

Power and Policy in Floodplain Management, drawing on research in Alberta, Canada

ABSTRACT

Floodplain management policy implementation and change involves a range of actors and opportunities for power to be exercised. Considering four conceptualizations of power envisioned by Dahl, Bachrach & Baratz, Lukes, and Emerson, this paper explores the actors and instances where power emerges in floodplain management policy implementation and change, using Alberta, Canada, as our focus. We consider which conceptualization is most reflective of the Alberta context. We conclude that all four views of behaviour are relevant here, with some power dynamics between actors more complex than others. Further, these dynamics change over time, and therefore the trade-offs to be made also change. Understanding power relations allows for clearer identification of these trade-offs and, therefore, the potential winners and losers in floodplain management policy. We describe strategies for assisting in this process of managing power relations, including information sharing, transparency and actively managing the policy process.

Keywords:

Flooding; Floodplain management; Power theories; Strategies; Alberta, Canada

Introduction

With changes in the patterns of precipitation, higher frequency of intense rainfalls and the threat of sea level rise, flooding and flood risk management continue to be of concern to governments (IPCC, 2014). As floodplain development occurs, it enhances the probability of future flooding and flood damage (e.g. Driessen et al, 2016; ASC, 2014; Parker, 1995, 342). Increasingly, non-structural measures are being used to manage this flood risk, including floodplain management policy (Dawson et al., 2011, 629).

Due to the potential for significant environmental impacts and damage to property during flooding, floodplain management policy (FMP) is developed to guide spatial planning and hence land-use decision-making in floodplains, as choices (and trade-offs) must be made between flood risk management and other land uses (see Tunstall et al, 2009). Thus FMP can encompass a range of measures, including requirements for approval to develop (e.g. prohibiting development, or setting conditions for development), flood insurance, and flood disaster relief (e.g. Government of Newfoundland & Labrador, 1996).

But this is a complex matter, and there are numerous actors involved in flood risk management, with varying degrees of power to influence policy and its implementation (see Thaler and Levin-Keitel, 2016; Albrecht, 2016; Penning-Rowsell & Johnson, 2015), including floodplain management policy (e.g. Driessen et al, 2016; van Herk et al, 2011; Pardoe et al, 2011). Our paper here seeks to outline the actors and instances where power relations emerge in floodplain management policy implementation and change, focusing

on Alberta, Canada, and considers four conceptualizations of power to determine which is most reflective of the Alberta context. Finally, it seeks to provide some means of identifying power dynamics in practice and associated strategies for managing those dynamics in the course of developing policy, its implementation, and eventual decision-making.

Actors and Conceptualizations of Power

There are many conceptualizations of power (see Allen (2009); and Ailon (2006) for examples; also Lukes (2005)), each of which involves relations between different actors. For the purposes of this discussion, four such conceptualizations or models of power are reviewed here, following an elaboration, below, of the actors generally involved in FMP and their aspirations and interests. The first three conceptualizations describe power where actor A is dominant over actor B. The fourth views both A and B as having power at the same time, with power manifesting itself according to who holds the needed resources at a given time. These models of power relations were chosen for their prevalence in the literature and their ability to be readily applied to a government policy context.

Actors and Power in Floodplain Management Policy

Floodplain management policy implementation and change involves a range of actors. These may include national, provincial/state, and municipal governments; regulatory agencies; developers (see Pardoe, Penning-Rowsell & Tunstall, 2011); interest groups (Penning-Rowsell & Johnson, 2015); and the general public [Interviewee 5, interview 1]¹. Further, there are many opportunities for power to be exercised by these actors. Parties may be investigated and punished for wrong-doing, applications to develop in a floodplain may be accepted or rejected, policy change may be advanced or not advanced, and funding may be provided or not to compensate for damage sustained in the flooding of an occupied floodplain [5,1; 4]. Individuals or groups may also seek to influence governments, insurers or developers, and national governments may exert power through policies or rules that must be adopted or adhered to by local governments and organizations, through the control of spending, and by holding organizations at lower levels to account (Penning-Rowsell & Johnson, 2015).

Dahl: Power as Decision-making

In 1957, Robert Dahl (1957, 203) viewed power as a relation between actors, wherein “A has power over B to the extent that he can get B to do something that B would not otherwise do”. Dahl’s view of power focused on participation in decision-making. His approach emphasized rigorous methodologies and measured attributes (Clegg, 1989, 8); he deemed the exercise of power to have occurred only when it could be seen to be exercised, as in voting (Clegg, 83). To identify a powerful group, “concrete decisions” must be examined (Dahl, 203).

¹ Subsequent citations of interviewees are given as [5,1], [5,2] or just [1] etc. See table 2.

Bachrach & Baratz: Power as Decision-making and Non-decision-making

Critical of those who focused only on power as a function of decision-making, Bachrach and Baratz (1962) identified two ‘faces’ of power. The first face represents power as a function of the ability of A to make decisions that may or may not adversely impact another party (B), similar to the view of Dahl. The second face views power as the ability to effect non-decision-making (Bachrach & Baratz, 948-949). According to Bachrach and Baratz, non-decision-making power could manifest itself in three ways: by A not listening to the demands of B; by B failing to raise an issue with A because B believes A would oppose the idea (Clegg, 1989, 77), or through A exerting control over political processes and systems, and over values, beliefs and opinions of less powerful actors in the systems, thereby preventing decision-making on issues important to B (Bachrach & Baratz, 1962, 949).

Lukes: Power in Decision-making, Non-decision-making, and Subconscious Internalization of What “A” Wants

Lukes (1974) conceived of power as having three dimensions, including the two discussed above (Clegg, 1989). Lukes argued that power was not always related to a difference in interests or always seen in the form of individual actions. As Lukes (23) states: “A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants”, ensuring compliance by controlling thoughts and desires. Power in this case is derived from the “construction of meaning in social life”, and allows A to influence B to adopt the goals, values and attitudes of A (Antonsen, 2009, 186). In this view, socialization processes are the key means of “serving the favour of the privileged” (Antonsen, 186).

Emerson: Power as a Function of Resource Dependency

In the preceding conceptualizations, A is viewed as dominant over B (see Ailon, 2006, 781). However, viewing the relationship between A and B as more complex, Emerson (1962, 32-4) saw power as a function of dependency between A and B. He also argued that both A and B could hold power at the same time, and that the exertion of power by one did not negate the power held by the other. According to Emerson, who holds power at a given time was related to control over resources or “things” the other values. This may include such “things” as economic dependence, need for social belonging, or respect for treaties between countries (Emerson, 1962, 33). Emerson contended “A depends upon B if he aspires to goals or gratifications whose achievement is facilitated by appropriate actions on B’s part”. Mutual dependency, in his view, suggested that both A or B could control or influence the conduct of the other, and this mutual dependency meant that both A and B had some ability to affect the other’s gratification.

Methodology

To answer our question concerning which conceptualization of power is most reflective of the Alberta context, a review of primary and secondary print sources and organizational websites was undertaken, and seven semi-structured qualitative interviews were conducted with six representatives from the provincial government of Alberta (policy and operational management), the City of Edmonton, and the rural municipality of Rocky View County (Table 1). These locations were chosen owing to the FMP issues

that have been evident there, including over development approvals, compensation payments, developer lobbying, and public and their politicians' attitudes.

The triangulation of methods, participants, and information derived from print sources allowed the verification and cross-checking of information collected to improve rigour (Denzin & Lincoln, 1998, 4). Personal communication citations in this paper from interviews were crosschecked with other participants and print sources to ensure that our research findings were not simply an expression of individual opinions (see Neuman, 2006, 153).

Representatives were interviewed at both the management level and the operational level, with experience in policy and land use decisions both represented, and care was taken to ensure that both an urban and a rural municipal view were captured. It should be noted that although triangulation was used across and within provincial and municipal governments, it is expected that the experience between municipalities will vary significantly [2; 6], and that the decisions made at the provincial level can also vary by geographic region [4; 3]. Thus, additional research is required if we are to understand further the subtle regional differences and temporal shifts in floodplain management policy in the Alberta context.

Despite these challenges, it is expected that the discussion here is sufficiently generalized to avoid some of the pitfalls of a relatively small number of interviews, particularly with municipalities. In line with ethics requirements, participants were asked if they could be cited; two preferred to remain completely anonymous (Table 1). Other participants preferred to remain anonymous for specific information items.

It is further acknowledged that policy is dynamic and that some rules discussed below may have changed since the research was conducted and published. This is not expected to change the impact of this paper, as policy context and the particular associated power dynamics are often related to a snapshot in time.

Floodplain management policy in Alberta

Floodplain management policy implementation and change in Alberta is multi-layered, as in most countries, there involving the Canadian federal government, provincial government, municipal governments, interest groups (the development lobby; watershed groups; industry groups; non-governmental-organizations), development project proponents, and the public. Their roles are described in Table 2. Our review of the current floodplain management policy processes in Alberta and their context, derived through our interviews and literature analysis, has revealed six situations where power relations manifest. These are discussed below. Many appear to focus on policy implementation, but that disguises the process of policy change that is behind the issues being "tested" in policy implementation situations.

1. The Water Act Approval Process – Provincial Government and Proponent

Projects that have the potential to impact on the flow of water, including floodwater, must seek approval under the provincial *Water Act*² [4]. However, in the past some flexibility was seen in decision-making. For example, prior to the 2005 flooding, *Water Act* approvals were reportedly easier to obtain in Alberta; but those same floods, launching a significant politician-led review process, mobilized action in favour of those affected by floods and more stringent floodplain management, and away from those developers who may have wished to develop in the floodplain (cf. Johnson et al, 2005). A stronger stance has consequently been taken on development in the ‘floodway’ since 2005 (see Table 2), and the standard response is now ‘No’ in southern Alberta³.

As a result, municipalities have been referring project proponents to the provincial authorities earlier in the planning phases in order to avoid rejection at later stages [4; 6]. Some exceptions have been made where proposed projects predicted minor impacts and were deemed to have no potential impacts on other landowners [4]. Where projects can proceed, conditions are imposed to minimize risk [4]. However, as interest in flooding waned, as the floods of 2005 and their impacts became a memory, it appears that so too did interest in policy change towards increasing the stringency of flood risk management.

However, context continues to change; in June 2013, an even larger flood – the largest natural disaster in the province’s history - caused \$5 billion in damage (Government of Alberta, 2014). This, and a growing perception that this may be a foretaste of greater risk in the future from climate change, will have undoubtedly have set in motion a further rearrangement of power dynamics and influences on floodplain management policy for the province, as it has elsewhere (e.g. ASC, 2014).

2. The Municipal Development Approval Process – Municipal Government and Proponents

Similarly, proponents of development projects⁴ must seek permission to develop in the floodplain through a municipal process guided by bylaws, which vary between municipalities [1]. Under a typical process, a proponent seeks a land use change approval from the municipality to convert, for example, agriculture land to an urban subdivision. When planning details are sufficient to understand the development proposed, a municipality decides to accept or reject the application [1; 4]. Municipalities may also approve development with conditions, including those related to development setbacks to mitigate flood risk [6; 2] (Government of Alberta, 2012c, 26). Municipalities may say “No” to a development if, for example, it does not fit in with a broader county plan that the municipality has developed for the area [6], or if they do not feel that the proposed new land-use is appropriate [1].

² See *Water Act*, Chapter W-3, Section 36(1) (2000).

³ Discussions with several other participants from the northern part of the province suggest this may not be as consistent in the north [1; 3]. Regional (watershed-based) policy in the south to manage water shortage in that part of the province may make it easier to reject applications for development; in the north there is more water and greater public pressure to develop [3].

⁴ Utility projects are exempt under Edmonton Zoning Bylaw 12800, Part IV, Section 812 [1].

In Edmonton, for example, much of the land that could be developed has plans to guide decision-makers [1; 2]. The majority of floodplain here is covered by the North Saskatchewan River Valley Area Redevelopment Plan developed in 1985, wherein the majority of the floodplain is set aside as “metropolitan” (or park land and therefore not subject to development (see City of Edmonton, 2010, 19)). Should development be proposed, the decision is regulated, with the City requiring certification from an engineer attesting to the flood risk, or lack thereof. This approval is subject to the conditions under Edmonton Zoning Bylaw 12800, section 14.4, and this then relieves the City of the liability in the event of a flood [1].

There has been the suggestion, however, that municipalities may find it difficult to reject development proposals, as such development enhances the municipalities’ tax base [6]. A provincial flood mitigation report developed by a ministerial task force provided recommendations for mitigating flood risk in the wake of the 2005 flood. It indicated that smaller municipalities were supportive of restricting disaster recovery payment for “new inappropriate development in flood risk areas”, but that larger cities with significant amounts of riverside development were not in favour, stating that this would prevent development in “very high value areas” (Groeneveld, 2006, 13). In 2004, municipalities raised 89.6 percent of their revenues through their own sources; roughly half of that was through property-related taxes (see Lesage & McMillan, 2008, 26). In 2008, Alberta municipalities were reported to be “squeezed fiscally between downloaded responsibilities, rising expectations and a slowly growing tax and revenue base” (LeSage & McMillan, 27).

3. The Flood Damage Reduction Program - Federal and Provincial Governments

The federal Flood Damage Reduction Program (FDRP) sought to discourage floodplain development through setting out guiding policy principles, and provided support for the mapping of flood risk areas (de Loe, 2000). Agreements negotiated with provinces under this programme contained three core principles promoted by the federal government: (a) governments would not build or support flood prone development in an area designated as high risk; (b) no payment of flood disaster assistance would be forthcoming for development built after the area is designated as high risk; and, (c) parties to the agreement would encourage local authorities to zone according to flood risk (de Loe, 361).

Through this agreement (1989), the federal government has exerted some power on current floodplain management and policy in Alberta [5,1]. Under the *Water Act* (2000)⁵, government projects cannot be placed in the flood hazard areas, and the province’s Disaster Recovery Program policy commits to provide disaster relief only to those impacted by flow greater than the 1:100 year level (AEMA, 2012). The second principle allows the federal government to exert direct power by controlling spending through its policy of nonpayment to provinces for disaster relief for new developments in designated flood hazard areas.

⁵ See *Water Act*, Chapter W-3, Section 96(2)(a)

4. Compensation for Damage to New Floodplain Development – Provincial and Municipal Governments

Just as the second principle promoted by the federal programme has allowed for the federal government to control compensation to the provinces, the adoption of this principle in Alberta's *Water Act*⁶ and disaster recovery program policy similarly grants the province the power to decide not to compensate municipalities for damage sustained in newer developments on the floodplain (see AEMA, 2012) [6]. This has reportedly led to some decisions not to allow development, for example in the floodplain in Rocky View County [6].

5. Interest Group Influence – Interest Groups and Governments

Lobby groups may also seek to influence governments in Alberta (LeSage & McMillan, 2008, 55; Leo, 1995). Business groups in the land development sector have been identified as one of the most successful and engaged groups lobbying Alberta municipalities (LeSage & McMillan, 2008, 55). Leo (1995, as cited by LeSage & McMillan, 2008, 55) found that there was a “tight compact” between developers, municipalities, and some politicians in Edmonton. These relationships are reported to continue to be strong [2]. In rural municipalities, farmers also represent their land-related interests (LeSage & McMillan, 2008, 55).

The Urban Development Institute (UDI) is one organization that advocates for developers in order to maximize benefits to developers through various means [5]. In one example found, UDI submitted extensive comments that sought to influence policy outcomes of one floodplain management policy being developed [6]. Notably, however, UDI was not seen as a key influence on policy change in this case, as the municipal Council's direction was clear that proposed policy goals were to be upheld [6].

One interviewee from the City of Edmonton was not aware of any influence by UDI to influence policy implementation in that city, but suggested that much of the land in question is already covered by planning decisions and/or would be set aside as an environmental reserve, so the potential for influence at the operational decision level was not likely [2]. Another interviewee from the Province also questioned the ability of the development lobby to influence policy implementation at the provincial level, suggesting that although the lobby may not always agree with the position of the Province, it did not have significant influence on *Water Act* approval processes [1]. However, additional research is required to elaborate the precise influence here of lobbies in floodplain management policy implementation and change.

6. The Public's Influence on Policy Advancement – Politicians and the Public

Electing a conservative government since 1971, the Alberta public, generally, has been resistant to policy that could impact private property rights (see Government of Alberta, 2012a; Keene & DeCillian, 2012). This has also been suggested to be true in floodplain management policy [5].

⁶ See *Water Act*, Chapter W-3, Section 96(2)(c)

In this case there is concern that with stronger development restrictions in the floodplain, landowners would be unable to develop their land [5]. Resulting concern on the part of politicians is suggested to have contributed to a delay in the release of a report promoting the prevention of further development in the floodplain, and may also have contributed to the slowing of policy change of a similar nature [5]; see also discussions of delay in Patterson (2012). It was also suggested that shortly after its drafting in 2006, its finalization was put on hold: as the 2005 flood receded from memory, interest in completing the report “waned” (Patterson, 2012, 2). It should be noted, however, that while public influence was a contributing factor to the delay, the primary cause of the delay was suggested to be the estimated large costs to implement the recommendations and the relatively weak condition of the economy at the time [5].

Similarly, though several years ago, public influence in Edmonton resulted in a change from enhanced floodplain protection to one of more development, as impacted communities argued that they were being “destroyed” by the City’s proposed policy change [2]. Furthermore, public pressures including vocal stakeholders and river/floodplain sensitivities can also influence floodplain development decisions at the provincial, *Water Act* approval level [3].

Analysis

The provincial *Water Act* approval process in Alberta is an example of Dahl’s decision-making power, wherein the government displays power by deciding to allow or disallow development in the floodplain, and in setting out conditions under which development may proceed if approved. Here, A (the provincial government) causes B (the proponent) to refrain from developing in the floodplain, when he would have otherwise preferred to develop. Power is clearly measurable, as “concrete decisions” are made, and the proponent (B) is limited in his ability to exert power over the provincial government (A).

Another example of this view of power is that displayed between the federal government and the provincial government as it relates to the federal policy of non-payment of compensation for flood damage to newer development in the floodplain. Although this power is related to resources, it is likely that the province does not hold power in this case (or “things” that the federal government depends on for the achievement of its own goals), and is therefore not fully in line with Emerson’s view of power. Instead, it is aligned with Dahl’s view, as the federal government decides whether or not to direct compensation to the province to assist with the management of flood damage.

Although additional research would be required to understand the exact influence of interest groups on floodplain management policy and whether their activity has resulted in “non-decision-making” in floodplain management policy implementation or change, at least one case in Rocky View County suggests that there is activity by interest groups in floodplain management policy and this type of activity would be important for policy writers and decision makers to understand. Depending on whether politicians adopt recommendations or stall processes on the basis of interest group activities, it is possible that power exercised by this group could represent a case of the ‘second face’ of power.

Bacharach and Baratz also suggested that power could also manifest by B failing to raise an issue with A because B believes A would oppose the idea (Clegg, 1989, 77). In the Rocky View County case, staff advised their own decision-makers against allowing some developments to proceed in the floodplain because of an awareness of the Province's policy position on not compensating for flood damage to new development. In this case, B did not undertake activities that could lead it to seek a decision from A (for compensation), believing that the answer would be "No".

In addition to the costs of the policy proposal and the economy, here, it also appears that "the public" (A) may be a factor that contributes to a slowing of the advancement of more stringent policy on floodplain development by the provincial government - ultimately by politicians [5]. Although voting (decision-making) is the most obvious and decisive display of power by citizens over politicians, in this case the perceived threat to them in advancing issues that are counter to a strong, specific, set of values or interest could have been preventing politicians from making policy change at the time this research was undertaken. Arguably politicians could be socialized to respect democratic accountability – i.e. to advance policy that is in line with public values. It could, therefore, be suggested that Lukes' view of power through socialization, where "[A]... exercises power over [B] by influencing, shaping or determining his very wants" is at play here as well.

In contrast to the provincial approval process, the relationship between municipal governments and proponents provides an example of Emerson's view of power. Here Emerson (1962, 34) saw power as a function of dependency between A and B; wherein both could hold power at the same time, and the exertion of power by one did not negate the power held by the other. Developers derive financial resources from development proceeding. When development applications are denied, the resources associated with that development are not realized. In this case, the municipality has control over the development approval process (and therefore, its associated resources). Similarly, as municipal governments rely on taxes derived from development, the developer also has power in the resources it could offer the municipality from approved development. This power does not negate the power that the municipality holds by having decision-making power on development; both hold power at the same time.

The Contribution of Theories of Power Relations to Practice

As several cases above demonstrate, there is usually not just an A and a B; there are likely Cs, Ds, Es, and Fs, involved as well. The use of power dynamics to influence policy decisions will vary by policy issue, and the potential for clearly influencing power relations will depend on the topic and the groups involved. Further, in some cases, multiple manifestations of power relations identified by the four theories can occur simultaneously. For example, in the case of municipal development-related decision-making, there was an emergence of both Dahl's manifestation of power and that of Emerson.

Thus, there may be a wide range and number of power relations in a given policy development or decision-making context, and a range of policy issues to be addressed, as

well as changing values and a changing context. It is therefore not possible to tie specific strategies and tools for recognising and understanding power relations in this context to particular theories of power, and we do not attempt this although some connections are made below; rather, policy is ultimately a balancing act across interests, and it is those interests that generate power relations and no one theory can be completely 'correct' for a particular situation, or one prescription always pertinent.

Instead, the theories presented here provide an important framework or lens for policymakers to use to help them to surmise, gauge, predict or just identify where and how power relations may have the potential to impact policy outcomes, and the various ways that actors may seek to influence policy processes, especially in policy implementation. Being aware of the potential power relations or dynamics that can emerge, particularly before they escalate to manifestation and clear attempts to unduly influence decision-making, is useful for keeping the policy processes effective and on track. This approach aims towards managing interests and ultimately achieving decisions that render positive floodplain management outcomes, through policy development or implementation, and meet the interests - to the extent possible or appropriate - of the multiple parties affected. The theories offer an understanding of how those influences may be exercised, including revealing underlying interests, and the likely sources of and manifestation of influence and associated behaviours.

To simplify somewhat, these behaviours identified by the theories presented above include:

- A is able to get B to do something that s/he would not do otherwise (Dahl, 1957);
- B failing to raise an issue with A because B believes A would oppose the idea (Bachrach & Baratz, 1962); A exerting control over political processes and systems, and over values, beliefs and opinions of less powerful actors in the systems, thereby preventing decision-making on issues important to B (Bachrach & Baratz, 1962)
- A exercising power by influencing and determining the desires of B (Lukes, 1974)
- Power is manifested by A or B according to who holds or controls the needed resources at a given time (Emerson, 1962)

In practice, recognising and gauging early signs of the extent of escalating power relations and managing them is liable to be context specific, but could involve certain stages, strategies, and tools. Early signs are likely to be recognized as letters to policymakers from actors advocating certain policy directions; newspaper and other media stories orientated towards specific decision options; meetings with policymakers and/or other interested parties to present positions; formal questions to ministers and their equivalent; requests for meetings at higher levels or with politicians; coalitions developing of unlikely partners; walking away from broader policy processes (or suggestions in this direction); and warnings of undesirable indirect consequences, some of which antagonists could engineer. Such actions all need to be gauged and may reflect several of the four types of behaviours listed above.

Strategies for Managing Power Relations in Policy Development and Implementation

Without a strategy for managing power relations, matters may escalate to executive or political levels of government in order to unduly influence or distort policy outcomes of where draft policies or processes are disputed – for whatever reason. Such matters may relate to aspects of the draft policy itself, the entire policy/approach or issue pursued, or the relationship of the decision(s) to broader picture issues.

The four strategies presented here are in no sense new, and are inherently interrelated, but represent good practices in environmental policymaking used by government employed staff in Alberta. We see them being deployed within a staged process of, first, the recognition and identification of power dynamics, secondly an analysis of those dynamics, thirdly a process of synthesis and communication with final decision-makers, and finally the communication of the policy decision taken. Each stage may well see deployed any or all of the four strategies outlined below.

We believe these strategies and a similarly staged approach are likely to be useful elsewhere, suitably amended based on the policymaking environment and the dynamics at play there. Here we seek only to provide policymakers (policy writers and final decision-makers) with approaches to managing power relations, prior to their emergence or after the manifestation of such relations, should the behaviours identified by the four theories show the potential to emerge. These strategies may not completely prevent power from influencing policy development and its implementation, but may be key to diffusing or minimizing power-imbalance related and distorting influences on policy decisions. Beyond that, high-level decision makers will always use their judgment as to how best to manage these pressures.

Strategy 1: Promoting Well-informed Decision-making Processes

Government policy advisors and policy teams that draft policy are employed to provide policy options and objective advice, in part through assisting final decision makers' participation in informed discussions, including with potentially powerful actors. In this way they can perceive the type behaviours those actors might display - and understand them in relation to, say, Dahl's (1957) or Emerson's (1962) theories - and thereby to make informed decisions.

Policymakers should make sure they have a clear picture of the appropriateness of the policy options for managing the floodplain management issue at hand: power relations/dynamics, and of the interests and potential behaviours of *all* parties involved (A; B; etc); the costs; benefits; risks; and ultimately the trade-offs to be made.

Final decision-makers should be able to weigh this information, secure in the knowledge that the issue and power relations have been properly identified, the relative strength or importance to the stakeholders analysed comprehensively, and that they are able to make

a decision that is communicated publicly and demonstrated to be sensible in the policy context.

Strategy 2: Ensuring Transparency through Public Consultation and Clear Communication of Process

Transparency in FMP decisions, including final-stage modification of decisions, and the reasons why choices were made (which may include influential interests considered important enough to change direction), is key to managing the influence of powerful actors on final decisions, because it requires clear justification of the influence of power dynamics on the decision. The greater the transparency, judging from our experience here and in policy development elsewhere (Green and Penning-Rowsell, 2010), the greater is the likelihood also that the more complex behaviours as described by Lukes (1974) and Emerson (1962) can be detected. The position of B in Dahl-type behaviours also is much weakened in situations of information deficit.

Engagement (or consultation), particularly multi-stakeholder consultation⁷ allowing for an exchange of diverse views and interests of those who are interested and/or affected by the decision to be made, in one room, has numerous benefits. In the context of this paper, it provides an opportunity for influencers to influence in a transparent forum rather than behind closed doors. All actors (A; B; C; etc) have the same access to policymakers (cf. Thaler and Keitel, 2016).

Additionally, multi-stakeholder engagement allows for further understanding of the interests and positions or behaviours at play on the issue, and learning about the experience or interests of other stakeholders. Open dialogue allows the policy writer, where possible, to collect information on interests and on emerging dynamics, so as to be able to manage those interests during the writing of policy. This means carefully addressing the floodplain management issue in a way that reasonably manages some or all of the interests of all stakeholders providing input, in the context of the issue, at the time of writing, whilst also considering the broader picture. It further allows for an exploration of underlying assumptions that may not be accurate, which can often be the cause of an actor escalating an issue to higher levels. Instead, the potential for such escalation is managed by finding solutions (within the policy writer's purview) that parties can accept, as policy is written.

Further, rules of engagement requiring that all inputs on the policy decision must be made transparent to the broader group at all stages can also help manage bilateral discussions (A with C; C with E, etc). Active listening; understanding of interests; and, demonstrating where interests are being met in the development of draft policy (and if they are not, why they are not), are also key here. The same applies to being transparent with final decision factors and any changes that occur between different policy drafts (e.g. prior to advancing to the final decision-makers), the reasons for those decisions, and the final outcome. This has the potential to address the fears that interests have not been

⁷ Ensuring that such engagement is accessible, by providing appropriate methods for audience and funding, if necessary, to support participation is important to reaping the benefits of this strategy.

considered, which can lead to the manifestation of power relations as identified by the four behaviours discussed above, and to generate an outcome that meets some of the interests of the powerful party, preventing the emergence of clear power dynamics and breakdown.

Strategy 3: Actively Managing the Policy Process and Communication

Managing the policy process is an important strategy to be used by both the policy writer and the decision-maker, including ongoing communication between different levels of government even at the stages of the recognition of power relations and their analysis.

For the policy writer, briefing final decision-makers throughout the development of policy to ensure that they are aware of potential issues that may trigger the emergence of power dynamics is important to ensuring they have information required for informed decision-making and engagement with potentially powerful actors, should engagement be requested by those actors. Equally, final decision-makers may have broad picture information and a different awareness (e.g. political) pertaining to these aspects and should relay that information to policy writers to ensure they are working within the most current context. As a result of this process management, policy writers are able to adapt accordingly to the information or advice provided by final decision-makers.

There are dangers managed through this approach. We may find parties (A) attempting to influence decision makers (B) by influencing and determining the desires of B (Lukes, 1974), for example through attempting to change the discourse. Having a history of clear briefing and open lines of communication to allow for additional updates can assist final decision-makers in understanding these attempts to influence. This can help to ensure that decision-makers continue to make decisions based on the objective advice and clear understanding of the trade-offs being managed across different interests in the face of conflicting information.

Strategy 4: Acknowledging Constraints on Decisions

Policy is developed under various constraints that are often outside of the control or influence of the extant policy process and interests. For example, the current political agenda, current public values, and available resourcing for implementation, can place bounds on the potential options. Having an awareness of such constraints will assist policymakers in providing a rationale to stakeholders for not (fully or partially) meeting their interests on a particular FMP issue.

Existing policy and legislation also can encapsulate a series of related prior decisions and, therefore, impose potential constraints on new policy. The provincial *Water Act* process represented an example of government (i.e. A in Dahl's sense), when deciding to allow or disallow development in the floodplain, being constrained by that legislation, which creates bounds on setting the conditions under which development could occur. Somewhat similarly, the presence of the *North Saskatchewan River Valley Area Redevelopment Plan* may have prevented the influence of a lobby group on subsequent policy due to the series of decisions already made within that plan.

It is also important to ensure decision-makers and participants are clear about the policy goals and the objective(s) sought, as well as the specific floodplain issue to be managed, through the policy development or implementation. These place bounds on what interests may be in scope and out of scope in the discussion. The Rocky View County case illustrates how the awareness of key decision-makers of clear goals can keep a policy development process on track and avoid undue disruptive influence by potentially powerful actors.

Conclusions

In Alberta, as in many instances elsewhere in the world, power manifests itself among a wide range of actors at several levels and scales in both policy change and policy implementation processes in the field of flood risk and floodplain management.

A review of such manifestations of power in our case study reveals that all three dimensions of power presented by Dahl, Bachrach and Baratz, and Lukes are present *at different times and in different relationships*. In some cases, the power is only about decision-making; in other cases, such as in the case of the Alberta public and politicians, decision-making, keeping decisions off the agenda, and a possible socialization component that could lead politicians to want what they perceive the voting public to want, are all present. Emerson's view of power is also clearly present, as seen in the municipality-developer relationship.

However, the situations we researched are not that straightforward. Context changes over time in this case and in others, and complicates matters (cf. Penning-Roswell and Johnson, 2015). Times have changed and as a result, those who "hold the power" have changed, trade-offs have changed, and the winners and losers of floodplain management policy implementation and change have, therefore, changed. Changing context, including the occurrence of flooding, an increasing risk, changing policy, or changing societal values or memories, can shift power dynamics, causing the trade-offs to be re-considered (and ultimate policy decisions made) and changed.

The Alberta case demonstrates that, as elsewhere, there are many conflicting uses of land, and many conflicting influences and interests in floodplain management. In many jurisdictions there are many demands on increasingly scarce land, and trade-offs must be made. Decision-makers are faced with complicated decisions about floodplain management policy, and will be faced with pressure from those constituents who value private property and minimal government intervention, from a public affected by flooding that argues for more stringent policy, and from communities built in the floodplain a hundred years ago who wish to see their communities grow, despite the increasing risk and potential cost; sometimes these will be the same individuals, and their priorities will change over time.

This case further demonstrates that power dynamics are important in floodplain management policy implementation and change, but other important factors can influence the advancement and implementation of policy. Increasing policy requirements from

other levels of governments, which can lead to policy change or influence certain decisions, is one factor that emerged in this case. Another key factor is the large cost of floodplain management measures, in the context of a changing economy and limited resources available to address all publicly funded needs.

We can now therefore see that examining floodplain management policy implementation and change through the lens of theories of power remains insufficient for understanding the full complexity of the flood management policy issue. Using all four conceptualizations of power dynamics at once, let alone one, has been found not to fully explain a set of processes that is, itself, inherently dynamic.

However, progress has been made: policy development can be a complex exercise, and power relations represent an additional layer of complexity that policymakers must at least be aware of in order to stay on track. Having an understanding of the power dynamics and the source and strength of the power for various parties does allow very important issues to be identified, many of which could require detailed analysis and attention to ensure the decisions/trade-offs to be made by decision-makers are clear and appropriate, and that those affected by the decisions are also aware of the trade-offs being made.

The behaviours and manifestation of influences described by the four theories of power, and the strategies offered here of promoting informed decisions, transparency, clear communication, and constraint acknowledgement - whilst deliberately not directly linked to individual theories - could present policymakers with the means to understand and thereby to manage these power dynamics and their impact on final policy decisions. A better appreciation of these power dynamics in other countries and other situations is also one way of influencing decisions that could lead to better solutions rather than accept the status quo, not least in giving policymakers the information, insight and ability to minimize the number and extent of the inevitable losers from any floodplain management policy that they seek to promote.

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References

1. ASC (Adaptation Sub-Committee) (2014) Managing climate risks to well-being and the economy: ASC progress report 2014. London: Committee on Climate Change.
2. Ailon, G. (2006). What B would otherwise do: A critique of conceptualizations of "power" in organizational theory. *Organization*, 13, 771-800.
3. Albrecht, J. (2016) Legal framework and criteria for effectively coordinating public participation under the Floods Directive and Water Framework Directive: European requirements and German transposition. *Environmental Science and Policy*, 55, 368-375.

4. Allen, J. (2009). Three spaces of power: Territory, networks, plus a topological twist in the tale of domination and authority. *Journal of Power*, 2(2) pp. 197–212.
5. Antonsen, S. (2009). Safety culture and the issue of power. *Safety Science*, 47(2008), 183-191.
6. Alberta Emergency Management Agency (2012). *Assistance and Recovery Support: Disaster Recovery Programs*. Retrieved November 10, 2012 from <http://www.aema.alberta.ca/disaster-recovery-programs.cfm>
7. Alberta Emergency Management Agency (2006). *Provincial Flood Mitigation Report: Consultation and Recommendations*. Retrieved November 15, 2012 from http://www.aema.alberta.ca/images/News/Provincial_Flood_Mitigation_Report.pdf
8. Bachrach, P. & Baratz, M.S. (1962). Two faces of power. *The American Political Science Review*, 56(4), 947-952.
9. Clegg, S. (1989). *Frameworks of Power*. London: Sage Publications.
10. City of Edmonton. North Saskatchewan River Valley Area Redevelopment Plan (Adopted February, 1985), Bylaw No. 7188 (as amended 2010) Retrieved on December 19th from http://www.edmonton.ca/environmental/documents/North_Saskatchewan_River_AR_P_Consolidation.pdf.
11. Edmonton Zoning Bylaw 12800 (2001). City of Edmonton.
12. Dahl, R. (1957). The concept of power. *Behavioural Science*, 2:3, 201-215.
13. Dawson, R., Ball, T., Werritty, J., Werritty, A., Hall, J., & Roche, N. (2011). Assessing the effectiveness of non-structural flood management measures in the Thames Estuary under conditions of socio-economic and environmental change. *Global Environmental Change*, 21, 628-646.
14. de Loe, R. (2000). Floodplain management in Canada: overview and prospects. *The Canadian Geographer*, 44(4), 355-368.
15. Denzin, N. & Lincoln, Y. (1998). Entering the field of qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (pp. 1-34). Thousand Oaks, CA.: Sage Publications.
16. Driessen, P. P. J., Hegger, D. L. T., Bakker, M. H. N., Van Rijswijk, H. F. M. W. and Kundzewicz, Z. W. (2016). Toward more resilient flood risk governance. *Ecology and Society* 21(4):53. <https://doi.org/10.5751/ES-08921-210453>
17. Emerson, R. (1962). Power-dependence relations. *American Sociological Review*, 27(1), 31-41.
18. Environment Canada (2009). *Canada's Top Ten Weather Stories of 2005*. Retrieved November 15, 2012 from <http://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=A4DD5AB5-1>
19. Government of Alberta (2014). May 2014 recovery update on the June 2013 floods that struck southern Alberta and Wood Buffalo. Retrieved July 10, 2014 from <http://alberta.ca/Flood-recovery-update.cfm>
20. Government of Alberta (2012a). *Flood Hazard Mapping*. Website. Retrieved November 10, 2012 from <http://environment.alberta.ca/01655.html>
21. Government of Alberta (2012b). *Report of the Property Rights Task Force: Engagement with Albertans*. Retrieved December 13, 2012 at <http://alberta.ca/PropertyRights/assets/Property%20Rights%20Task%20Force%20Report%20FINAL%20Feb%2021.pdf>

22. Government of Alberta (2012c). Stepping Back from the Water: A Beneficial Management Practices Guide for New Development near Water Bodies in Alberta's Settled Region. Retrieved November 15, 2012 from <http://environment.gov.ab.ca/info/library/8554.pdf>
23. Government of Newfoundland & Labrador (1996). Policy for Floodplain Management (W.R. 96-1). Retrieved December 31, 2012 from http://www.env.gov.nl.ca/env/waterres/regulations/policies/flood_plain.html
24. Green, C., Penning-Rowsell, E.C. (2010). Stakeholder engagement in flood risk management. In: Pender, G. and Faulkner, H. (Eds.), *Flood Risk Science and Management*. Wiley-Blackwell, West Sussex, pp. 372–385.
25. Groeneveld, G. (2006). Provincial Flood Mitigation Report: Consultation and Recommendations. Retrieved April 29, 2014 from http://www.aema.alberta.ca/images/News/Provincial_Flood_Mitigation_Report.pdf
26. IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
27. Johnson, C., Tunstall, S., Penning-Rowsell, E.C., 2005. Floods as catalysts for policy change: historical lessons from England and Wales. *Int. J. Water Resour. Dev.* 21,561–575.
28. Keene, J. & DeCillia, B. (2012, April 18). Property rights a big issue in rural Alberta. *CBC News Canada*. Retrieved December 13, 2012 from <http://www.cbc.ca/news/canada/albertavotes2012/story/2012/04/17/albertavotes2012-vote-compass-property-rights.html>
29. Leo, C. 1995. 'Global change and local politics: Economic decline and the local regime in Edmonton'. *Journal of Urban Affairs*, 17(3): 277-99.
30. LeSage, E. & McMillan, M. (2008). Alberta: Municipal system overview. Western Centre for Economic Research, Information Bulletin No. 1110.
31. Lukes, S. (1974). *Power: A Radical View*. London: MacMillan.
32. Lukes, S. (2005). *Power: A Radical View* (2nd Edition). London: MacMillan.
33. Municipal Government Act, Revised Statutes of Alberta (2000, c. M-36). Alberta Queen's Printer.
34. Neuman, W.L. (2006a). Qualitative and quantitative research designs. In *Social Research Methods* (6th Edition) (pp. 149-178). Toronto: Pearson.
35. Parker, D.J. (1995). Floodplain development policy in England and Wales. *Applied Geography*, 15(4), 341-363.
36. Pardoe, J., Penning-Rowsell, E.C., & Tunstall, S. (2011). Floodplain conflicts: Regulation and negotiation. *Natural Hazards and Earth System Sciences*, 11, 2889-2092.
37. Patterson, D. (2012, July 27). Flood report finally released - Province: Wildrose leader says government missed opportunity. Okotoks Western Wheel. Retrieved December 19, 2012 from <http://www.westernwheel.com/article/20120727/WHE0801/307279999/0/wh>
38. Penning-Rowsell, E. & Johnson, C. (2015). The ebb and flow of power: British flood risk management and the politics of scale. *Geoforum* 62, 131–142.

39. The Canadian Press (2012, July 29). Province releases 6-year-old flooding report. *CBC News Calgary*. Retrieved November 15, 2012 from <http://www.cbc.ca/news/canada/edmonton/story/2012/07/29/edmonton-alberta-flooding-report.html>
40. Tunstall, S., McCarthy, S. and Faulkner, H. (2009). Flood risk management and planning policy in a time of policy transition: the case of the Wapshott Road Planning Inquiry, Surrey, England. *Journal of Flood Risk Management* 2, 159–169.
41. Thaler, T. and Levin-Keitel, M. (2016). Multi-level stakeholder engagement in flood risk management – a question of roles and power: lessons from England. *Environmental Science and Policy*, 55, 292-301.
42. Van Herk, S., Zevenbergen, C., Ashley, R. and Rijke, JK. (2011). Learning and option of alliances for the integration of flood risk management into urban planning: a new framework from empirical evidence from The Netherlands. *Environmental Science and Policy*, 14, 543-554.
43. Water Act, Revised Statutes of Alberta (2000, c. W-3). Alberta Queen’s Printer.

Table 1. *Personal Communications/ interviewees*

Participant and number (cited in the text as [1], [2], etc)	Date	Citation in text
Anonymous	December, 2012	[1]
Anonymous	January, 2013	[2]
Puhlmann, R. Reclamation Approvals Specialist, Central Region. Government of Alberta	January 11, 2013	[3]
Simieritsch, R. Senior Water Administration Technologist, Southern Region. Government of Alberta.	November, 15, 2012	[4]
Taggart, J. Head, Surface Water Policy, Water Policy Branch; Former Head in Flood Forecasting, Environmental Monitoring Branch. Government of Alberta	Interview 1: December 4, 2012 [5,1] Interview 2: December 19, 2012 [5,2]	[5,1] [5,2]
Willms, C. Former Municipal Ecologist. Rocky View County, Alberta.	December 19, 2012	[6]

Table 2. *Actors in Floodplain Management Policy in Alberta and their sources of authority*

Actor	Role	Authority source
Politicians	<ul style="list-style-type: none"> Decision-makers on policy 	
Government of Alberta	<ul style="list-style-type: none"> Managers and regulators of development in the <i>floodway</i> Managers of <i>Flood Hazard Identification Program</i> Responsible for disaster recovery programs 	<p>Floodway: Authority granted under the <i>Water Act</i>, R.S.A 2000, c W-3. In Alberta, the “floodway” (or flood hazard area) is “the area within which the entire design flood [1:100] can be conveyed while meeting certain water elevation rise, water velocity and water depth criteria” (GOA, 2012c, 55). The “flood fringe” is “the land along the edges of the flood risk area that has relatively shallow water ... with lower velocities...” (GOA, 2012c, 55). For ease of discussion, these both are referred to here as the “floodplain”.</p>
Municipal Governments	<ul style="list-style-type: none"> Managers of development in the flood fringe; Municipal land zoning (<i>Municipal Government Act, 2000</i>) 	<p>Zoning: Authority granted under the <i>Municipal Government Act</i>, R.S.A. 2000, c. M-36</p>
Government of Canada	<ul style="list-style-type: none"> <i>Flood Damage Reduction Program</i> (1989-1999) Ongoing indirect role 	<p>Ongoing indirect role: Activities related to navigation, fisheries, interprovincial/international issues, and works that are beneficial to Canada or to two or more provinces (Environment Canada, 2012).</p>
Interest Groups	<ul style="list-style-type: none"> Seek to influence governments on issues of interest 	
Proponents	<ul style="list-style-type: none"> Seek to undertake construction in the floodplain. 	

