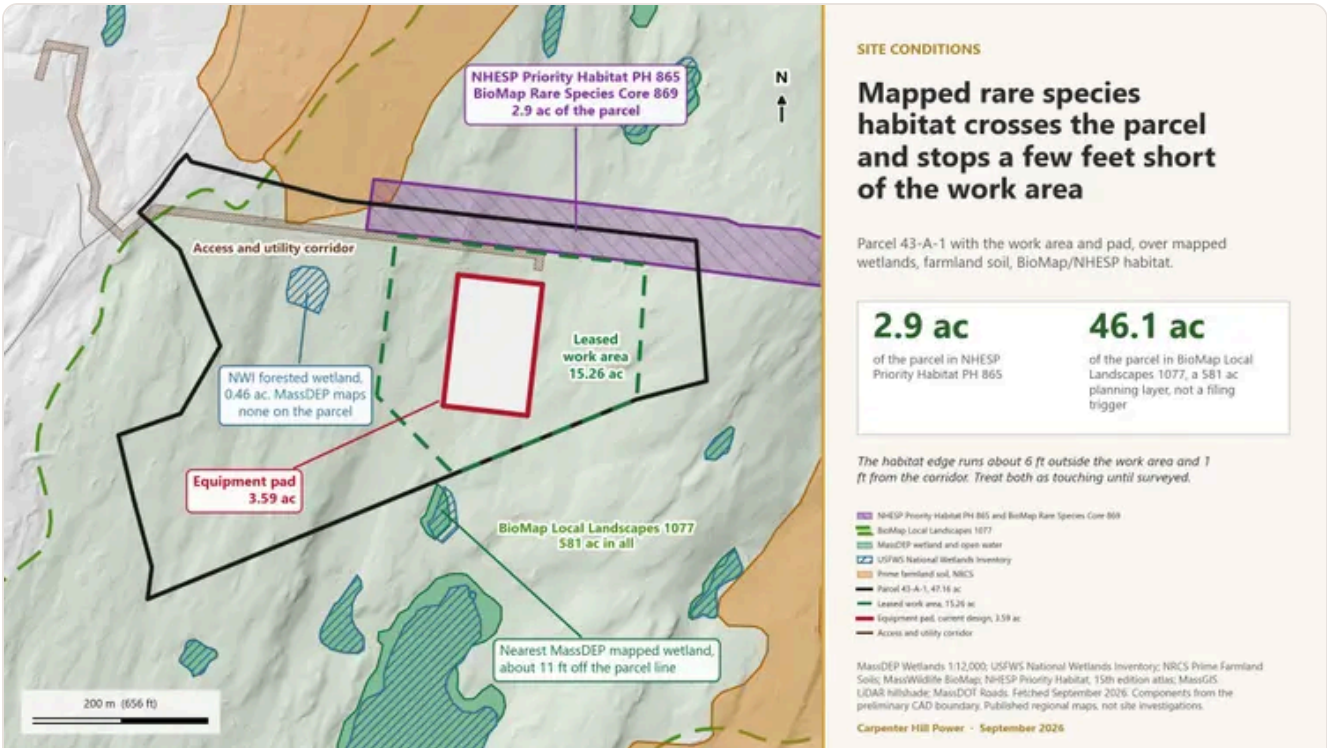


Figure 8. Environmental resources on and near the parcel: mapped habitat, wetlands, soils and the drawn components.

5.4 Agricultural resources: 0.0

The Agricultural Resource Index is zero across the 5.7-acre area, and the SSURGO soils explain why. The parcel is Charlton, Chatfield-Hollis-rock outcrop, Ridgebury and Paxton soils, all extremely stony or shallow, and none of it is farmed. The one prime farmland unit, 305B Paxton fine sandy loam, covers 0.56 acre at the parcel's north edge by the road. None of it is in the work area or the pad. The corrected boundary clips about 0.009 acre of it where the gen-tie easement meets the road, which is why the re-run is checked rather than assumed to return zero.

Soil map units on the parcel, from the NRCS SSURGO survey via MassGIS. A published soil map, not a site investigation: borings govern design.

Unit	Name	On the parcel	Farmland class
407B	Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony	18.04 acres	Not prime
102C	Chatfield-Hollis-rock outcrop complex, 0 to 15 percent slopes	11.87 acres	Not prime
407C	Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony	8.36 acres	Not prime
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony (poorly drained)	7.09 acres	Not prime
407E	Charlton fine sandy loam, 15 to 35 percent slopes, extremely stony	1.02 acres	Not prime

Unit	Name	On the parcel	Farmland class
305B	Paxton fine sandy loam, 3 to 8 percent slopes	0.56 acre	All areas are prime farmland
1	Water	0.19 acre	Not prime

5.5 Climate change resilience: 0.0, scored from the state's design standards tool

The mapping tool does not produce this criterion, so its report for this site carries no climate page. The Site Suitability Guidance scores it another way. It takes the higher of two exposure ratings from the state's Climate Resilience Design Standards Tool, one for riverine flooding and one for coastal flooding from sea level rise and storm surge, and converts it on a four-step scale: Not Exposed scores 0.0, Low Exposure 1.0, Moderate Exposure 2.0 and High Exposure 3.0. The tool was run on this site on September 4, 2026 and returns Not Exposed for both hazards, so the anticipated score is 0.0. That fits the site's position. Charlton sits about 35 miles inland, and FEMA's National Flood Hazard Layer places the entire parcel, work area and pad in Zone X, an area of minimal flood hazard, on FIRM panel 25027C0788F effective June 21, 2023; the nearest special flood hazard area is a Zone A about 0.2 mile away. The same run rates the site High Exposure for two hazards the criterion does not count but the design must: extreme precipitation and extreme heat.

Climate Resilience Design Standards Tool, version 1.5, Project 55250, run September 4, 2026.

Hazard	Exposure	Planning value	Where it goes in the design
Riverine flooding	Not Exposed	No mapped riverine flooding through the project's useful life	Scores 0.0 on the criterion
Sea level rise and storm surge	Not Exposed	Not applicable, about 35 miles inland	Scores 0.0 on the criterion
Extreme precipitation	High	10.7 inches in 24 hours for the 100-year storm by 2070	The stormwater design. The MEPA Office asked on September 4 that the design use this storm or document the departure.
Extreme heat	High	Up to 59 days a year above 90 degrees Fahrenheit by 2070	The equipment thermal specification and cooling design

5.6 Protected open space: no overlap

No protected or recreational open space in the MassGIS layer lies on the parcel or abuts it. The nearest is a private Agricultural Preservation Restriction 0.17 mile away, protected in perpetuity with no public access, and the corrected Facility Boundary comes within 373 feet of it without touching it. Eleven open space records lie within a

mile, among them Prindle Lake Park at 0.64 mile, the Capin Hill Nature Sanctuary at 0.72 mile and the town recreation fields at 0.73 mile. No Area of Critical Environmental Concern lies within 16 miles. The MassGIS layer carries no explicit Article 97 flag; on the usual proxy, publicly owned land protected in perpetuity, nothing on or next to the parcel qualifies.

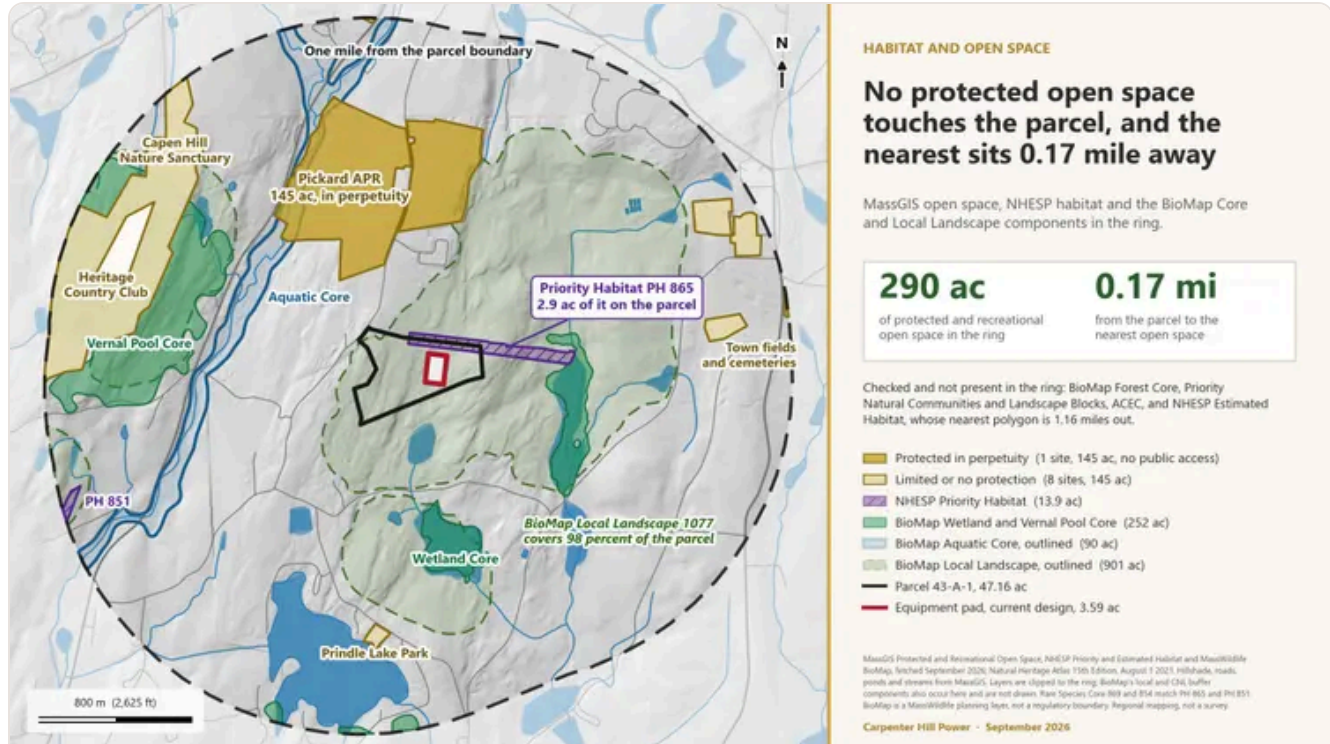


Figure 9. Protected open space and mapped habitat within a mile. No protected open space touches the parcel.

6 Beyond the six criteria: what the site screening found

The regulation says the six criteria do not limit what the Board looks at. The September 2026 screening on LiDAR terrain, published soils and the state layers turned up six findings that matter more to this site than any single score. Each is a desktop finding on published mapping, not survey, and each is paired with the study that answers it.

6.1 Soils under the pad

The equipment pad as drawn sits 76 percent on soil unit 71B, Ridgebury fine sandy loam: poorly drained, hydrologic group D, with a seasonal high water table within inches of the surface over dense till at about 19 inches. It is the parcel's only poorly drained unit, and it runs from the pad down the swale to the swamp. This was disclosed to the Citizen Advisory Committee on August 4, 2026. Geotechnical borings, test pits and piezometers follow after the pre-filing engagement period, before the Application. Foundation, dewatering, recharge and any containment liner follow their results.

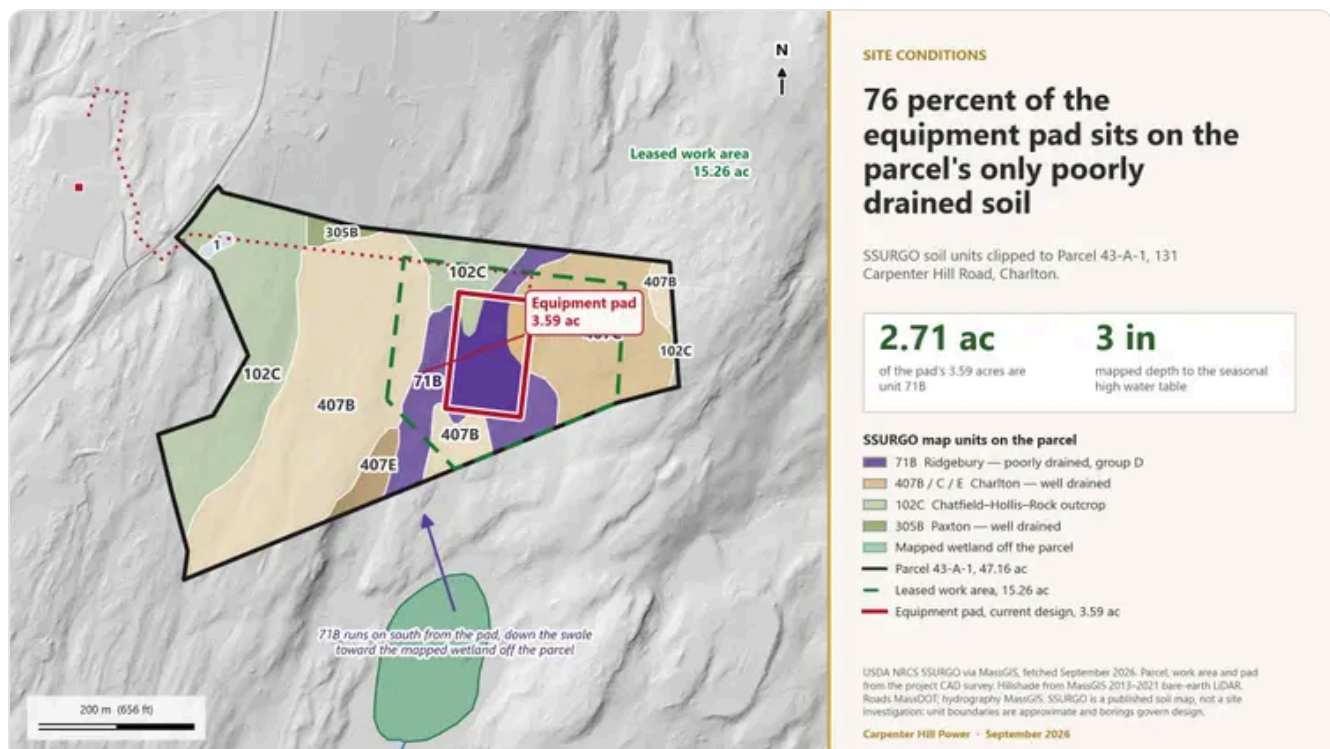


Figure 10. Site soils and the equipment pad. 76 percent of the pad sits on the parcel's only poorly drained soil.

USDA NRCS SSURGO via MassGIS, fetched September 2026. Parcel, work area and pad from the project CAD survey. Hillshade from MassGIS 2013–2021 bare-earth LiDAR. Roads MassDOT; hydrography MassGIS. SSURGO is a published soil map, not a site investigation: unit boundaries are approximate and borings govern design.

6.2 Where the water goes

Flow routing on the state's bare-earth LiDAR shows runoff leaving the pad at its southwest corner and running south, off the parcel after about 670 feet, into a 0.3-acre MassDEP-mapped shrub swamp about 307 feet from the pad edge, then down an unnamed stream toward McIntyre Pond, about 1.3 miles away in a straight line and about 2.1 miles along the stream. Cady Brook, the Category 5 impaired stream that carries much of the block group's burden score, lies in a different drainage to the north. Above the pad, about 45.6 acres of hillside drain onto it, 13.4 of them on the parcel. The current design routes that clean rainwater around the pad and its containment, and the diversion works, not the fence, are what set the width of the clearing.

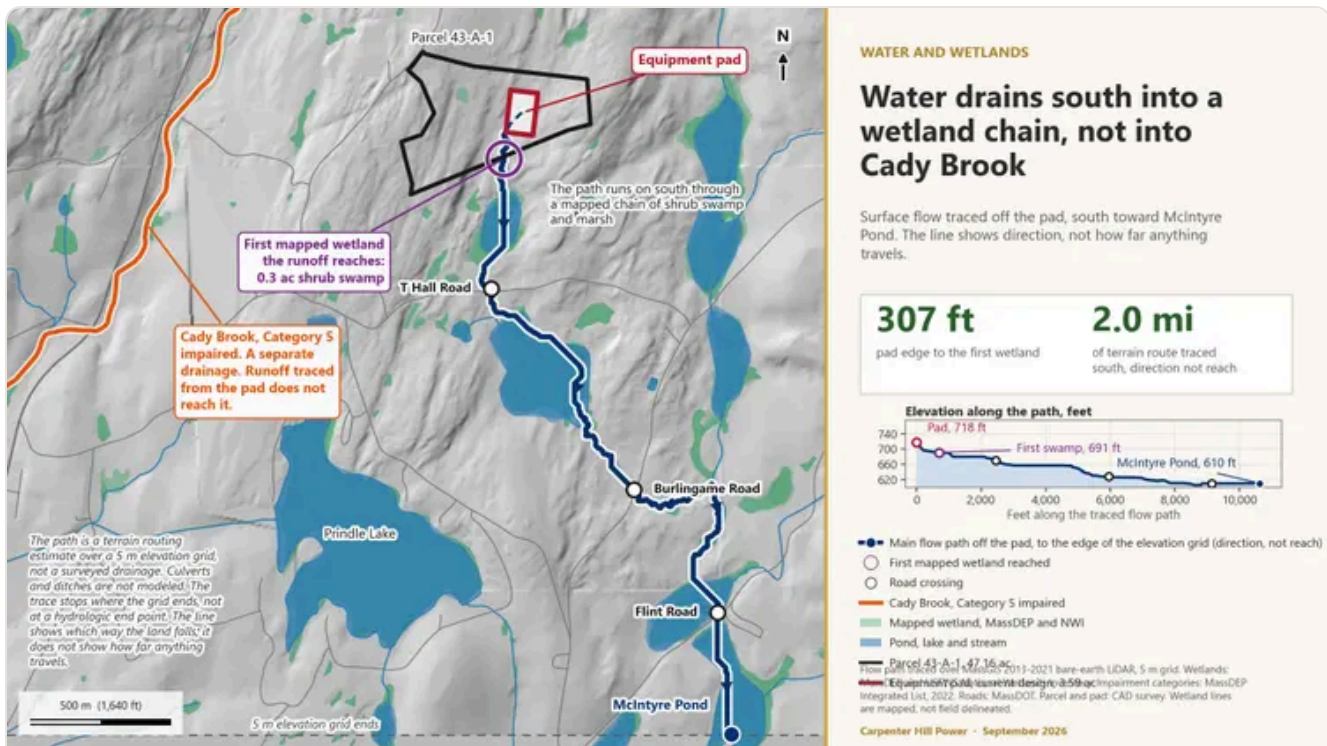
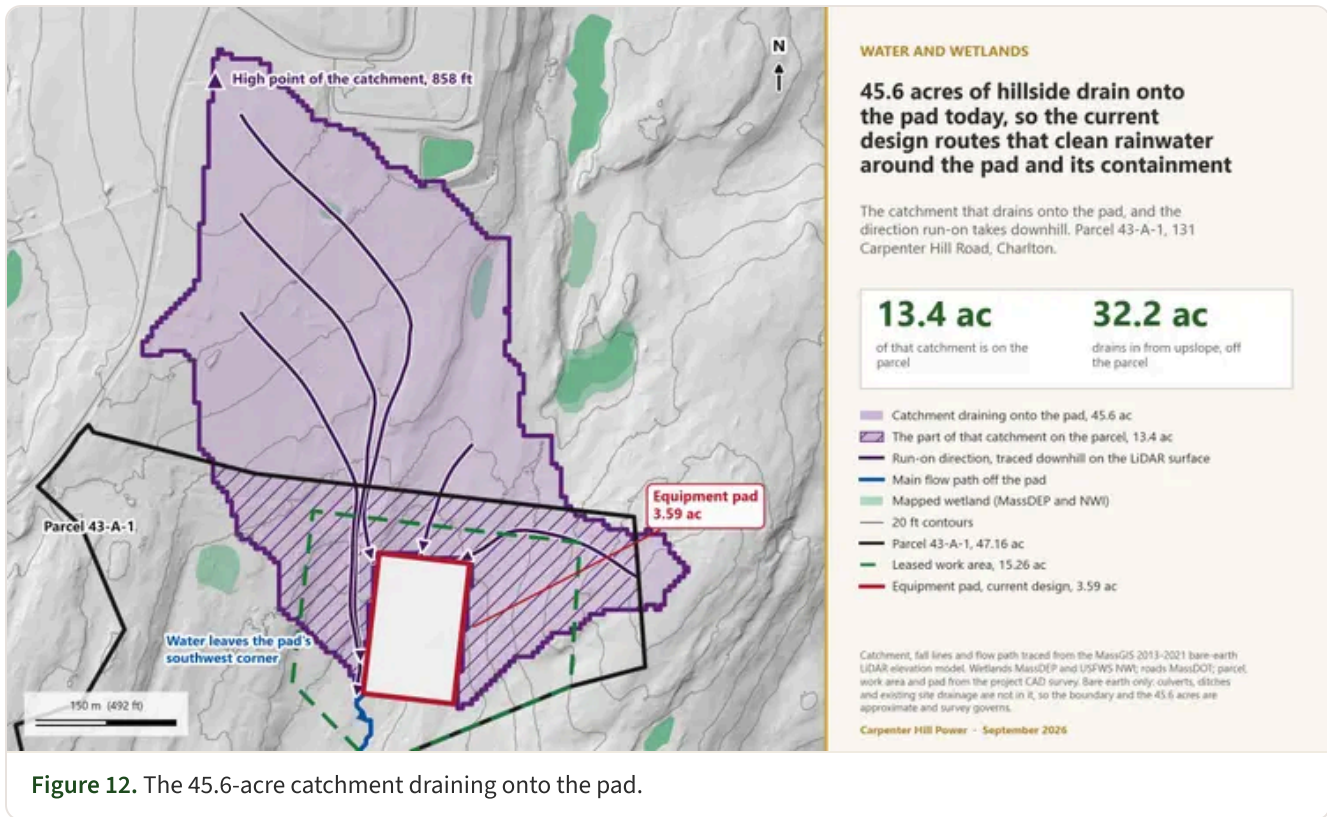
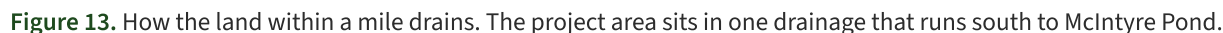


Figure 11. Where water leaving the pad goes: south into a wetland chain, not into Cady Brook.



Seen over the whole mile, the project area sits inside one drainage. About 59 acres of hillside drain onto it from above, and everything that leaves it runs south by a single path, through the shrub swamp and the marsh below T Hall Road, to McIntyre Pond. The one-mile routing runs on a coarser 5-metre grid than the parcel tracing above, so its acreages are approximate: the pad's own catchment comes out at about 49 acres on it, against the 45.6 acres traced at 1 metre, and the one-mile figures are quoted as about.



MassDEP maps no wetland on the parcel; the nearest mapped shrub swamp is about 11 feet outside the parcel line. The National Wetlands Inventory maps 0.46 acre of forested wetland on the parcel, outside the work area and about 37 feet above the pad in elevation, so it is not a receptor. No wetland is filled. The 100-foot buffer zone under the Wetlands Protection Act reaches about 0.05 acre into the leased work area at its southern corner, and the interconnection route clips the buffer about 47 feet north of the substation. The pad itself is 292 feet clear. A wetlands specialist has walked the property. The formal field delineation follows after the pre-filing engagement period, before the Application. It is filed with the Charlton Conservation Commission, with the Notice of Intent to follow.

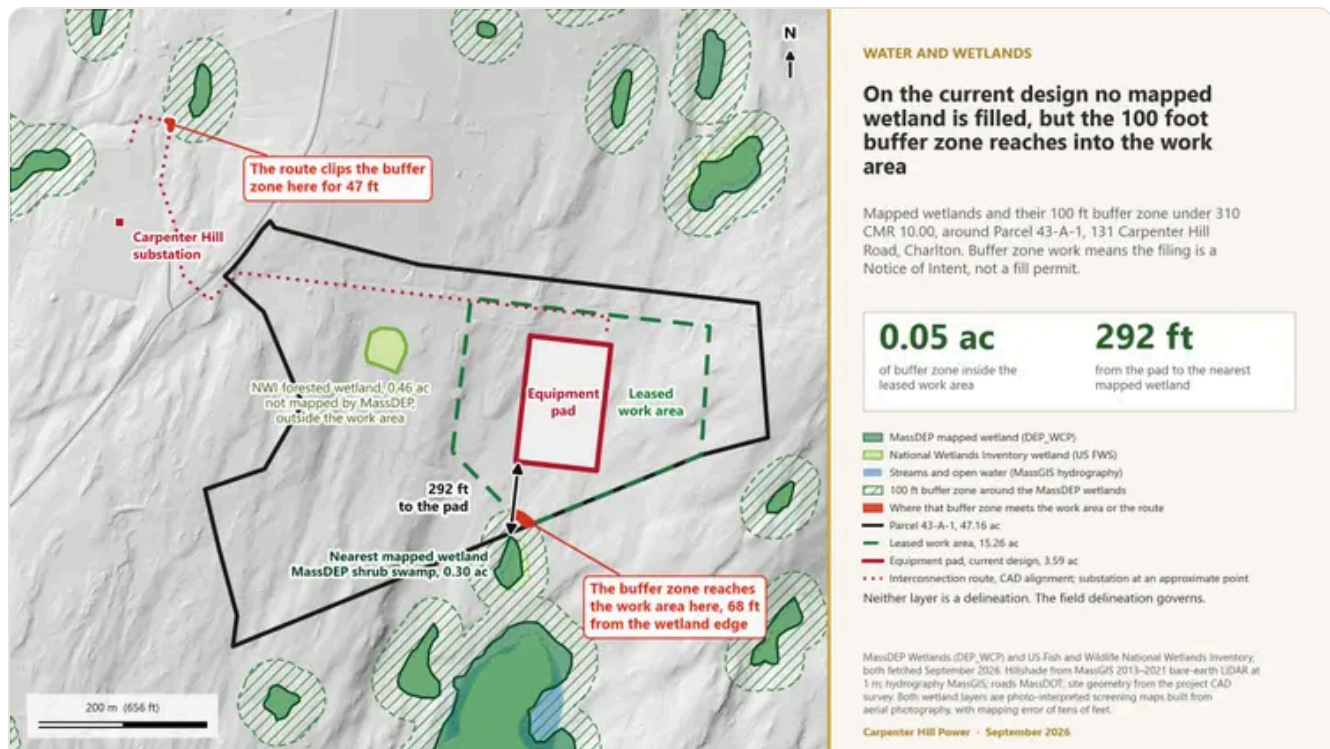
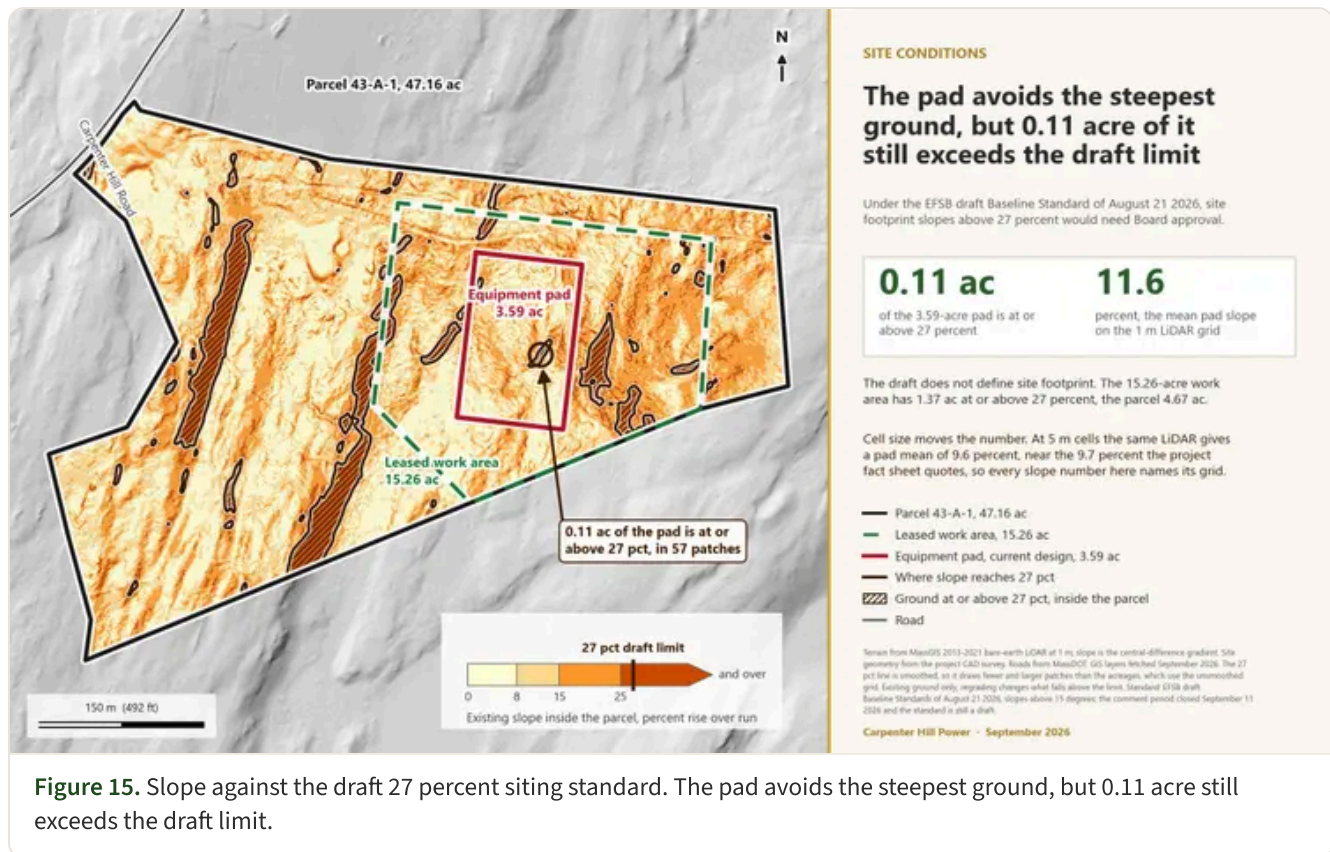


Figure 14. Wetlands, buffer zones and the work area. No wetland is filled, but the 100-foot buffer zone reaches into the work area.

6.4 Slope against the draft standard

The parcel has about 137 feet of relief, from 688 to 825 feet. The Board's draft Baseline Standards, revised August 21, 2026, set a 27 percent slope limit and leave the term site footprint undefined. Measured on a 1-metre LiDAR grid, about 0.11 acre of the pad, 3.2 percent of it, sits at or above the limit; the work area carries 1.37 acres and the parcel 4.67 acres above it. The pad averages 9.7 percent slope on a 5-metre grid and 11.6 percent on a 1-metre grid, and the grid size changes the answer, so any slope figure should say which grid it came from. Grading design, with the stormwater design, addresses the 0.11 acre. Comments on the revised draft standards were due September 11, 2026, and the standard is still a draft.



6.5 Private wells

The MassDEP well database holds 87 records within about a mile: 61 with coordinates plus 29 addressed to Carpenter Hill Road, three in both sets. Domestic wells on the road run 175 to 665 feet deep, median 500 feet, all but one drilled into bedrock. A surface flow-routing screen on the LiDAR classifies the 71 records that can be placed: two domestic wells on T Hall Road, 0.39 and 0.45 mile away, sit downgradient in the pad's own drainage; the landowner's well is about 459 feet northwest and 44 feet above the pad; the Karl Storz public supply wells are about half a mile north with a ridge between. Sixteen Carpenter Hill Road records carry no street number and cannot be placed. The screen follows land surface, not fracture flow in the bedrock these wells draw from, and it does not say whether any well is or is not affected. This report makes no such statement. A door-to-door well survey within half a mile, to locate the unplaced records, has not yet started.

The same records, measured against the pad's ground level, show how deep these wells go. The pad's median ground level is about 716 feet. Of the 49 located domestic wells with a logged depth, every one bottoms out below that level, the median by about 456 feet, and the landowner's well, the nearest to the pad, reaches rock at 22 feet and a depth of 500 feet. Depth does not change which wells the surface screen places downgradient, because the screen classifies by where the wellhead stands, and groundwater under a hill moves down and outward toward the valleys. What depth does change is the pathway that would matter for the wells above the pad, which is flow through fractures in the bedrock rather than surface runoff. That pathway is a question for the groundwater consultation with MassDEP and the monitoring program, not for this screen. This paragraph states the general

behaviour of groundwater under a hill, written from the well logs and the terrain. A hydrogeologist has not yet reviewed it for this site, and it is not a finding about any particular well.

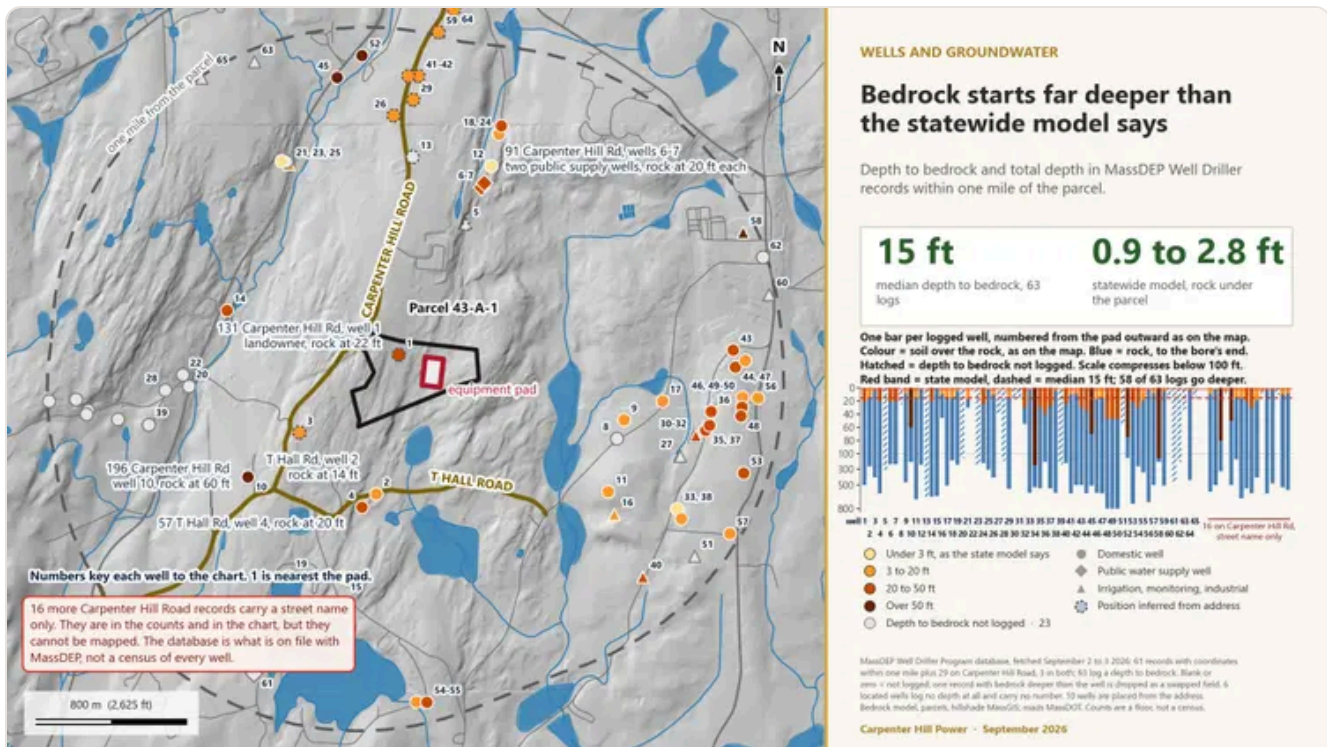


Figure 16. Recorded wells within a mile: depth to bedrock and total depth, one bar per well, numbered outward from the pad.

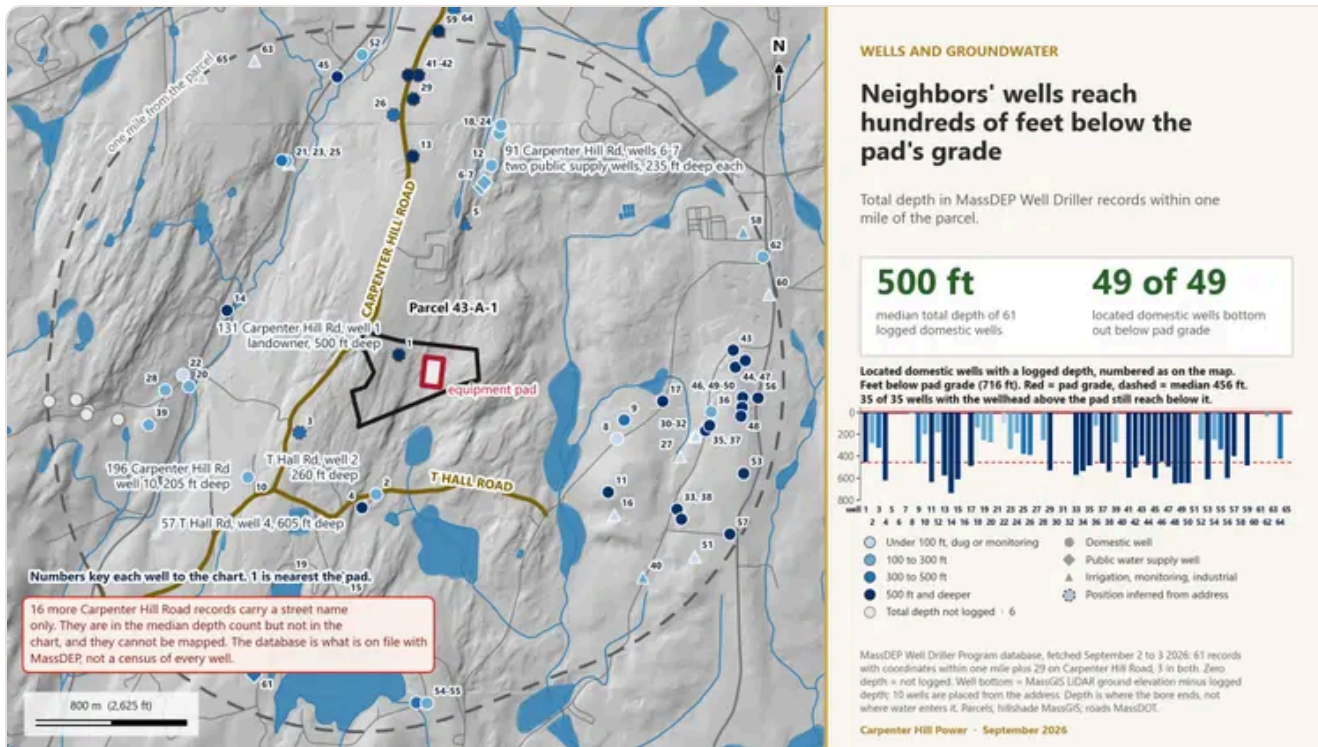


Figure 17. The same wells, measured against the pad's ground level. Every logged domestic well bottoms out below pad grade.

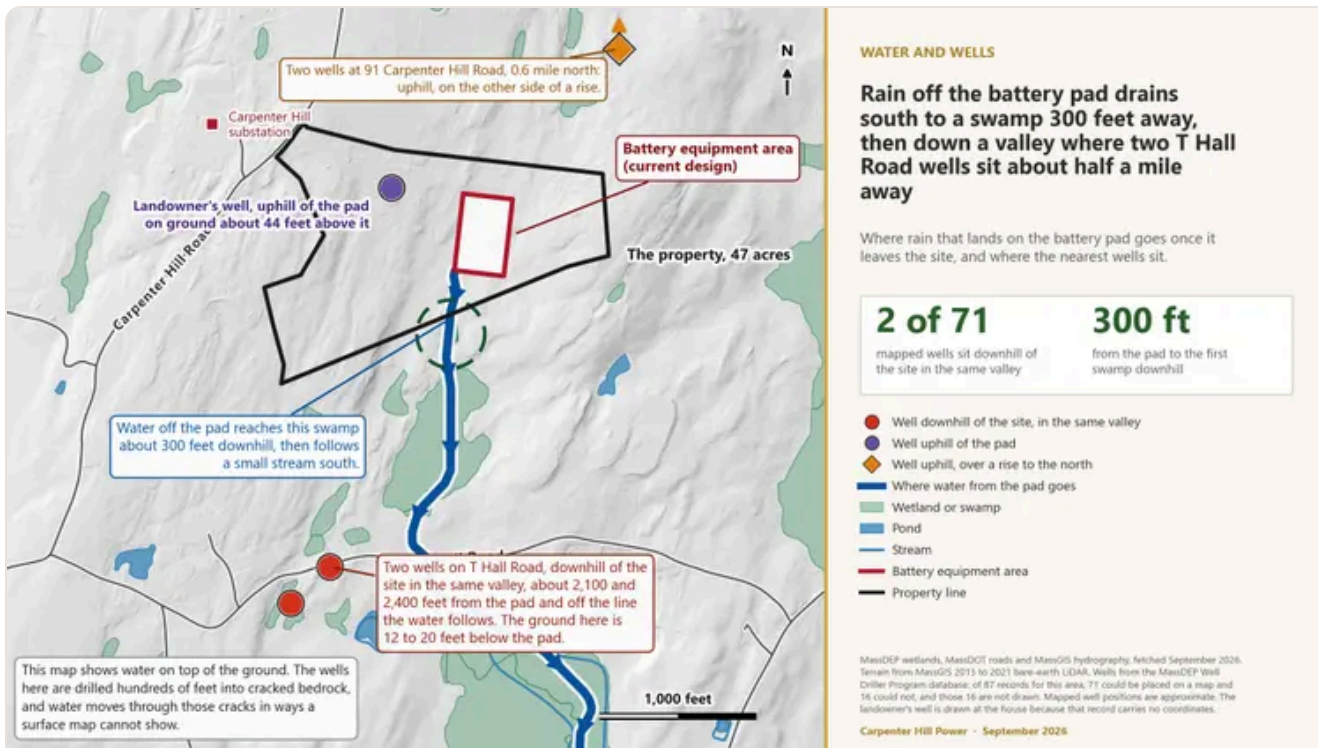


Figure 18. Where the water goes and where the wells are, drawn for residents.

6.6 Historic resources, geology and public water supply

- **Historic.** The Massachusetts Historical Commission inventory records no property on the parcel or in the work area. The nearest is the Isiah Putney House on Tinker Hall Road, built 1784, 0.27 mile away; the Charlton Center Historic District, listed on the National Register, is 0.79 mile away. The MHC Project Notification Form and tribal consultation have not yet been filed.
- **Geology.** The whole parcel is mapped as thin till over bedrock, with bedrock outcrops within a few hundred feet. The statewide depth-to-bedrock model reads 1 to 3 feet at the parcel corners, while the well records nearby report bedrock from 2 to 80 feet down, so the model understates the till here and borings govern. Seismic soil class A, hard rock, at every sampled point. Quinebaug River basin.
- **Public water supply.** No Zone II wellhead protection area lies within a mile. The nearest Zone I is the Karl Storz Endovision non-community supply, 0.49 mile away with a 231-foot radius; its interim wellhead protection area is 0.42 mile, or about 2,244 feet, from the parcel. No surface water supply watershed, sand and gravel aquifer or sole source aquifer touches the parcel. The parcel is in the Southbridge Water Department's mapped service area by 0.03 acre at its edge. The current design draws no public water for operations; the fire water supply is being planned with the Charlton Fire Department (Section 7.4).
- **Contamination.** No Chapter 21E site, activity and use limitation, landfill or groundwater discharge permit is on the parcel. The nearest tier-classified site is the closed Charlton Landfill on Flint Road, 0.75 mile away, which lies outside the site's block group. Karl Storz Endovision, 0.28 mile away, is a MassDEP major facility as a hazardous waste generator.

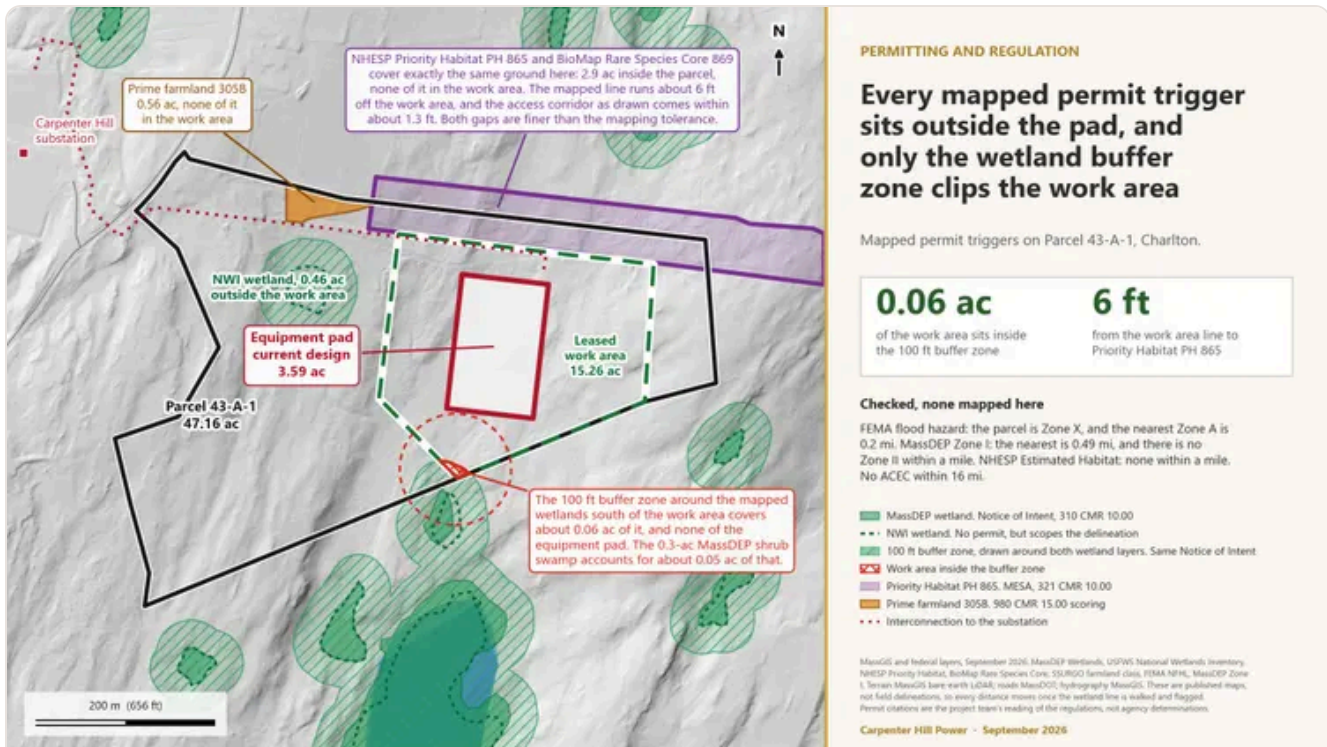


Figure 19. What triggers which permit, drawn on the site. Every mapped permit trigger sits outside the pad, and only the wetland buffer zone clips the work area.

MassGIS and federal layers, September 2026: MassDEP Wetlands, USFWS National Wetlands Inventory, NHESP Priority Habitat, BioMap Rare Species Core, SSURGO farmland class, FEMA NFHL, MassDEP Zone I. Terrain MassGIS bare-earth LiDAR; roads MassDOT; hydrography MassGIS. These are published maps, not field delineations, so every distance moves once the wetland line is walked and flagged. Permit citations are the project team's reading of the regulations, not agency determinations.

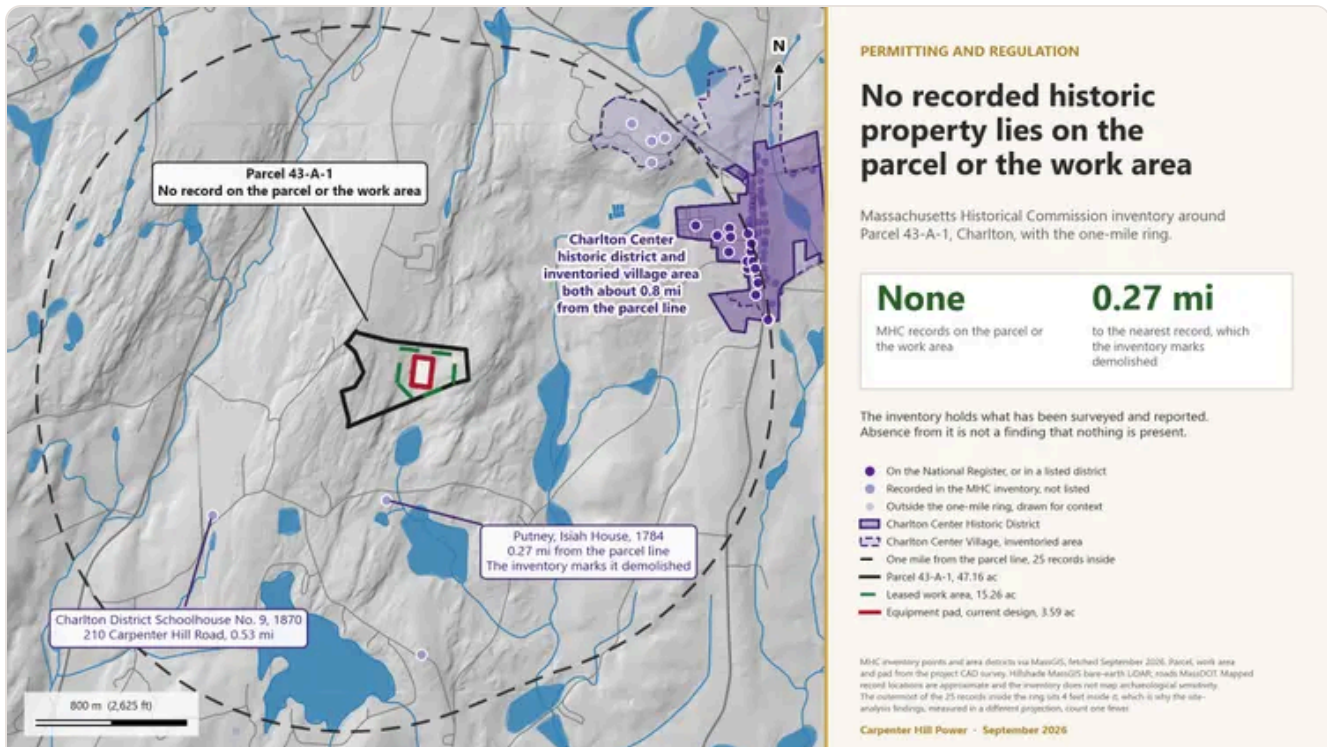


Figure 20. Mapped historic and cultural resources within a mile. None on the parcel.

MHC inventory points and area districts via MassGIS, fetched September 2026. Parcel, work area and pad from the project CAD survey. Hillshade MassGIS bare-earth LiDAR; roads MassDOT. Mapped record locations are approximate and the inventory does not map archaeological sensitivity. The outermost of the 25 records inside the ring sits 4 feet inside it, which is why the site-analysis findings, measured in a different projection, count one fewer.

980 CMR 16.09(1)(A)4 AND 16.04(1)(D)2

7 How the criteria shaped the site and the design

The siting rules ask the project to say how the site suitability criteria have been incorporated into choosing the site and shaping the design. The honest answer is in three parts: why this parcel, what the screening changed, and what is still open.

7.1 Why this parcel

The parcel sits beside the Carpenter Hill substation, where the 345 kV line built in 1967 meets the region's 115 kV lines. That adjacency is the reason for the site: the facility interconnects through a gen-tie of about 2,694 feet, most of it in an existing easement, rather than through new long-distance transmission. A storage facility can only be built where a landowner agrees to host it, and this is the parcel next to the substation where the project secured a lease. The Stantec Critical Issues Analysis of November 2023 screened the parcel before the lease was signed. The 2026 desktop screening on the state layers found no Area of Critical Environmental Concern within 16 miles, no Chapter 91 jurisdiction at this inland site, no overlap with protected open space, no land mapped as Article 97 on the usual proxy, no wetland on the parcel in the MassDEP layer, and the whole site in FEMA Zone X.

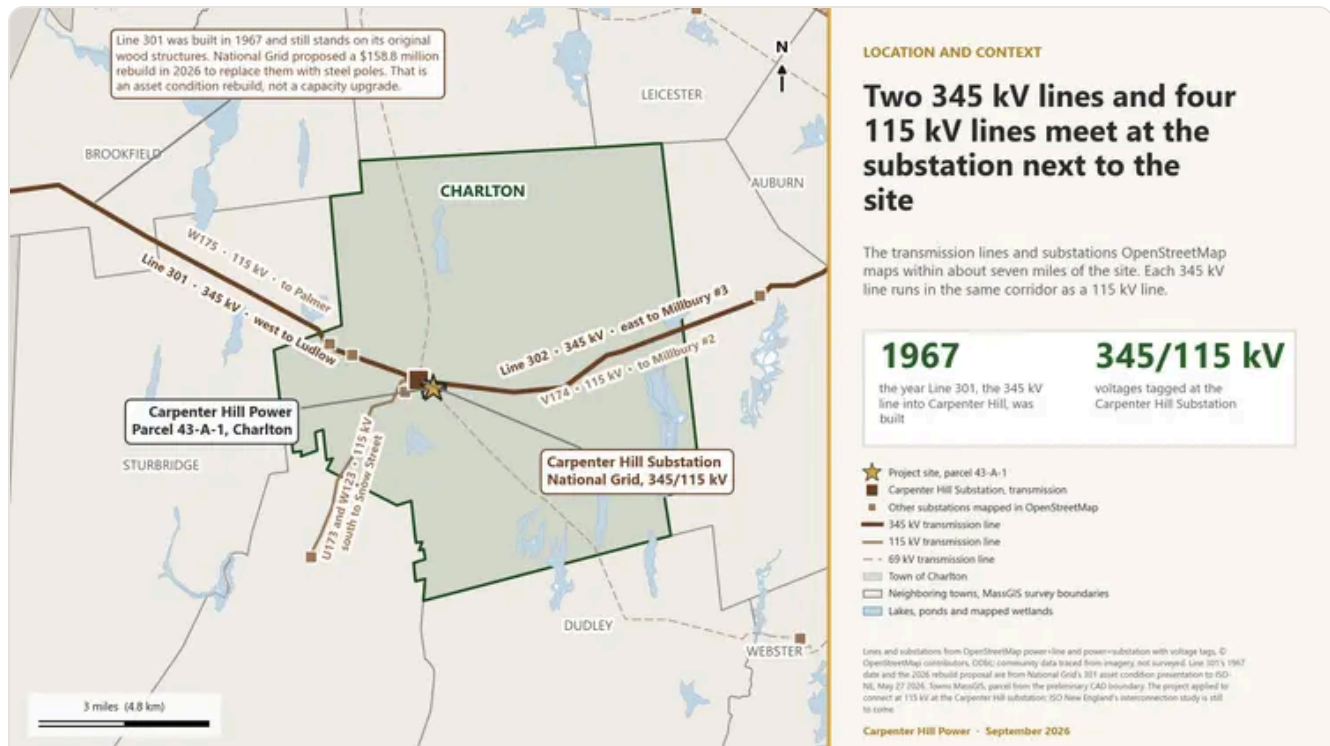


Figure 21. The transmission grid around the site. Two 345 kV lines and four 115 kV lines meet at the substation next to the site.

7.2 What the screening changed

Criterion or finding	What the current design does about it	Where it is recorded
Carbon and biodiversity: forest cover, habitat at the northwest edge	Tree clearing outside the transmission right-of-way held at or under 10 acres; corridor clearing kept inside the 1.86-acre right of way; the PH 865 boundary treated as a no-disturbance line staked by survey before clearing, subject to NHESP's confirmation.	Commitment Tracker; plans filed with the Application; MESA review
Layout	The layout moved from Megapack 2 XL to Megapack 3 and from 156 to 136 units when the newer equipment became available, which shrank the equipment area. That was an equipment change, not a response to the screening. Design changes and the reasons for them are logged on this site.	Commitment Tracker, alternative designs
Soils and run-on	Foundation, dewatering and recharge design follow the borings. Post-construction runoff held at today's rate; the 45.6 acres of run-on diverted around any containment; a catchment swale along the southern boundary in the current design.	Stormwater design; Commitment Tracker
Wetland buffer	Setbacks from delineated resource areas; no wetland fill; the 0.05-acre buffer overlap is what the Notice of Intent covers.	ANRAD and Notice of Intent to the Charlton Conservation Commission
Climate: precipitation and heat	The 2070 100-year storm and the heat projections are inputs to the stormwater design and the equipment thermal specification.	Stormwater design; Application
Burdens score	Cannot be changed by design. Answered by the Cumulative Impact Analysis and the Community Benefits Plan, with required mitigation listed separately and not counted as a benefit.	Cumulative Impact Analysis; draft Community Benefits Plan

7.3 Alternatives on the parcel

The MEPA Office recommended on September 4, 2026 an environmental alternatives analysis covering siting and design alternatives that reduce footprint and clearing, in addition to the battery technology alternatives already considered. That analysis is scoped for the Application. Ahead of it, a desktop search of the whole parcel was run in September 2026 to ask where a pad could go and how the drawn location compares. It holds the recorded New England Power transmission easement along the north line clear, since its deeds bar structures and any change of grade, and it scores every placement on run-on, slope, poorly drained soil, forest cover, distance to the substation and distance to the nearest dwelling.

7.4 Studies complete, in progress and not started

COMPLETE

Critical Issues Analysis (Stantec, November 2023)

Site Suitability Mapping Tool run, July 17, 2026, on a 5.7-acre site area

MassEnviroScreen block group analysis, February 27, 2026 build

Terrain, soils and drainage analysis, September 3, 2026

Well gradient screen and well inventory within one mile, September 3, 2026

Wellhead protection desktop screen and ACEC check, September 2, 2026

Climate Resilience Design Standards Tool run, September 4, 2026

One-mile landmark map, two sheets, posted

IN PROGRESS

Re-run of the Site Suitability Mapping Tool on the 17.29-acre Facility Boundary, before the Pre-filing Notice

Cumulative Impact Analysis Report

Stormwater design

Emergency Action Plan with the Charlton Fire Department, independently reviewed

Fire water source decision with the Charlton Fire Department

Sound study against the MassDEP noise policy (a preliminary screening model, not confirmed by a sound engineer, is posted; the professional study follows with the Megapack 3 data)

Viewshed or visual impact assessment (preliminary viewshed complete)

NOT STARTED, OR OPEN

Geotechnical borings, test pits and piezometers, after the pre-filing engagement period, before the Application

Field wetland delineation, after the pre-filing engagement period, before the Application, then ANRAD and Notice of Intent

MESA project review with NHESP; rare species information request being prepared for signature

Door-to-door well survey within half a mile

Environmental alternatives analysis for the Application

Traffic plan with Charlton DPW

Fire protection engineering report and hazard mitigation analysis; smoke and toxic gas plume dispersion analysis

MHC Project Notification Form; tribal consultation

Landscaping and lighting plans; magnetic field analysis; SF6 determination; SPCC Plan

FAA obstruction evaluation; Clean Water Act Section 404 applicability

8 980 CMR 15.10(2) TO (5) What happens next

The provisional scores become anticipated scores on the correct boundary before the Pre-filing Notice, and final scores when the Site Suitability Report is filed with the Application. Between now and then, anyone can question them.

When	What	What it produces
September 4, 2026	Interagency consultation convened by DPP	The provisional scores, the boundary correction and the site findings presented to state agencies. Done.
September 10, 2026	Citizen Advisory Committee meeting 3, virtual, 7:00 to 8:30 PM	The scores and this report shared with the committee. Done.
September 30, 2026	Community Public Forum, Dexter Hall, Charlton Public Library, 12:30 to 1:30 PM and 6:30 to 8:00 PM	The scores shared with the public. Done. Questions from both sessions are being added to the Engagement Log.
Fall 2026	Desktop work: MESA information request, alternatives analysis, door-to-door well survey	What can be settled from published records and conversations with neighbors.
Before December 2026	Re-run of the Site Suitability Mapping Tool on the 17.29-acre Facility Boundary	Anticipated scores on the correct boundary. This report is reissued with them and the prior version stays published.
December 2026	Pre-filing Notice to DPP, the Board and the permitting agencies	The anticipated scores in the record. Agencies have 30 days to comment.
After pre-filing, before the Application	Field investigation: borings, test pits, field wetland delineation, survey	The field results Section 6 waits on. Until they are in, every site finding in this report is a desktop finding.
February to March 2027	Application for a Consolidated Permit	The Site Suitability Report filed under 980 CMR 15.10(3). Scores become final.

How to question a score

Under 980 CMR 15.10(4), the project, the Town of Charlton or any Key Stakeholder who believes a score was calculated on materially erroneous, incomplete or faulty data may ask the Director of the Siting Board for a score revision, in the form the Director prescribes. The request has to name the specific deficiency. The Director decides within 30 days, and a revised score is final subject to any modifier. If you think a number in this report is wrong,

tell us first, at the contact below, and we will check it and say what we found on the Engagement Log. That does not replace your right to go to the Director.

9 Sources, methods and terms

Every number in this report traces to a named source with a date. Where a number is a desktop measurement on published mapping rather than a survey, it says so.

Clean Energy Infrastructure Site Suitability Report	Output of the official Site Suitability Mapping Tool, Executive Office of Energy and Environmental Affairs, run July 17, 2026 on a 5.7-acre site area. Six pages: cover with the four scores, carbon, biodiversity, agricultural resources, social and environmental burdens, protected open space. The output carries no climate change resilience page; the guidance scores that criterion from the Climate Resilience Design Standards Tool instead. Available on request.
980 CMR 15.00	Cumulative Impact Analysis and Standards for Applying Site Suitability Criteria, Energy Facilities Siting Board, effective May 8, 2026, applying to applications filed on or after July 1, 2026.
Site plan G101 revision 16	June 10, 2026. Components measured from the matching CAD export; the title block figures are recorded alongside and the differences are being reconciled with the project engineer.
MassGIS and federal layers	Pulled September 2 to 3, 2026: SSURGO soils and prime farmland, MassDEP wetlands, National Wetlands Inventory, FEMA National Flood Hazard Layer, NHESP Priority and Estimated Habitat, MassWildlife BioMap, Protected and Recreational Open Space, ACEC, wellhead protection Zone I, Zone II and IWPA, 2016 land cover, MHC inventory, surficial geology, Chapter 21E sites, AUL sites, major facilities, landfills, water and sewer service areas, census block groups and MassEnviroScreen (February 27, 2026 build).
Terrain	MassGIS 2013 to 2021 bare-earth LiDAR, 0.5-metre tiles, used at 1-metre and 5-metre grids. Slope by Horn's method. Flow routing by priority-flood pit filling and D8 direction. Bare earth only: culverts and existing site drainage are not in it.
Wells	MassDEP Well Driller Program database, fetched September 2 to 3, 2026. Hand-entered records back to 1962; coordinates required only for about the last 15 years, so counts are a floor, not a census.

One-mile drainage and well depth	October 6 to 9, 2026, on the same LiDAR at a 5-metre grid: priority-flood fill with flats resolved, then D8 routing over the one-mile window. Well depths from the same MassDEP records, measured against the pad's median ground level of 716 feet. Desktop figures on published mapping, quoted as about.
Climate Resilience Design Standards Tool	ResilientMass Action Team, version 1.5, Project 55250, run September 4, 2026. Riverine flooding and coastal flooding both Not Exposed; extreme precipitation and extreme heat both High Exposure.
Site Suitability Guidance	Executive Office of Energy and Environmental Affairs, final guidance issued March 1, 2026, as presented by EEA on July 8, 2026: the climate change resilience criterion takes the higher exposure rating for riverine or coastal flooding from the Climate Resilience Design Standards Tool, scored 0.0, 1.0, 2.0 or 3.0; the mapping tool does not include it.
Draft Baseline Standards	Energy Facilities Siting Board, revised draft of August 21, 2026, comments were due September 11, 2026. The 27 percent slope limit is a draft standard.
Critical Issues Analysis	Stantec, November 2023. In the Document Library.

Terms used in this report

Criteria-specific Suitability Score

The score for one criterion, 0.0 most suitable to 5.0 least suitable, produced by the state's Site Suitability Mapping Tool for a site footprint (980 CMR 15.02).

Facility Boundary

The outermost boundary of the project site, such as the outermost area of construction or disturbance or the fence line, and for a linear component the edge of the right of way (980 CMR 15.02).

Site Suitability Mapping Tool

The state's web mapping tool, maintained by the Executive Office of Energy and Environmental Affairs, that calculates the scores for a drawn site footprint.

Site Suitability Report

The written report of the scores, any modifiers sought, and supporting documentation, filed with the Application (980 CMR 15.10(3)).

Large Clean Energy Storage Facility

A clean energy storage facility above the size threshold in 980 CMR 1.01, which places it under the Siting Board's consolidated permit.

MassEnviroScreen

The state's screening tool that scores every census block group on 30 indicators of environmental exposure, environmental effects, climate risk, sensitive populations and socioeconomic factors.

Burdened Area

A census block group with a MassEnviroScreen score of 75 or more, or a median household income of 65 percent or less of the state median (980 CMR 15.04(1)).

Priority Habitat

Land mapped by the Natural Heritage and Endangered Species Program as habitat of state-listed rare species, where work is reviewed under the Massachusetts Endangered Species Act.

Zone X, Zone A

FEMA flood zones. Zone X is minimal flood hazard; Zone A is a special flood hazard area with a one percent annual chance of flooding.

Run-on

Rainwater that flows onto the pad from the hillside above it, as opposed to rain that falls on the pad.

Downgradient

Lower along the direction water moves. In this report it is judged from the land surface, not from a groundwater model.

Request for Score Revision

A request to the Director of the Siting Board to revise a score calculated on faulty data (980 CMR 15.10(4)).

Questions about this report

Jonathan Santiago, Project Development Associate, ESA Solar. jsantiago@esa-solar.com or 407-232-7440 ext. 251.

Translation, interpretation, or another accommodation for any meeting about this report is available on request.

The live version of this report, the slides, every map in it at full size, the Commitment Tracker, the Engagement Log, and every document it rests on are at carpenterhillpower.com/reports/site-suitability. When a version of this report is replaced, the old one stays readable, with the date it changed and the reason.

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Commitment Tracker: carpenterhillpower.com/commitments

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Carpenter Hill Power, LLC · 131 Carpenter Hill Road, Charlton, Massachusetts · Preliminary draft v0.4 · October 12, 2026