Governor's Energy Office Distributed Generation Stakeholder Group Land Use Work Session Summary

Wednesday, October 19, 2022 9:00 a.m. – 12:00 p.m. Virtual meeting via Zoom

Background

This Land Use Work Session was designed specifically to obtain public feedback on land use-related considerations as the DG Stakeholder Group crafts a successor program. The public was invited to provide feedback during the session, or afterward in writing. Written comments were requested by Wednesday, October 26, 2022.

The Work Session consisted of an overview of the Distributed Generation Stakeholder Group by GEO staff, followed by three presentations:

- <u>Agricultural Solar Stakeholder Group Process and Report</u> Nancy McBrady, Bureau Director, Bureau of Agriculture, Food and Rural Resources, Maine Department of Agriculture, Conservation and Forestry
- <u>Technical Potential for Renewable Development on Disturbed Land</u> Rob Wood, Director of Government Relations and Climate Policy, The Nature Conservancy
- <u>Maine Brownfields Program Overview</u> Eric Sroka, Project Manager, Maine Department of Environmental Protection

Following the presentations, a panel including the three presenters joined by Eliza Donoghue, Director of Advocacy and Staff Attorney at Maine Audubon, Ellen Griswold, Vice President and Deputy Director at Maine Farmland Trust, Matt Kearns, Chief Development Officer at Longroad Energy, and Neal Goldberg, Legislative Advocate at Maine Municipal Association, discussed the contents of the presentations, their implications for distributed generation, and key perspectives related to the topic of land use.

After the panel discussion, all attendees were invited to join breakout rooms to engage in dialogue and share their perspectives on the topic. During the panel discussion and breakout sessions, staff took notes to generate this summary document. Prompting questions for these breakout discussions included:

- What priorities should the future distributed generation program incorporate with regard to land use?
- What creative mechanisms could be used to encourage siting projects on preferred types of land?

45 participants joined the session by Zoom. Three sets of written comments were submitted by a range of entities after the session, included as an appendix to this summary.

The agenda and presentations from the land use work session are available here: https://www.maine.gov/energy/studies-reports-working-groups/current-studies-working-groups/dg-stakeholder-group

Торіс	Detail
Support for encouraging development in priority areas such as brownfields, while recognizing successful climate mitigation hinges on cost effective renewable deployment	 Program design should encourage siting of solar development on previously developed or degraded land, in a manner that avoids and minimizes natural resource impacts, and that supports alignment with community preferences. The state should take a balanced approach to DG development with other state priorities such as protection of prime farmland and soils, forest conservation, and other development needs such as housing.
Improved access to data	• The state, in collaboration with utilities and natural resource organizations, should play a larger role in data collection and mapping activities that can inform stakeholders about distributed generation development.
Program design should align with existing state programs and resources	 Maine Department of Environmental Protection (DEP) Brownfields Program encourages the redevelopment of contaminated sites through cooperation with municipalities and/or potential owners to investigate and/or remediate sites. The program has access to both state and federal funds that could reduce project costs.
<i>Maximize the benefits of the IRA</i>	 Ensure program design maximizes targeted interconnection, siting, and enrollment components of the Inflation Reduction Act. Incremental investment tax credits are available to projects sited in "energy communities," including on brownfield sites.
Need for additional planning capacity at the municipal and regional level	• A "clearinghouse," toolkit, and outreach resources specifically targeted at helping municipal staff navigate development questions and resources management has been identified as a clear need.
Desire for standardized regulatory and financial guidance	• The state should provide more transparency and standardization of regulatory processes for the development of DG projects
Ensure program delivers benefits to ratepayers and communities	 Interest in encouraging the siting of distribute degeneration in close proximity to electrical load.
Program design should encourage the pairing of battery storage with DG	• Battery storage can complement the installation of distributed generation and further increase its value.

Appendix

The following comments and additional information were submitted by email following the October 19 work session from:

- The Nature Conservancy in Maine, Maine Audubon, Maine Farmland Trust, Natural Resources Council of Maine, Appalachian Mountain Club, Sierra Cub Maine, and Maine Conservation Voters
- Sierra Club Maine
- Maine Farmland Trust
- Jenn Curtis, Director of Planning and Development, Town of Bowdoinham

October 26, 2022

Ethan Tremblay Governor's Energy Office 62 State House Station Augusta, Maine 04333

RE: Land use recommendations for Distributed Generation Stakeholder Group

Dear Mr. Tremblay:

Thank you for the opportunity to provide input on land use considerations as the Distributed Generation (DG) Stakeholder Group develops recommendations for a cost-effective successor program to foster DG development in Maine between 2024 and 2028. Please accept these comments on behalf of The Nature Conservancy in Maine, Maine Audubon, Maine Farmland Trust, Natural Resources Council of Maine, Appalachian Mountain Club, Sierra Club Maine, and Maine Conservation Voters.

We strongly support the goals of the DG Stakeholder Group and the establishment of a DG successor program. DG solar energy will play an important role in achieving Maine's clean energy and greenhouse gas emissions reduction requirements.

The DG successor program also provides an opportunity to utilize already developed or degraded land for solar development. Policy design that encourages siting in these areas can avoid natural resource impacts and reduce community siting concerns, achieving multiple State policy goals while speeding clean energy deployment. There are ample degraded and developed sites available in Maine that could host solar facilities in the 1-5 MW range¹; DG policy design can make these sites more attractive for developers.

We specifically encourage consideration of the following recommendations:

- If the Stakeholder Group recommends that the DG successor program should include competitive procurements for DG resources, it should recommend that bids should be evaluated at a discounted rate for projects located on brownfields, other contaminated sites, capped landfills, closed gravel pits,² buildings, impervious surfaces, and other areas that avoid and minimize environmental impacts.
- If the Stakeholder Group recommends that the DG successor program should include a tariff rate to incentivize DG development, it should recommend that there should be a differentiation in tariff rates (such as an adder) for projects located on brownfields, other contaminated sites, capped landfills, closed gravel pits, buildings, impervious surfaces, and other areas that avoid and minimize environmental impacts.

¹ See "Maine Technical Potential for Renewable Development on Disturbed Land," prepared for The Nature Conservancy by Sustainable Energy Advantage LLC, September 15, 2022 (available soon on the DG Stakeholder Group webpage).

² Except closed gravel pits enclosed in forested properties distant from existing development.

The appropriate size of the procurement program discount rate and/or tariff adder could be determined at a later date by the Legislature and/or Public Utilities Commission (PUC), but it should not be inconsistent with ensuring that the successor program is cost-effective.³

The recommendations above are aligned with recent actions taken by the Legislature and PUC. Specifically:

- The 2019 solar law (LD 1711) required that, "In evaluating bids in a competitive solicitation, the commission shall evaluate a qualified bid for a project that is located on previously developed or impacted land at 90% of the offered rate."
- The 2020 PUC procurement announcement (following LD 1711) specifically provided discounted bid rates for projects on brownfields, capped landfills, closed gravel pits, impervious surfaces and other sites that demonstrably avoided natural resource impacts, such as sites that require less than 10 acres of forest clearing; sites that avoid wetlands, waterfowl and wading bird habitat, and vernal pools; and sites with less than 10 percent of the project located on prime agricultural soils or soils of statewide significance.
- The 2021 law that paused net energy billing for projects 2-5 MW in size and formed the DG Stakeholder group (LD 936) encourages, "Identifying mechanisms that prioritize distributed generation that are sited to: (a) Limit impacts by being located on previously developed or impacted land, including areas covered by impervious surfaces, reclaimed gravel pits, capped landfills or brownfield sites as defined by the Department of Environmental Protection..."

Outside of Maine, there is also significant precedent for preferencing well-sited projects in past and present solar programs. For example, the Solar Massachusetts Renewable Target (SMART) program provides differential reimbursement based on a project's site location,⁴ and the New Jersey Transition Renewable Energy Certificate (TREC) and Successor Solar Incentive Program (SuSi) provided/provides additional compensation for projects located on contaminated properties such as brownfields and landfills.⁵

Redeveloping degraded sites with solar and locating projects in areas that avoid or minimize natural resource impacts offers a unique win-win for communities and the environment. The State should seek ways to encourage projects to locate on these sites, and the design of a DG successor program offers an important opportunity to achieve this goal.

Thank you for your consideration of our comments.

Sincerely,

³ Additional policy details could also be determined by the Legislature and/or PUC, such as the portion of a project that would need to be located on degraded or developed land to qualify for the discount rate and/or tariff adder.

⁴ See <u>https://www.mass.gov/doc/land-use-siting-and-project-segmentation-guideline-september-2021/download</u>

⁵ See <u>https://njcleanenergy.com/renewable-energy/programs/susi-program/adi-program</u>

Rob Wood Director of Government Relations and Climate Policy The Nature Conservancy in Maine

Eliza Donoghue Director of Advocacy and Staff Attorney Maine Audubon

Shelley Megquier Policy and Research Director Maine Farmland Trust

Rebecca Schultz Senior Advocate Natural Resources Council of Maine

Eliza Townsend Maine Conservation Policy Director Appalachian Mountain Club

Matt Cannon State Conservation and Energy Director Sierra Club Maine

Kathleen Meil Director of Policy and Partnerships Maine Conservation Voters To: Distributed Generation Stakeholder Group, Governor's Energy Office (ethan.tremblay@maine.gov)
From: Sierra Club Maine
Subject: Comments on the Land-Use Work Session
Date: October 26, 2022

The Maine Chapter of the Sierra Club has a great interest in the successor program for distributed generation (DG) of the electrical supply within Maine. We have followed some of the previous discussion, and both staff and volunteer members were present at the virtual meeting on October 19, 2022 ("Land-Use Work <u>Session</u>") which focused on land-use issues surrounding the current and future programs for DG. We respectfully submit the following comments on the successor program, as related to land use.

The essence of the Sierra Club policy on DG is contained in the Club's <u>Energy</u> <u>Resources Policy</u>:

"Many opportunities exist in and adjacent to our communities for the local, smaller-scale application of renewable technologies (such as rooftop solar). Distributed clean energy involves the entire community in energy solutions, and reduces transmission impacts and disruptive transmission bottlenecks. The Sierra Club supports properly sited and designed local and district energy projects, and calls for measures to ensure that local, smaller-scale projects have access to the transmission and distribution system."

Although not stated here, this policy intertwines strongly with other Sierra Club policies which advocate for environmental justice and land conservation, and we believe the successor program should accommodate those goals as well as providing reasonable, transparent means for Maine electricity customers to benefit financially.

The announcement for the DG land-use work session offered two questions to participants to consider:

Question 1: "What priorities should the future distributed generation program incorporate with regard to land use?"

Question 2: "What creative mechanisms could be used to encourage siting projects on preferred types of land?"

Our responses to these two questions are given below, but first we examine the land-use needs for solar development in Maine.

What amount of land will be required to supply solar power in Maine?

According to the <u>SEIA website</u>, 1 MW of solar capacity needs about 5-10 acres of land, depending on the solar insolation at a particular site. Maine is likely at the higher end. Taking actual generation into consideration rather than capacity, <u>NREL study</u> (Table ES-1) suggests 3.7 acres of solar needed to generate 1 GWh/year (fixed axis collectors). So, **currently (2020) Maine needs 13,000 x 3.7 acres = 48,000 acres of solar** to supply its annual electrical energy. In square miles, this is 48,000/640 = 75 sq. mi. or a square about 8×8 miles on a side, or about the area of Portland, ME municipality. This estimate can easily be off by a factor of two either way, considering panel efficiency, solar insolation, sun tracking mechanisms, etc. Annual electrical consumption (GWh) is projected to more than double from 2020 to 2050. from ~13,000 GWh to ~ 29,000 GWh (<u>Maine Renewable Energy Goals Market Assessment</u>, section 3.3.1.1). Taking the load estimate for 2050 and assuming additional load is met with solar alone, this acreage (48,000) should at least be doubled.

It is important to put this land-use requirement in perspective. Solar development in Maine is late to the game of land use, but should it be devalued simply for that reason? Other development has long been authorized as a benefit to Maine society, so what about solar development? What is the loss of agricultural (or forest) land due to other development within Maine? To answer this, we consulted the <u>American Farmland Trust report</u> titled "Farms Under Threat 2040". This report treats Urban and Highly Developed (UHD) conversions and also Low-Density Residential (LDR) conversions of farmland. Maine is mostly forested land, so if the report were expanded to include forested lands, the conversion of land area to UHD or LDR would be much higher.

The American Farmland Trust projected (Appendix 2) that, in the period of 2016 to 2040, Maine would lose 53,400 acres of its agricultural lands to "business-as-usual" development. (This does not include any loss estimates for solar installations.) This loss of 53,400 acres exceeds the 48,000 acres estimated to be needed to supply Maine's current electrical energy consumption and could be on the order of 1/2 of the projected consumption in 2050. Thus, ordinary development is roughly as large a threat to agriculture in Maine as is the growth of the solar component of our electrical supply.

Question 1: "What priorities should the future distributed generation program incorporate with regard to land use?"

A physics principle here is that energy generated close to the point of use will overall make less demand on transmission facilities (and thus require less land in the future) to supply Maine with increasing electrical supply as we transition to electric vehicles and to new electrical technology in our homes such as heat pumps. Adherence to this principle will require:

- First, and foremost, rooftop solar must be supported with a net metering program that encourages "right-sizing" of the solar installation such that overall supply approximately meets overall demand at a given site on an annualized basis.
- A planning tool is needed that will take into account small-scale factors for rooftop solar development such as building height, existing shade, and orientations.
- The program should support the dual-use of commercial parking areas for solar generation arrays by removing barriers to the on-site sale of generated electricity to, for instance, vehicle charging stations.
- The program should encourage and simplify the growth of real community solar whereby loans could be secured by the future energy generation revenue and "subscribers" would be replaced by "owners".
- The <u>analysis presented by TNC</u> at the land-use workshop on 10/19/2022 showed (p. 8) that there was roughly 9.1 GW of solar potential in lands preferred for solar development (see list below), of which 6.3 GW is potential on rooftops. This potential should be unlocked to fulfill Maine's need for renewable energy capacity while minimizing grid growth.

Creative support to bring electrical generation closer to the actual usage may have immediate cost handicaps relative to large solar arrays due to factors of scale, but there are long-term benefits, perhaps less clearly quantifiable in value, in the form of less land use, less transmission upgrades, and less exposure to weather elements.

Question 2: "What creative mechanisms could be used to encourage siting projects on preferred types of land?"

We see these categories of land as preferred for solar development:

• agricultural land (dual-use)

- disturbed land
- closed landfills
- abandoned mines, gravel pits, and quarries
- brownfields
- state ROWs
- highways where it is non distracting
- residential and business buildings
- parking areas

The last two categories were discussed above in relation to siting solar generation close to electrical demand.

A fundamental land-use principle here recognizes that considerable Maine land is already devoted to developed infrastructure: buildings, parking areas, roads and driveways, storage spaces, warehouses, etc. Such land should be put to dual-use with solar installations wherever feasible. We offer these creative mechanisms to encourage uses of those lands:

- Give to owners of rooftop solar generation the ability to designate unused credits to offset the electrical charges of an unrelated, 501c3 non-profit organization (NPO).
- For disturbed or brownfield lands and for abandoned commercial gravel or quarry sites, remove any impediments in reclamation laws and regulations such that solar installations would be acceptable as a reclamation or remediation treatment.
- Review all state ROWs for suitability for solar installations and offer those deemed suitable through a bidding process to solar array installers.
- Develop means, as part of the successor program, such that communities could install true community solar in a manner that benefits all ratepayers in the community. In this regard the NPO "<u>A Climate to Thrive</u>" has led the way with its innovative projects, and the state should support the realization of their model elsewhere.
- The <u>3rd-party leasing model</u> has worked well in at least 12 other states, and Maine should consider this mechanism that allows metered customers to basically rent their private space to a solar company that will install and operate solar generation equipment under net-metering rules.
- Owners of summer homes should be monetarily incentivized such that they do not lose solar credits realized in off-season when their usage is very low but the solar panels continue to generate electricity.

- All forest land is not equal in productivity. The surface geology map of Maine should be used, in combination with any other appropriate soil indicators, to inform forest property owners of productivity value versus the value of a possible renewable energy facility.
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Current subscription solar plan

We have strong reservations about whether the current model of subscriptions to solar arrays is working. The chart on p. 9 of the Interim Report of the Distributed <u>Generation Stakeholder Group</u> shows that, as of Nov. 2021, roughly 90% of the projects "active" under the program are still not operational. Most of this capacity (94%) is in the 2-5 MW range which is geared toward a "subscription" model for customers. The chart on p. 10 of the Interim Report of the Distributed Generation Stakeholder Group seems to say that there are about 6,000 "subscription" customers in Maine by Nov. 2021. Using information provided on websites, CMP has 636,000 accounts and Versant has 159,000 accounts, for a total of 795,000. So, the subscriber portion of accounts is about 0.008 or less than 1%. It is a year since the subscription data was made available, and we expect a similar accounting now would show higher figures. However, the late 2021 data does not encourage a continuation of the subscription method for adding solar energy to the Maine grid. Solar energy providers flooded the mailboxes of electricity customers in 2022, but we do not know the results of that marketing. Resistance was expected because of the complexity of the billing and the small savings to be obtained for most customers. While savings for individual customers may be small, the current program opened the door to non-competitive bidding on the wholesale price of solar electricity, with consequent overpricing and excess profits going to the developers. This needs to change.

Batteries and Land Use

It is well-known that, due to the varying production of solar and wind energy, which are not dispatched energy sources, renewable energy facilities are often not a good fit to the demand curve on a daily or annual basis. It is a <u>general consensus</u> around the industry that batteries will be important to store energy for when it is really needed as renewable sources become dominant in the mixture of energy sources. Maine's successor program for DG should encourage renewable sources that bring battery storage into the design of the facility. From a land-use perspective, the addition of battery storage should require very little extra land area

because batteries can be stacked vertically and do not need large corridors separating them as for solar panels.



October 26, 2022

Ethan Tremblay Governor's Energy Office 62 State House Station Augusta, Maine 04333

RE: Land use recommendations for Distributed Generation Stakeholder Group

Dear Mr. Tremblay:

Thank you for the opportunity to present last week on October 19, 2022 to the Distributed Generation (DG) Stakeholder Group Land Use Subcommittee, as well as to follow-up with this additional input on land use considerations. We believe that solar energy development and agriculture can co-exist in Maine in a mutually beneficial manner. We ask that the DG Stakeholder Group recommend specific siting considerations to ensure a cost-effective successor program that will foster DG development in Maine without compromising Maine's agricultural resources or working farms.

Maine Farmland Trust (MFT) is a member-powered statewide organization that works to protect farmland, support farmers, and advance the future of farming. We wholeheartedly support the goals of the DG Stakeholder Group and the establishment of a DG successor program. DG solar energy will play a key role in achieving the goals of the award-winning *Maine Won't Wait* and the state's clean energy and greenhouse gas emissions reduction requirements. DG solar development is of great interest to some farmers because solar energy production on a farm can be a source of economic support. The trouble is that Maine, like states across the country, has been losing farmland, including high-value farmland, to all different types of development, and MFT wants to be sure that we have the land base to support a robust local and regional food system and food security in the state. Solar development using marginal lands on a farm property or on lands with high levels of PFAS contamination could be effective ways of providing that economic support without losing important agricultural land to solar development.

To ensure an adequate balance is found between solar development and farmland protection, we recommend the following considerations:

• Avoid developing land classified by NRCS as prime farmland or farmland of statewide importance. These agricultural soils are most conducive to productive farming and only 14% of the soils of the state are classified in these categories. We should protect these soils as valuable natural resources that can help to ensure a robust local and regional food system and food security in our state.

Several different policy mechanisms could be considered to support balanced solar siting:

• Create an in-lieu payment program with mitigation fees that developers pay if developing on certain categories of land. Fees would serve as a disincentive to

developing arrays on prime agricultural soils, soils of statewide importance, and other types of important land. The fees that are subsequently collected can be used to protect similar types of priority lands in other areas.

- Implement a procurement policy in which bids for grid procurements are evaluated based on criteria that includes site locations and impacts to natural resources, like important agricultural soils. Although the 2020 DG procurement was not successful for other reasons, it does provide a model for how the Public Utilities Commission can work with natural resource agencies to develop criteria and determine ways of assessing project impacts.
- Launch a dual-use pilot program that integrates solar projects with agricultural production systems. A dual-use pilot program was also a recommendation of the Agricultural Solar Siting Stakeholder Group and would allow for assessment of the viability of this model. The pilot program must be of a sufficient size, though, to allow for dual-use projects of varying sizes, in different locations, and involving different types of agriculture so that it can be determined how these projects affect agricultural production, and what kinds of benefits, costs, and support needs are associated with this type of development.
- Adopt a Tariff Program for projects on sites with certain attributes. We envision additional increments of compensation for projects on degraded or previously developed land or for dual-use projects to be able to incentivize development where we would like to see it most while compensating developers for the additional costs associated with developing on those sites or with those types of projects.
- Create and maintain a publicly-accessible database. Also a recommendation of the Agricultural Solar Siting Stakeholder Group, this database would include key characteristics of approved and constructed renewable energy projects, including solar projects, so that agricultural and natural resource impact trends can be identified. This type of information is not currently publicly available.

Thank you for the opportunity to provide written input. I'm available to you and the members of the DG Stakeholder Group should you have any follow-up questions or comments.

Sincerely,

A HEL

Ellen Stern Griswold Vice President & Deputy Director Maine Farmland Trust egriswold@mainefarmlandtrust.org 207-338-6575 x307

Tremblay, Ethan

From:	Jennifer Curtis <planning@bowdoinham.com></planning@bowdoinham.com>
Sent:	Thursday, October 13, 2022 9:55 AM
То:	Tremblay, Ethan
Cc:	Sharon Klein
Subject:	Written Comments for Distributed Generation Stakeholder Group - Land Use
Attachments:	Ordinance Amendment - Solar - May 10, 2022.pdf

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe. Hi Ethan,

I was forwarded notification of the Distributed Generation Stakeholder Group Work Sessions by Sharon Klein (thank you, Sharon) and noted a specific work session on Land Use, with an opportunity to provide comment.

I have a few comments to share, that I hope are helpful.

I have been working as a land use planner in Maine for over five years – for two years with the Land Use Planning Commission, and the last three and a half years with municipalities (first Windham, and now Bowdoinham). While working as the Town Planner in Windham, I processed applications for six grid-scale solar projects reviewed by the Planning Board. Last year in Bowdoinham, I drafted and shepherded through an ordinance amendment to thoughtfully regulate solar energy systems in a town with a large and growing organic farming economy, that is welcoming of solar projects, but had no specific solar energy generation regulations.

These are my comments:

- Many small communities don't have a robust system of project review. It would be helpful for the State to provide specific guidance for the process.
- It might help to put PFAs contaminated fields back to productive use, if there is a way to reduce the interconnectivity fee for fields contaminated with PFAs to incentivize their use for solar energy generation.
- Ground-mounted solar does not need to significantly disturb the ground. They can be installed on landfills, for example. If it's placed on prime agricultural lands, it can act as a co-use site allowing apiaries or grazing for example, or simply do it's best not to disturb the soil so that it may be used again for agriculture in the future.
- Strong decommissioning language ensures that the projects don't get left in place at the end of their useful life.
- Electrical utilities should be installed belowground wherever possible.
- Fences around the facilities (apparently a PUC requirement) can be green or other natural colors, and slightly raised up to allow small wildlife to move through the site (I think Maine Audubon was recommending 6").
- Recreational trails should be re-routed around the sites where possible local snowmobile clubs are good contacts to work with on plans for that.
- Vegetated buffering generally makes for happy neighbors but is not always practical around solar sites depending on how they're sited it can interfere with their ability to generate energy because of shading, or it can be impossible to block them from view due to topographical differences.

- A project large enough to host a large-scale solar project, pretty much anywhere in Maine, is likely to also have wetlands. For communities without strong local review capabilities, ensuring that Natural Resource Protection Act (NRPA) wetland permits are appropriately received prior to project approval and development is a good idea for protecting water resources.
- Making sure stormwater management and erosion control best practices are required is always a good idea to conserve soil, protect water habitats, replenish groundwater, and prevent flooding.
- I'm attaching a copy of the Solar Energy System ordinance language that passed through the Bowdoinham Town Meeting unanimously this June, in case any of the reference language in it is helpful to the process. It includes decommissioning language that was developed by taking the best parts from the State wind project decommissioning language, State of Massachusetts model ordinance language, and Town of Windham performance guarantee language.

Thank you for your work, and please let me know if you have any questions!

Jenn Curtis Director of Planning and Development Town of Bowdoinham (207) 666-5531 planning@bowdoinham.com https://www.bowdoinham.com/