

**AGENCY AND LEGISLATIVE OVERSIGHT AS PROBLEM
FEEDBACK: THE CASE OF THE MID-MICHIGAN DAM
FAILURES**

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This study examines the concept of problem feedback as a mechanism for signaling that a problem requires the attention of policymakers. It contributes to the literature on the Multiple Streams Framework (MSF) in two ways. First, this study examines the roles that agency and legislative oversight play in generating feedback about policy problems. Second, it assesses the content of feedback messages that are sent as a result of oversight activities. This research relies on a case study of Michigan dam failures throughout 2020 to apply the concepts of problem feedback and examine the content of feedback. The Mid-Michigan dam failures are a useful case because problem feedback occurred over a long period of time in federal and state agencies and legislatures. The results of the case analysis suggests that feedback alone, resulting from systematic monitoring and compliance, may not be sufficient to gain the attention of lawmakers. Furthermore, the audience of feedback messages matters at least as much as the content of messages. Without a broader audience that

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extends beyond an agency, there is lower likelihood of issue expansion and, therefore, of policy change. Finally, when legislative oversight occurs, feedback appears to focus on failings rather than the need for policy change.

I. OVERVIEW

To what extent do disasters and crises send signals about public problems to policymakers? The social science literature on public policy suggests that large-scale disasters, often known as “focusing events”¹ influence policy making. The idea of focusing events was first introduced in John Kingdon’s canonical study, *Agendas, Alternatives, and Public Policy*, which serves as the foundation of a body of theory known as the Multiple Streams Framework (MSF).² The MSF conceives of policy making as involving three streams of policy making activity: problems, policies, and politics.³ Policy change is more likely when these streams are brought together by a savvy policy entrepreneur to promote agenda change, thereby increasing the probability of policy change.⁴ The politics stream describes key features of the current political landscape, such as the partisan composition of the legislative branch, public approval of political institutions, or measures of what Kingdon calls the “national mood.” The policy stream contains potential solutions to policy problems, usually in the form of ideas for legislation or regulation. In this paper we focus on the problem stream as one of the critical elements of the MSF, particularly in terms of issue attention.

We situate problem feedback in the context of infrastructure failures in the United States, with specific reference to the case of the 2020 Edenville and Sanford dam failures in Midland, Michigan. We examine the extent to which feedback regarding the problems posed by the dam failure and assess the relative importance of the different types of feedback that emerged at the state and federal levels. This article endeavors to illustrate the role of feedback as a mechanism by which policymakers and the public learn about public policy problems, thereby moving the problem stream closer to a point where action is taken on revealed problems.

1. JOHN W. KINGDON, *AGENDAS, ALTERNATIVES, AND PUBLIC POLICIES* 94 (2nd ed. 2011); THOMAS A. BIRKLAND, *AFTER DISASTER: AGENDA SETTING, PUBLIC POLICY AND FOCUSING EVENTS* 3 (1997).

2. KINGDON, *supra* note 1, at 94.

3. *Id.*

4. *Id.* at 196; NICOLE HERWEG ET AL., *THE MULTIPLE STREAMS FRAMEWORK: FOUNDATIONS, REFINEMENTS, AND EMPIRICAL APPLICATIONS* 28 (4th ed. 2018).

II. MULTIPLE STREAMS FRAMEWORK, PROBLEM FEEDBACK, AND OVERSIGHT

A. Overview of the Multiple Streams Framework

The Multiple Streams Framework (“MSF”) is one of the important contemporary theories of the policy process. The Framework helps explain the dynamics of agenda-setting and policy change in legislative settings and within the context of policy implementation.⁵ The Framework’s theoretical assumptions are grounded in the garbage can model of organizational decision-making that conceived of organizations as loosely arranged “organized anarchies,” characterized by fluid participation, unclear technology, and problematic preferences.⁶ When Kingdon observed the workings of the United States Congress, he saw organized anarchies at work in the broader policy process: participants in the policy process were making choices that defied expectations rooted in theories of bounded rationality. Kingdon observed that certain policy problems gained attention, while others fell by the wayside, and that representatives were making choices about how to vote on a bill.⁷

A robust body of scholarship has developed around the MSF to better understand the policy process. This section provides a brief overview of the Framework itself before the paper begins a deeper examination of the idea of policy feedback. The main assumption of the MSF is that policymaking is characterized by ambiguity, time constraints, problematic policy preferences, unclear technology, and fluid participation in the policy process.⁸

The assumption of ambiguity means there are many ways in which a policy problem can be defined.⁹ Ambiguity is not the same as uncertainty in models of decision making grounded in bounded rationality; uncertainty describes decision-makers’ inability to gather all information about a problem and its solutions, which means that decision makers need to make the best decision available to them with the information they can reasonably gather. Unlike uncertainty, ambiguity cannot be reduced with

5. KINGDON, *supra* note 1, at 71; HERWEG ET AL., *supra* note 4; Michael Howlett et al., *Streams and Stages: Reconciling Kingdon and Policy Process Theory*, 54 EUR. J. POLIT. RES. 419, 420 (2015).

6. Michael D. Cohen et al., *A Garbage Can Model of Organizational Choice*, 17 ADMIN. SCI. Q. 1, 1 (1972).

7. JOHN W. KINGDON, *CONGRESSMEN’S VOTING DECISIONS 3–5* (3rd ed. 1989).

8. HERWEG ET AL., *supra* note 4, at 18.

9. Nikolaos Zahariadis & Theofanis Exadaktylos, *Policies that Succeed and Programs that Fail: Ambiguity, Conflict, and Crisis in Greek Higher Education*, 44 PUB. POL’Y STUD. J. 59 (2016).

more information.¹⁰ Instead, the assumption of ambiguity suggests there are—and will always be—various incongruent ways of thinking about the same problem. These varying understandings of the same problem are competing problem definitions, which broadly denote the ways in which problems get communicated and framed. In this respect, all problems are socially constructed, as opposed to technocratic issues that can be resolved through an informed analysis and application of certain agreed upon “facts.” Complicating matters further, policymakers are constrained by time and must contend with several problems at once, rather than handling them one at a time.¹¹ Moreover, the intersection of ambiguity and time constraints results in a set of problematic policy preferences among actors.¹² For example, support for a climate change bill might have been easy to give when a lawmaker was early in her term but may not pose the same electoral benefits close to her next election. Unclear technology means that the institutional arrangements, jurisdictions, and responsibilities of actors are unclear to members.¹³ This is particularly important because legislators and their staff can become frustrated by unresponsive or unresponsive bureaucrats, while bureaucracies can become overwhelmed with onerous reporting rules assigned by the legislature.¹⁴ Finally, fluid participation means that multiple actors flow in and out the policy process, such as through turnover in a legislature after elections, or as seen in the so-called “revolving door of officials” who move between private industry and leadership positions within public agencies.¹⁵

These assumptions are the backdrop for three streams of independent policy making activity: the problem stream, the politics stream, and the policy stream.¹⁶ When these streams come together, a window of opportunity opens for increased attention to a policy problem and its potential solutions, thereby increasing the probability that some sort of policy change will result.¹⁷ These windows open because the political timing is right, such as after a significant election, or after a large-scale crisis or disaster.¹⁸ Policy windows are rare and create opportunities for

10. Kristin Taylor et al., *Ambiguity, Uncertainty and Implementation*, 3 INT. REV. PUB. POL’Y, 100, 115 (2021) (last visited May 26, 2021); Zahariadis & Exadaktylos, *supra* note 9, at 77.

11. HERWEG ET AL., *supra* note 4, at 18.

12. *Id.*

13. Cohen, et al., *supra* note 6, at 2.

14. HERWEG ET AL., *supra* note 4, at 19.

15. *Id.* at 20.

16. Howlett et al., *supra* note 5, at 420-21.

17. *Id.* at 421.

18. *Id.* at 423.

policy entrepreneurs—participants in the policy process who invest time and effort to advance particular policy ideas—to couple a preferred policy alternative with a problem, given favorable political conditions.¹⁹

In the problem stream, policy problems emerge and gain attention.²⁰ Policy scholars assume that public policies are made in response to a problem²¹ that government action can address.²² However, given the assumption of ambiguity, policy problems are not self-evident, and perceptions of a policy problem's prevalence and severity will vary. Indeed, because of ambiguity and problematic preferences, policy problems are not considered to be objective facts, but instead are socially constructed and manipulated by participants in the policy process to not only gain attention to the problem but to lead decision makers to a particular solution.

There are three ways that policymakers and the public learn about policy problems in the MSF. The first way are changes in problem indicators,²³ like the unemployment rate or violent crime rate, which suggests a policy problem that is getting worse and needs attention. The second way are what Birkland²⁴ called potential focusing events, which may open a window of opportunity because these events are sudden, rare, reveal actual or potential harms, become recognized by the public and policymakers virtually simultaneously, and are concentrated in a particular location or disproportionately affected community interest. Third, feedback brings problems to the attention of lawmakers and these problems are ones that suggest a policy may not be meeting its legislative mandate, may not be working effectively, or that there are unanticipated negative consequences.²⁵

In the problem stream, members of the policy community, including bureaucrats and technical experts, float ideas and policy solutions to produce a set of worked out policy solutions that await a propitious time

19. Sarah E. Anderson et al., *Policy Entrepreneurs, Legislators, and Agenda Setting: Information and Influence*, 48 POL'Y STUD. J. 587, 604 (2020); Paul Cairney, *Three Habits of Successful Policy Entrepreneurs*, 46 POL'Y & POLIT. 199, 210 (2018).

20. Howlett et al., *supra* note 5, at 420.

21. THOMAS A. BIRKLAND, AN INTRODUCTION TO THE POLICY PROCESS: THEORIES, CONCEPTS, AND MODELS OF PUBLIC POLICY MAKING 11 (4th ed. 2020).

22. Daniel Béland & Michael Howlett, *The Role and Impact of the Multiple-Streams Approach in Comparative Policy Analysis*, 18 J. COMP. POL'Y ANAL. RES. PRACT. 221, 222 (2016).

23. Rob A. DeLeo, *Indicators, Agendas and Streams: Analysing the Politics of Preparedness*, 46 POL'Y POL. 27, 41 (2018).

24. BIRKLAND, *supra* note 1, at 3; Thomas A. Birkland, *Focusing Events, Mobilization, and Agenda Setting*, 18 J. PUB. POL'Y 53, 72 (1998).

25. KINGDON, *supra* note 1, at 31.

to link the solution to emerging problems.²⁶ The make-up of the policy community with the policy stream often is indicative of what the process is to sort through the “primordial soup” of policy alternatives.²⁷

Finally, the politics stream describes the political context for policy making. There are three core elements: the national mood, interest groups and government.²⁸ This is a broad set of elements that has been advanced to include public opinion²⁹ and party politics.³⁰

B. Problem Feedback and the Role of Oversight in the Multiple Streams Framework

According to Kingdon,

Through the normal course of events, government officials receive feedback about the operation of existing programs. They monitor expenditures, have experience with administering programs, evaluate and oversee implementation, and receive complaints. This feedback often brings problems to their attention; programs are not working as planned, implementation that does not square with their interpretation of the legislative mandate, new problems that have arisen as a result of the program’s enactment, or unanticipated consequences that must be remedied.³¹

This conceptualization of feedback suggests that government officials—either in the legislative or executive branches—receive feedback about policy problems during day-to-day government operations. Tasked with passing laws and implementing the policies and programs that emerge from laws, lawmakers and bureaucrats alike get information about how policies are working in the form of feedback. When legislators receive feedback about the performance of a policy or agency officials receive feedback about the implementation of a program, attention to the policy problem increases. In the MSF, increasing attention

26. NICOLE HERWEG, CLARIFYING THE CONCEPT OF POLICY COMMUNITIES IN THE MULTIPLE STREAMS FRAMEWORK 125, 126 (Friedbert W. Rüb & Reimut Zohlnhöfer eds., 2016); KINGDON, *supra* note 1, at 172.

27. HERWEG, *supra* note 26, at 126.

28. KINGDON, *supra* note 1, at 146.

29. Nikolaos Zahariadis, *The Shield of Heracles: Multiple Streams and the Emotional Endowment Effect*, 54 EUR. J. POL. RES. 466, 477 (2015).

30. HERWEG ET AL., *supra* note 4, at 24.

31. KINGDON, *supra* note 1, at 100.

to a problem is critical because it places the issue on the policy agenda, thereby creating the potential to initiate attention and policy change.

Unlike problem indicators and focusing events, Kingdon's definition of feedback suggests more of a principal-agent relationship between goal-oriented lawmakers and the bureaucrats entrusted to carry out the will of the legislature. This assumes that policy making and governance are goal oriented.³² Feedback effectively functions as a category of the performance management functions of government, falling within principal-agent theories of governance.

There are three broad types of feedback in the MSF: systematic monitoring, complaints and casework, and bureaucratic experience.³³ *Systematic monitoring* is defined as the regular monitoring and evaluation studies of the performance of programs. Systematic monitoring is feedback that comes from the regular monitoring of a program or policy, either within a government agency³⁴ or as a part of the so-called "police patrols" work of standing congressional committees.³⁵ This set of systematic monitoring implies that feedback is generated from within the policy community that is actively engaged in work on the problem. Systematic monitoring is one way to build in bureaucratic accountability by providing independent information about how a policy is performing,³⁶ such as that provided by independent Offices of Inspector General (OIG) at the federal, state, and local levels.³⁷ OIGs are independently "responsible for identifying problems and making recommendations for fixing problems."³⁸ OIGs create this feedback from systematic monitoring activities such as regular performance management activities, program evaluation and monitoring, and audits for regulatory and contract compliance. OIGs appear to be fairly effective at identifying systemic problems, but are limited, at the federal level, by the extent to which their leaders must be congressionally confirmed.³⁹

32. THOMAS A. BIRKLAND, *LESSONS OF DISASTER: POLICY CHANGE AFTER CATASTROPHIC EVENTS* 15–17 (2006); Birkland, *supra* note 24, at 8.

33. *See e.g.*, PAUL CHARLES LIGHT, *MONITORING GOVERNMENT: INSPECTORS GENERAL AND THE SEARCH FOR ACCOUNTABILITY* 16–17 (1993); Mathew D. McCubbins & Thomas Schwartz, *Congressional Oversight Overlooked: Police Patrols Versus Fire Alarms*, 28 AM. J. POLIT. SCI. 165 (1984).

34. LIGHT, *supra* note 33.

35. McCubbins & Schwartz, *supra* note 33, at 166.

36. *Id.*

37. Robin J. Kempf, *Crafting accountability policy: Designing offices of inspector general*, 34 POL'Y SOC. 137–149, 140 (2015).

38. LIGHT, *supra* note 33, at 19.

39. Robin J. Kempf & Jessica C. Cabrera, *The De Facto Independence of Federal Offices of Inspector General*, 49 AM. REV. PUB. ADMIN. 65, 67 (2019).

We define “complaints and casework” as activities that draw the attention of legislators, resulting in oversight activities. Complaints and casework are consistent with the so-called “fire alarm” style of oversight.⁴⁰ In essence, complaints from constituents about how a policy or program is performing serve as feedback that there is a policy problem that requires attention. However, there are constraints on the extent to which complaints and casework initiate problem feedback. Congress is less likely to hold oversight hearings on an issue when policy conflict with the responsible agency is low; in circumstances of high policy conflict between Congress and the responsible agency that makes oversight hearings likely to occur.⁴¹ When policy and political conflict are low, Congress is inclined to use a favorable political environment to conduct “retrospective oversight” as a way of adjusting policies adopted under the prior presidential administration.⁴² While the efficacy of oversight is limited in circumstances with multiple committees having overlapping jurisdictions,⁴³ the complaints and casework that initiate oversight remain important mechanisms of problem feedback. The third form of feedback in the MSF is bureaucratic experience where people working in government agencies have knowledge and expertise from the day-to-day administration of a program and channel that feedback to lawmakers.⁴⁴

The content of the feedback messages, whether received from systematic monitoring, complaints and casework, or bureaucratic expertise, shapes how a problem is interpreted Kingdon lists four types of content feedback.⁴⁵ First, feedback may signal that implementation is not meeting legislative intent.⁴⁶ Feedback messages that send a signal a policy is not being implemented in a way that aligns with legislative intent are consistent with the problems associated with goal ambiguity and goal

40. McCubbins & Schwartz, *supra* note 33, at 166.

41. Robert J. McGrath, *Congressional Oversight Hearings and Policy Control*, 38 LEGIS. STUD. Q. 349, 350 (2013).

42. Jason A. MacDonald & Robert J. McGrath, *Retrospective Congressional Oversight and the Dynamics of Legislative Influence over the Bureaucracy: Retrospective Congressional Oversight*, 41 LEGIS. STUD. Q. 899, 917 (2016).

43. Joshua D. Clinton et al., *Influencing the Bureaucracy: The Irony of Congressional Oversight*, 58 AM. J. POLIT. SCI. 387, 387 (2014).

44. KINGDON, *supra* note 1, at 101.

45. *Id.*

46. *Id.*

conflict⁴⁷ in addition to notions of accountable bureaucracy.⁴⁸ Second, feedback can reveal that a policy has failed to meet its goals. There are many reasons why policies can fail to meet their stated goals.⁴⁹ Evidence of policy failure may trigger attempts by policymakers to learn from this feedback and work to improve the policy.⁵⁰ Third, program costs may need to be reconsidered, particularly if they are greater than anticipated. Fourth, that there are unanticipated consequences that arise during policy implementation that will gain lawmakers' attention and will generate demands for action to ameliorate the negative effects of these consequences.

III. CASE STUDY: THE MID-MICHIGAN DAM FAILURES

We rely on a case study for this analysis. Case studies are a useful tool for social science research because they allow for an in-depth examination of an event or set of circumstances through a well-articulated theoretical lens.⁵¹ A case study methodology is consistent with other examinations of events in the policy process, including natural disasters⁵² and technological accidents.⁵³ The cases we use are the 2020 Edenville and

47. Richard E. Matland, *Synthesizing the Implementation Literature: The Ambiguity-Conflict Model of Policy Implementation*, 5 J. PUB. ADMIN. RES. & THEORY 145, 147 (1995); see also Nikolaos Zahariadis, *Ambiguity and Choice in European Public Policy*, 15 J. EUR. PUB. POL'Y 514, 514 (2008). See also Taylor et al., *supra* note 10, at 115.

48. Mark Bovens, *Analysing and Assessing Accountability: A Conceptual Framework*, 13 EUR. L. J. 447, 448–49 (2007); LIGHT, *supra* note 33, at 17; MacDonald & McGrath, *supra* note 42, at 901–02; McGrath, *supra* note 41, at 350–351; McCubbins & Schwartz, *supra* note 33, at 165–66; Clinton et al., *supra* note 43, at 388.

49. Allan McConnell, *What is Policy Failure? A Primer to Help Navigate the Maze*, 30 PUB. POL'Y ADMIN. 221, 222 (2015); Allan McConnell, *A Public Policy Approach to Understanding the Nature and Causes of Foreign Policy Failure*, 23 J. EUR. PUB. POL'Y 667, 668 (2016); Michael Howlett et al., *Understanding the Persistence of Policy Failures: The Role of Politics, Governance and Uncertainty*, 30 PUB. POL'Y ADMIN. 209, 210–11 (2015); Allan McConnell, *Ripples Not Waves: A Policy Configuration Approach to Reform in the Wake of the 1998 Sydney Water Crisis*, 21 GOVERNANCE 551, 552–53 (2008).

50. Peter J. May, *Policy Learning and Failure*, 12 J. PUBLIC POL'Y 331, 332–33 (1992); Kristin O'Donovan, *Policy Failure and Policy Learning: Examining the Conditions of Learning after Disaster*, 34 REV. POL'Y RES. 537, 538–39 (2017); BIRKLAND, *supra* note 32, at 15–17.

51. ROBERT K. YIN, *CASE STUDY RESEARCH AND APPLICATIONS: DESIGN AND METHODS* 176 (6th ed. 2018).

52. O'Donovan, *supra* note 50, at 537.

53. Thomas A. Birkland, *Learning and Policy Improvement After Disaster: The Case of Aviation Security*, 48 AM. BEHAV. SCI. 341, 341 (2004).

Sanford dam failures in Michigan.⁵⁴ The dam failures present a useful case for examining oversight as a form of feedback in the MSF for two reasons. First, because of the long duration of oversight, it allows us to examine the different ways that policy feedback emerged before and after the failure. Second, it allows us to examine the intergovernmental aspects of oversight on an issue that transcends federal, state, and local jurisdictions.

We consider oversight and policy feedback taking place in two distinct eras in the Edenville and Sanford dam cases. The first era spans from 1999 to 2017, in which federal agency oversight relied on feedback in the forms of systematic monitoring and bureaucratic expertise. The second era of oversight occurs between 2017 and 2021, relying on legislative and agency oversight at the federal and state levels of government. In this era, feedback manifests primarily as complaints and casework and systematic monitoring.

In central Michigan in May 2020, the Edenville and Sanford dams failed.⁵⁵ These dam failures, coupled with historic rainfall,⁵⁶ contributed to significant flooding of the Tittabawassee River with devastating impacts on the City of Midland. The Edenville and Sanford dams were built in the 1920s and structurally were composed of earth fill, grated concrete spillways and powerhouses.⁵⁷ The dams were both privately owned, operated and maintained by a private firm, Boyce Hydro Power.⁵⁸ Problems with the dams and their maintenance were well known prior to the failure.⁵⁹ Before the failure, the most recent and notable signal of a problem occurred when the Federal Energy Regulatory Commission (FERC) revoked the license for the Edenville dam to operate its powerhouse in 2018.⁶⁰ FERC is an independent agency of the federal government that regulates the interstate transmission of electricity, natural

54. See, e.g., JOHN W. FRANCE ET AL., INVESTIGATION OF FAILURES OF EDENVILLE AND SANFORD DAMS (2021), https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/Edenville-Sanford_Interim%20Report_Sept2021_Final.pdf [<https://perma.cc/8K2H-QG5Z>].

55. FRANCE ET AL., *supra* note 54, at 1.

56. Steve Carmody, *Floodwaters in Midland Crest*, MICH. PUB. RADIO (May 20, 2020, 10:29 PM), <https://www.michiganradio.org/weather/2020-05-20/floodwaters-in-midland-crest> [<https://perma.cc/U2Q3-6KWY>].

57. FRANCE ET AL., *supra* note 54, at 1–2.

58. Steve Carmody, *Michigan's U.S. Senators Want More Regulation for Privately Owned Dams*, MICH. PUB. RADIO (May 23, 2020, 5:06 PM), <https://www.michiganradio.org/politics-government/2020-05-23/michigans-u-s-senators-want-more-regulation-for-privately-owned-dams> [<https://perma.cc/G92Z-LAAC>].

59. *Id.*

60. FRANCE ET AL., *supra* note 54, at i; Carmody, *supra* note 58.

gas and oil.⁶¹ It also reviews proposals to build liquified natural gas terminals, interstate natural gas pipelines, and the licensing of hydropower projects.⁶² However, these problems and the signals of problems with the maintenance and operation of the dams persisted, sending feedback through the federal government and State of Michigan.

In 1998, the Federal Energy Regulatory Commission (FERC) issued a license to what ultimately would become Boyce Hydro Power to operate the Edenville and Sanford dams to generate hydroelectricity.⁶³ In 2004, Wolverine Power transferred the federal licenses to operate to a corporation named Synex Michigan, which later changed its name to Boyce Hydro.⁶⁴ Boyce Hydro licensed the operations of the dams to Wolverine Power Corporation.⁶⁵ In January 1999, the Division of Dam Safety and Inspections of the Chicago region of FERC, notified Wolverine power that they needed to increase the spillway capacity of the Tittabawassee and Tobacco spillways that were part of what is known as the Edenville Dam Project, the collection of the Sanford, Secord, Smallwood, and Edenville dams.⁶⁶ This notification marked a period of 18 years of FERC's oversight of Boyce Hydro's operation and maintenance of the Edenville Dam Project using systematic monitoring and bureaucratic experience.⁶⁷

From 1999 through 2017, the Regional Engineer for FERC monitored the regulatory compliance of Boyce Hydro's licensed operation and maintenance of the Edenville and Sanford dams specifically and the larger Edenville Dam Project generally.⁶⁸ In 1999, FERC notified Boyce Hydro that it needed to increase the spillway capacity of both the Edenville and Sanford Dams.⁶⁹ There is little evidence in public records to suggest that Boyce Hydro responded to this notice. Subsequently, in 2001, FERC issued a notice to Boyce Hydro that it had failed to comply with public access requirements, it failed to construct and maintain required recreation facilities, and that it had performed unauthorized repairs and earth moving practices.⁷⁰

61. U.S. FED. ENERGY REG. COMM'N, *What FERC Does* (Nov. 19, 2020), <https://www.ferc.gov/about/what-ferc/what-ferc-does> [<https://perma.cc/FV77-KNKV>].

62. *Id.*

63. U.S. FED. ENERGY REG. COMM'N, ORDER REVOKING LICENSE: ORDER 16 FERC 61,187 1 (2018), <https://www.ferc.gov/sites/default/files/2020-06/10808-058.pdf> [<https://perma.cc/J6NY-T36B>].

64. *Id.* at 3.

65. *Id.*

66. *Id.* at 2–3.

67. *See generally id.*

68. *Id.* at 3–7.

69. *Id.* at 3–7.

70. *Id.* at 7.

Attempts by FERC to ensure compliance of the dams' spillway capacity occurred over many years, with Boyce Hydro requesting multiple extensions and ultimately receiving multiple violation notices.⁷¹ During this time, agency oversight shifted from an approach of systematic monitoring to one of bureaucratic expertise in the period from 2002 to 2008. Beginning in June 2002, FERC issued a letter to Wolverine Power (that would subsequently become Boyce Hydro), requiring the operator to file a plan and schedule for completion of the spillway changes by June 30, 2002.⁷² Boyce Hydro failed to meet this deadline and subsequently repeatedly asked FERC for a series of extensions over the course of two years.⁷³

In November 2004, the FERC Regional Engineer notified Boyce Hydro that it was required to complete the feasibility and requirements study to expand the spillway by December 23, 2004.⁷⁴ Boyce Hydro was later granted an extension until January 31, 2005.⁷⁵ These requirements to increase spillway capacity were intended to increase the probable maximum flood capacity (PMF) of the dams to protect life, property, and the natural environment in case of a flood.⁷⁶ Boyce Hydro again failed to meet the January 31 deadline to submit a plan and schedule for spillway improvements.⁷⁷ In February 2005, the FERC Regional Engineer issued a letter finding Boyce Hydro in violation of regulatory compliance and that continued violations would result in civil penalties.⁷⁸ Subsequently, in August of 2005, FERC instructed Boyce Hydro to hire a board of independent, professional engineers to oversee, review, and assess the planning, design and construction of the spillway plans.⁷⁹ It is unclear from public documents whether Boyce Hydro complied with FERC's request. FERC required an updated plan for the spillway project in August of 2006.⁸⁰ Over a year later in November 2007, Boyce Hydro requested to develop a new design plan and schedule for the spillway project, and FERC approved the request.⁸¹ Ultimately, Boyce Hydro submitted their plans for the spillway project but the FERC Regional Engineer rejected

71. *See generally id.*

72. *Id.* at 3.

73. *Id.* at 3–4.

74. *Id.* at 4.

75. *Id.* at 4–7.

76. *Id.* at 26.

77. *Id.* at 4.

78. *Id.*

79. *Id.* at 4–5.

80. *Id.* at 5.

81. *Id.*

them on October 31, 2008 because they were insufficient.⁸² In November 2008, Boyce Hydro responded by requesting a time extension because it lacked the finances to implement plans for the spillway project that FERC deemed sufficient.⁸³ FERC granted the requested extension in February 2009.⁸⁴ Ultimately, the back and forth between FERC and Boyce Hydro regarding the spillway project, with requests for plans and subsequent requests for schedule changes and modifications, continued through 2017.⁸⁵

This period of agency oversight that occurred between 1999 and 2017 can be characterized as a period in which systematic monitoring took place as FERC acted on a “police patrol” of Boyce Hydro’s operation and maintenance of the Edenville and Sanford Dams. When appropriate, FERC issued violations for noncompliance, but these instances were rare, with violation notices being issued in 2001 and 2005.⁸⁶ However, during this period of agency oversight, FERC relied on bureaucratic experience to generate policy feedback about the performance of Edenville and Sanford dams. FERC issued multiple letters, sets of instructions and requirements, and deadline extensions.⁸⁷ Such activities fall under the bureaucratic experience category of policy feedback and ultimately oversight.

The challenge for oversight during the 1999–2017 period is ultimately one of visibility. FERC’s police patrol oversight of Boyce Hydro did not send feedback beyond the agency, the dam operator, or presumably, people who lived near the dams. While a series of letters between FERC staff and Boyce Hydro certainly created a paper trail to ensure bureaucratic accountability, it did little to send a signal that the policies intended to ensure dam safety were being properly implemented. Furthermore, the feedback that came from systematic monitoring failed to send a signal beyond the confines of the agency that this was a problem that required attention.⁸⁸ One potential explanation is that the content of the feedback message did not signal that dam safety policies were not being implemented as intended, that the policy had not failed, or that there were not unanticipated costs.

The second era of oversight begins in 2017, and during this time there is more policy feedback that comes from oversight conducted by federal agencies, state agencies, the United States Congress, and the Michigan

82. *Id.*

83. *Id.* at 5–6.

84. *Id.* at 6.

85. *Id.* at 3–7.

86. *Id.* at 4, 7.

87. *Id.* at 3–7.

88. *Id.*

State Senate.⁸⁹ On June 15, 2017, FERC issued a compliance order detailing the deficiencies of the spillways, the multiple requests for extensions for design and construction, and violations of water quality monitoring by Boyce Hydro in their operation of the Edenville Dam Project.⁹⁰ In response, the Michigan Department of Natural Resources (DNR) filed a concurrence with FERC's assessment of Boyce Hydro's compliance issues and requested a clarification on some technical points of the order.⁹¹ The order and concurrence serve as systematic monitoring of the Edenville and Sanford dams, and marks the point where oversight has visibility beyond a single government agency. In this instance, the content of the feedback message suggests that the dam safety policies are not being implemented as intended.

On November 20, 2017, FERC issued a Cease Generation order to Boyce Hydro. A cease generation order means that Boyce Hydro can no longer generate electricity from the operation of the Sanford and Edenville dams. The cease generation order begins a process in which Boyce Hydro's license to operate the dams will be revoked. On February 15, 2018, FERC issued an order proposing the revocation of Boyce Hydro's federal license to operate the dams.⁹² This series of systematic monitoring of Boyce Hydro's dam license and the proposed revocation generated more visibility and attention from outside groups. On March 14, 2018, Consumers Energy Company, the Michigan Department of Natural Resources, the Wixom Lake Association, Tobacco Township, the Gladwin County Commission, and Sanford Lake Preservation Association filed motions requesting the FERC revocation of a license not to compromise the dam, its use and the surrounding environment.⁹³ In terms of feedback, this proposed order to revoke Boyce Hydro's license sends messages that dam safety policies are not working as intended and potentially the policy has failed in so far as the dams cannot be operated in a way that safely generates hydroelectricity.

Ultimately, the FERC revoked Boyce Hydro's license to operate the dams to generate hydroelectric power in September 2018.⁹⁴ At that time the Department of Natural Resources (DNR) for the State of Michigan⁹⁵

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.*

93. *Id.*

94. *Id.*

95. Mich. Exec. Order No. 2011-01 (Jan. 4, 2011), https://www.michigan.gov/documents/snyder/EO-01-2011_342039_7.pdf [<https://perma.cc/6UEL-J7MK>]. The Michigan Department of Environmental Quality (DEQ) and the Department of Natural

assumed regulatory authority over the dams, including plans and specifications for maintenance, setting minimum spillway capacity, and requiring prior approval before modifying dams.⁹⁶ Beginning on September 25, 2018, the Michigan DNR had jurisdiction over the dam and conducted a cursory physical inspection of the dam on October 4, noting that it was functioning in fair condition with signs of erosion.⁹⁷ In early November 2018, Michigan DNR inspected the dams because of complaints from the community about drawdowns from Wixom Lake. These drawdowns were notable because they compromised the homes of lakefront residences and violated the federal protection of an endangered species of mussels. Much of the agency oversight by the State of Michigan between 2018 and 2020 focused on the regulation of the dams on drawdowns of Wixom Lake that pitted the State's arguments that drawdowns violated for protection of an endangered species of mussels against Boyce Hydro's arguments about the affordability and safety of operating the dams.⁹⁸ Oversight of the dam and of drawdowns of Lake Wixom continued, albeit in a different venue: the courts. On May 28, 2019, Midland Circuit Court issued an order setting the legal lake levels for Wixom Lake in a legal complaint brought by the Four Lakes Task Force.⁹⁹ The Four Lakes Task Force (FLTF) is a community-based non-profit that works with the Midland and Gladwin County governments.¹⁰⁰

Resources (DNR) were created in 2011 and had jurisdiction over dam safety in the state. In 2019, the DEQ was renamed the Department of Environment, Great Lakes, and Energy (EGLE) and retains jurisdiction over dam safety. Mich. Exec. Order No. 2019-02 (Feb. 4, 2019), <https://www.michigan.gov/whitmer/news/state-orders-and-directives/2019/02/04/executive-order-2019-2> [<https://perma.cc/HS7T-HGZ5>].

96. U.S. FED. ENERGY REGUL. COMM'N, *supra* note 61, at 12.

97. Jim Pawloski, *Edenville Dam - Dam ID 549, Gladwin County* DEP'T OF ENV'T QUALITY 1-2 (2018), <https://www.michigan.gov/documents/egle/egle-EdenvilleDamInspection-100420186912457.pdf> [<https://perma.cc/7KAP-24S9>].

98. Beth LeBlanc, *Dangers of Edenville Dam Failure Evaded State Scrutiny*, THE DET. NEWS (May 20, 2020, 9:23 PM), <https://www.detroitnews.com/story/news/local/michigan/2020/05/20/dangers-edenville-dam-failure-evaded-state-scrutiny/5228559002/> [<https://perma.cc/NBP3-MNXX>]; Mike Wilkinson et al., *Michigan Regulators Moved Fast on Dangerous Dam. To Protect Mussels*, BRIDGE MICH., (May 21, 2020), <https://www.bridgemi.com/michigan-environment-watch/michigan-regulators-moved-fast-dangerous-dam-protect-mussels> [<https://perma.cc/F6C8-FKLR>]; Cheyna Roth, *Timeline: The Edenville Dam Saga, Before, During and After the Break*, MLIVE (Sept. 1, 2020, 3:57 PM), <https://www.mlive.com/news/2020/09/timeline-the-edenville-dam-saga-before-during-and-after-the-break.html> [<https://perma.cc/23HV-SLYK>] (last visited Jan. 30, 2022).

99. In the Matter of Wixom Lake, Sandford Lake, Smallwood Lake and Second Lake, No. 19-5980-PZ (Mich. Cir. Ct., Midland Cnty. May 28, 2019).

100. Jason Hayes, *The 2020 Midland County Dam Failure* 4-5 (2020), https://www.mackinac.org/archives/2020/2020_midland_dam_failure.pdf [<https://perma.cc/7HRC-XVNB>].

In the time leading up to the dam failures, the FLTF agreed to purchase all the dams in the Edenville project from Boyce Hydro in December 2019, in an effort to maintain the dams and preserve the communities, wetlands and wildlife in the area surrounding the dams.¹⁰¹ The purchase and transfer of ownership to FLTF was planned to occur in January 2022 when Boyce Hydro completed agreed upon repairs. was in negotiations to buy the dams from Boyce Hydro.¹⁰² The Four Lakes Task force had conducted its own independent assessment of the dams prior to the floods and had been in discussion with FERC and EGLE along the way.¹⁰³ The FLTF's independent structural assessment of the dams occurred in June 2019, with the report issued in March 2020, finding that the Edenville dam did not have the capacity to handle a "probable maximum flood," a standard for dam safety required by the State of Michigan.¹⁰⁴

After the federal revocation of Boyce Hydro's license and the transfer of regulatory jurisdiction to the State of Michigan, agency oversight continued, creating feedback from systematic monitoring of the dams and their operation but also the surrounding environment, habitats, and property interests. Effectively, the transfer of jurisdiction to the State of Michigan meant that there was much more visibility and attention paid to the problems with the dams. Moreover, in contrast to FERC's oversight of the dams, the problems that were being signaled in feedback transcended spillway requirements and improvements to other policy areas. The feedback that occurred suggested that the oversight of dam safety was a policy that was not working as intended, and in some instances of drawdowns from Wixom Lake, the policies had failed.

On May 19, 2020, during a very large rainstorm, the Midland and Sanford dams failed, flooding the surrounding communities, damaging or destroying roads, houses, and infrastructure.¹⁰⁵ There were 11,000 people who were evacuated from their homes, although there were no injuries or fatalities, 2,500 structures were damaged, resulting in \$250 million dollars in property damage.¹⁰⁶ The flood initiated additional oversight of the disaster and circumstances leading up to it. On May 27, 2020, Michigan Governor Gretchen Whitmer directed EGLE to conduct an investigation

101. *Id.*

102. FRANCE ET AL., *supra* note 54, at 6–9.

103. FRANCE ET AL., *supra* note 54, at 6–9; LeBlanc, *supra* note 98; U.S. FED. ENERGY REG. COMM'N, *supra* note 63, at 12.

104. Ashley Schafer, *New Edenville Dam Report Confirms Its Capacity Was Not up to Regulation*, MIDLAND DAILY NEWS (June 12, 2020), <https://www.ourmidland.com/news/article/New-Edenville-Dam-report-confirms-it-s-capacity-15336591.php> [<https://perma.cc/DSA8-DG3R>].

105. Roth, *supra* note 98.

106. FRANCE ET AL., *supra* note 54, at i–ii.

to determine the cause of the failures.¹⁰⁷ On June 1, 2020, the Committee on Energy and Commerce in the United States House of Representatives began an oversight inquiry to assess the transfer of regulatory authority from FERC to the State of Michigan.¹⁰⁸ On June 10, 2020, the Michigan State Senate conducted oversight by holding a series of joint sessions of the committees on Environment and Energy and Technology.¹⁰⁹ These hearings investigated the actions of state dam safety regulators and officials from FERC from June 10-23, 2020. For legislative oversight at both the state and the federal levels, the focus was not necessarily on the failure of dam safety regulators to meet their intended purpose. Instead, it appears that the content of the feedback message focused on the failure of intergovernmental relationships to facilitate the handoff of jurisdiction of a doomed pair of dams that had been neglected under the jurisdiction of federal and state regulators for two decades. In the end, an independent investigation into the dam failure stated static soil liquefaction as the cause of the Edenville Dam failure and embankment overtopping as the cause of the Sanford dam failure.¹¹⁰

IV. DISCUSSION

The Edenville and Sanford Dam failures provide a cautionary example of the limitations of policy feedback as a mechanism for effective infrastructure governance and disaster mitigation. Policy scholars often use the term “conflict expansion” to characterize the process through which policy debates evolve from localized, often private troubles to items worthy of attention on the crowded institutional agenda.¹¹¹ In the case of the Midland dam failures, agency oversight limited the potential for a conflict expansion beyond the relationship between FERC and Boyce Hydro. As a result, there was very little visibility of the issue of dam safety to other outside groups that might have been interested in the issue. This was particularly acute during the period of 1999–2017, when much of the policy feedback came in the form of systematic monitoring and

107. Press Release, Office of the Governor, Governor Whitmer Directs EGLE to Investigate Failures of Edenville, Sanford Dams (May 27, 2020), <https://www.michigan.gov/whitmer/news/press-releases/2020/05/27/governor-whitmer-directs-egle-to-investigate-failures-of-edenville-sanford-dams> [<https://perma.cc/DRG4-JVT3>].

108. Roth, *supra* note 98.

109. Garrett Ellison, *Edenville Dam Failure Investigation to Take ‘Many Months,’* MLIVE (Jun. 10, 2020, 12:06 PM), <https://www.mlive.com/news/2020/06/edenville-dam-failure-investigation-to-take-many-months.html> [<https://perma.cc/35BP-QF4C>].

110. FRANCE ET AL., *supra* note 54, at 25–30.

111. E.E. SCHATTSCHNEIDER, *THE SEMISOVEREIGN PEOPLE* 20–25 (1975); SARAH BETH PRALLE, *BRANCHING OUT, DIGGING IN: ENVIRONMENTAL ADVOCACY AND AGENDA SETTING* 13–15 (2006).

bureaucratic experience. For each of those types of feedback, the content of the message was clear: the federal dam safety policy was not working as intended. In the absence of an audience for such a message, feedback was contained within FERC, thus limiting any potential signals to expand conflict to communities of interest.

After the 2020 dam failure and floods, Boyce Hydro's license and the regulatory agencies tasked with oversight found their way to the institutional agendas of the Michigan State Senate as well as the United States Congress.¹¹² In both instances, the debate centered on bureaucratic accountability while investigating the events leading up to the failure, presumably to ensure similar crises never happened again. At first glance, this policy sequence would appear to suggest a healthy and well-functioning policymaking system wherein elected officials use their power and influence to monitor bureaucratic failure and wrongdoing. Expansion was broad, spanning multi-levels and institutions of government, and appeared to activate the appropriate policy venues, namely committees with jurisdiction over dam safety issues.

Yet when couched within the larger context of policy process theory, the legislative response to the dam failures is in fact emblematic of a policymaking system that only responds to issues *after* they have blossomed into a full-blown crisis. Policy feedback represents one of several factors that help draw policymaker attention to previously ignored issues alongside indicators (measures or metrics of a policy problem) and potential focusing events (attention grabbing crises that become known to policymakers and the public simultaneously). In the context of the Multiple Streams Framework, the complaints and casework that rang fire alarms in federal and state legislative institutions and that led to oversight were framed as matters of bureaucratic accountability, not policy efficacy or failure.

Unlike sudden focusing events, feedback, and in some cases indicators, provide an opportunity to correct problems before they become a full-blown crisis. This feedback provides a window into the administrative process, thereby allowing policymakers to demand better service provision before existing issues spiral into crisis or, assuming the program is working as intended, support ongoing agency efforts. As evidenced in the case study, concerns about Boyce Hydro's management of the dams date back to at least the early 2000s, when FERC demanded the organization expand the dams' spillway in compliance with existing state regulations.¹¹³ But a series of extensions granted by FERC, paired with the revocation of Bryce Hydro's license, allowed the spillway issue—

112. Roth, *supra* note 98.

113. Roth, *supra* note 98.

as well as concerns about potential erosion—to continue unabated up until the dam failures.

At an agency level, the steady drumbeat of feedback documenting, at best, Boyce Hydro's lackluster response to spillway issues and, at worst, the organization's failure to comply with state environmental safety rules, failed to induce substantive change. Feedback alone, it seems, was an insufficient instrument for ensuring disaster mitigation. Indeed, it ultimately took the dam failure before the elected officials expressed concern with the state's dam system and, by then, it was far too late.

This case therefore raises important normative questions about the value of feedback as a mechanism for ensuring compliance with existing state rules, let alone for producing policy change. Of all the elements in Kingdon's problem stream, feedback is the process most inextricably linked to norms, rules, or cultures of the agencies tasked with carrying out public programs. These organizations are frequently given a degree of latitude in terms of how they chose to go about generating feedback, a testament to the inherent information asymmetries that exist between government agencies and elected officials, which means that the content of feedback itself may be less conducive to generating widespread public concern.

Put differently, a key question to ask when evaluating the efficacy of different types of policy feedback and agency communication is for whom is this information being generated and to what end? Most of the feedback produced in the years leading up to failure was highly technical, focusing almost exclusively on particularistic elements of the dam management without speaking to the larger risks associated with Boyce Hydro's performance and failure to expand the spillways. While this regulation based on technical information is commonplace within government agencies, it is unlikely to produce much of a response from elected officials, assuming they are even privy to this information in the first place.

Finally, it's notable that, at least in the case of the Edenville and Sanford Dam failures, feedback did not produce substantive policy change. Despite robust deliberation and investigation, the primary function of the legislative hearings from this period was to assign blame for the disaster and document bureaucratic failure. Legislators did not, however, create new policies aimed at reducing the likelihood of similar disasters in the future. As Birkland¹¹⁴ found, focusing events like industrial accidents provide an opportunity for learning about policy failure and improving policy as a result. But institutions of government must seize these opportunities if learning is to occur.

114. BIRKLAND, *supra* note 32, at 165–66.

V. CONCLUSION

This paper explored the nexus between policy feedback, infrastructure failure, and policy change. The Edenville and Sanford Dam failures suggest feedback is often insufficient catalyst for policy change. This is, in part, a testament to the overly technocratic nature of policy feedback in the administrative arena as well as the inherent political and time constraints confronting elected officials. Simply put, program monitoring is unlikely to rank high on the list of legislative priorities. Instead, rigorous review of feedback typically occurs in the aftermath of disaster or programmatic failures, which raises important questions about the normative value of feedback in the first place.

Of course, the Edenville and Sanford cases are not necessarily emblematic of the relative influence of policy feedback in all contexts. Indeed, emergency management policy has historically been an overly “event driven” area of policymaking in that robust interest group mobilization typically occurs in the aftermath of disaster, if it occurs at all. Hazard mitigation and preparedness projects that occur in the absence of a highly visible accident or disaster, like spillway expansions and dam restoration, rarely evoke a response from policymakers and interest groups.

Future research should explore the political dynamics of policy feedback in other policy domains, including those with more long-standing cultures of embracing this type of information as an important indicator of programmatic success. For example, a proverbial army of interest groups and government agencies constantly monitor the administration and implications of various economic and health care policies. To what extent do these reports shape policymaking at a regulatory or even legislative level?

Moreover, it is plausible that the influence of feedback will be highly contextual. For example, the COVID-19 pandemic has elevated previously ignored social and public health issues to the top of the government agenda, revealing significant gaps in the nation’s public health infrastructure and thereby creating new pathways for various forms of feedback to enter the public space. The news media is awash in feedback documenting everything from the allocation of COVID-19 relief money to the efficiency of existing testing programs to state administration of vaccines. Given the heightened level of issue attention to this problem, this type of reporting may—or may not—have greater resonance with elected officials.

Additionally, as noted above, the content of feedback may be an important determinant whether an item transcends the bureaucratic agenda

and manages to capture the attention of busy policymakers. Future research should probe this possibility further and more systematically since the implications of this finding will not only influence extant policy theory, but practitioner work as well since public administrators frequently seek to use feedback to advance agency interests.

In conclusion, the case study highlights the importance of oversight as a means of sending feedback to agencies, legislators, and the public about policy problems. There are three important implications. First, feedback about policy problems, particularly in terms of compliance of existing rules and regulations, may not be sufficient to initiate agenda change or policy change. Second, feedback in the form of complaints and casework certainly draws legislative attention to a policy issue but a disaster or crisis in the form of a focusing event may be necessary to ultimately motivate legislators to change policy. Third, and finally, the feedback represents a set of challenges about information and information asymmetries that exist between agencies, legislators, and the public. Future research is needed to understand the relationship between the extent to which information asymmetries help promote or constrain issue expansion.

Appendix A: Timeline of Oversight Activity, by Level of Government, Type of feedback, and Content of Feedback Message

Date	Activity	Level of Government/Unit	Type of Feedback	Content of Feedback Message
January 4, 1999	FERC Notice issued to increase spillway capacity	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended
1999	FERC Notice of failure to comply with water monitoring plan	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended
2001	Notice of violation of failure to comply with	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended

	requirements to grant public access to project facilities; failure to construct and maintain recreation facilities; unauthorized dam repairs and earth moving practices			
June 13, 2002	Letter issued requiring Wolverine to file plan and schedule for completion of spillway changes by July 31, 2002.	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
July 15, 2004	Transfer of dam ownership to Boyce Hydro. General acceptance of spillway plans. Required construction to begin by	Federal, Agency	None	

	October 2004.			
November 10, 2004	Meeting with FERC staff to review progress of conducting a Probable Maximum Flood (PMF) study that would be due on December 23, 2004	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
January 31, 2004	Boyce Hydro requested a deadline extension and FERC Regional Engineer granted it	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
February 24, 2004	FERC Regional Engineer issued a letter finding Boyce Hydro in violations of FERC regulations and continued violations would result in civil penalties	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended

August 24, 2005	FERC Regional Engineer instructed Boyce Hydro hire a board of independent professional engineers to oversee, review and assess the planning design and construction of the spillway projects	Federal, Agency	Bureaucratic Experience	Assurances for accountable bureaucracy
August 7, 2006	FERC Regional Engineer required an updated plan to address the spillway projects	Federal, Agency	Bureaucratic Experience	Assurances for accountable bureaucracy.
October 15, 2015	FERC issued violation of Boyce Hydro's license for failing to produce and implement its Recreation Plan	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended
November 8, 2007	Boyce Hydro sent a request for a	Federal, Agency	Bureaucratic Experience	Problems associated with goal

	new schedule and design of the spillway projects and the FERC Regional Engineer approved the request.			ambiguity and goal conflict
October 31, 2008	The FERC Regional Engineer rejected the design plans submitted by Boyce Hydro as being insufficient.	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
November 26, 2008	Boyce Hydro requests an extension because of funding. The FERC Regional Engineer granted the extension on February 9, 2009	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
August 1, 2013	FERC letter notifying Boyce it failed to comply with requirement to file an acceptable	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended

	public safety plan			
February 11, 2014	FERC Regional Engineer extended deadline for spill way complete construction by the end of 2015	Federal, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
August 2014	FERC Environmental Inspection project	Federal, Agency	Systematic Monitoring	Undetermined
2015	FERC Notice of violation for unauthorized repairs to the Tobacco abutment spillway. Notice of violation for failure to report that the dam was failing, that repairs had been made to a dam wall, that a quality control plan had not been filed, and that plan and	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended. Problems associated with goal ambiguity and goal conflict Policy failure.

	schedule to address repairs had not been filed.			
June 15, 2017	FERC Staff issued a compliance order detailing the deficiencies of the spillways and multiple time extensions for planning, design and construction , and violations of the Water Quality Monitoring plan.	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended. Policy failure.
June 19, 2017	Michigan Department of Natural Resources filed a request for clarification from FERC and concurred with the Commission 's assessment of Boyce's	Federal, Agency State, Agency	Systematic Monitoring	Policy not being implemented as intended.

	compliance issues			
November 20, 2017	FERC issued a Cease Generation Order	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended.
February 15, 2018	FERC issued an Order Proposing Revocation of License	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended.
March 14, 2018	Consumers Energy Company, the Michigan Department of Natural Resources, the Wixom Lake Association, Tobacco Township, the Gladwin County Commission, and Sanford Lake Preservation Association filed motions requesting the FERC revocation of a license not to compromise	Federal, Agency State, Agency Local, Legislative Local Executive	Systematic Monitoring	Policy not being implemented as intended. Problems associated with goal ambiguity and goal conflict. Policy failure.

	the dam, its use and the surrounding environment			
September 10, 2018	FERC Issues order revoking Boyce Hydro's license to operate the Edenville and Sanford Dams	Federal, Agency	Systematic Monitoring	Policy not being implemented as intended.
September 25, 2018	Effective date for revocation of license. The State of Michigan has regulator authority jurisdiction.			
October 4, 2018	Michigan Department of Natural Resources/Division of Environmental Quality conducts inspection of dams	State, Agency	Systematic Monitoring	Assurances for accountable bureaucracy.
November 2 and 9, 2018	DNR and DEQ inspection	State, Agency	Complaints	Policy not being

	of dams based on complaints of drawdowns			implemented as intended.
May 28, 2019	Midland Circuit Court issues order setting legal lake levels	State, Judicial	Systematic Monitoring	Problems associated with goal ambiguity and goal conflict
September 12, 2019	Michigan DEQ and DNR staff meet with the Four Lakes Task force to discuss winter drawdowns of Wixom Lake	State, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
November 17, 2019	DNR and DEQ Dam Safety Engineer meet with Boyce Hydro and the Four Lakes Task Force to discuss necessary dam repairs	State, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict
December 5, 2019	Boyce Hydro enters into a consent judgment, requiring it	State, Judicial	Complaints	Problems associated with goal ambiguity and goal conflict

	to restore wetlands, conduct floodplain compensation, obtain a post-action permit, and pay \$161,000 in enforcement fees			
December 12, 2019	DNR issues an Enforcement Notice for the unauthorized drawdown of Lake Wixom	State, Agency	Systematic Monitoring	Policy not being implemented as intended.
January 2, 2020	Boyce Hydro agrees to sell the dams to the Four Lakes Task force over the process of two years.	State, Agency		
May 1, 2020	State of Michigan Department of the Environment, Great Lakes, and energy (EGLE) and the Department	State, Agency State, Executive	Complaints	Policy not being implemented as intended.

	of Natural Resources (DNR) file a legal complaint against the owners of Boyce Hydro for damages to natural resources caused by unauthorized drawdowns of Lake Wixom			
May 19, 2020	Edenville and Sanford Dams fail			
May 27, 2020	Michigan Governor Gretchen Whitmer directs EGLE to conduct an investigation into the dam failures	State, Executive State, Judicial	Systematic Monitoring	Assurances for accountable bureaucracy.
June 1, 2020	United States Congress, House of Representative Committee on Energy and Commerce begins an	Federal, Legislative	Complaints and Casework	Policy not being implemented as intended. Assurances for accountable bureaucracy.

	inquiry to assess the transfer of authority from FERC to the State of Michigan to address public safety risks			
June 10, 2020	Michigan State Senate hearings dam failures in a joint session of the Senate committees on Environment, Energy and Technology	State, Legislative	Complaints and Casework	Policy not being implemented as intended. Assurances for accountable bureaucracy.
June 17, 2020	EGLE and FERC agree to hire a team of independent dam safety experts to investigate the dam failures	Federal, Agency State, Agency	Bureaucratic Experience	There are problems associated with goal ambiguity and goal conflict
June 23, 2020	Michigan State Senate Hearings take testimony from officials from FERC to assess	State, Legislative	Complaints and Casework	Policy not being implemented as intended. Assurances for accountable bureaucracy.

	their regulatory actions			
July 28, 2020	Michigan State Senate Energy and Technology and Environmental Quality Committees meet with the Four Lakes Task Force to estimate the costs of infrastructure repairs. (\$340 Million).	State, Legislative	Systematic Monitoring	Unanticipated consequences
December 21, 2021	Dam failure report issued by an independent group hired by EGLE and FERC.	Federal, Agency State, Agency	Bureaucratic Experience	Problems associated with goal ambiguity and goal conflict

Source: Compiled by authors from the following sources (LeBlanc, n.d.; United States Federal Energy Regulatory Commission 2018; Roth 2020; France et al. 2021; Michigan Department of Environment, Great Lakes, and Energy 2020)