Evaluating Vermont's Land Use Policy (Act 250): An Opportunity for Legislative Reform

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Presented to the legislative *Commission on Act 250: The Next 50 Years* on November 29, 2018.

Abstract:
This report is a response to Vermont's 2017-2018 legislative initiative to complete a comprehensive, public review of the state's land use and development law, Act 250. The law was originally established in 1970, with the intention of transforming traditional planning through active community participation in major land use decisions, and an emphasis on environmental protection. While Act 250 has been amended over the years, it has unfortunately not been able to change at rate that incorporates relevant climate science, the ways in which developers have learned to bypass restrictions, and the evolving values and concerns of Vermonters. As a response, in 2017, the Vermont Legislature created a six person commission called *The Commission on Act 250: The Next 50 Years,* also referred to as Act 47. The role of the Commission has been to conduct a critical examination of the ways in which land is permitted and developed across the state, current problem areas with the law, and how it could be improved moving forward, directly involving Vermonters' priorities and perspectives. This report has three distinct intentions. First, it defines key terminology, presents a history of Act 250, and provides background on the Commission's review process thus far. Then, the report identifies five problem areas within the law, followed by informed suggestions for the Commission to consider in their deliberations. Finally, the report transitions into a discussion of Vermont-specific climate change, offering climate resilience strategies for the Commission to consider in their legislative recommendations.

Key words: land use planning, environmental policy, community engagement, climate change

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Acknowledgements

I would like to thank Nathan Sanders, along with the Environmental Program at the University of Vermont, for the opportunity to study Act 250 through funding from a 2018 Ian Worley Research Award. The Ian Worley Award was established in 2013, to honor the teaching of Ian A. Worley, a long-time Professor of Botany and Environmental Studies and Director of the Environmental Program at the University of Vermont. The Founding Donor, Gary Simpson (College of Agriculture and Life Sciences ’76), wanted to empower students to pursue creative, integrative, and innovative projects that work towards positive environmental change. I had the pleasure of meeting both Ian Worley and Gary Simpson at an award dinner in October of 2018.

Next, I would like to thank Shaina Kasper, the Vermont and New Hampshire State Director of Toxics Action Center, which is an environmental justice organization that works directly with community groups to fight toxics threats across New England. This report could not have been possible without her guidance and resources in the winter and spring of 2018, during my internship with Toxics Action Center. Shaina first introduced me to Act 250, which I am deeply grateful for.

I would also like to thank Donna Barlow Casey, the executive director of the Natural Resources Board, for providing me with relevant documents and advice throughout my research process, and for inspiring me with her kindness and depth of knowledge. Finally, I would like to thank my advisor, Bindu Panikkar, who has been an inspiration for me throughout my education, due to her vibrant passion for environmental justice, social equity, and her own research surrounding land use policy in Alaska.

In closing, I would like to respectfully recognize the traditional owners and inhabitants of this land, the Abenaki people. Prior to European colonization, the Abenaki lived for generations on the land which Act 250, The Natural Resources Board, and the Agency of Natural Resources now manage for the state of Vermont. Abenaki knowledge, worldview, and experience of this landscape is one of the most valuable resources Vermont has, and something that should not be taken for granted.

Executive Summary

We live in a world where the natural and built environments around us are continuously changing, both through rapid human development, and an increasingly unstable climate. Over the last half century, Act 250 has played a prominent role in determining how Vermont's working landscapes have expanded economically, and been altered culturally and ecologically. Today, Act 250 is still a public review process, working to balance economic growth with environmental protection. That being said, there are still outstanding problems within the law's permitting, review, and appeals processes. The issues addressed in this paper span the speed of permit approval, developers finding ways around the law, inconsistency between District Commissions, a lack of public knowledge and access to information, and the fact that climate change is not directly addressed in the environmental criteria.

This year, Vermont has been presented with the opportunity to reassess Act 250, and to engage with the public on its unique land use permitting process, which has been around for 47 years. All of Vermont is impacted by major land use decisions, therefore it is important that residents are aware of how they can get involved, and what resources are available to them. In 2017, the Vermont Legislature formed *The Commission on Act 250: The Next 50 Years* to concentrate energy on reviewing and rebuilding various aspects of the law, such as the permitting, appeals, and public participation processes. The Commission has not been alone in its efforts, but has instead requested the priorities and recommendations of the public, in order to make the most effective and representative changes.

The 2017-2018 public review process has also been an opportunity for the Commission to consider climate change, and the predicted impacts on a state like Vermont. The severity of these impacts, such as unpredictable growing seasons, more severe and frequent storms, soil erosion, damaged infrastructure, and more intense heat events, will largely be determined by how climate change preparedness is addressed in Act 250 this year. It is vital that the Commission emphasizes climate change concerns in its legislative recommendations, in order to protect and prepare Vermont communities for the future. This report identifies six climate related recommendations:

1. Identify and assess Vermont's land use typologies
2. Create a cost-benefit analysis for the various land use typologies
3. Identify valuable ecosystems across the state as priority areas
4. Identify vulnerable human communities across the state as priority areas
5. Work directly with identified communities to design appropriate and robust plans surrounding climate preparedness
6. Ensure that Vermont-specific climate change concerns are incorporated into all future Act 250 development projects, through the addition of a climate change & resilience-building criteria

Research Process

January - April 2018

My preliminary research took place beginning the first month of 2018, while working with Toxics Action Center (TAC). I was introduced to an extensive online survey that had been created by a former intern, as a way to gain insight into community members' experiences while opposing major Act 250 projects. I made edits to the survey, and distributed it by email to all of TAC's members. Eight individuals from Addison, Rutland, Washington, Windham, and Windsor counties completed the survey. Each individual had direct experience with a major Act 250 case. Two individuals had experience serving on Act 250 District Commissions, while the rest had been on the side of the community, opposing a project with concerns in respect to a few of the environmental criteria. For additional information on the public participation and the appeals processes, I searched through TAC's databases, the Act 250 database on the Agency of Natural Resources' website, and other online resources, reports and articles. From these sources I was able to gather more information and contacts to survey about their specific cases and perspectives on the law. I spoke with many individuals over the phone about their experiences, asking informal questions which varied depending on the person and case. This process of gathering information helped to inform the report.

May - November 2018

In May of 2018 I attended the Vermont Planners Association Spring Workshop, entitled, "Act 250: What's Next?" hosted by Vermont Law School. The conference gathered 200 planners, lawyers, commissioners, members of ANR and the NRB, members of the legislative Commission on Act 250, and other relevant parties. During the day I made a number of valuable connections for my research, including Donna Barlow Casey, the executive director of the Natural Resources Board, which oversees Act 250. The information and in-depth conversations that I gained from this conference, as well as the summer 2018 Act 250 public forum I attended, significantly informed this report. In addition, this report is supported by online research consisting predominantly of scholarly journal articles and reports, as well as books, websites, news articles, and topics and terms introduced in environmental policy courses at the University of Vermont. My entire research process has been tied together by various conversations on Act 250, starting with Shaina Kasper and the individuals I surveyed during my TAC internship, planners and policy makers at the Act 250 forum and conference, professors, Vermont residents, and finally Donna Barlow Casey.

Throughout my study of Act 250, three core questions that repeatedly emerged were:

1. *What are the factors that can lead to one project getting approved and another denied?*
2. *Do these cases represent social interest?*
3. *What are the social and environmental violations of land use?*

Act 250 Definitions

Act 250
Act 250 is Vermont's land use and development law, enacted in 1970, and administered by the Natural Resource Board (NRB).

Agency of Natural Resources
The Agency of Natural Resources (ANR) is composed of the Department of Environmental Conservation, the Department of Fish and Wildlife, and the Department of Forests, Parks and Recreation, and is in charge of managing and protecting Vermont's natural environment.

Commission on Act 250
The Commission on Act 250: The Next 50 Years, also known at Act 47, is the legislative committee tasked with reviewing the land use law and developing strategies and recommendations to improve it, in the form of a report due December 15, 2018.

Criteria
The District Environmental Commissions evaluate every proposed Act 250 project under 10 environmental criteria: air and water pollution, water supply, impact on water supply, erosion and capacity of soil to hold water, transportation, educational services, municipal services, scenic and natural beauty, impact of growth, prime ag. soils, resource extraction, energy & settlement patterns, and local and regional plans.

District Commission
The District Environmental Commissions ensure that all projects abide by the 10 criteria. The state is split into nine districts, with nine District Commissions, composed of a chair, two members, and four alternates, which are appointed by the Governor and serve on a volunteer basis.

District Coordinator
The District Coordinator is a full-time Natural Resource Board position, located in each of the five regional district offices in the state. These individuals support each of the District Commissions, as well as applicants and other parties during the Act 250 process.

Natural Resources Board
The Natural Resources Board (NRB) is an independent entity within the Vermont state government, which is in charge of administering Act 250. The NRB also trains and assists the district commissioners and district staff.

Relevant Terms

Ecosystem Services

Ecosystem services is a comprehensive approach to land valuation, incorporating the benefits that humans get from the environment which cannot be easily calculated monetarily, and therefore have never been traditionally included in land use decisions (Costanza et al., 1997; Danley & Widmark, 2016). Since these benefits cannot be quantified in ways that fit within our current economy, the valuable services are not given weight in political and economic decisions, even though they are at the center of ecological and social wellbeing (Gómez-Baggethun, 2010; Satz et al., 2013).

Examples of ecosystem services are climate regulation, water regulation, water supply, erosion control, soil formation, nutrient cycling, waste treatment, pollination, biological control of species, wildlife habitat, food production, raw materials, genetic resources and medicine, recreation, as well as aesthetic, artistic, educational, scientific, spiritual, and cultural values (Costanza et al., 1997; Horwitz & Finlayson, 2011). Given the abundant services that nature provides, it is clear that "the need to understand the dynamic nature of ecological systems, especially in the context of climate change, is crucial for successful restoration work" (Timpane-Padgham et al., 2017).

When policy makers attempt to measure the value of an ecosystem, in the context of whether or not to build something on or in proximity to it, they must consider the landscape's entire worth, not just in traditional economic terms, but through taking into account the various ecosystem services that the landscape provides (Costanza et al., 1997; Gómez-Baggethun, 2010; Satz et al., 2013). When making land use decisions that will have lasting impacts, it is the responsibility of decision makers to weigh all possible values, even if they are more abstract and challenging to quantify, such as flood and erosion control, or spiritual significance and sense of place (Horwitz & Finlayson, 2011).

Environmental Justice

Environmental justice (EJ) is an interdisciplinary movement and field of study, founded on the fact that low-income communities, and communities of color, are disproportionately impacted by environmental burdens, such as pollution, toxic waste, water, air and soil contamination, unsafe living environments, and workplace hazards (Cole & Foster, 2000; EPA, 2018; Girdner, 2002; Pastor & Morello-Frosch, 2018; Verchick, 2004). The movement is working towards the equitable distribution of environmental burdens and benefits, and the fair and meaningful participation of people in all environmental decision-making (EPA, 2018). Environmental justice acknowledges the value of local knowledge, cultural difference, diversity in decision making,

and strong policies that are upheld to protect vulnerable communities as well as prevent future threats to human and ecological communities (Pastor & Morello-Frosch, 2018).

Resilience

For as long as there has been life on earth, the survival of a species has been dependent on its ability to adapt to environmental changes, therefore its capacity for resilience (Spaans & Waterhout, 2017; Union of Concerned Scientists, 2016). In Vermont, resilience is deeply tied to identity, so the definition by Walker et al. (2004) is also worthy of attention. Resilience can be defined as "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks" (Walker et al., 2004). When applying for an Act 250 development permit, it is critical that a developer proves to their District Commission that the project will enhance the resilience of the community, and is therefore flexible, resourceful, inclusive, and integrated (Garcia & Vale, 2017; Spaans & Waterhout, 2017).

Social Equity in Public Administration

The National Academy of Public Administration defines social equity as "the fair, just and equitable management of all institutions serving the public directly or by contract; the fair, just and equitable distribution of public services and implementation of public policy; and the commitment to promote fairness, justice, and equity in the formation of public policy" (Johnson, 2012).

In many ways, social equity can be considered "the moral imperative of the field" of public administration (Guy & Mccandless, 2012; Johnson & Svara 2011; Plant, 2018; Svara & Brunet 2005). Social equity is the idea that every human is equal and has inalienable rights (Guy & Mccandless, 2012). Act 250 was founded on public values, which include "the need for accountability, commitment to social equity, fairness and impartiality, and procedural due process" (Plant, 2018).

Social Interest

The term "social interest" emerged in the 1930s by Alfred Adler, defined broadly as a person's connection to other people and a sense of belonging within a community, as well as greater empathy for humankind (Ansbacher & Ansbacher, 1956; Clark, 2017; Crandall 1980). Adler theorized social interest as "a feeling of community, an orientation to live cooperatively with others, and a lifestyle that values the common good above one's own interests and desires" (Guzick et al., 2004).

Sustainability (Strong)

Strong sustainability is predominantly concerned with the wellbeing of future generations and the protection of the earth's natural resources, as opposed to growth for growth's sake or personal desires in the present (Kuhlman & Farrington, 2010; Martins, 2016; Olivera et al., 2018; Ostrom, 2009). Strong sustainability acknowledges that without the environment, neither the economy or society would exists, so they must be subsets of the larger whole (Kuhlman & Farrington, 2010; Olivera et al., 2018). It is "the great target for human life and a challenge for organizational practice that involves changing societal habits" (Olivera et al., 2018).

Sustainability (Weak)

Weak sustainability places equal emphasis on economic, social, and environmental wellbeing, also known as the triple bottom line, or the three pillars of sustainability (Klarin, 2018; Rogers & Ryan, 2001). Weak sustainability states that natural capital and manufactured capital are entirely interchangeable, generating equal wellbeing (Ang & Passel, 2012). This allows for environmental degradation in exchange for monetary gains, and is therefore a weaker form of environmental sustainability (Ang & Passel, 2012; Pelenc et al. 2015).

Sustainable Development

1987 - The origins of the term sustainable development, now a widely used and accepted concept and organizing principle, began in the Brundtland Report, "Our Common Future," published by the World Commission on Environment and Development in 1987. The report defined sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Drexhage & Murphy, 2010; Kuhlman & Farrington, 2010; World Commission on Environment and Development, 1987).

1998 - Donella Meadows was an American environmental scientist, teacher, and author of the influential books, *The Limits to Growth* and *Thinking in Systems: A Primer,* as well as numerous articles on sustainability and systems thinking. In 1998 Meadows defined sustainable development as "a social construct, referring to the long term evolution of a hugely complex system -- the human population and economy embedded within the ecological systems and biogeochemical flows of the planet" (Meadows, 1998).

2015 - The Sustainable Development Goals, also known as the 2030 Agenda for Sustainable Development, were accepted by the United Nations Member States in 2015. They define sustainable development as the immediate need to address global crises such as poverty, hunger, gender inequality, the displacement of people, environmental degradation, access to education, climate change, and war and conflict (United Nations, 2015).

Introduction

"We must establish control over any act which has an undue adverse effect on the public health and safety, or the right of people to enjoy an unpolluted environment." - Art Gibb

The History of Act 250

In the 1960s and early '70s, Vermont, as well as the rest of the United States, faced the consequences of rampant and largely unregulated human development. (Carson, 1962; (Woodhouse, 2014). However, with growing public attention to major pollution events and their social and environmental impacts, there was a significant push for environmental regulations at the end of the decade. On the first day of 1970, Congress passed the National Environmental Policy Act, which required all federal agencies to provide an Environmental Impact Statement for any proposed activity that could impact the environment (Public Broadcasting Service, 2018). Following this milestone, The Natural Resources Defense Council, the Environmental Protection Agency, and The National Oceanographic and Atmospheric Administration were established, with the first Earth Day taking place on April 22, 1970 (Woodhouse, 2014).

Around this same time, Vermont was facing unprecedented growth and land use change, promoting tourism and ease of travel from Boston and New York, due to a new interstate highway system which increased the demand for housing and business (Natural Resource Board, 2018b). The Green Mountains hadn't felt significant developmental pressure since the start of the 20th century, so Governor Deane Davis was both concerned and hopeful about what changes to the Vermont landscape might bring (Natural Resource Board, 2018b). Since Vermont had not had previous environmental regulations or a current state land-use plan, on May 18, 1969, Davis created the Governor's Commission on Environmental Control, with State Representative Arthur Gibb as the chair (Natural Resource Board, 2018b).

During the following spring, the Vermont Legislature passed its new Land Use and Development Law, Act 250. The Act was a result of community hearings throughout Vermont, and a recommendation by the Gibb Commission in the form of a new system for reviewing major proposed development projects (Natural Resource Board, 2018b). The law was founded on the active involvement of community members, who felt that all of Vermont should have a say in the various processes and decisions which determine how land gets developed.

A notable decision by Governor Davis was to not center the system in the capital, Montpelier, but to instead distribute decision making power in the form of seven regional commissions (now

nine), known as District Environmental Commissions (Banta, 2012; Natural Resource Board, 2018b). The commissions would review local developmental plans that were expected to result in large environmental, social, or aesthetic changes. In an effort to prioritize public participation and contribution, the nine commissions were run by laypeople, appointed by the Governor (Natural Resource Board, 2018b). Act 250 permit applications were reviewed in relation to ten environmentally related, priority criteria, which intended to cover the state's core environmental concerns. These criteria ranged from air and water pollution, to transportation concerns, to scenic and natural beauty, and have largely remained the same to present day.

Another important aspect of the law was the presence of the Vermont Environmental Board, whose role was to review projects that appealed their District Commission ruling (Natural Resource Board, 2018b). This board was intentionally made up of natural-science professor, an architect, a realtor, a community leader and homemaker, a county extension agent, a ski area operator, an engineer, a businessman, and a county sheriff, as opposed to government officials (Natural Resource Board, 2018b). This diverse and community based board dealt with District Commission appeals for 35 years, until 2005, when the process changed. The quasi-judicial Environmental Board was replaced by the Environmental Court, and a Superior Court Judge (Natural Resource Board, 2018b).

Vermont's Working Landscape

Vermont is defined by its working landscapes. A working landscape can be defined as "a cohesive unit of land that is ecologically, socially, and economically connected" (Global Rangelands, 2018). The state is a complex patchwork of farms, fields, valleys, rolling green mountains, hardwood forests, compact villages, and bustling downtowns. When considering these various land typologies, one must also recognize the presence of Vermont's Act 250, which has played a major role in shaping both human and natural communities for fifty years. Although many Vermont residents may not be aware, the landscape has been slowly, yet permanently altered by permit approvals, denials, court rulings, and community opposition efforts that have taken place because of this unique land use law.

A 2009 study from the Council on the Future of Vermont, entitled *Imagining Vermont: Values and Vision for the Future*, reports that the vast majority of Vermonters expressed that the state's working landscape is a key to the future (Vermont Council on Rural Development, 2009). Working landscapes do not exclude human communities, but instead emphasize the importance of humans knowing the land, and working with and within ecological systems and limits. All Vermonters, farmers and foresters in particular, play a large role in upholding and managing the state's landscapes, balancing ecological protection with social and economic well-being. Since agricultural and forest productivity depend on the health of surrounding ecosystems, it is

understood that ecological diversity and success impact economic success, and in turn affect the health and wellbeing of local communities. Since the interconnectedness and viability of Vermont's landscapes are a clear priority for the state, these values must be at the forefront of conversations as we reassess Act 250 in 2018, and as priorities in land use planning evolve over the next 50 years.

Thoughtful, concentrated urban development brings economic growth and furthers social cohesion, providing residents with all their basic needs, such as housing, education, work, stores, restaurants, and entertainment options, in central locations (Pierce 2007; Shamsuddin et al. 2012). Walkable cities radically increase the livability and the overall wellbeing of their inhabitants, improving physical and psychological health, social integration, and environmental sustainability (Muñoz 2015; Shamsuddin et al. 2012). Compact downtowns are also economically beneficial because jobs and profits circulate directly within the community (Pierce 2007). In contrast, even well planned sprawl breaks up the community connection that can be found in Vermont's villages, and tends to have larger environmental impacts through increasing commutes by car, air and water pollution, and the demand for land to expand on (VNRC, 2013; VNRC, 2018).

Under the 1973 Acts and Resolves No. 85, Secs. 6 and 7, the General Assembly approved Act 250's Capability and Development Plan. One of the plan's objectives states, "Strip development along highways and scattered residential development not related to community centers cause increased cost of government, congestion of highways, the loss of prime agricultural lands, overtaxing of town roads and services and economic or social decline in the traditional community center" (Act 47, 2017). In order to discourage sprawled developments such as strip malls and residential subdivisions, Act 250 must place more emphasis on the walkability of towns and villages in Vermont (VNRC, 2013; VNRC, 2018).

An Opportunity for Legislative Reform

The Commission on Act 250: The Next 50 Years

In 2017, the Vermont Legislature established *The Commission on Act 250: The Next 50 Years,* consisting of six members: Rep. Amy Sheldon (chair), Sen. Christopher Pearson (vice chair), Sen. Brian Campion, Rep. David Deen, Rep. Paul Lefebvre, Sen. Dick McCormack.

As articulated in Act 47, the Commission was tasked with reviewing how Vermont's land use law has been managing growth and development over the past 50 years, identifying current successes and challenges with the permitting process, and considering new legislative changes to the law. These policy recommendations will be the cumulation of over a year of careful examination of Act 250, and an entire summer of public outreach. The Commission's findings will be presented to the Vermont Legislature in the form of a report, due December 15, 2018.

Public Forums: Summer 2018

The Commission has worked directly with Vermonters during this process, asking residents about their values and priorities pertaining to land use, as well as their personal experiences with Act 250. The ongoing conversation and accumulation of perspectives has taken place online, and through letters and reports submitted to the Commission, although the most structured dialogue took place through six public forums. The forums were in Springfield (June 27), Manchester (July 11), South Royalton (July 25), Island Pond (August 22), Rutland (September 5), and Burlington (September 12).

These six Act 250 forums were free and open to the community, advertised online and through word of mouth, and facilitated by Cope & Associates, Inc, a business management consultant based in Williston, Vermont. Cope faced a significant undertaking, as a small team organizing and running these critical forums. Their role was to act as the middleman between the public who attended and the Commission. Cope facilitated the various dialogues and activities, and recorded all of the perspectives and values shared by attendees. After each forum, Cope gave their notes directly to the Commission, as well as updated the Act 47 website.

Going into these forums, the NRB asked that attendees focus not on attacking the law, but instead work to find positive solutions to problems with the Act 250 process. The forums were also spaces to share success stories and examples of where the law is working to maintain the integrity of Vermont's ecosystems and communities, and to find ways to replicate these successes.

Act 250's Current State & Identified Problems

The Speed of Project Approval

The Natural Resources Board faces the challenge of balancing efficiency and predictability in the permitting process, while also prioritizing environmental protection, and more stringent regulations on businesses. According to the Commission, 98% of permit applications get approved without major changes, 50% in 30 days or less, and 80% of applications are approved without a hearing of any kind. While this is useful for developers, it is important to consider the environmental and social consequences of a largely predictable permitting process.

At the same time, many businesses dislike the restrictions that Act 250 places on their projects. Developers whose proposed projects are considered "Majors" or that are more controversial, express concerns for how arduous, time consuming, and financially draining the Act 250 process can be. This is a highly debated aspect of the law, since the projects that face numerous appeals and delays tend to be fairly disputed projects themselves. Local community groups are often opposed to these controversial developments for social and environmental justice reasons. Community members can apply for party status as an individual or as a group, and officially oppose the project at a District Commission hearing. While the developer is forced to spend money on legal resources in order to push their project through multiple appeals, in many cases, community members must spend a similar amount of money to bring their concerns to the attention of the courts.

One way that the review process of a project can get lengthened is when a developer fails to consider the variety of ANR permits that can be triggered, often depending on weather. If a project needs a wetland evaluation, and it is November in Vermont, the developer must wait until spring for the evaluation to take place. This can cause frustration, however, these delays could be avoided if the NRB had a more robust pre-application process, with greater communication and outreach. One way of improving this could be that a developer comes into a District Commission office for a preliminary project review with a coordinator. The coordinator would have the chance to alert the developer of any outstanding concerns, and bring relevant ANR permits to their attention early on. This could prevent unnecessary delays, and mean the difference between a wetland evaluation in September versus one in May.

In the spring of 2018, at the "Act 250: What's Next?" Vermont Planners Association Conference, it was emphasized by many individuals that the Act 250 permitting process needs to find ways to reward the "good guy," accelerating the application process for developers who have completed thorough applications, while still holding developers to high standards in

environmental protection. While not all development projects are a good fit for Vermont communities, developers who have considered all the environmental criteria should be able to navigate the permitting process with greater ease. One way to do this is if developers work directly with neighbors, or with community concerns in mind during the early stages of project development. This often means avoiding major opposition and costly appeals. The best way for a developer to have the efficient, predictable review process that they hope for, is to work with the ten environmental criteria and take all possible concerns into consideration from the start.

Developers Finding Ways Around the Law

In the 47 years of Act 250, developers have learned the law, and learned to work within the system. Over the years there has been a decline in the number of Major permits going through Act 250, where hearings are a routine part of the process. An example of this is that a developer might make a project 9.5 acres, as opposed to 10+, to avoid the more stringent regulations, hearings, and appeals that come with being considered a Major. Of course, these issues will always be present. One radical way to avoid this would be to broaden jurisdiction to include almost all projects, so that 1 acre projects and higher would be assessed to the same extent. This may be unrealistic, but is worth consideration to improve environmental protection, one of the founding principles and intentions of the law.

Today, the vast majority of projects are considered “Minors” or “Administrative Amendments” (amendments to existing permits), which mean that they face significantly fewer regulations during the permitting process. With regards to Minors, the Natural Resources Board could do a better job of letting the general public know that any individual can request a hearing to a District Commission if they have a legitimate concern regarding a proposed development. If this is better understood within communities, Vermonter’s might feel that they have more of a voice and a stake in the land use decisions that are happening around them.

Looking back at Act 250’s history, it is apparent that developers have learned a lot about the law, and found strategic ways to navigate its processes. Unfortunately, Act 250 has not done similar work to learn the state, and evolve as dramatically as its residents and the rest of the world over the last half century. In the future, Natural Resources Board must make it a priority to work on improving communication and outreach to the wider public, with more frequent webinars, forums, information sessions, and updates to social media.

Consistency Between District Commissions

There are currently 9 District Environmental Commissions and 5 district offices spread out across the state. The 9 District Commissions are administratively run by 8 District Coordinators.

Districts 1 and 8 have a single collective coordinator, 2, 3, and 7 each have their own coordinators, 5, 6 & 9 have two coordinators in charge of all three, and district 4, Essex, has two coordinators. While the districts are consistent in how they practice the law, there are differences in how they practice their responsibilities.

There are many benefits of having local Commissions review projects, however, they also create a challenge for the Natural Resources Board in terms of maintaining consistency, and with changes in appointees. One recommendation would be to build upon and enhance the required training for all new appointees, and have a standardization of key components of the review process. Another recommendation would be to have periodic trainings to acquaint Commissioners with new and relevant science, all of which can be identified and reported on by the NRB in an Annual Report.

Public Knowledge & Access to Information

While Act 250 was originally established to involve Vermont residents in major land use decisions, today, the legal process is not widely accessible to the public. Even the term "Act 250" presents a barrier to those who do not have a background in policy. It is clear that names matter, especially in determining who is part of the conversation, and has the privilege of influencing critical policy.

Many Vermonters who express concerns about proposed project in their community start out with no previous knowledge of Act 250 or its appeals process. This means that a significant amount of time must be dedicated to researching environmental and land use policy, Act 250 and its 10 environmental criteria, as well as the specific project and its possible impacts. The public participation process should be more user friendly, encouraging Vermonters to be at the forefront of major land use decisions, given that these projects have immediate and lasting impacts on their communities.

While some districts have hearings at night, many others hold them during work hours, which means that working Vermonters often do not have the ability to attend. This is a real barrier that prevents working-class residents from showing up at hearings, learning about proposed projects, and voicing legitimate concerns. In order to address this inequity, I suggest that individuals who have party status should be able to request an evening hearing, and that in general, districts make an effort to hold hearings after work hours.

The process of referencing materials from former Act 250 hearings is difficult for individuals and community groups to navigate. There are not enough land use law resources available for community members who choose to oppose a development project, and getting Act 250 hearing

and court transcripts can be challenging and expensive. Act 250 should have designated public outreach materials, information consolidation, and sharing information as part of its strategic plan.

In 2005, when the quasi-judicial Environmental Board was replaced by the Environmental Court, Act 250 lost its citizen friendly, open, accessible process which it had been founded on (Natural Resource Board, 2018b). In order to regain equity and access in the process, the Commission must find a middle ground between the citizen-run Environmental Board, and the Environmental Court that we have today. This will allow for every Vermonter to participate in land use decisions that affect them, no matter their socio-economic status.

Environmental Criteria

When Act 250 came into effect in 1970, it articulated,
"Before granting a permit the board or district commission shall find that the subdivision or development:

1. Will not result in undue water or air pollution…
2. Does have sufficient water available…
3. Will not cause unreasonable burden on an existing water supply…
4. Will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water…
5. Will not cause unreasonable highway congestion…
6. Will not cause an unreasonable burden on the ability of a municipality to provide educational services.
7. Will not place an unreasonable burden on the ability of the local governments to provide municipal or governmental services.
8. Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas.
9. Is in conformance with a duly adopted development plan, land use plan or land capacity plan.
10. Is in conformance with any duly adopted local or regional plan under chapter 91 of Title 24" (An Act to Create an Environmental Board and District Commissions, 1969, p. 242).

Today, the ten environmental criteria that the law was founded on remain largely the same. Developers and District Commissioners assess each project in regards to the ten criteria, to ensure that the proposed development does not have any outstanding adverse environmental or social impacts. In addition, individuals and local community groups have the opportunity to oppose developments in court, if they have legitimate concerns involving one or more of the

criteria. Abbreviated versions of the ten criteria that are used today can be found on the website of the Natural Resources Board, and are listed below (Natural Resources Board, 2018d):

Criterion 1 (air and water pollution)
Criterion 2 (water supply)
Criterion 3 (impact on water supply)
Criterion 4 (erosion and capacity of soil to hold water)
Criterion 5 (transportation)
Criterion 6 (educational services)
Criterion 7 (municipal services)
Criterion 8 (aesthetics, scenic and natural beauty)
Criterion 9 (impact of growth, prime ag. soils,
resource extraction, energy, settlement patterns, and other services)
Criterion 10 (local and regional plans)

Regional planning in the U.S. since the 1970s traditionally focused its energy on projects such as hazardous waste facilities and nuclear power plants, and rarely considered land use concerns which scientists emphasized, such as climate change, storm recovery, soil erosion, species extinction, ozone depletion, and other large environmental events (Popper, 1993). While regional planning across the nation has infrequently made these issues a priority, Vermont has paved the way with Act 250, emphasizing unique environmental concerns such as "erosion and capacity of soil to hold water." As a leader in land use planning, Vermont must incorporate modern science into its decision making process, through updating its environmental criteria to include language on climate change.

Act 250 does not directly address climate change, resilience, or storm preparedness in its environmental criteria. This is known as the "resilience gap" (Union of Concerned Citizens, 2016). According to the Union of Concerned Citizens, "the 'resilience gap' represents the degree to which a community or nation is unprepared for damaging climate effects--and therefore the degree to which people will suffer from climate-related events" (2016). Including language on Vermont-specific climate change predictions and preparedness would be a strategy to narrow the climate resilience gap in the state, and a way to ensure that all residents are better prepared for future climate threats.

Policy Recommendations & Climate Resilience Strategies

As identified by the U.S. Global Change Research Program's 2014 National Climate Assessment, land use change, determined by land use policy and planning, contributes significantly to local ecosystem function, larger climatic processes, and the ability of human and ecological communities to adapt to climate change (Brown et al., 2014).

Four key messages from the Climate Assessment Chapter 13, Land Use & Land Cover Change:

> 1. Choices about land-use and land-cover patterns have affected and will continue to affect how vulnerable or resilient human communities and ecosystems are to the effects of climate change.
>
> 2. Land-use and land-cover changes affect local, regional, and global climate processes.
>
> 3. Individuals, businesses, nonprofits, and governments have the capacity to make land-use decisions to adapt to the effects of climate change.
>
> 4. Choices about land use and land management may provide a means of reducing atmospheric greenhouse gas levels.

Over the next 50+ years of Act 250, District Commissioners must consider the impacts of land use change on climate related issues specific to Vermont, as they make their decisions surrounding controversial development permits. In order to do this, policy makers need to have a concrete understanding of three core issues.

First, Commissioners must understand the ways in which land use change affects local and regional climate change processes, and the ecosystem services that Vermont landscapes provide. Second, they must be able to identify key qualities of resilient communities, as well as which populations in the state are the most at risk, and why. Finally, they must know how the Vermont landscape is changing, and how it will continue change due to the impacts of climate change in the future.

The following six recommendations provide practical initiatives that Act 250 should consider implementing. Together, they form a solid foundation on which future climate preparedness strategies can evolve. Addressing climate change and resilience through land use policy is an effective way for a state like Vermont to take control of its future.

In order to protect and preserve human and ecological communities over the next 50 years, a period of time that will be defined by climate related disasters and human resilience, the Natural Resource Board and Act 250 regional planning must:

1. Identify and assess Vermont's land use typologies.

One of the first steps that should be taken when assessing a region's capacity for resilience, is understanding its ability to withstand a range environmental shocks (Walker et al., 2004). A community's ability to prepare and respond well in such events requires resilient environmental, political, cultural, and economic systems (Garcia & Vale, 2017; Spaans & Waterhout, 2017). In order to enhance the state's overall preparedness for the upcoming 50 years of climate change, it will be crucial to identify how climate change will impact each Vermont community and landscape uniquely (Union of Concerned Scientists, 2016; Urban Land Institute, 2014).

In Vermont, the Agency of Natural Resources (ANR) should identify and define the state's different land use typologies, by taking into account each locality's environmental, political, cultural, and economic conditions, such as population density, transportation access, and vulnerable or unique ecosystems to be protected.

2. Create a cost-benefit analysis for the various land use typologies.

Research has shown that in the next few decades, climate change will significantly increase the amount of precipitation as well as the frequency of storms in the Northeastern United States (Balling and Goodrich 2011; Diffenbaugh et al. 2005; Huang et al. 2017; Knighton et al. 2017; Kunkel et al. 2013). These storms have been shown to lead to major flood damage, loss of crops, and drive up the costs of protecting and rebuilding homes, businesses, properties, and infrastructure (Urban Land Institute, 2014). Strategic resilience planning involves robust, flexible, and long-term policies that take into consideration the wide range of impacts that climate change may have on a region (Union of Concerned Scientists, 2016).

The reality is that if a land use planning authority does not properly prepare its localities for their specific, location-based impacts, the state as a whole will face tremendous economic burdens, much of which will end up on individuals in the most vulnerable communities. With the knowledge that our built environment faces the greatest risks, Vermont must weigh the benefits of continuing business as usual, with the economic and social costs of not adapting.

3. Identify valuable ecosystems across the state as priority areas.

Multiple studies have shown that over the next 50 years, the global increase in temperature is predicted to raise the capacity for the atmosphere to hold moisture, dramatically increasing levels of precipitation, as well as the frequency and severity of storms in the Northeastern United States (Balling and Goodrich 2011; Diffenbaugh et al. 2005; Huang et al. 2017; Knighton et al. 2017; Kunkel et al. 2013). This increase in storms will lead to costly damages in infrastructure, since the built environment is not prepared to be resilient and continuously recover from significant storm events. Ecosystems provide important benefits to human communities, most of which can directly reduce the impacts from climate change events (Gómez-Baggethun, 2010; Horwitz & Finlayson, 2011; Satz et al., 2013). Examples are regulation of gases and atmospheric chemical composition, flood control, carbon sequestration, erosion control, nutrient cycling, waste treatment, food production, and many others (Costanza et al., 1997; Horwitz & Finlayson, 2011).

Protecting and improving valuable ecosystems, such as wetlands, has been shown to be one of the most cost effective ways to prepare for climate change. Looking specifically at flood and erosion control, a single healthy wetland environment has the ability to absorb much of the burden that otherwise would have devastated a housing development or community (Horwitz & Finlayson, 2011). How effectively policy makers and land owners maintain as well as enhance these ecosystems over the next 50 years will play a critical role in how well Vermont communities are able to bounce back after severe climate events.

4. Identify vulnerable human communities across the state as priority areas.

Low-income communities are often hit the hardest from climate related disasters, such as severe storms, flooding, heat waves, and drought (Melillo, Richmond, & Yohe 2014). Extreme weather events, which are predicted to increase in coming years, disproportionately affect economically disadvantaged communities due to the fact that these residents tend to live in older, less safe housing, in places more exposed to flooding, pollution, or toxic threats, and are less likely to have insurance (Union of Concerned Scientists 2016; Urban Land Institute 2014).

Socioeconomic status plays a large role in the ability of people to adapt to environmental changes, so low-income and minority communities should be supported and considered a priority in the face of climate change. Act 250 should not degrade these communities, or

allow for a resilience-gap to grow in the coming years, but instead, provide residents with options as well as a valued voice in land use decisions that might affect them.

5. **Work directly with identified communities to design appropriate and robust plans surrounding climate preparedness for the future.**

Act 250 has the ability to empower Vermont communities through providing them with relevant data and information regarding how they could be affected by climate change, and then working directly with them to design appropriate adaptation and resilience strategies. Today, there are numerous ways to measure the sustainability and resilience of Vermont communities, one of which being the Natural Resources Council's Resilient Communities Scorecard, that focuses on areas such as walkability, transportation, energy, housing, food security, storm preparedness, conservation efforts, land use, human health, and urban design (VNRC, 2013).

6. **Ensure that Vermont-specific climate change concerns are incorporated into all future Act 250 development projects, through the addition of a climate change & resilience-building criteria.**

Climate change mitigation and adaptation strategies must be central to how District Commissions assess development projects and applications over the next 50 years. When applying for an Act 250 permit, every applicant should be required to provide substantial information that shows how their proposed project will address local disaster risks, as well as quality of life considerations specific to the local community and environment.

It is up to decision makers, as well as the specifics of Act 250's environmental criteria, to protect Vermont's human and ecological communities from climate related disasters. To do this, the state must enforce strict regulatory policy on development projects that put landscapes and communities at risk. In addition, regional planning must integrate previous knowledge on how local communities and ecosystems have responded to and recovered from climate-related disasters in the past, in order to be better prepared for future events (Union of Concerned Scientists, 2016).

Conclusion

In this report, I identify five areas of concern in regards to Vermont's land use law, Act 250. The areas are: the speed of project approval, developers finding ways around the law, inconsistency between District Commissions, a lack of public knowledge and access to information, and the exclusion of climate change preparedness within the environmental criteria. The intention is to bring these areas of concern to the attention of the Commission, along with informed, but informal recommendations specific to each issue.

After addressing these problems, I transition into a discussion of the lack of language surrounding climate change in Act 250's environmental criteria. I then present research-based recommendations for how to improve resilience and climate change preparedness in Vermont. My recommendations for the Commission are as follows:

1. Identify and assess Vermont's land use typologies.
2. Create a cost-benefit analysis for the various land use typologies.
3. Identify valuable ecosystems across the state as priority areas.
4. Identify vulnerable human communities across the state as priority areas.
5. Work directly with identified communities to design appropriate and robust plans surrounding climate preparedness for the future.
6. Ensure that Vermont-specific climate change concerns are incorporated into all future Act 250 development projects, through the addition of a climate change & resilience-building criteria.

Vermont continues to be a leader in the nation in terms of regional land use planning and policy. The 2017-2018 legislative initiative came at a critical time, taking a comprehensive approach to the review of Act 250's permitting process. The committee officially in charge of review, *The Commission on Act 250: The Next 50 Years,* has collected information from the public through online submissions and public forums, to inform significant policy changes that will be presented in the form of a report due December 15, 2018.

While the 2017-2018 public review is in its final stage of completion, the act of reviewing and updating Act 250 should continue over the years as relevant new data and science emerges. Future reassessments should also actively to involve the public, to ensure that the law continues to uphold its original intentions of environmental protection, equity, and public involvement.

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