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Who Takes a Dam: Regulatory Confusion and Surging Opportunities for Small Dam Removal in Rural Maine

Grady R. Burns
University of Maine School of Law

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WHO TAKES A DAM: REGULATORY CONFUSION AND SURGING OPPORTUNITIES FOR SMALL DAM REMOVAL IN RURAL MAINE

Grady R. Burns

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Grady R. Burns*

ABSTRACT

This Comment examines the regulatory regimes surrounding the removal of state-regulated small dams in Maine by comparing the relatively underdeveloped regime in Maine with the much more coherent and robust regime in neighboring New Hampshire. When compared to more deliberate regimes, Maine's system lacks key features, including a streamlined permitting program and a single clearinghouse for information, resources, and regulatory enforcement.

Given the significant opportunities afforded by a coherent regulatory small dam removal regime, this Comment recommends that Maine follow the example of other states by creating a river restoration and dam removal program, re-establishing its statewide dam inventory, creating and enacting a strategic plan for small dam removal, and establishing a single permitting process for small dam removals across the state.

I. INTRODUCTION

The State of Maine has played an outsized role in the history of waterway protection over the past fifty years—Maine's United States Senator Edmund Muskie served as the chief architect of the 1972 Clean Water Act, inspired in part by the startling levels of pollution found in western Maine's Androscoggin River,¹ and in 1999 the removal of the 162-year-old Edwards Dam over central Maine's Kennebec River marked the first time in American history “that the federal government had ordered the destruction of a dam over the objection of its owner.”² The removal of Edwards Dam marked a new era in American water policy, one in which the option of dam removal had evolved from an idea dismissed as a radical environmental pipe dream into a viable policy alternative at the federal level.³ The resulting bounce back of native fisheries on the Kennebec within just a few years following removal of the dam provided a strong justification for future removal projects and stronger consideration of removal by the Federal Energy Regulatory Commission (FERC), which is tasked with overseeing the relicensing process for large hydroelectric dams.⁴

* J.D. candidate, University of Maine School of Law.

1. *Environmentalists To Celebrate Clean Water Act in Lewiston on Tuesday*, LEWISTON SUN J. (Oct. 16, 2017), <http://www.sunjournal.com/environmentalists-to-celebrate-clean-water-act-in-lewiston-on-tuesday/> [<https://perma.cc/3HGS-FDY6>].

2. Christine Klein, *On Dams and Democracy*, 78 OR. L. REV. 641, 641 (1999).

3. Steve Friess, *When To Give a Dam? The Quiet Controversy of Hydropower Projects*, AL JAZEERA AM. (Jan. 7, 2016), <http://america.aljazeera.com/articles/2016/1/7/the-quiet-controversy-of-dam-removal.html> [<https://perma.cc/N4RH-VDSX>].

4. *Id.*

But while the dramatic removal of large, federally regulated hydroelectric projects may occupy the majority of public perception about dam removal projects, of the more than 77,000 dams in the United States,⁵ only roughly six percent are owned or regulated by the federal government.⁶ Thus, the story of dam regulation and removal is often much more local and intimate than a cursory examination would suggest. Battles for the futures of the flows of small rivers and streams are often fought in town offices and covered by local papers. Given the immense impact that dams of any size play on water quality and fishery resilience in the waterways that they occupy, this reality means that state and local regimes play an outsized role in the health of American waters.⁷ Development of coherent small dam regulation and removal policies holds potential for immense downstream benefits for inland rural communities, such as in opportunities for water tourism and fishery growth. A state-by-state examination of regulatory frameworks finds a wide array of regulatory approaches to small dam removal. Maine, despite serving as the setting for many of the recent chapters of the national story of dam removal in the larger context of waterway regulation, provides a striking example of state-level regulatory incoherence in the area of small dam removal. Neighboring New Hampshire, in turn, provides a strong counterexample of a clearer framework that includes a structure of prioritization and financial incentive for small dam removal.

This Comment aims to briefly survey the national landscape for small dam removal and examine states' outsized roles in the process, as well as the major implications of dam removal for rural communities: namely, the competing concerns for waterway restoration and respect for local autonomy and private property rights. The analysis will begin with an overview of the national regime for dam removal, as well as an examination of the positive and negative upshots of dam removals for local waterways. This Comment will then turn to a comparison of Maine's regulatory regime with that of New Hampshire, and finally an examination of possible changes to Maine's dam removal regime.

II. OVERVIEW OF THE NATIONAL REGULATORY REGIME FOR DAM REMOVAL

An examination of the law, regulations, and politics of hydroelectric dams in the United States hits on some of the most delicate issues on the axes of state/federal balance and public/private interests in American life.⁸ Traditionally, state law has controlled the property rights of water flowing within state borders and states were empowered to regulate the distribution of their water resources,⁹ but relevant federal

5. ASPEN INST., DAM REMOVAL: A NEW OPTION FOR A NEW CENTURY 4 (2002).

6. FEMA, SUMMARY OF EXISTING GUIDELINES FOR HYDROLOGIC SAFETY OF DAMS 2-4 (2012), https://www.fema.gov/media-library-data/20130726-1849-25045-6913/02_hydrosafetydam_ch_2_4.pdf [<https://perma.cc/LBQ6-Z9JF>].

7. See AM. RIVERS, ECOLOGY OF DAM REMOVAL: A SUMMARY OF BENEFITS AND IMPACTS 2 (2002).

8. See, e.g. George Sherk, *Approaching a Gordian Knot: The Ongoing State/Federal Conflict over Hydropower*, 31 LAND & WATER L. REV. 349, 350-52 (1996). The article discusses conflicts arising from the tension between deference to state law regarding proprietary rights to the water and FERC regulation regarding hydroelectric projects within FERC jurisdiction, which have been interpreted by courts to "not consume water, but rather pass it through." *Id.* at 352.

9. *California v. United States*, 438 U.S. 645, 665-66 (1978).

agencies such as FERC have been empowered to regulate the production of hydroelectric power, which obviously implicates the use of state water resources.¹⁰ Hydropower projects that fall into FERC's ambit are subject to lengthy federal licensing and relicensing regimes that are intended to account for the competing interests of the utility, the federal government, Indian tribes, state governments, and the general public.¹¹ These licensing applications can take a decade or more to complete and can result in licenses being granted to hydropower utilities for up to fifty years.¹²

Some knotty federalism issues in the small dam removal context remain intact, including requirements such as "Section 404" permits indicating compliance with the Clean Water Act;¹³ "Section 10" permits issued jointly with the Section 404 permit indicating compliance with the Rivers and Harbors Act;¹⁴ and in many cases an environmental assessment indicating compliance with the National Environmental Policy Act (NEPA).¹⁵ However, the most comprehensive federal regime—the FERC review—will not apply. Rather, states are empowered to develop their own regimes for dam regulation and removal, placing the remaining public/private balance squarely on the shoulders of state regulators. However, the extent to which state regulatory agencies even recognize strategic dam removal as a tool to improve rural fisheries and opportunities for increased water tourism varies wildly between jurisdictions. Indeed, until roughly a decade ago, dam removal remained a new concept for many states, subject to "conflicting goals, procedures and requirements among relevant authorities."¹⁶

This regulatory naïveté is largely a function of the relatively recent recognition of dam removal as a viable or even desirable solution for a rapidly-growing problem of aging and degeneration in the stock of American dams.¹⁷ Indeed, the widely publicized success of the Edwards Dam removal in 1999 is largely credited with kickstarting a national movement. It is also credited with the Kennebec's rapid regeneration of a previously-depleted, and highly profitable, population of native alewives to more than two million. As a result, the potential economic benefits of

10. Sherk, *supra* note 8, at 350.

11. Heather Payne, *A Long Slog: What a Ten Year Hydroelectric Relicensing Process Demonstrates About Public Participation and Administrative Regulation Theories*, 53 IDAHO L. REV. 41, 54-55 (2017).

12. *Id.* at 54.

13. AM. RIVERS, PERMITTING DAM REMOVAL: THE STATE OF (SEVERAL) STATES 4 (2006). Many states, including Maine and New Hampshire, utilize a joint processing system for dam removal projects that "minimally impact" surrounding ecosystems, that allow state agencies to issue a State Programmatic General Permit (SPGP) that fulfills the Section 404 requirement. *Federal Activities: Section 404 Wetland Permits*, NEW ENGLAND OFFICE, U.S. FISH AND WILDLIFE SERV., https://www.fws.gov/newengland/FedActivities-ProjectPermits-404_wetland_permit.htm [<https://perma.cc/N2MW-M4YC>].

14. AM. RIVERS, *supra* note 13.

15. *Id.* at 5.

16. *Id.* at 1.

17. The vast majority of American dams were constructed prior to 1970, and as of 2012 more than 4,400 dams were designated "unsafe or deficient" by FEMA. FEMA, *supra* note 6, at 2-2 to 2-3.

fishery restoration became more focused.¹⁸ Apart from its standing as a prototypical example of a successful dam removal project vis-à-vis economic and ecological indicators, the Edwards Dam project brought together a coalition of environmental and fishery interest groups including American Rivers, the Natural Resources Council, the Atlantic Salmon Federation, and Trout Unlimited, who successfully intervened in the FERC relicensing process and ultimately won the fight for the removal of the dam over the protest of the dam operator.¹⁹ In the decade following the removal of Edwards Dam, more than 430 dam removals followed, many of which involved American Rivers and the same coalition partners, who now had a model of a successful large-scale dam removal campaign.²⁰

The post-Edwards rise of dam removal as a reasonable mainstream option for aging dams and the surrounding civil society infrastructure advocating for such measures coincided with an increased attention to policy and regulatory frameworks for dam removal operations.²¹ Key in the analyses that emerged was a call for the coordination of regulatory programs that affect small dam removal.²² The acceleration of dam removal projects nationally and an increased outflow of supporting policy resources for lawmakers and regulators has laid bare some of the key opportunities and challenges of small dam removal.

III. THE CONSEQUENCES OF DAM REMOVAL ON RURAL WATERWAYS, FISHERIES, AND COMMUNITIES

The removal of dam infrastructure can have wide and diverse impacts and implications for surrounding communities. As much of the scholarship around dam removal points out, dam removal is neither appropriate, nor desirable, in many or even most instances because of the economic, environmental, or public safety benefits that such dams provide; removal must be weighed in a cost-benefit analysis to determine whether any social gains from removal outweigh costs.²³ Even when benefits outweigh costs, removal projects run up against several competing interests. To wit, an examination of some recent dam removal projects in Maine illustrates the broad positive outcomes of effective dam removal projects, as well as the underlying concerns that motivate opposition to removal initiatives. Positive impacts can be seen in areas including fisheries, water tourism, and water quality; while pitfalls include local hostility to perceived outsider interventions, issues concerning historical preservation, water quality impacts from the release of toxic sediments, and legitimate concerns about property rights and values following changes in water levels and flow patterns. Each will be briefly examined.

18. Andrew Fahlund, *River Rebirth: Removing Edwards Dam on Maine's Kennebec River*, NAT'L GEOGRAPHIC, <https://www.nationalgeographic.com/environment/freshwater/lessons-from-the-field-edwards-dam-removal-maine/> [<https://perma.cc/TYB4-V3E5>].

19. *See id.*

20. *See id.*

21. *See, e.g.*, ASPEN INST., *supra* note 5.

22. *Id.* at 17; *see also* AM. RIVERS, *supra* note 13, at 3.

23. *See, e.g.*, ASPEN INST., *supra* note 5.

A. Local Fisheries

The removal of the Edwards Dam in 1999 provides a straightforward example of the dramatic impact that a successful dam removal can have on the condition of a river's fishery. In 1723, an onlooker once allegedly described the size of the Kennebec fish runs such that "a person could fill fifty thousand barrels a day, if he could endure the labor."²⁴ However, by 1999 the river had been virtually depleted of its populations of salmon, herring, sturgeon, and alewives for over a century.²⁵ But with the removal of the dam, the fisheries began to recover in a matter of years, creating additional and dramatic increases in wildlife populations farther up the ecosystem's food chain,²⁶ as well as providing an essential economic lifeline for a flagging local fishing industry.²⁷ These striking results have not been contained to the Kennebec. Only a few miles north, University of Maine researchers confirmed the return of shortnose sturgeon to the Penobscot River after more than 100 years shortly after the removal of the Veazie Dam in 2013.²⁸

Elvers, the name given to adolescent American eels while they migrate through northeastern fresh waterways on their way to their adult habitats in the Sargasso Sea, are some of the most valuable fish in the world, sometimes averaging up to \$2000 per pound,²⁹ with a fishery worth an annual \$12 million in Maine alone.³⁰ While elvers are native to rivers up and down the east coast, Maine possesses the only significant elver fishery in the country, largely because Maine's major tributaries have been freed from dams,³¹ which are fatal to these young fish.³² The first Interstate Fishery Management Plan for American Eel produced by the Atlantic State Marine Fisheries Commission in 2000 noted that reintroduction of elvers into other historic habitats would depend on construction of additional fish passages in existing

24. JOHN WALDMAN, *RUNNING SILVER: RESTORING ATLANTIC RIVERS AND THEIR GREAT FISH MIGRATIONS* xv (2013).

25. Friess, *supra* note 3.

26. *Id.* There was a pronounced increase in local bald eagle populations, who rely on alewives as a key food source.

27. Matt Hongolitz-Hetling, *As Alewife Populations Recover, a New Economy Emerges*, *KENNEBEC JOURNAL* (Aug. 10, 2013), <https://www.centralmaine.com/2013/08/10/as-alewife-populations-recover-a-new-economy-emerges/> [<https://perma.cc/RM7L-LV2H>].

28. *After More Than a Century, Endangered Shortnose Sturgeon Find Historic Habitat Post Dam Removal*, *UMAINE NEWS* (Nov. 16, 2015), <https://umaine.edu/news/blog/2015/11/16/after-more-than-a-century-endangered-shortnose-sturgeon-find-historic-habitat-post-dam-removal/> [<https://perma.cc/BB7C-558D>].

29. Nora Flaherty, *Why Maine is the Only State in the US With a 'Significant' Elver Fishery*, *ME. PUB.* (May 1, 2018), <http://www.mainepublic.org/post/why-maine-only-state-us-significant-elver-fishery#stream/0> [<https://perma.cc/UF4M-Q3XZ>].

30. Bill Trotter, *Maine Elver Fishermen Caught \$12 Million Worth of Eels This Season*, *BANGOR DAILY NEWS* (June 12, 2017), <https://bangordailynews.com/2017/06/12/business/maine-elver-fishermen-caught-12-million-worth-of-eels-this-season/> [<https://perma.cc/S4JJ-U9UR>].

31. Flaherty, *supra* note 29.

32. Karen Pinchin, *The Epic Fight over the Enigmatic Eel*, *SMITHSONIAN* (Feb. 5, 2018), <https://www.smithsonianmag.com/science-nature/eel-fortune-180968028/> [<https://perma.cc/35P2-2A3Y>].

dams, or the “outright removal of identified hazards to eel passage” in those waters.³³ Likewise, on the West Coast, the 2007 removal of the Marmot Dam over the Sandy River in Oregon coincided with a doubling or tripling of native fish species’ populations.³⁴

While each of the above examples represent the results of removals of large, FERC-regulated dams flowing over major rivers, the positive and rapid results for native fisheries observed in these removals are not limited to larger dams. Post dam-removal studies of tributaries of larger river systems have yielded results indicating overall increases in the health of those fishery ecosystems.³⁵ Undamming even small streams can unlock dozens or hundreds of miles of additional habitats for native fish species to swim.³⁶

B. Water Tourism

An important ancillary benefit for communities that surround waterways that experience increased flows and fish populations is an increased opportunity for water tourism, including from recreational fishing or paddling. A 2013 study commissioned by the Maine Department of Inland Fisheries and Wildlife found that total annual in-state spending from freshwater fishing activities excluding ice fishing totaled more than \$160 million by roughly 237,000 anglers.³⁷ That economic activity in 2013 supported up to 3,300 Maine jobs and \$104 million in annual labor income,³⁸ and some of the most popular destinations—the Rangeley and Moosehead Lake watersheds and the Allagash River—are located in some of the most rural areas of the state.³⁹

Likewise, paddling and whitewater rafting are increasingly being viewed by Maine riverfront communities as essential components of their plans for future

33. ATL. STATE MARINE FISHERIES COMM’, INTERSTATE FISHERY MANAGEMENT PLAN FOR AMERICAN EEL 53 (Apr. 2000), <http://www.asmf.org/uploads/file/amEelFMP.pdf> [<https://perma.cc/7JVK-7Q78>].

34. *Decade After Dam Removal, Fish Rebounding on Sandy River*, KZTV (Oct. 20, 2017), <https://www.ktvz.com/news/decade-after-dam-removal-fish-rebounding-on-sandy-river/642051982> [<https://perma.cc/EMY6-TDE3>].

35. See ROBERT AL-CHOKHACHY, ET AL., YELLOWSTONE CUTTHROAT TROUT MONITORING IN SPREAD CREEK, WYOMING (2013), <https://www.nps.gov/grte/learn/nature/upload/Yellowstone-Cutthroat-Trout-Monitoring-in-Spread-Creek-opt.pdf> [<https://perma.cc/4CKU-GWBP>] (demonstrating the successful return of the Yellowstone cutthroat trout to Spread Creek, a tributary of the Snake River, following the removal of a small dam in 2011).

36. See TROUT UNLIMITED, *A New River: Spread Creek Dam Removal*, YOUTUBE (Nov. 8, 2011), <https://www.youtube.com/watch?v=JJtn6F-Frk4> [<https://perma.cc/2QAZ-56EN>]. The undamming of Spread Creek alone opened up 50 additional miles of fish habitats that were previously inaccessible. *Id.*

37. ME. OFFICE OF TOURISM & ME. DEP’T OF INLAND FISHERIES & WILDLIFE, FISHING IN MAINE IN 2013: A STATEWIDE AND REGIONAL ANALYSIS OF PARTICIPATION AND ECONOMIC CONTRIBUTIONS ii (Jan. 2014).

38. *Id.* at 18.

39. See *Fishing in Maine: Thirteen of the Best Lakes, Rivers & Coastlines to Catch Fish*, WILDERNESS TODAY, <https://www.wildernesstoday.com/fishing-maine/> [<https://perma.cc/QX3B-FVPB>]. The Rangeley Lake watershed, for example, is contained within Franklin County, which covers 1,743 square miles in western Maine and is home to only roughly 30,000 people. *Quick Facts, Franklin Cty. Me.*, U.S. CENSUS BUREAU, <https://www.census.gov/quickfacts/franklincountymaine> [<https://perma.cc/2PJ3-PZSQ>].

economic development. For example, Skowhegan, a former manufacturing hub in central Somerset County that sits on the Kennebec River, has proposed the construction of a whitewater rafting park on the river that they estimate would create \$6 million in annual revenue for the city and create more than forty jobs.⁴⁰ The Maine paddling industry has at times developed a synergistic relationship with dam operators, exemplified by the advertising of the Dead River, one of the tributaries of the Kennebec, as “New England’s most continuous whitewater,” but for only eight days per year as the conditions are created by timed releases of the dams that run up the river.⁴¹ However, outside of those releases, the damming means that the Dead River will only otherwise run after periods of heavy rain.⁴²

In the context of dam licensing and renewal, fights over timed dam releases for recreational uses, and recreational uses more broadly, have featured more prominently in disputes between local stakeholders and dam operators seeking to maintain dams in smaller tributary rivers and streams.⁴³ In central Maine, for example, the City of Auburn used diminished opportunity for recreation on the Little Androscoggin River to advocate for at least more releases from the Lower Barker Dam in its comments to FERC when that dam was due for relicensing.⁴⁴ However, despite efforts to integrate small dams into a larger recreation framework through such timed releases, there are those that argue that, in many cases, outright removal of some smaller dams would bring the most dramatic benefits to recreational opportunities.⁴⁵

C. Water Quality

In addition to dramatic impacts on fisheries and, by extension, opportunities for water recreation and tourism, dam removal can have significant impacts, both beneficial and deleterious, on the water quality of rivers and streams. Dam removal often transforms waterways that during their impoundment possess habitats closer to those of lakes and ponds, which are warmer, than to their natural and cooler free-

40. Justin Shrair, *Whitewater Rafting Park Pitched for Skowhegan*, NEWS CTR. ME. (Oct. 3, 2016), <https://www.newscentermaine.com/article/news/local/whitewater-rafting-park-pitched-for-skowhegan/328607474> [<https://perma.cc/4VEJ-C3W3>]; see also *Run of River*, MAIN ST. SKOWHEGAN, <https://mainstreetskowhegan.org/run-of-river/> [<https://perma.cc/ZQZ8-2PXF>].

41. *Dead River Rafting*, N. OUTDOORS, <http://www.northernoutdoors.com/maine/dead-river-rafting/> [<https://perma.cc/2VTH-QU6W>].

42. *Gauge Information*, AM. WHITEWATER, <https://www.americanwhitewater.org/content/River/show-gauge-info/reachid/787/> [<https://perma.cc/9SV9-ZYSM>].

43. See e.g., Nina Doonan et al., *Examining Recreation Potential of the Little Androscoggin River Through the FERC Relicensing of the Lower Barker Dam in Auburn, Maine*, BATES COLL., 4 (2015) (undergraduate thesis).

44. CITY OF AUBURN, ME., COMMENTS IN RESPONSE TO THE PROPOSED STUDY PLAN FOR THE LOWER BARKER HYDROELECTRIC PROJECT, FERC PROJECT No. 2808 1-3 (May 6, 2015), http://www.auburnmaine.gov/CMSContent/Planning/Rivers_and_Hydropower/4%20May_6_2015_City_ofAuburnBarkerMillStudyPlanComments.pdf [<https://perma.cc/TYL4-Q925>].

45. See John Waldman, Editorial, *Maine Voices: State Could Magnify Its Allure by Removing More Dams from Its Rivers*, PORTLAND PRESS HERALD (Aug. 16, 2018), <https://www.pressherald.com/2018/08/16/maine-voices-state-could-magnify-its-allure-by-removing-more-dams-from-its-rivers/> [<https://perma.cc/48H7-EPRK>].

flowing states.⁴⁶ This reversion provides a benefit to historic species, but often leads to declines in wildlife reliant on the warmer, lake-like conditions, such as ducks and muskrats.⁴⁷ Perhaps more significantly, however, dam removal can have severe impacts on the flow of sediment because dams tend to trap silt and fine sediment from flowing downstream, which can both rob downstream organisms of nutrients, or shield them from toxins that accumulate in those sediment beds from upstream industry.⁴⁸

In the latter case, reckless destruction of a dam can in fact cause highly toxic pollutants that had previously been resting benignly behind the dam to rapidly wash through a watershed, decimating existing wildlife.⁴⁹ Even when a dam is not locking away decades worth of pollutants, the release of years of accumulated sediment can shock the rivers ecosystem by depleting oxygen levels and diminishing water quality.⁵⁰ However, proactive mitigation prior to dam removal, such as dredging pollutants locked behind the dam, timing the dam removal before a spring runoff, or gradually running down a reservoir prior to removal can eliminate many of the worst short-term effects on stream and river health from the removal of a long-extant dam.⁵¹

While the ecological penalties for failing to consider trapped sediment or pollutants can be very heavy, the long-term benefits of dam removals on waterway quality are generally very positive when short-term impacts are mitigated. The natural free-flow of sediments benefits native species and can even help to restore coastal beaches,⁵² and the release of dammed water cools and reoxygenates the river, providing immense benefits to migratory fish species.⁵³ Ultimately, however, the removal of a single dam in a highly-impounded river will have little overall effect on the larger river ecosystem: opening the flow of a stream in a single section will have little impact on the health of the river if that section remains closed farther downstream.⁵⁴ Thus, dam removal as part of a larger strategy of ecological restoration requires a more holistic and less myopic approach.

D. Concerns Around Local Control

While the objective benefits and risks of dam removal should weigh heavily on a decision to keep or take a dam, subjective concerns relating to respect for local autonomy often require equally significant considerations. Even in dam removal projects touching smaller rivers and smaller communities, feelings of resentment

46. AM. RIVERS, *supra* note 7, at 4.

47. *Id.*

48. *Id.* at 8.

49. *Id.* A stark example of the phenomenon can be found in the removal of the Fort Edwards Dam in New York, which unlocked three decade's worth of accumulated polychlorinated biphenyl (PCB), as much as 1.3 million pounds, that had been deposited by runoff from an upstream General Electric plant. The resulting dam removal caused an ecological disaster that has taken four more decades to mitigate. *Actions Prior to EPA's Feb. 2002 Record of Decision (ROD)*, U.S. ENVTL. PROT. AGENCY, <https://www3.epa.gov/hudson/actions.htm> [<https://perma.cc/4NRK-29UE>].

50. AM. RIVERS, *supra* note 7, at 8.

51. *Id.*

52. *Id.* at 7.

53. *Id.* at 4-5.

54. *Id.* at 10.

regarding outsiders pushing for or dictating the terms of a removal project can be potentially fatal to the effort. A stark example of this can be found in the case of the proposed removal of the Walton's Mill Dam in Farmington.⁵⁵ In this instance, the Atlantic Salmon Federation (ASF) offered to cover the entire cost of the dam's removal, totaling more than \$1.2 million.⁵⁶ The town would likely have spent at least \$750,000 on the project had ASF not stepped in, as the municipally-owned dam was in violation of the U.S. Endangered Species Act because it contained no fish passage and blocked the path of salmon trying to spawn upstream.⁵⁷ The town's Board of Selectmen voted 4-1 to accept ASF's proposal, but the lone holdout told the press that he refused to support the proposal because he felt bullied by the arrayed outside forces: "They've expected us to make a certain decision I understand it would be expensive to build a fish passageway, but it's still our choice."⁵⁸ The voters of Farmington ultimately voted to accept ASF's proposal.⁵⁹

Likewise, in the more intensive, FERC-governed debate regarding the removal of the Klamath River dams in Oregon, residents in 2016 voted seventy-two percent in opposition to that project after the project's politicization and polarization.⁶⁰ While the project—the largest dam removal operation in U.S. history—will ultimately likely move forward in 2020, local residents and governmental bodies remain starkly opposed to the operation.⁶¹ The fight has largely been framed by opponents as Pacificorp (the owner of the dams) and FERC operating on one side, and local residents and county governments on the other.⁶² Ultimately, while opponents will often cite environmental or economic concerns as the drivers for that opposition, the underlying tension between local control and outsider intervention often provides the narrative framework for many such efforts.

E. Property Value and Economic Impact

Wrapped up intimately with more ephemeral concerns about local control are concrete fears that altering water flow and water levels will bear negative impacts on property values or otherwise negatively impact local economies. Loss of riverfront property due to altered flow paths and changes in the floodplain that impact insurance

55. Rachel Ohm, *Farmington Selectmen Support Dam Removal at Walton's Mill*, PORTLAND PRESS HERALD (July 10, 2018), <https://www.centralmaine.com/2018/07/10/farmington-selectmen-support-dam-removal-at-waltons-mill/> [https://perma.cc/EH8B-UZAD].

56. *Id.*

57. *Id.*

58. *Id.*

59. Staff Report, *Voters Support Walton's Mill Dam Project*, LEWISTON SUN J. (Nov. 6, 2018), <https://www.sunjournal.com/2018/11/06/voters-support-waltons-mill-dam-project/> [https://perma.cc/7DC2-MS3M].

60. Gerry O'Brien, *Citizens Oppose Dam Removal in Advisory Note*, HERALD AND NEWS (Nov. 9, 2016), https://www.heraldandnews.com/news/local_news/citizens-oppose-dam-removal-in-advisory-vote/article_77cf93e5-dc90-531e-b909-d5fdb9fd80d8.html [https://perma.cc/AU3G-6D4Q].

61. Damon Arthur, *Corporation Submits Plans to Remove Four Dams on Klamath River*, REDDING RECORD SEARCHLIGHT (July 1, 2018), <https://www.redding.com/story/news/2018/07/01/klamath-river-dam-removal-project-nations-largest-moves-forward/749654002/> [https://perma.cc/A7U6-SZ8A].

62. See Damon Arthur, *Siskiyou Residents Debate Klamath River Dams*, REDDING RECORD SEARCHLIGHT (Jan. 26, 2016), <https://www.redding.com/story/news/local/2016/01/27/siskiyou-residents-debate-klamath-river-dams/93437564/> [https://perma.cc/9PJ7-E6SE].

costs are often cited by dam removal critics as areas of intense concern.⁶³ In its “Environmental Fact Sheet” for dam removals, the New Hampshire Department of Environmental Services (NHDES) notes that while “[s]tudies have not shown strong correlations between dam removal and changes in property values . . . the removal of a particular dam will be seen as a good thing to some potential buyers and a bad thing to others One person’s lost pond is another person’s restored river.”⁶⁴

The same NHDES fact sheet continues by addressing another concern that may be raised by the removal of a dam: the ownership status of the newly-exposed land following a dam’s removal.⁶⁵ Paradigmatic of this line of concern is the fight that erupted between waterfront property owners and the City of Janesville, Wisconsin upon the proposed removal of the Monterey Dam. Here, city officials cited the nineteenth century legislation that authorized the construction of the dam to assert that the previously flooded land was owned by the dam’s owner and would become the property of the city once the waters receded.⁶⁶ Citizens previously enjoying waterfront property would thus face a double-punch—losing their waterfrontage and the prospect of the public being able to traipse through what used to be their private back yards.⁶⁷ An association comprised of these property owners unsuccessfully fought to halt the removal in court,⁶⁸ ultimately dropping the lawsuit because the completed removal rendered the actions of the city a *fait accompli*.⁶⁹

Finally, given that some dams play important roles in flood control, removal projects can raise concerns around changes to the flood map and resultant increases in flood risk and flood insurance costs. Although dam removals often in fact reduce flood risk, in some instances flood concerns drive opposition to dam removals.⁷⁰ In the case of the Klamath River dams, a candidate for Oregon state representative used the removal project, and the dam system’s “exemplary flood control,” as a political

63. See, e.g., Chauncy Copeland, Letter to the Editor, *Dam Removal Already Impacts Real Estate*, KENNEBUNK POST (Jan. 15, 2016), http://post.mainelymediallc.com/news/2016-01-15/Letters/Dam_removal_already_impacts_real_estate.html [<https://perma.cc/EH67-YFVC>].

64. N.H. DEP’T OF ENVTL. SERVS., WD-DB-19, FREQUENTLY ASKED QUESTIONS ABOUT DAM REMOVAL (2011), <https://www.des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-19.pdf> [<https://perma.cc/4YW7-Y8NA>].

65. *Id.*

66. Jake Magee, *Residents Prepare Legal Battle Against Monterey Dam Removal*, THE GAZETTE (Sept. 23, 2017), https://www.gazettextra.com/news/local/residents-prepare-legal-battle-against-monterey-dam-removal/article_2ef946e7-4d90-5169-b404-948be786c67c.html [<https://perma.cc/4DYX-6TD6>].

67. *Id.*

68. Neil Johnson, *Judge Dismisses Group’s Suit To Halt Monterey Dam Tear Out*, THE GAZETTE (July 17, 2018), https://www.gazettextra.com/news/government/judge-dismisses-group-s-suit-to-halt-monterey-dam-tear/article_0c1c1fc5-aeb3-5bfa-a4b9-7a96d68ee39c.html [<https://perma.cc/G3M3-Y6R7>].

69. *Monterey Dam Association Agrees To Drop Lawsuit Against City of Janesville*, WCLO (Oct. 18, 2018), <https://www.wclo.com/2018/10/18/monterey-dam-association-agrees-to-drop-lawsuit-against-city-of-janesville/> [<https://perma.cc/Z3VJ-4KVB>].

70. See Derrick DePledge, *Engineers Flagged Flooding Risk If Dam Is Removed*, THE DAILY ASTORIAN (Feb. 15, 2017), http://www.dailyastorian.com/Local_News/20170215/engineers-flagged-flooding-risk-if-dam-is-removed [<https://perma.cc/RRB6-E8PN>].

issue in an effort to win elected office.⁷¹ However, as a minority of dams actually function to provide flood control,⁷² such concerns will only have legitimate force in a minority of instances. Further, with the stock of dams rapidly aging, the prospect of floods caused by dam failure are not trivial; the 2016 update of the National Inventory of Dams noted that a full third of registered dams in the United States would pose “high” or “significant” risks to life or property if failure occurred.⁷³

F. *Historic Preservation*

Concerns surrounding opposition to certain dam removals due to issues of historic preservation or cultural/sentimental value were significant enough that American Rivers produced a report in 2008 aiming to help supporters of dam removals navigate the hurdles of preservation arguments.⁷⁴ The report notes that any federally-funded project, whether or not the dam is owned by the federal government, must comply with section 106 of the National Historic Preservation Act (NHPA), which empowers the Advisory Council on Historic Preservation (ACHP) “to comment on any federal project that may affect properties that are listed on or eligible for listing in the National Register of Historic Places.”⁷⁵ Additionally, even if a project is not federally-funded, projects run up against state, county, and local historic preservation laws and ordinances, which may further limit the removability of a dam structure that is deemed to have requisite historic or cultural significance.⁷⁶ Some states, including Vermont, have in fact established specific processes for identifying and preserving historically significant dams; the criteria include the dam’s age, any unusual character, and the extent to which the “historical integrity” of the original design remains intact.⁷⁷

Generally, threading the legal and political needle with dam removal projects that may implicate historic preservation concerns requires steps such as determining at the outset whether the dam or area surrounding the impoundment are listed or eligible for listing as historic places, determining the level of community attachment to a dam through direct outreach, and communicating with state and/or federal historic advisory boards proactively.⁷⁸ In the end, like with virtually every potential consequence or benefit of dam removal, the determinations and required actions for a given project will often be intensely fact-specific, and require a balancing of myriad legitimate interests to reach a positive outcome for environmentalists and other

71. E. Werner Reschke, *Open Letter to DEQ: Opposition to Dam Removal Along the Klamath River*, WERNER FOR OR. (July 5, 2018), <http://www.wernerfororegon.com/news-issues/2018/7/5/open-letter-to-deq-opposition-to-dam-removal-along-the-klamath-river> [<https://perma.cc/A96C-J9WY>].

72. See, e.g., N.H. DEP’T OF ENVTL. SERVS., *supra* note 64 (noting that only two percent of dams in New Hampshire provide flood control).

73. *Dam Failure Information*, FEMA (Sep. 14, 2018), <https://www.fema.gov/dam-failure-information> [<https://perma.cc/T6V3-DQUM>].

74. SERENA MCCAIN ET AL., AM. RIVERS, DAM REMOVAL AND HISTORIC PRESERVATION: RECONCILING DUAL OBJECTIVES 7 (2008), https://s3.amazonaws.com/american-rivers-website/wp-content/uploads/2016/06/24143701/Dam_Removal_and_Historic_Preservation3eb.pdf [<https://perma.cc/4RTQ-5PTW>].

75. *Id.* at 8.

76. *Id.* at 9.

77. *Id.* at 48.

78. *Id.* at 25.

stakeholders.

IV. COMPETING REGULATORY MODELS: MAINE AND NEW HAMPSHIRE

For the thousands of dams that fall outside of the regulatory jurisdiction of FERC, the regulatory framework for the removal of one of those dams is largely governed by the state in which that dam is located.⁷⁹ The regulatory regimes of the states are often as diverse as the states themselves. Indeed, while some states have adopted robust regulatory frameworks to tackle questions around small dam removal, others are more or less incoherent.⁸⁰ Comparing the robust state framework and funding system of New Hampshire and the more incoherent model currently adopted by neighboring Maine provides a useful glimpse into the varied states of the states' regulatory models, or lack thereof, in the area of dam removal. Both will be discussed in turn.

A. *New Hampshire*

Since 1984, the New Hampshire Supreme Court has recognized that “RSA chapters 481 and 482 have preempted regulation of the construction and maintenance of dams and hydroelectric generating facilities in [New Hampshire], to the exclusion of local regulation or control through building codes, local planning or zoning ordinances, or flood plain ordinances.”⁸¹ Thus, the sole regulatory body empowered to regulate New Hampshire dams is NHDES, whose duties include monitoring, inventorying, and overseeing the construction of dams,⁸² and whose commissioner is empowered by statute to take enforcement actions against dam operators in violation of state regulation, which may include “remedial or restorative measures as may be necessary.”⁸³ This oversight is delegated to NHDES's Dam Bureau, whose management portfolio includes dam removal and river restoration.⁸⁴ Within the Dam Bureau is a “Dam Removal and River Restoration Program” that is permanently staffed by a River Restoration Coordinator.⁸⁵

The River Restoration Coordinator serves as a point person for dam owners seeking information about the process through which the owner can initiate an application for dam removal, and since 2000, the agency has maintained a “New Hampshire River Restoration Task Force,” which serves to proactively explore opportunities for strategic dam removals within the state.⁸⁶ Since 2001, the Task

79. See AM. RIVERS, *supra* note 13, at 4.

80. See *id.*

81. *Wasserman v. Lebanon*, 474 A.2d 994, 995 (N.H. 1984).

82. N.H. CODE ADMIN. R. ANN. ENV.-WR. 102 (2018).

83. N.H. REV. STAT. ANN. § 482:11 (2018).

84. N.H. DEP'T OF ENVTL. SERVS., NEW HAMPSHIRE'S DAM SAFETY PROGRAM, <https://www.des.nh.gov/organization/divisions/water/dam/documents/dam-brochure.pdf> [<https://perma.cc/TK6T-2YMX>].

85. *Dam Removal and River Restoration Program*, N.H. DEP'T OF ENVTL. SERVS. <https://www.des.nh.gov/organization/divisions/water/dam/damremoval/index.htm> [<https://perma.cc/RVT8-3MGS>].

86. N.H. DEP'T OF ENVTL. SERVS., THE NEW HAMPSHIRE INITIATIVE TO RESTORE RIVERS THROUGH SELECTIVE DAM REMOVAL (2011),

Force has overseen the removal of thirty-three dams, and the rate of removals has accelerated over time, with four projects occurring in 2018.⁸⁷ Thus, within the single clearinghouse of the Restoration Program, there are comprehensive resources available to field inquiries from dam owners that can lead to viable removal projects, and there is a body dedicated to actively seeking out new viable removal projects within the state.

In addition to a single official clearinghouse to handle dam removal operations, beginning in 2003, NHDES published its *Guidelines to the Regulatory Requirements for Dam Removal Projects in New Hampshire*, which was created as part of a “State Dam Removal Plan.”⁸⁸ This document provides an overview of state laws and regulations affecting dam removal projects,⁸⁹ and lays out a detailed four-step process through which an owner can navigate the regulatory framework to seek the removal of a dam.⁹⁰ Perhaps unsurprisingly, the first step is to consult with the River Restoration Coordinator to obtain the necessary information.⁹¹ And perhaps most significantly within that first step, the Coordinator then works with dam operators to secure necessary funding for the removal project.⁹² While New Hampshire does not provide dedicated state funding to dam removals, as is the case in some states such as Pennsylvania, the Coordinator becomes a valuable tool for connecting dam owners with sources of third-party funding for a removal project.⁹³

The consolidation of all non-federal dam removal projects into the hands of NHDES also allowed for a streamlining of the permitting process for small dam removals; there is only a single state permit required for such projects, by the NHDES Wetlands Bureau.⁹⁴ Once a permit is issued, a completed application for removal is submitted to the Dam Bureau, which will approve a project if the applicant has provided the necessary information, and has demonstrated that the removal “[w]ill not cause damage to structures downstream of the dam,” and “[w]ill not cause environmental damage that cannot self-restore within one year.”⁹⁵ While notice to the municipality in which a dam is contained is required,⁹⁶ and municipalities may require some additional permitting for things such as waste disposal,⁹⁷ municipal ordinances cannot contravene the state regulatory framework governing the dams.⁹⁸ Although projects that utilize federal funding must comply with applicable federal regulations, such as those discussed above regarding environmental impact and

<https://www.des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-18.pdf>
[<https://perma.cc/YHA2-ZCFB>].

87. *Projects: Planned, Completed and Under Consideration*, N.H. DEP’T OF ENVTL. SERVS.
<https://www.des.nh.gov/organization/divisions/water/dam/damremoval/projects.htm>
[<https://perma.cc/6NXX-Z2X6>].

88. N.H. DEP’T OF ENVTL. SERVS., *GUIDELINES TO THE REGULATORY REQUIREMENTS FOR DAM REMOVAL PROJECTS IN NEW HAMPSHIRE* (3d ed. 2018).

89. *Id.* at 4.

90. *Id.* at 6-7.

91. *Id.* at 6.

92. *See* AM. RIVERS, *supra* note 13, at 2.

93. *Id.*

94. *Id.* at 7.

95. N.H. CODE ADMIN. R. ENV-WR 604.01(a) (2018).

96. N.H. CODE ADMIN. R. ENV-WR 603.01(a) (2018).

97. *See* N.H. DEP’T OF ENVTL. SERVS., *supra* note 88, at 8.

98. *See* *Wasserman v. Lebanon*, 474 A.2d 994, 998 (N.H. 1984).

historical preservation, this two-step permit and approval process comprises the regulatory framework for small dam removals in New Hampshire. New Hampshire's dam removal framework has been held up by American Rivers as an exemplar of the successes that can be achieved by coordinating projects through a single point of contact and a simplified permitting and application process.⁹⁹

While New Hampshire stands out as a particularly strong example of regulatory reform in the dam removal space, it is not alone in taking proactive steps to thoughtfully reshape the quality of its rivers. Wisconsin, Massachusetts, and Pennsylvania have each enacted similar reforms around creating single points of contact for dam removal projects.¹⁰⁰ New Jersey and Connecticut both regulate all of their dams, power-producing and non-power-producing, within a single bureau.¹⁰¹ However, the diversity among states is wide, and while some have explicitly prioritized dam removal as a piece of a larger environmental or economic agenda, others have not. Maine provides a useful and striking counterexample.

B. Maine

While the number of dams registered and regulated in the state of Maine for hydropower hovers at around 120, the actual number of dams stretching across the rivers and streams in the state remains unknown.¹⁰² And although the regulation of all hydroelectric dams is governed by a single piece of legislation—the Maine Waterway Development and Conservation Act (MWDCA)—regulatory oversight of Maine's energy-producing dams is bifurcated between the Department of Environmental Protection (DEP) for dams contained partly or wholly in organized municipalities, and the Land Use Planning Commission (LUPC) for dams contained within unorganized territories.¹⁰³ While there is no special permitting process for hydroelectric dam removals, any person proposing a project that “‘structurally alter[s] a hydropower project in ways that change water levels or flows above or below the dam,’ including a person intending to remove a dam,” must acquire a permit under MWDCA.¹⁰⁴ This permit, whether for construction, modification, or removal, requires evaluation of eight factors: financial capability, safety, public benefits, traffic movement, LUPC zoning (if applicable), environmental mitigation, environmental and energy considerations, and water quality.¹⁰⁵ Every hydroelectric dam removal project, regardless of whether the dam is subject to federal regulation, requires the issuance of a “Section 401” water quality certificate, which is used to

99. See AM. RIVERS, *supra* note 13, at 2-4.

100. *Id.* at 2.

101. *Id.* at 5, 7.

102. *Advocating for Free Flowing Rivers*, ME. RIVERS, <https://mainerivers.org/about/advocating-for-free-flowing-rivers/> [<https://perma.cc/2UJB-JSTC>]. According to the Maine DEP website, the Department has not been required to maintain a registry of dams since 1993, and thus does not do so. *Issue Profile Regulation of Dams*, ME. DEP'T OF ENVTL. PROT., <https://www.maine.gov/dep/land/dams-hydro/documents/ip-dams.html> [<https://perma.cc/YL2E-45EE>]. The most recent government estimate is 1,016 dams within the state. *Dam Safety Statistics*, ME. EMERGENCY MGMT. AGENCY, https://www.maine.gov/MEMA/damsafety/mema_dam_stats.shtml [<https://perma.cc/WRX2-5YK9>].

103. 38 M.R.S.A. § 634-A (2018).

104. *Save Our Sebasticook v. Bd. Of Env'tl. Prot.*, 2007 ME 102, ¶ 14, 928 A.2d 736 (quoting 38 M.R.S.A. § 633(1)).

105. 38 M.R.S.A. § 636 (2018).

show compliance with Section 401 of the Federal Water Pollution Control Act.¹⁰⁶

This bifurcated regulatory framework in Maine is further muddled by the fact that regulatory authority over non-hydroelectric producing dams is derived not from the MWDCA but the Maine Natural Resources Protection Act (NRPA), which empowers the DEP to issue permits for activities on a waterway that includes “[a]ny construction, repair or alteration of any permanent structure.”¹⁰⁷ The upshot of this is that DEP has regulatory authority of all small dams, except for hydroelectric dams contained entirely within unorganized territories that fall into LUPC jurisdiction, and then within DEP jurisdiction there is a regulatory divide between energy-producing and non-energy-producing dams.

Exacerbating the complication of Maine’s multifaceted regulatory framework is the fact that, unlike New Hampshire, Maine possesses no official framework or strategy for prioritizing dam removals, nor does it possess a designated point person whose sole responsibility is to shepherd dam removal projects through the regulatory process or oversee the execution of a unified vision of what Maine’s waterways ought to look like.¹⁰⁸ And, while Maine is like New Hampshire in that Maine also possesses no direct, public funding source for strategic dam removal projects, it additionally lacks that dedicated dam removal expert that has developed connections and expertise to dramatically ease the funding search for dam owners.¹⁰⁹ This necessarily means that those seeking to remove a small dam in Maine are required to lean heavily on the expertise of nonprofit interest organizations like Maine Rivers or Trout Unlimited for technical assistance in navigating the regulatory process, and even ensuring that one is applying to the correct regulatory agency applying proper statutory jurisdiction.¹¹⁰ It is perhaps unsurprising, given this dynamic, that since 2001 Maine has removed roughly a quarter fewer dams than New Hampshire, despite having a vastly larger network of rivers and streams and shared concerns over an aging stock of small dams.¹¹¹

Ultimately, while there have been a number of significant and successful small dam removals from Maine waters, the lack of a regulatory cohesion in the dam removal process appears to be inhibiting the progress of strategic removal efforts. Certainly, the lack of a comprehensive plan or strategy for the role of Maine’s aging dams in the future of its waters only adds to that difficulty. Given that so much of interior Maine’s economy is tied to its rivers and fisheries, the failure to enact

106. *See id.* § 635-B.

107. *Id.* § 480-C(2)(D). “Permanent structures” are statutorily defined as any fixed structure “with a fixed location for a period exceeding 7 months within and 12-month period, including, but not limited to, causeways, piers, docks, concrete slabs, piles, marinas, retaining walls and buildings.” *Id.* §480-B(7).

108. The Maine DEP Bureau of Land Resources has a point contact for all dam projects, designated their “Hydropower Coordinator,” but there is no analogous division of DEP or position within DEP to the New Hampshire regime. *Hydropower & Dams*, ME. DEP’T OF ENVTL. PROT., <https://www.maine.gov/dep/land/dams-hydro/index.html> [<https://perma.cc/X3MQ-BDCU>].

109. *Compare* ME. RIVERS, *Removing Small Dams in Maine: A Basic Guide for Project Managers* 7 (2011) <https://mainerivers.org/wp-content/uploads/2009/05/Dam-Project-Manager-GuideME-copy.pdf> [<https://perma.cc/LC9J-FB66>], *with* AM. RIVERS, *supra* note 13, at 2.

110. *See, e.g.*, ME. RIVERS, *supra* note 103.

111. *See* *American Rivers Dam Removal Database*, AM. RIVERS (Dec. 2, 2018), https://figshare.com/articles/_/5234068 [<https://perma.cc/BK7Z-PDN4>] (data showing that since 2001, Maine has removed 25 dams while New Hampshire has removed 33).

strategic and regulatory reforms represents an ongoing missed opportunity to enhance economic opportunities and environmental protection in Maine's most rural areas. However, as demonstrated through the examination of New Hampshire's regulatory regime, Maine would not have to reinvent the wheel to reinvigorate its inland fisheries.

V. POTENTIAL POLICY SOLUTIONS

As one can see by examining the immense consequences, both positive and negative, that dams and dam removals can play in rural waterways, states with large inland fisheries and water economies such as Maine cannot afford to ignore the costs and benefits. Given the current state of Maine's regulatory regime for dam removal, there are a number of statutory and regulatory initiatives that the state could undertake to identify small dams that are costlier to keep than to remove, to prioritize the restoration of certain waterways for economic or environmental reasons, to clarify and ease the regulatory process for small dam removals, and to build local support and participation into the regulatory process. Some of those potential strategies will be briefly discussed below. Implementing any or all of these steps would place Maine in a better position to strategically address the present and growing concerns and opportunities presented by keeping or removing small dams within its waterways.

A. *Create a River Restoration and Dam Removal Program*

Perhaps the most significant step that the Maine State Legislature should take in moving toward a more coherent regulatory regime for dam removal is establishing a program, working group, or taskforce within DEP dedicated to the development and implementation of a strategic plan for small dam removals.¹¹² By creating a single clearinghouse for river restoration initiatives, Maine can begin to build a coherent strategic posture for such initiatives. Additionally, identifying river restoration as a strategic goal at all would likely help to alter the current, more agnostic landscape. As the New Hampshire model illustrates, creating an agency singularly tasked with river restoration prevents river restoration, as a strategic goal, from being subsumed by competing goals.

Maine, even without addressing the bifurcation of jurisdiction between DEP and LUPC, could create a program within DEP that is tasked with inventorying Maine dams, developing a strategic plan for river restoration, and serving as a passive receptor and active hunter of opportunities for dam removals that fall within a strategic plan for the restoration of a given waterway. However, the following three recommendations discussed—the reestablishment of a statewide registry of dams, creation of a strategic plan for river restoration, and establishment of a new, single permitting process specifically for dam removals—would all benefit immensely from the establishment of a singular institution.

112. The Aspen Institute study noted that a “transparent, predictable, and rational decision-making process” is a foundational requirement for rendering dam removal a viable option for states. ASPEN INST., *supra* note 5, at 27.

B. Re-Establish a Statewide Inventory of Dams

Maine has not maintained a registry of its dams since 1993.¹¹³ Before Maine can adequately commission or implement a strategic plan, it must have a clearer sense of the level of impoundment of its rivers and streams, and the relative conditions of those dams. An essential first step of any program manager or taskforce in developing a strategic plan for Maine's rivers and streams would be determining where dams are located. The core of a registry could be built by using historic data from permitting applications to DEP and LUPC for dam building and maintenance, with further inventories of old and/or abandoned small dams occurring in conjunction with local municipalities, educational institutions, or nonprofits. A registry that included the status of ownership and relative condition of each dam would additionally aid a strategy-making body in prioritizing and organizing restoration efforts.

C. Create a "Strategic Plan for River Restoration" That Considers the Desires and Concerns of Local Actors

A properly designed strategic planning process would, on the front end, head off local concerns around local control and historic preservation by integrating local input into the larger framework of a strategic plan for river restoration that would consider the relative environmental and economic opportunities for the restoration of certain waterways through selective dam removal. For example, a regulatory agency tasked with the strategic planning process could be required as part of that planning process to develop waterway-specific goals in consultation with municipalities that abut that waterway, and provide resources to town offices regarding potential opportunities connected with the restoration of a specific water resource. Regardless, by establishing a comprehensive waterway restoration plan, a dedicated agency would be able to begin to implement that plan through active outreach to target dam operators or owners, and would be able to more easily vet outside inquiries from dam owners exploring removal as an option.

D. Establish a Single State Permitting Process for All Dam Removal Projects with Clear Guidelines for Operators and Owners

Currently, Maine's permitting process for dam removals is bifurcated between regimes governed by MWDCA and NRPA,¹¹⁴ and there is no specific permitting process for dam removals separate from the construction and modification process.¹¹⁵ Using the New Hampshire model, Maine should adopt a permitting regime unique to dam removals that would be overseen by a single regulatory body, which would allow that body to streamline the application process to a single permitting process. Clearing away regulatory confusion from dam operators and simplifying the removal permitting process will facilitate more strategic removals with lower transaction costs. Bringing the permitting process within a single regulatory body would also allow dam owners to access expert support from those

113. See ME. DEP'T OF ENVTL. PROT., *supra* note 103.

114. See 38 M.R.S.A. §§ 480-C, 634-A (2018).

115. *Id.* § 636.

that staff that agency, who will develop greater expertise through a narrower operational mandate.

VI. CONCLUSION

Whether one is referring to the removals of once mighty dams like the Edwards, or tiny, forgotten impoundments hidden in rural streams, dam removal, and the resulting restoration of a water system, can have profound environmental and economic impacts on local communities that exist within and around those systems. Since the relative boom in dam removals in the 1990s, the potential benefits—and potential traps for the unwary—have been well-documented, such that a state government can begin to make informed and strategic decisions about the benefits and costs of keeping an aging dam in its waters. Not every dam should be a candidate for removal; indeed, many if not most dams play integral roles in energy generation, flood control, or pollution containment. However, with thousands of small dams aging in place in rural areas around the country, strategic removal can and should be a tool employed by states when the benefits of removal to fisheries, recreational opportunities, or general water quality outweigh any environmental, economic, or intrinsic value that that dam brings to a community.

As more and more states begin to address dam removal within their regulatory regimes, the path forward for states looking to adopt more strategic frameworks will become clearer. Where there are already striking examples of simple, successful regulatory regimes in states such as New Hampshire, states without any meaningful strategic development around dam removal, such as Maine, have little to lose by following the example of others. Steps as simple as identifying river restoration as a policy goal, and empowering a regulatory body to develop a regime around that goal can create significant opportunities for positive outcomes for rural inland communities that abut rivers and streams. And with the stock of dams continuing to age around the country, the question of strategic removal will soon be one that states cannot afford to ignore.

