

To: Maine Public Utilities Commission
Director Harry Lanphear

From: Preserve Rural Maine

Petition for Intervenor Status in Docket Number 2021-00369

Dear Mr. Lanphear:

Preserve Rural Maine is a new non-profit established for the sole purpose of protecting the rights, environment, and cultures of rural Mainers in the face of increasing land requirements for energy projects. Our organization is a 501(c)(3) non-profit that has received tax exempt status with the IRS. We are seeking Intervenor Status, or Late Intervenor Status, with the Maine PUC for docket number 2021-00369.

In June of 2023, LS Power, a multi-billion-dollar corporation headquartered in New York, sent a letter to approximately 3,500 rural Mainers in 41 towns and townships. This letter was sufficiently vague that many recipients discarded it, assuming it was advertising. We do not know how many letter recipients remain unaware that their land is currently being considered as a potential target for eminent domain acquisition.

We see many problems with the project as currently proposed, notably its impacts on Maine people, its failure to demonstrate economic benefits to ratepayers, and its use value in our fight against climate change relative to other approaches that better meet the state's statutory goals.

Impacts on Maine People

Eminent Domain. To our knowledge, this project could entail the largest ever use of eminent domain in Maine. Since the stark change in precedent following the *Kelo v. New London* Supreme Court ruling in 2005¹, states now have the clear right to take land via eminent domain for the economic benefit of corporations. Maine, unlike other states, has not updated its law to protect people against the threat of eminent domain by private interests.²

As with many instances of eminent domain use, LS Power's application of this unique tool would impact poorer citizens more substantially than others.³

¹ "Eminent Domain Without Limits? U.S. Supreme Court Asked to Curb Nationwide Abuses," Institute for Justice, <https://ij.org/case/kelo/>.

² "Maine Eminent Domain Laws," Institute for Justice, <https://ij.org/issues/private-property/eminent-domain/maine-eminent-domain-laws/>.

³ See, e.g., Ilya Somin, "How Eminent Domain Use Harms the Poor," *Spotlight on Poverty and Opportunity* (May 26, 2015), <https://spotlightonpoverty.org/spotlight-exclusives/how-eminent-domain-abuse-harms-the-poor/>; Dick M. Carpenter II, "Victimizing the Vulnerable: The Demographics of Eminent Domain Abuse" (Institute for Justice, June 2007).

This unfortunate situation poses a problem, since, according to the supporting legislation for LD 1710, the route shall:

“Promote energy equity with particular consideration given to the economic circumstances and opportunities in the State's socially vulnerable counties and communities. For the purposes of this paragraph, ‘socially vulnerable counties and communities’ means those counties and communities in the State containing populations that are disproportionately burdened by existing social inequities or lack the capacity to withstand new or worsening burdens....” (§3210-1, Section 1, Item D).

We recognize that this paragraph may refer to providing lower-cost energy to Mainers, but it could hardly be interpreted as supporting the use of eminent domain against 400+ Maine citizens. Nor, it seems, would the people of Massachusetts, who are supposed to share 40% of the project’s cost, be pleased to know that they are receiving their power at the expense of the poor. According to our southern neighbors’ Climate Act of 2022 (Section 82), Massachusetts will only enter into “long-term contracts” with developers who “avoid, minimize, or mitigate, *to the maximum extent practicable*, environmental impacts . . . and impacts to low-income populations.”⁴ We can certainly debate what constitutes a good-faith effort to avoid these impacts, but drawing a red line through some of the poorest towns and counties in the state and labeling it a “proposed route” seems far off the mark.

To date (9/26/23), LS Power has been unable to acquire any of the 400+ land easements they would require for this route.⁵ But the company is negotiating an option for a substation in Troy, whose residents suffer poverty at 1.3 times the rate of others in Waldo County, itself one of the state’s poorest counties with a poverty rate around 20% higher than the overall rate in Maine.⁶ In a world where the poor already bear the disproportionate burden of climate change, why make them sacrifice the most for our attempts to address it as well?⁷

Food Security and Farms. The proposed route has a substantive impact on food security and farms, a fact that presents problems at both a constitutional and practical level. Running transmission lines over vegetable-growing operations, maple tree stands, and other places where people are growing food to eat would seem to be in direct conflict with the new “Right to Food” amendment in the Maine State Constitution.⁸ Since any transmission route that runs outside existing corridors or DOT right-of-ways should seek to *avoid* these conflicts, a utility’s decision to use eminent domain in a food-growing area would present the opportunity for significant and lengthy legal challenges that would likely end up in the Maine Supreme Court.

⁴ “Massachusetts Evaluation Framework for Projects in the Northern Maine Renewable Energy Procurement under Section 82 of the MA 2022 Energy Law, *An Act Driving Clean Energy and Offshore Wind*” (Oct. 27, 2022), 4 (emphasis ours).

⁵ Jason Niven (Aroostook Renewable Gateway Project Director) in discussion with author, Sept. 2023.

⁶ Troy Town, Waldo County, ME, “Census Reporter,”

<https://censusreporter.org/profiles/06000US2302777625-troy-town-waldo-county-me/>; Waldo County, ME, “Census Reporter,” <https://censusreporter.org/profiles/05000US23027-waldo-county-me/>.

⁷ “EPA Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States” (Sept. 2, 2021),

<https://www.epa.gov/newsreleases/epa-report-shows-disproportionate-impacts-climate-change-socially-vulnerabl>
e#:~:text=WASHINGTON%20(Sept.,%2C%20flooding%2C%20and%20other%20impacts.

⁸ Maine State Constitution, Article I, Section 25 “Right to Food.”

Maine's farms are major affected stakeholders for precisely this reason: they produce food in abundance. Despite Doug Mulvey's assertion in the *Bangor Daily News* on August 15th stating that LS Power's project would permanently impact less than one acre of farmland,⁹ we can demonstrate, from the mouths of farmers, that this represents a grossly false understanding of how farming works and which factors impact farms. When tallying the negative effects that would go beyond the footprint of the proposed aerial system poles, it is important to consider, among other issues:

- Animal health, both physical and psychological, during construction and maintenance
- Compounding impacts of insufficient fields in the post-PFAS era
- Demonstrated impacts of electromagnetic fields (EMFs) on pollinators, which provide honey, pollinated crops, and animal feed¹⁰
- Wind-related impacts on crops, including downed poles and lines
- Crop damage due to channeled high-speed wind exiting 150'-wide easements through forested land onto open farmland
- Additional efforts of maintaining forest clear cuts by farmers to prevent the use of pesticides or herbicides by the transmission company

Please see Appendix A for map images of just *some* of the farms in the path of LS Power's proposed route and how they would be impacted. The *Maine Won't Wait* Report¹¹, one of the guiding study pieces that supports beneficial electrification, also supports greater food security and local food production. Traversing farms with 150'-tall poles that cause multiple negative impacts is hardly in line with the intention of *Maine Won't Wait* and is a compromise too large to let stand.

Real Estate and Tourism. The impact of above-ground aerial high-voltage transmission lines (HVTL's) on real estate values and tourism is also significant. LS Power has argued HVTL's have little impact to real estate values, based on an article by James Chalmers. Yet each of the studies on which this article depends were paid for by utility companies. The results, then, are both biased and at odds with other articles that show property devaluations in the 13% - 50% range, with scenic rural areas – the very areas that LS Power is proposing to use for its corridor – disproportionately affected.¹² When New Hampshire faced this issue in the plan for Northern Pass, they eviscerated Chalmers' biased and poorly constructed studies and demonstrated to the people of New Hampshire the devastating property value and tourism impacts. Northern Pass

⁹ Billy Kobin, "The Questions and Controversy behind a Proposed Maine Wind Powerline," *Bangor Daily News* (Aug. 15, 2023),

<https://www.bangordailynews.com/2023/08/15/politics/questions-proposed-maine-wind-power-line-aroostook-renewable-gateway-joam40zk0w/>.

¹⁰ See, e.g., Marco A. Molina-Montenegro et al, "Electromagnetic Fields Disrupt the Pollination Service by Honeybees," *Science Advances* 9, no. 19 (May 12, 2023): 1-11, <https://www.science.org/doi/full/10.1126/sciadv.adh1455>.

¹¹ "What's the Plan?" <https://www.maine.gov/climateplan/the-plan>.

¹² See, e.g., Daniel Aras-Aranda, Agustin López-Sánchez, and Francisco Gustavo Bautista-Carrillo, "Analysis of the Impact of High Voltage Power Lines on the Value of Properties in Environments of High Ecological Value and Rural Tourism: The Case of the Lecrín Valley (Granada – Spain)," *International Journal Business Environment* 12, no. 1 (2021): 64-82.

required only 32 miles of new corridor, compared to this proposed route at 109 miles of new corridor. (See Appendix B for studies, notes, quotes, and more information.)

Communities and Values. Finally, the route proposed by LS Power would have a devastating impact on rural cultures, society, and values. We moved here, or stayed here, in part because we cherish beauty, privacy, and silence – values that are at odds with crackling transmission lines, ATV’s and snowmobiles ripping through newly available transmission corridors, and helicopters roaring overhead to inspect lines, cut tree limbs, and spray herbicides. Furthermore, LS Power’s project would create substantive opportunity costs in the form of potentially diminished tourist revenue and lost farmland, adding cruel insult to the injury of land already ruined through PFAS contamination.

The sense of fear and helplessness among rural, potentially impacted Mainers is palpable. Many of us have put aside all other projects for months to focus completely on confronting this proposal.

Failure to Demonstrate Economic Value to Ratepayers

The Daymark study produced by LS Power is structured around the predicted rising cost of natural gas. However, there is nothing in the history of natural gas pricing to indicate that is a fair prediction. If the price of natural gas does not rise, or rises less than predicted, the economic benefits proposed by the Daymark study disappear, and this project becomes a net cost to the Maine people.

Moreover, the LS Power proposal requires that payments might begin prior to the King Pine wind farm coming online. How can paying \$94 million a year, or more, for energy that is not being transmitted be a net benefit to the Maine people? What guarantee do ratepayers have that King Pine will actually get built?

Even looking beyond this project, it is unclear how ratepayers will benefit given the longer-term capital costs associated with producing green energy on the scale necessary to meet increased electric loads. Due to the low capacity factors of wind and solar PV, the installation of battery systems that can hold energy when it is not windy or sunny is essential.¹³ These systems are expensive, and Maine has a long way to go when it comes to building enough of them to meet its 2025 target (at least 300 MW of battery storage) and 2030 target (at least 400 MW).¹⁴ As of 2021, the state had only 46.3 MW of battery capacity.¹⁵ In light of these cost challenges and shortfalls, would Maine ratepayers and the climate be better served if the current budget for ARG & King Pine Wind was instead applied to battery expansion that could be coupled to existing renewable generation?

¹³ LD1850, An Act Relating to Energy Storage and the State’s Energy Goals.

¹⁴ LD1850, An Act Relating to Energy Storage and the State’s Energy Goals.

¹⁵ EIA 2021 Maine Electricity Profile Spreadsheet Full Data Tables, Tab #4 Capacity; LD1850, An Act Relating to Energy Storage and the State’s Energy Goals.

Of course, Maine’s standard approach to saving ratepayers money has been to cost-share with Massachusetts – a commercial rather than technological strategy. Unfortunately, for Maine to meet Massachusetts’ renewable energy goals, which Maine appears politically determined to do, ratepayers would need to help fund something on the order of 12 King Pine wind power plants. Using King Pine’s footprint of 4500+/- acres as a baseline, this undertaking would have the effect of directly impacting 84 square miles of forested landscape and indirectly impacting some 3,000+/- square miles. (The latter calculation is represented visually as a polygon in Appendix D.)

Were these wind power plants to be built, ratepayers would also need to fund an updated or new set of corridors to move the power south. The people of Maine were furious about NECEC, and it only impacted a small number of landowners. The ARG is several times as big in terms of social impact. How will people feel if there are a dozen more projects on this scale in the coming 30 years? And how much money will ratepayers save if the very mechanism for defraying expense – namely, capacity-sharing with Massachusetts – only serves to drive demand for additional costly infrastructure?

Exacerbating the problems of cost-sharing is Maine’s difficulty in meeting its own emissions targets. Since we are now 3 years behind Maine’s wind generation goals, it seems that the immediate requirements of Title 35-A (Section 3404) entail the construction of at least two King Pine-sized stations (170+ turbines) – the equivalent of 2,000 MW of onshore wind generation – along with battery storage.¹⁶ Cost-sharing with Massachusetts increases the immediate need from approximately 2 to 4 stations. Assuming Title 35-A (Section 3404) is based solely on Maine’s statutory objectives as defined in Title 38 Section 576-A, it is worth considering whether the cost-sharing model will allow Maine to meet those objectives within the required timelines, or, for that matter, to prioritize the right climate sectors at the right times.¹⁷

Questionable Value in Meeting Statutory or Climate Goals

Regarding the project’s climate benefits, we would be remiss if we failed to point out that LS Power’s proposed route (as of July of 2023) would clear-cut approximately 2,000 acres of forests (150 feet x 109 miles of new corridor). By one estimate, that amounts to nearly 12 million pounds of carbon sequestration *lost* per year.¹⁸

But our critique also extends to the larger rationale that brought the Aroostook Renewable Gateway to Maine in the first place.

For many of us who have worked to understand the project, it is unclear why the PUC would want to prioritize the Aroostook Renewable Gateway when (a) climate goals for Maine’s electricity generation sector have already been met, and (b) offshore wind remains a more efficient way to benefit ratepayers and achieve carbon neutrality than does onshore wind. With

¹⁶ Title 35-A Section 3404 Determination of Public Policy; State Wind Energy Generation Goals

¹⁷ As specified by Title 38 (Section 576-A).

¹⁸ “The Maine Forest,” Maine Forest Service (Aug. 2009), <https://www.maine forestry.net/the-maine-forest>.

respect to CO2 emission goals, Maine has already met its 2030 and 2040 goals for CO2 associated with the electricity generation sector.¹⁹ This accomplishment represents a 56% reduction in CO2, whereas statutory calls for a 45% reduction by Jan 1, 2030.

Yet electric power generation only accounts for 5% of Maine’s CO2 emissions.²⁰

Maine's most pressing challenge is to reduce CO2 in its transportation sector, which, according to the January 2023 Maine Climate Council Report, accounts for 49% of Maine's total CO2 emissions. In 1990 the CO2 emissions were 8,300,000 metric tons (MT) and in 2021 7,100,000 MT.²¹ That amounts to a 14.5% reduction, which is still a long way off from the 2030 goal of 45% reduction. Furthermore, the same report states that Maine aims to have 219,000 electric and plug-in hybrid vehicles on the roads by 2030. At the end of 2022, there were only 8,594. It follows that to achieve its 2030 goals in the transportation sector, Maine needs *many* more low-emissions vehicles on the road.

But what kind of low-emissions vehicles? Here it is helpful to distinguish between fully battery electric (BEV’s) and plug-in hybrid electric (PHEV’s) vehicles. Within Maine’s current small fleet of low-emissions vehicles, 44% are BEV’s and 56% are PHEV’s.²² Because of our global lithium shortage, and purely on cost, it would make sense to move toward statutory goals by encouraging the use of PHEV’s: they have smaller batteries and cost less than BEV’s, and they can still make a big difference in reducing overall emissions – especially because more people will be able to afford them. According to the 2023 Maine Climate Council Report, the current EV trajectory fails to meet the Council’s own goal. It projects that only 26,000+/- EVs will be on Maine’s roads by 2030, a rate that is insufficient to achieve the 219,000-vehicle goal set by the Council and thus insufficient to achieve its statutory 45% reduction.²³ Indeed, 26,000 EV’s would represent only 2.4% of the 1.1 million light-duty vehicles on Maine roads – an abysmal number given the pressing need within this sector.²⁴ In any case, asking electricity ratepayers to fund a transmission and generation project that does not satisfy the overarching climate goals is reason for pause.

The residential sector represents another area that far exceeds electricity generation in terms of CO2 output. Maine households produce 21% of the state’s total CO2 emissions.²⁵ Yet the state remains well off the mark in meeting its goal of 45% reduction in this sector by 2030. In 1990, Maine households produced 3,000,000 MT of CO2, and in 2021, they are still producing 2,700,000 MT.²⁶ This represents a mere 10% reduction.

¹⁹ See EIA 2021 Maine Electricity Profile Spreadsheet, Full Data Tables, Tab #7 (Emissions). In 1990, CO2 emissions were 5,205,000 MT; in 2021, they amounted to 2,285,000 MT.

²⁰ Maine Climate Council Annual Report (2023).

²¹ See EIA Maine State Carbon Dioxide Emissions from Fossil Fuels, Tables 1970 to 2021; or EIA Transportation Sector Energy-Related Carbon Dioxide Emissions Tables by State, 1970 to 2021.

²² Natural Resource Council of Maine (NRCM).

²³ Maine Climate Council Annual Report (2023), “Electric Vehicles on the Road” graph.

²⁴ Maine Climate Council Annual Report (2023), “Electric Vehicles on the Road” graph.

²⁵ Maine Climate Council Annual Report (2023).

²⁶ See EIA Maine State Carbon Dioxide Emissions from Fossil Fuels, Tables 1970 to 2021.

Based on these figures, it seems prudent to focus efforts on the transportation and residential sectors, which produce heavy amounts of CO₂ and where the state is lagging, rather than on electricity generation, which produces lighter amounts of CO₂ and where the state is ahead. This strategy also seems reasonable in light of Title 38 (Section 576-A), Item 4-B, which stipulates that the state

Must prioritize greenhouse gas emissions reductions by sectors that are the most significant sources of greenhouse gas emissions, as identified by the US EIA and in the department's biennial reports submitted under section 587, taking into account gross greenhouse gas emissions reductions achieved by each sector since 1990 measured as a percentage of statewide gross greenhouse gas emissions and taking into account the cost-effectiveness of future gross greenhouse gas emissions reductions by each sector.²⁷

Item 4-C goes on to say that the state “Must be fair and equitable and account for and give significant weight to greenhouse gas emissions reductions already achieved by various sectors.”²⁸ Again, this statutory language begs the question why we are *not* giving “significant weight” to our emissions achievements in the generation sector.”

To better balance the state’s efforts, it may be worth exploring a Non-Wires Alternate (NWA) solution that encourages the wide-scale adoption of PHEV’s – a move that would have an immediate impact on CO₂ emissions. This strategy might take the form of major state subsidies that would enable more consumers to buy PHEV’s. Alternatively, the MDEP could adopt an appropriate rule change to accelerate the use of such vehicles. Either way, the state would be advancing the use of a technology that remains far cheaper than BEV’s *and* holds significant promise as a viable direct path toward satisfying the 2030 transportation sector emission reduction statute. This approach would also address driver range anxiety due to the present lack of rural charging facilities.

Focusing on the transportation sector has the added benefit of giving the state more time, relative to the climate goal timelines, to implement its 5,000 MW offshore wind statutory goal²⁹ – a goal that needs attention, given that Maine missed both its 2015 and 2020 onshore wind energy targets and is thus not on a favorable trajectory to meeting its 2030 target.³⁰ A key consideration is that offshore wind generation has significantly higher capacity factors than onshore wind. While Maine’s onshore wind average capacity factor was 29.2% in 2021 (per EIA data), offshore averages range from 40% - 50%.³¹ In other words, offshore wind boasts 1.37 – 1.71 times the capacity factor of onshore wind. A 1,000 MW onshore capacity is equivalent to a 650 MW offshore capacity.

Given these realities, it can likely be demonstrated that direct action in the transportation sector, coupled with giving priority to offshore over onshore wind, represents a lower-cost solution for

²⁷ Title 38, Climate Change (Section 576A): Greenhouse Gas Emissions Reductions.

²⁸ Title 38, Climate Change (Section 576A).

²⁹ Title 35-A (Section 3404) “Determination of Public Policy; State Wind Energy Generation Goals,” Paragraph 2-C.

³⁰ Title 35-A (Section 3404), Determination of Public Policy; State Wind Energy Generation Goals.

³¹ “Offshore Wind Outlook 2019: World Energy Outlook Special Report,” International Energy Agency.

Maine ratepayers. As part of that research, it would be important to consider transmission, generation, energy storage, and PHEV vs BEV costs for Maine ratepayers.

Whatever the state's approach, it will be especially important to plot a course that maximizes efficiency in order to meet the electric loads of the future. Attaining Maine's climate goals will add significant load to the system. In addition to EV's that will need charging, it is reasonable to project an increase in the use of heat pumps for home heating and hot water; electric cook stoves; electric clothes dryers; and electric power tools, including lawn mowers, chainsaws, trimmers, etc., that would replace fossil-fueled appliances and small machinery. In light of this likely wide-scale adoption of green energy within the residential sector, it will be useful to quantify increased loads to the extent possible – and at the same time generate wind energy at the highest possible capacity factors.

Request for Intervenor Status

For each of the reasons listed above – the impacts of LS Power's project on Maine people, the failure of the project to demonstrate ratepayer benefits, and the questionable value of the project in terms of its climate benefits or satisfaction of Maine statutes – we seek intervenor status in 2021-00369.

However, we currently are unable to present all the evidence and positions that we may wish to take, as the protective order bars us from seeing most of the evidence. We have sought access to the Designated Confidential information from the municipal level, and been denied, despite the seemingly clear language of the NDA and protective order that states access shall include: "*other federal, regional, state or local governmental or regulatory entities.*"³²

LD 1710 directed the PUC to select a bid based on at least two elements we do not believe were adequately represented by the selected bid:

- Item 1D, energy equity and protecting socially vulnerable communities
- Item 2C2, "Favor use, where practicable, of existing utility and other rights-of-way and other existing transmission corridors in the construction of the line or lines described in this subsection...."

The selected bid from LS Power proposes using less than 30% of existing corridors. The MEPCO bid had approximately 70% of its route in the corridor, based on a map that was on their website and has been included in appendix. The MPL bid, based on language that used to be on their website, did not publicly present a route map. Instead, MPL was planning to use a corridor development process similar to that of LS Power.

Our legislators have told us they supported LD 924 because they understood from LS Power and LD 1710 that the route would run within existing corridors. LS Power distributed the route to impacted landowners on June 22nd, the same day that the legislation was signed by the Governor. Based on discussions with LS Power, we know these routes were developed long beforehand. LS

³² Protective Order Number 1, Docket Number 2021-00369, February 7th 2022, page 3.

Power included a route proposal in their bid. They have described looking at about 15 different routes. It was therefore disingenuous at best, and a misleading omission at worst, to tell the Energy, Utilities, and Technology committee that the route had not been selected.

We understand the challenge of finding an appropriate high-voltage transmission corridor west of Bangor between Chester station and Pittsfield station. See Appendix C.

We ask that this project be situated in existing corridors and rights of way, and that the state of Maine undertake a comprehensive **technical** planning process that would intelligently allow the state to use modern, buried, scalable, high-voltage direct current (HVDC) to connect renewable energy projects to states south. By “technical” planning process, we request that independent engineers who understand and can quantify socioeconomic benefit from a citizen’s point of view be included. We want to know that citizens are represented in the process.

During NECEC testimony opposing the use of buried HVDC, the most comprehensive testimony was provided by Justin Bardwell.³³ We believe this testimony should not be used as an argument to prevent the study of buried HVDC on a statewide basis, because:

- Bardwell’s testimony was heavily mixed between Horizontal Directional Drilling (HDD) burial and regular burial. HDD is a method of burying HVDC underground without disturbing the surface, at a cost of 3.5x regular methods.
- The terrain of western Maine should not be compared to the terrain of pre-existing corridors or rights of way.
- Modern buried HVDC has other benefits in operational, maintenance, and energy management costs that are not reflected in Bardwell’s testimony, but we expect it could be seen in a statewide comprehensive implementation.

Group Impact

The founders of Preserve Rural Maine started a Facebook group which now numbers over 1,000 members. The mission of Preserve Rural Maine is to represent these participants. We expect a substantive portion of the Facebook group to become members.

In encouraging members of the Facebook group to post public comments to the PUC docket, we have discovered technical hurdles: some members may not understand why they should “allow popups” in order to view prior comments. Many members primarily access the internet via phones. The Maine PUC website is not a responsive design for phones, and thus an untold number of interested parties are unable to participate. Please note that this proposal impacts off-grid, homesteading, blue-collar, and low-income Mainers – people who might not spend all day on a desktop computer.

³³ Pre-Filed Rebuttal Testimony and Exhibits of Justin Bardwell, March 25, 2019.

Town Committees

Lacking a clear means to organize regionally, these small, impacted towns have set up study committees which are working on regional coordination. In most of the impacted towns, Select-people are volunteers or slightly compensated. They hold other jobs, and even if the will of the townspeople is clearly voiced through a 100% opposed vote, as has happened in many towns, there are no town employees available to work on organization. Towns that have enacted a moratorium include Windsor, Palermo, Troy, Thorndike, Freedom, Troy, and Albion. Others are in the process of doing so. These towns also intend to enact ordinances controlling the methods with which high-voltage lines may be constructed. Very few townspeople have voted against moratoriums, as would also be evidenced by the fact that LS Power has not acquired any easements.

In sum, the not-for-profit organization Preserve Rural Maine respectfully requests that it be granted Intervenor Status, or Late Intervenor Status, for Docket number 2021-00369. Thank you in advance for your consideration, and please let us know if you have any questions about our petition or advice for moving forward.

Sincerely,

Tanya Blanchard

Tanya Blanchard
Preserve Rural Maine
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Attachments: Appendices A-D

Appendix A: Farmland Impacts

Using a mapping program, we measured 150' wide corridors across active fields in the following towns, and found this to be the impacted acreage in towns south of Detroit:

Palermo: 28 acres

China: 17 acres

Albion: 8 acres or 10, depending on line direction

Unity: 32 acres

Troy: 4 acres

Benton: 17 acres

Clinton: 33 acres

Pittsfield: 3 acres

Burnham: 8 acres

Detroit: 1 acre

The following images are just a few of the many farms that would be impacted:

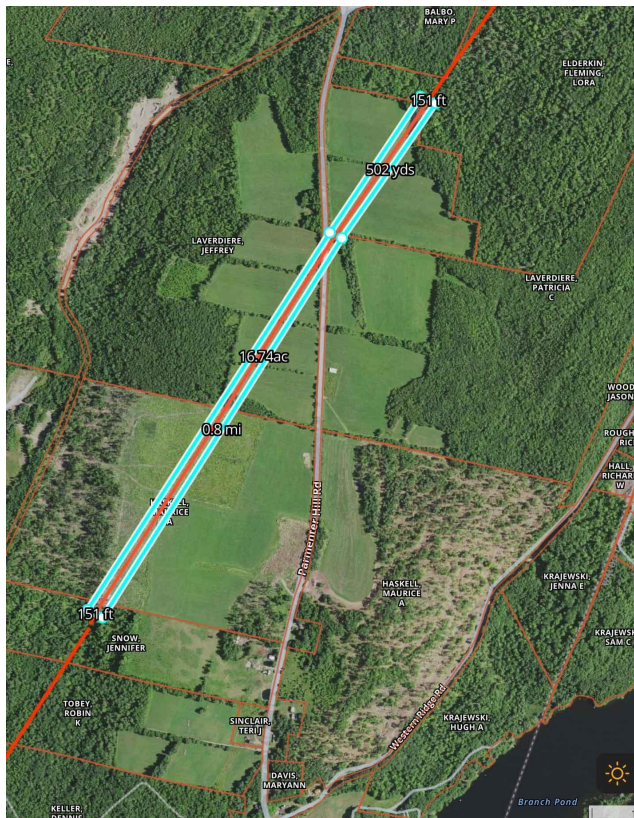


Figure 1, Unknown Owner, Albion Maine

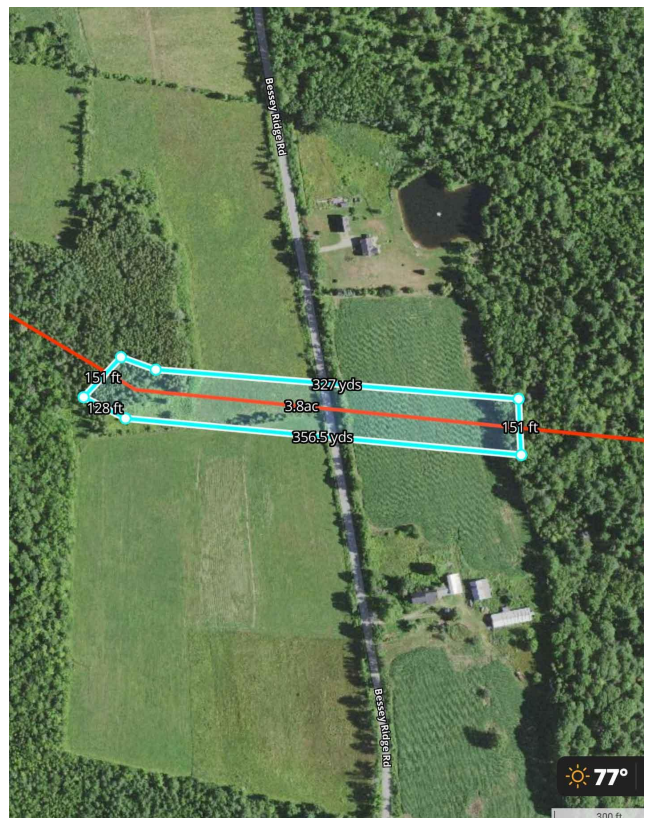


Figure 2, Haskell & Laverdiere, China, Maine

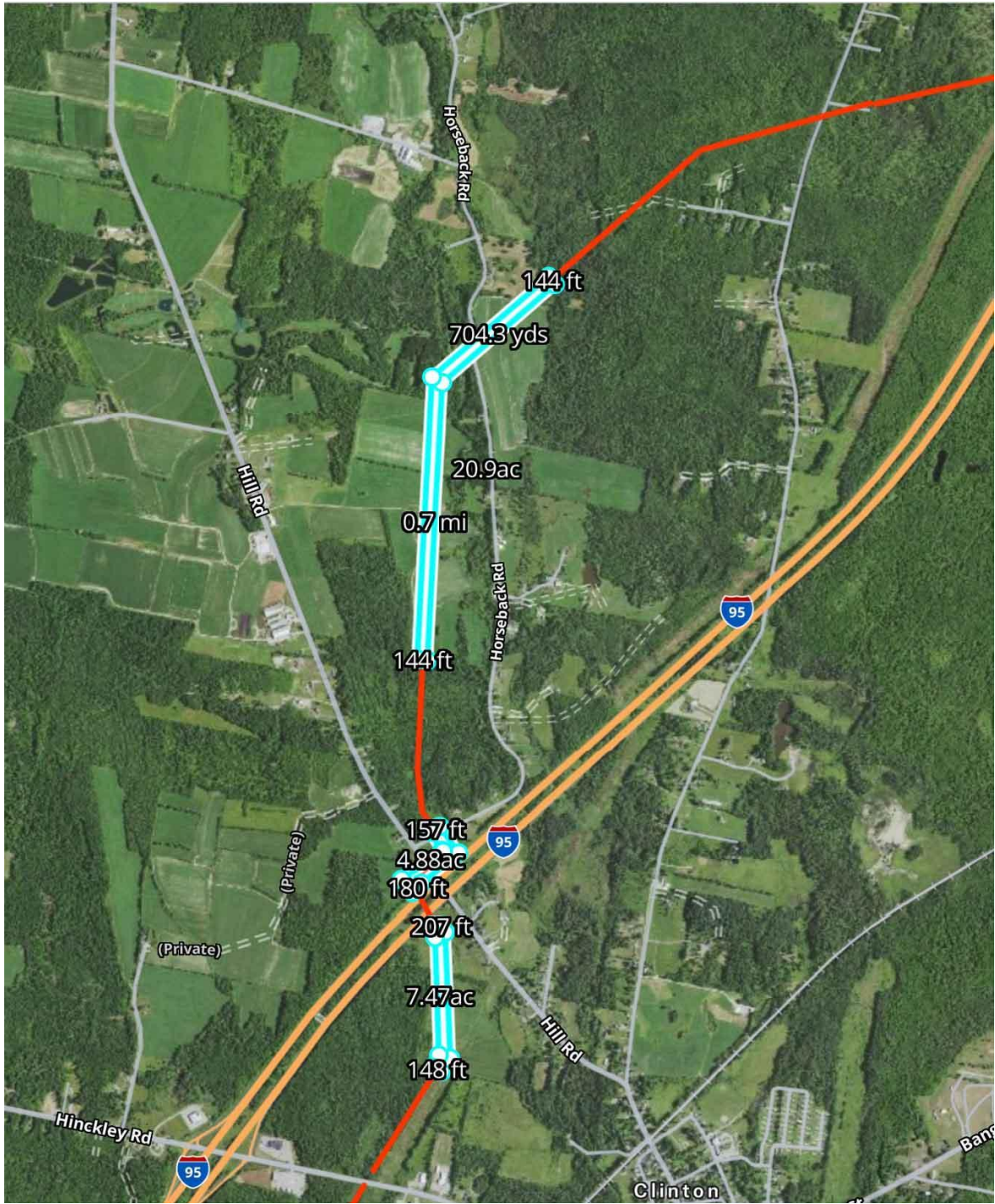


Figure 3, Unknown owners, Clinton, Maine

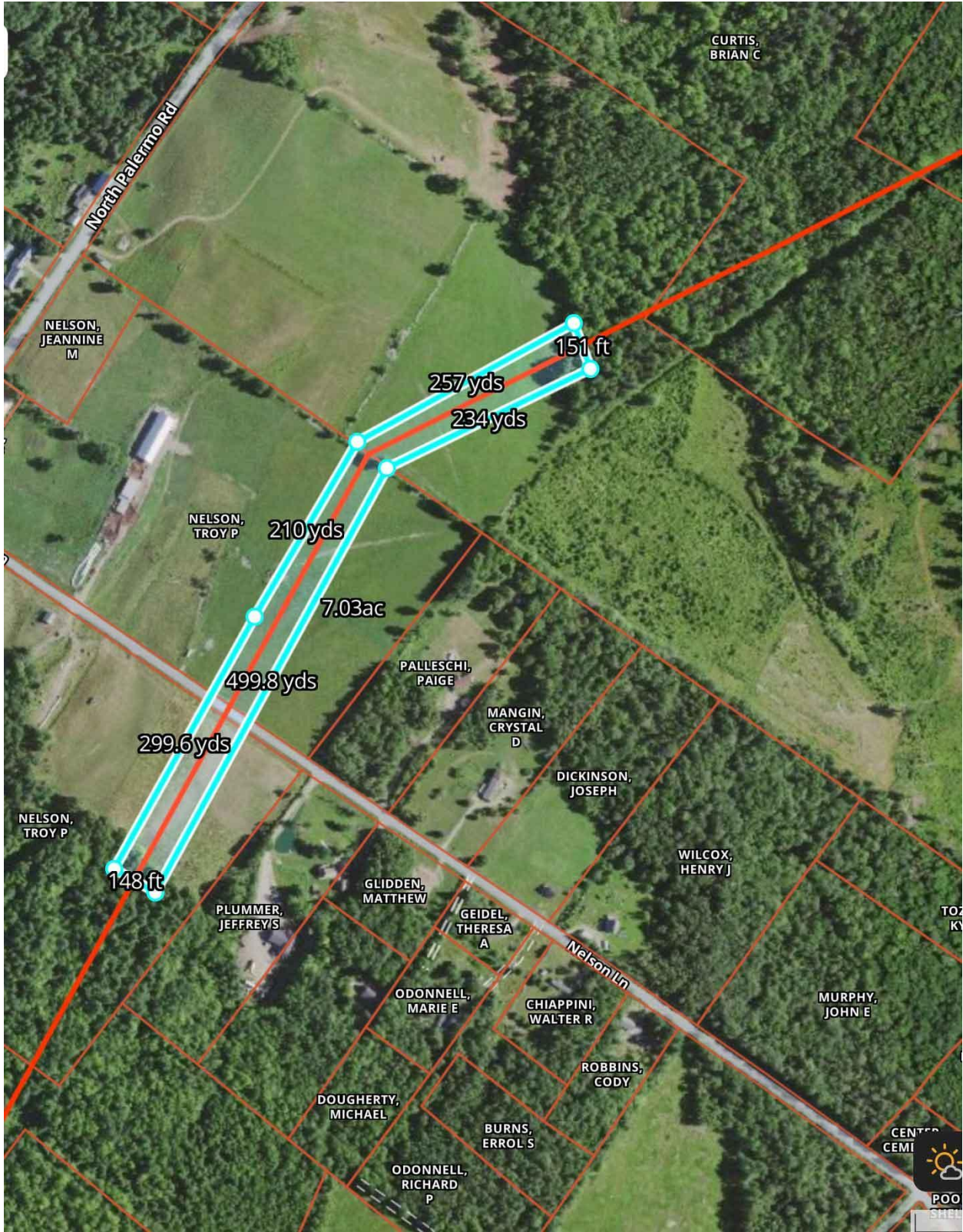


Figure 4 Nelson Farm, Palermo, Maine

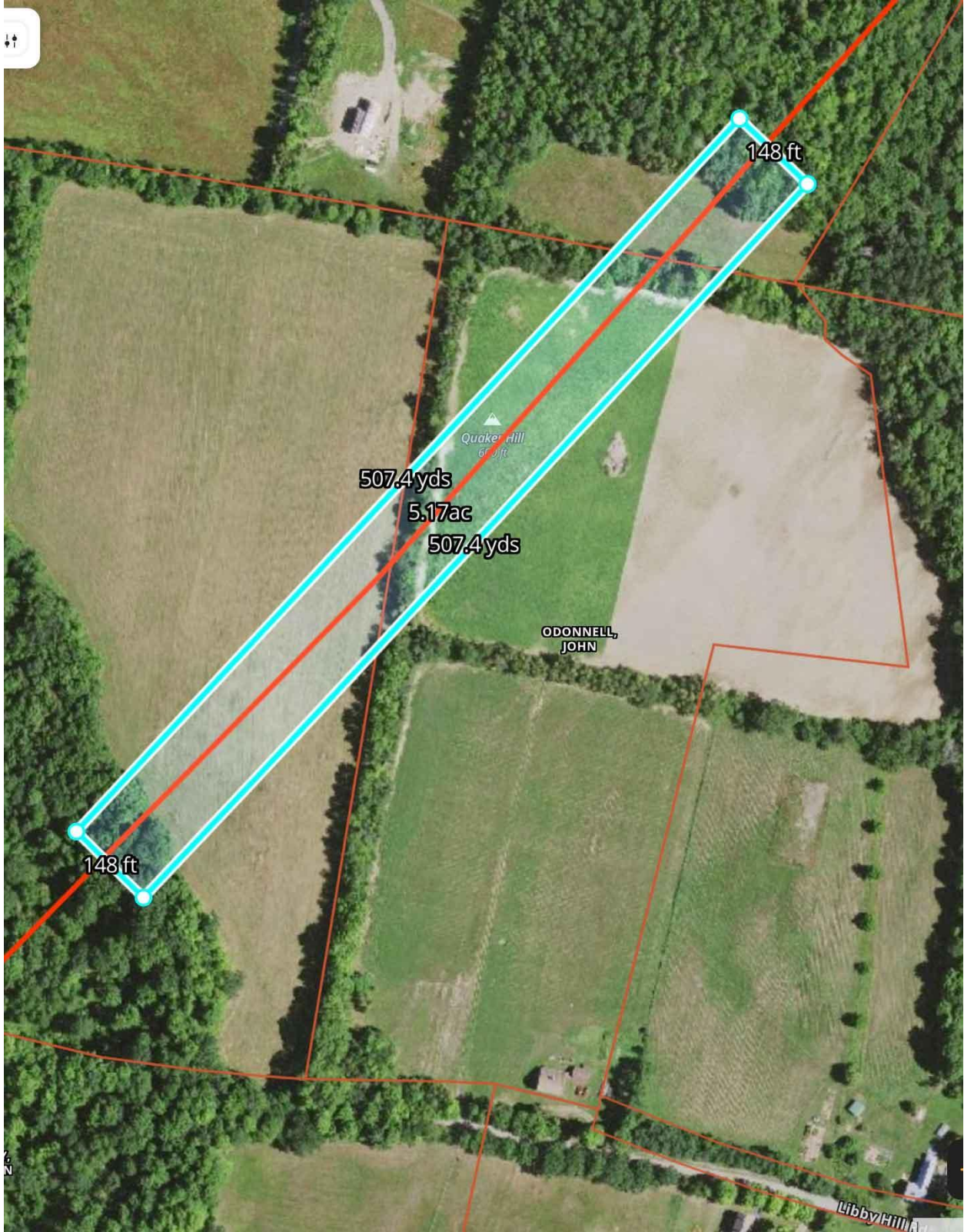


Figure 5 O'Donnell Farm, Unity, Maine

Appendix B Real Estate & Property Value Impacts

How much would a 150-foot-tall high-voltage transmission corridor impact property values in rural Maine?

Notes from five reference documents reviewed by the petitioners:

1. [“The Pricing of Power Lines: A Geospatial Approach to Measuring Residential Property Values”](#) by **David Wyman & Chris Mothorpe**, 2018.

Summary: this study looked at vacant land lot sales across 17 years in a single county in South Carolina. This was a rural county that, since the 1960s, had significant transmission line coverage due to a nuclear power plant. The study looked only at vacant lots in order to avoid the complicating factor of structure value. The dataset was ultimately 5455 vacant lot sales within the noted time period. As indicated by the title, this was a GIS-focused study which analyzed pricing variance using four different GIS models. The outcome of the study was: lots adjacent to power lines sold for 44.9% less, and lots within 1000 feet sold for 17.9% less. Lots within viewshed of a tower had pricing diminution of 22.1%.

Why does this study, which is so large, offer such a significant estimation of pricing impact from proximity to transmission corridors, when earlier studies suggested there was little price impact? The authors suggest two reasons: earlier studies discarded outlier data – a standard of statistical methodology, but outlier data is very important to accurately estimate price impacts in this sort of situation.

The second reason is that utility companies have financed many of the existing transmission line price impact studies, and meta-analyses or overviews of study data thus incorporate necessarily biased data. In an example given by the authors, “utility companies financed 22 out of 27 power line studies reviewed by Kroll and Priestley (1992)” (page 126.)

2. [“High-Voltage Transmission lines and Residential Property Values in New England: What Has Been Learned”](#) by James A. Chalmers, PhD.

Chalmers is known for having written multiple studies on this topic across the country. This article compared three studies in New England. All three studies were paid for by utility companies.

They are:

- **2008 Massachusetts and Connecticut Study**, paid for by Northeast Utilities, now known as Eversource. Looked at 1200 home sales from 1998-2007, published in 2009 under the name “High Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects”
- **New Hampshire Research Study**, paid for by Northern Pass Transmission LLC, Public Service Company of New Hampshire, and National Grid. Looked at 78 case study sales of residential properties that were encumbered by or adjacent to a high-voltage ROW.

This study was published in 2015 as “High Voltage Transmission Lines and Real Estate Markets in New Hampshire: A Research Report.”

- **2018 Massachusetts and Connecticut Study**, paid for Eversource. A statistical study of 1800 residential property sales and a case study analysis of 42 residential property sales. Published in 2018 as “High Voltage Transmission Lines and Real Estate Markets in Massachusetts and Connecticut: A Research Report.”

However, even this work by Chalmers finds an adverse price effect:

“For encumbered properties with homes within 100 feet of an existing HVTL ROW boundary and clear or partial structure visibility, the probability of a sale price effect, should they be sold, is indicated by the research to be in the range of 46% to 59%, depending on structure visibility.” (page 275)

3. Economic Impact Analysis and Review of the Proposed Northern Pass Transmission Project

Prepared for the State of New Hampshire Office of the Attorney General Counsel for the Public SEC Docket No. 2015-06

The Northern Pass project proposed only 32 miles of new ROW. It was canceled, in part due to significant landowner outcry. Property Valuation commentary starts on page 17 and is a direct refutation of the biased Chalmers New England studies paid for by utilities.

“there is potentially more than \$1.1 billion in residential property that could be affected by the presence of the line. While some properties with high scenic view amenities could be severely affected and others will have minimal or no negative impacts, the loss in wealth to current property owners within this viewshed could be as much as \$15 to \$30 million.” (page 2)

“Even a reduction of 15 one-hundredth of one percent (0.15%) in regional visitation in the affected tourism regions could result in reductions in direct spending losses of \$8 million per year and the loss of nearly 200 jobs per year.” (page 3)

“Even a 1% reduction in residential property values within the viewshed of the proposed Project represents more than \$11 million in potential wealth loss to current property owners, lower rental income and a reduction in the property tax base when these losses are ultimately realized in lower-priced property sales.” (page 17 – and remember, only 32 miles of new ROW)

“we believe Chalmers entirely ignores the part of the market that may be most severely affected: land with high view amenity value, with and without structures.” (page 18)

Even Chalmers, in an interview, states “If it is basically a view-lot and your view is down the valley and you string transmission lines across that valley right in the middle of the viewshed and that becomes kind of the dominant feature of the view, I can easily imagine

your \$200,000 second home might only be a \$75,000 second home or a \$100,000 second home – something like that.” (page 59)

4. House Hearing 112 Congress

The Impact of Overhead High Voltage Transmission Towers and Lines on Eligibility for Federal Housing Administration (FHA) Insured Mortgage Programs

This testimony demonstrates a city-wide negative property influence attached to a transmission corridor.

This project is a 3.5 mile, 500kv, 200 foot tall overhead line run through a tight urban/suburban pre-existing but unused corridor in Chino Hills, CA. The city saw a 17% drop in property values across the city in the ten months after the project began.

The testimony closes with the recurring question about burying the lines: “Is it possible that our friends in Europe or in Russia or in China are anticipating that maybe it is worth the tradeoff given what we don't know about electromagnetic fields and the consequences of that in the future?” (Edward Royce, House Committee on Financial Services, April 14th, 2012 testimony)

5. Transmission Lines & Property Value Impacts

A Summary of Published Research on Property Value Impacts from High Voltage Transmission Lines

This study was prepared for a Montana 500kv line; and primarily re-hashing the Chalmers “Montana Study”, which was composed of 49 case studies of properties in proximity of an existing corridor, and a statistical analysis of a residential subdivision. The Chalmers Montana study, like all the Chalmers work mentioned here, was paid for by a utility, in this case, Northwestern Energy. This work was well refuted by the Northern Pass study listed above.

Some quotes:

“Criticisms of the comparison sales approach have to do with the influence of an author’s expert judgment in locating and refining a set of comparable sales for analytical purposes. The implication is not so much that another appraisal would come to different conclusions, but rather that the choice and manipulation of comparables could influence the finding of price impact.” (page 4)

“The property in question is a 350-acre parcel in central Broadwater County with Missouri River frontage sold without improvements in 2006. The Colstrip-BPA 500 kV line travels through the middle of property and is visible from most areas of the property. . . .The seller reported showing the property an estimated 25 to 30 times, stated that the transmission lines were always an issue with prospective buyers, and estimated the loss from the transmission line in terms of potential sale price in the absence of transmission line at 25 percent.” (page 9)

“A separate statistical analysis was performed on lot sales in Aspen Valley Ranches, a rural subdivision with 156 separate 20-acre (+/-) lots and bisected by the Colstrip-BPA 500 kV line. In all, 183 sales of unimproved lots between 1986 and 2010 were included in the analysis, which involved rigorous testing of factors such as lot size for their influence on sales price. The statistical analysis indicates an average discount of 15 percent in the sale price of the lots within 1,000 feet of the center line of the 500kV line.” (page 10)

“Realtors associated with the panel held by the MSTI Review Project as well as others active in southwestern Montana have attested to a marked impact of the proposed project on real estate sales activity over the past four years.²⁵ One concern is that “top tier” buyers won’t consider recreational properties affected (or potentially affected) by a transmission line.” (page 11)

“Footnote 25: Kevin Pearce, a broker-owner with New Frontier Ranches in Twin Bridges, said the study only addressed an existing line and didn't consider the effects during construction of a power line. He said the presence of a power line can completely shut out some buyers.

"A top-tier buyer is not going to be interested, period," he said. "Then you're going to be left with a second-tier buyer and a reduced price." “ (page 17)

Appendix C: Other bids and other corridors

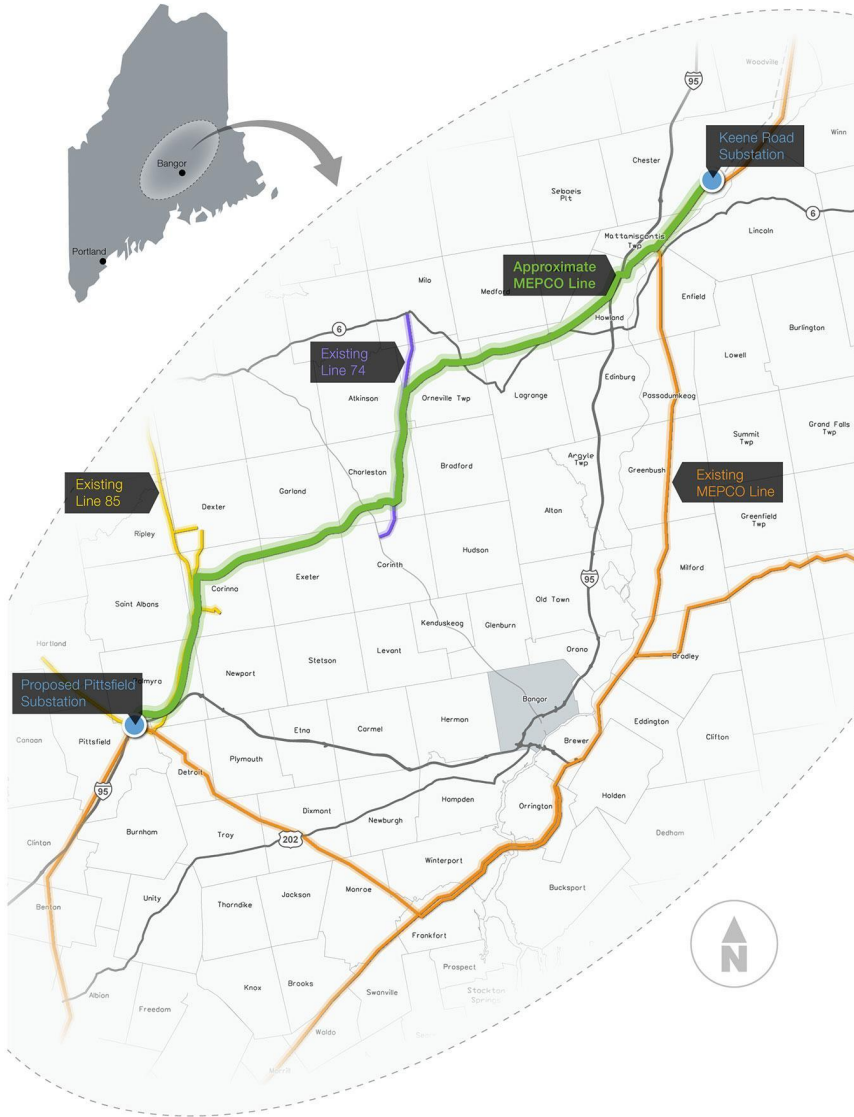


Figure 6 MEPCO proposed corridor

- A: Coopers Mills
- B: Penobscot River Crossing in So. Lincoln
- C: West Winterport intersection
- D: Pittsfield Intersection
- E: Guilford
- F: Dover-Foxcroft

Pink Line: existing large corridor
Red and Blue Line: Proposed LS Power Corridor
Green line: very approximate MEPCO corridor

A-E: 65.4 miles
A-B: 96.5 miles

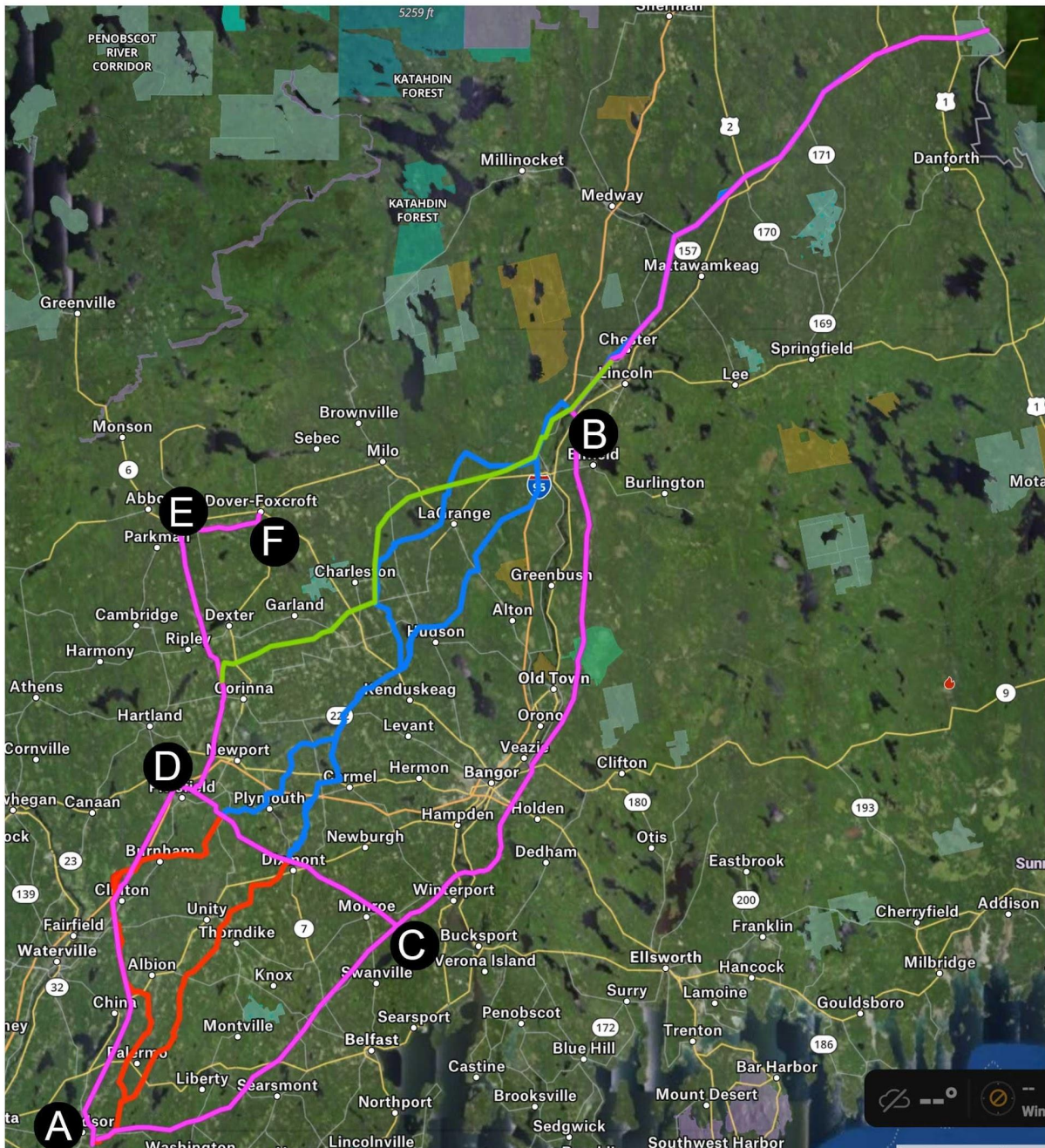


Figure 7 This map overlays existing large corridors, the MEPCO proposed corridor, and the LS Power proposed corridor

Appendix D Maine and Massachusetts Energy Goals

Massachusetts Energy Data			Footnote
Yearly Consumed Power	55.3	TWh	1
Percent of Fossil Fuels Consumed	66.67%		
	36.86666		
Yearly Fossil Fuel Power Consumed	7	TWh	

Massachusetts Energy Goals			
Year	2030	2050	2
Target Reduction	70.00%	85.00%	
Estimated Electrical Vehicle Increase	14	20	TWh 3
Estimated Heat Pump Increase	3.45	3.45	TWh 4
NECEC	-9.5	-9.5	TWh 5
King Pine Wind	-2.63	-2.63	TWh 6
Mayflower + Vineyard	-5.12	-5.12	TWh 7
Current Clean Energy Estimated Values	26.00666 7	37.53666 7	TWh 7
King Pind Wind Farm Size	2.63	2.63	TWh h
Quantity of Future Projects Needed	9.888466 4	14.27249 7	

Footnotes:

- https://www.energy.gov/sites/prod/files/2015/06/f22/MA_Energy%20Sector%20Risk%20Profile.pdf
- <https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download>
- 70% of 20TWh. This based on <https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download> , page 71. ALSO keep in mind - <https://malegislature.gov/Bills/193/HD3348>
- Based 500,000 heat pumps by 2030, a demand factor of 25% and a average power consumption of 2500W.
- Value taken from <https://www.energy.gov/oe/articles/calpine-intervention-and-comments-necec-application>

6. Assumes 30% efficiency of the windmills. Value based on (<https://www.enerdata.net/publications/daily-energy-news/maine-us-approves-1-gw-wind-project-and-345-kv-transmission-project.html>)
7. 1600MW generation based on <https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download> ,
Page 64

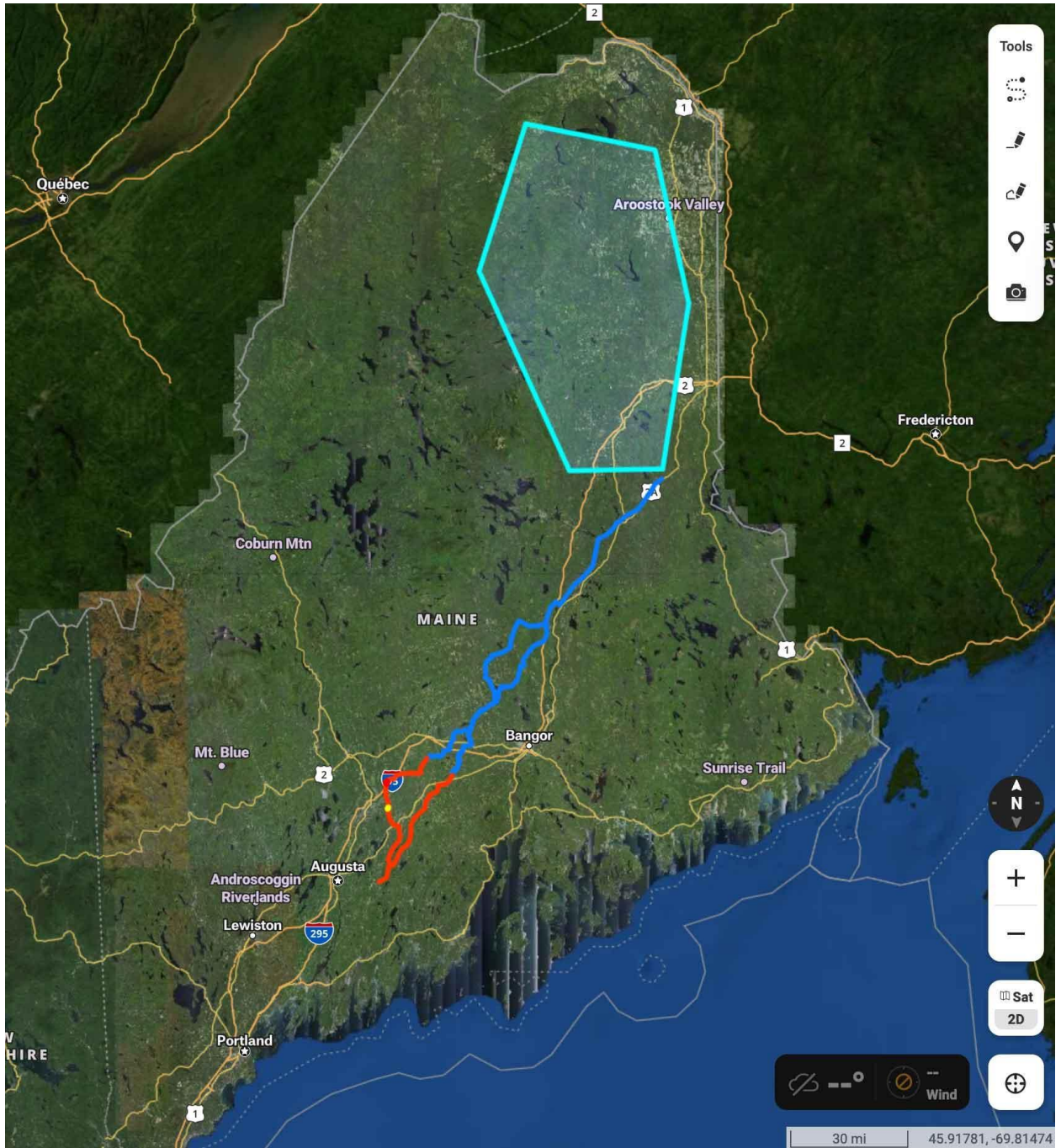


Figure 8 Illustration of nine percent of the state landmass, or 3000+ square miles which could be indirectly impacted by the energy goals