

BOW RIVER PHOSPHORUS MANAGEMENT PLAN

Lessons from the process of plan development

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Executive Summary

The development of a Bow River phosphorus management plan has been a test of a prototype to manage cumulative environmental effects at a sub-regional scale. The environmental issue, excessive phosphorus release, arises from both point and non-point source contributions. Rather than a top-down model to control phosphorus releases, a bottom-up approach to governance has been encouraged to develop a sense of shared responsibility and accountability among stakeholders for water quality and conservation actions.

A prototype needs active review to ensure its success, with participants given the opportunity to contribute and provide feedback in its development. For the purposes of continuous improvement, ESRD has sought to identify lessons arising from the process of developing a Bow River phosphorus management plan. This report summarises the results of a survey of participants to gather impressions and lessons to date in the formation of the plan.

Stakeholder engagement was designed to empower participants, who responded favourably that the process in principle has been meaningful, influential, and “the way it should be done”. Most considered that the format of stakeholder involvement ought to continue for future initiatives to manage cumulative effects. While the concept of a stakeholder-led approach is well supported, challenges were encountered in practice. The model of stakeholder engagement (empowerment) was found to take more time than other approaches. Information needs were a common topic of concern for stakeholders, requiring a combined approach of managing expectations and seeking additional data. The process was designed primarily to engage stakeholders, though this focus has led to confusion among stakeholders who are participating to support an outcome (water quality) that is yet to be clearly defined.

Theories, experiences, strategies, and practical approaches are all available to understand and address some of the other issues encountered to refine the prototype. This includes challenges experienced in managing group dynamics, decision making under uncertainty, encouraging leadership to emerge from within, generating legitimacy of the process, and for the formation of a cohesive work plan. A topic of high priority in moving the plan development to the next stage is to define a clear environmental goal. This step is ideally required prior to the discussion of actions. Leadership in setting and communicating the framework, and encouraging change, will also assist in moving the process forward.

It was of note that those less familiar with regulation and ESRD, the urban non-point source and rural non-point source sectors, were identified as being the least engaged and/or productive in the process. Several participants interviewed from the rural non-point source sector have a fundamental disagreement with the concept of a phosphorus management plan. This sector was also discouraged by disruptive changes in team membership. Solutions brought forward were to produce a “good context piece” that clearly outlines the environmental issue, along with communication of the need and vision for change, and to consider a custom approach that meets the unique needs of the rural sector.

Table 1–1 Snapshot of lessons learned in the creation of the Bow River Phosphorus Management Plan, June 2011 to March 2013

What was done well...	
Stakeholder engagement and meaningful collaboration	Responding and adapting to the needs of the prototype as it developed
Openness to learn given prototype status	Appreciation among team for team strengths, performance and commitment.
What was a challenge...	
Length of process and resource requirements (2+ years)	Ongoing flux of participants, both team members and stakeholders. Incorporating new members.
Rigour of project management and preparations	Information gaps and technical inputs
Unknown nature of prototype, combined with training and capacity of project team	Connectivity of tools to each other and plan development.
Leadership and refining the project vision	Overcoming resistance and generating commitment to plan development.
Some suggestions for the future...	
Review overall project concept, risks, timelines, and leadership approach given nature of concerns expressed.	Review roles for remainder of project, including allocation of time to planner(s) to prepare the draft plan
Package information into an accessible format for communication and change management.	Map out meeting dates, intended outcomes, and process to prepare the draft plan.
Adopt and communicate an outcomes focus. Ensure that the process supports the setting and achievement of outcomes i.e., the process is not an end in itself.	Keep up the team support, and celebrate achievements.

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1. Introduction

Launched in mid-2011 and led by Alberta Environment and Sustainable Resource Development (ESRD), the process for developing a Bow River phosphorous management plan represents a collaborative effort with stakeholders. Rather than a top-down model to control phosphorus releases, a bottom-up approach to governance has been encouraged to develop a sense of shared responsibility and accountability among stakeholders for water quality and conservation actions. This relatively new process, involving stakeholders whose environmental releases are regulated under the *Alberta Environmental Protection and Enhancement Act* as well as those whose activities and impacts are not, is considered a prototype for managing cumulative environmental effects. The process is an example of plan development at the sub-regional scale to manage a chronic environmental issue arising from point and non-point source contributions.

A prototype needs active review to ensure its success, with participants given the opportunity to contribute and provide feedback in its development. For the purposes of continuous improvement, ESRD has sought to identify lessons arising from the process to date of developing a Bow River phosphorus management plan.

This report summarises the results of a survey of 23 participants to gather impressions and take stock of the lessons learned over the past 18+ months in the formation of the plan. The information captured will be used to assess and design future stages of the prototype, and to inform other similar projects to manage cumulative environmental issues.

This report is structured as follows:

- A short background to the development of a Bow River phosphorus management plan, including recent cumulative effects management initiatives, is provided in Section 2.
- Examples of support and encouragement for the project and team are provided in Section 3.
- Feedback on the process and work plan is summarised in Section 4
- Feedback on information and tools used is described in Section 5
- Section 6 addresses management aspects of the project, including leadership, team work, organisation structure, and communication feedback
- Section 7 mentions other survey comments in relation to a vision of success, anticipation of upcoming stages, and use of the prototype for cumulative effects management.

1.1 Method for capturing lessons learned

Draft interview questions were drafted and discussed with the ESRD Project Support Team, and a draft template was then created followed by further review with two members of the team. The questions were based in part on the Terms of Reference document (released Oct 23rd, 2012) for the plan development.

Pilot interviews were conducted with two participants, both of whom confirmed the relevance of the questions and considered the 60 to 90 minute format to be satisfactory.

Overall, twenty-one key participants were identified by the ESRD project manager to be contacted for interview for this project, of which 20 were interviewed and a further single participant completed the interview template (Appendix A.1) in written form. A further twenty-three participants were asked to provide feedback based on a set of four questions (Appendix A.2), of which two participants responded via e-mail. Verbal responses were documented based on notes taken by the interviewer.

1.2 Acknowledgements

The author wishes to acknowledge the 23 survey participants (listed in Appendix A) for their time and valuable perspectives that form the content of this report.

Thanks to Louella Cronkhite, Tanya Melnyk, and others within the ESRD Project Support Team for providing feedback on the questions and scope of this learning exercise.

The Lessons Learned project¹ was undertaken by Elinam Inc. (Amy Mannix) with the oversight of Louella Cronkhite (ESRD).

¹ Project reference AESRD-OPSSOU-130325

2. Background

A short history of the policy context for the initiation of a Bow River phosphorus management plan is provided below, along with a description of the terms of reference for the plan development.

2.1 Environmental cumulative effects management

In recent years the Government of Alberta has developed a series of initiatives aimed at managing environmental impacts based on net outcomes, rather than a focus on end-of-pipe limits. The present approach is multi-faceted and involves the development of regional plans under the Land Use Framework (LUF), and implementation of an environmental Cumulative Effects Management System (CEMS).

A handbook, “Walking the Cumulative Effects Talk: A Case Study Approach” was prepared in October 2008 by Alberta Environment. Following internal work and communications, core functions of a Cumulative Effects Management System were described in the May 2010 report, “AENV Functional Design: CEMS Transformation”. In February 2010, a series of internal workshops were held on the preparedness to implement cumulative effects management. The focus has now shifted toward implementation under the “CEMS in Action” initiative.

In the southern region, cumulative effects management has included consideration of water quality parameters within the Oldman River, and water quality in the Bow River (starting in the fall of 2010). Progress has been made under the Southern Region Land-use Plan and sub-plans, including development of a draft water quality management framework.

The development of a Bow River phosphorus management plan is one of several sub-regional planning initiatives to address cumulative environmental effects in Alberta. Others in this category include the management of air and water quality impacts of the Industrial Heartland precinct on the North Saskatchewan River, and a lake water quality initiative in Alberta’s central region.

2.2 Bow River Phosphorus Management Plan

Heightened nutrient levels along the Bow River downstream of Calgary have long been a concern, and in the past these levels were primarily managed by placing concentration limits on point source discharges. The decision to discharge treated wastewater from Strathmore to the Bow River was a turning point. The environmental approval for the activity was successfully appealed to the Environmental Appeals Board (2007), who in their ruling emphasized that such decisions ought be managed in light of their cumulative environmental impacts, particularly given that water quality guidelines were being exceeded.

An interim policy on effluent limits was released by Alberta Environment in the following year (2008) that affected discharges from Calgary, Heritage Pointe and Strathmore. This policy required that a regional nutrient load reduction plan be developed for reaches at risk of exceeding water quality guidelines. As the format of the nutrient load reduction plan was uncertain, a water quality modelling project was initiated to understand the risks to water quality from a regulatory perspective. It was found that if the regulated entities discharged phosphorus at their approved limits then the water quality guidelines for phosphorus would be frequently exceeded. The results further showed that in the spring and summer months, the phosphorus discharge from non-point sources would be similar in magnitude to the approved limit from the City of Calgary. In this case, the parameter of concern (phosphorus) is not toxic in itself, though its ongoing high release can lead to adverse water quality outcomes.

Given the findings of the modelling project, combined with the policy to implement cumulative effects management (“CEMS in Action”), a planned approach that manages phosphorus inputs from multiple sources was considered appropriate. Stakeholders were gathered in mid-2011 to communicate these findings and to form such a plan.

2.2.1 Terms of reference for plan development

A terms of reference document for the Bow River Phosphorus Management Plan was last released on October 23, 2012. The document states the vision that “phosphorus levels in the Bow River will be managed within a range that meets the needs of its stakeholders and provides a healthy aquatic ecosystem”. The intention is for the plan to be “proactive, place-based, knowledge driven and adaptive” (p. 8), with elements that may include:

- Research and analysis.
- Identification of quantitative targets and timeframes for improvement.
- Development of management plans and actions.
- Evaluating results and adapting the approach as necessary.

To address the section of the Bow River considered most at risk, the plan is to cover the reach from Bearspaw Dam to Bassano Dam. The purpose of the plan is to “understand sources of phosphorus and identify opportunities for improved management based on consideration of environmental, social and economic factors”. The plan is to identify preventative strategies and actions to reduce phosphorus load, in order to improve existing water quality and accommodate future impacts, so that water quality is maintained within “consistently acceptable levels”.

The terms of reference mentions the link between the plan and the water quality management framework under development (as part of the South Saskatchewan Regional Plan), and that the phosphorus management plan may qualify as a management response under the framework in the case that in-stream concentration thresholds for phosphorus are exceeded.

In terms of the process, collaboration is sought with affected stakeholders to participate in a process to identify issues, gather and evaluate information, identify knowledge gaps, and “develop the goals, objectives and strategies toward achieving the desired outcomes” (Figure 2–1). Details are further outlined in Appendix D of the terms of reference, and includes the following steps (adapted, in order):

- Identification of issues and influences.
- Information gathering and analysis, including:
 - Characteristics of existing programs
 - Scientific information
 - Analysis and evaluation, including setting a base case scenario.
- Setting goals and objectives, in particular:
 - Draft phosphorus targets by sector, time-frame and geographic location
- Exploration, evaluation and selection of remedial strategies and actions by sector.
- Consolidating the plan, including:
 - Goals, strategies and actions
 - Implementation plan, including resources
 - Communications plan
 - Performance indicators.

The target completion date for a draft Bow River phosphorus management plan is September 2013.

Addressing Chronic Cumulative Effects Issues in Ecosheds: An Adaptive Planning and Management Process

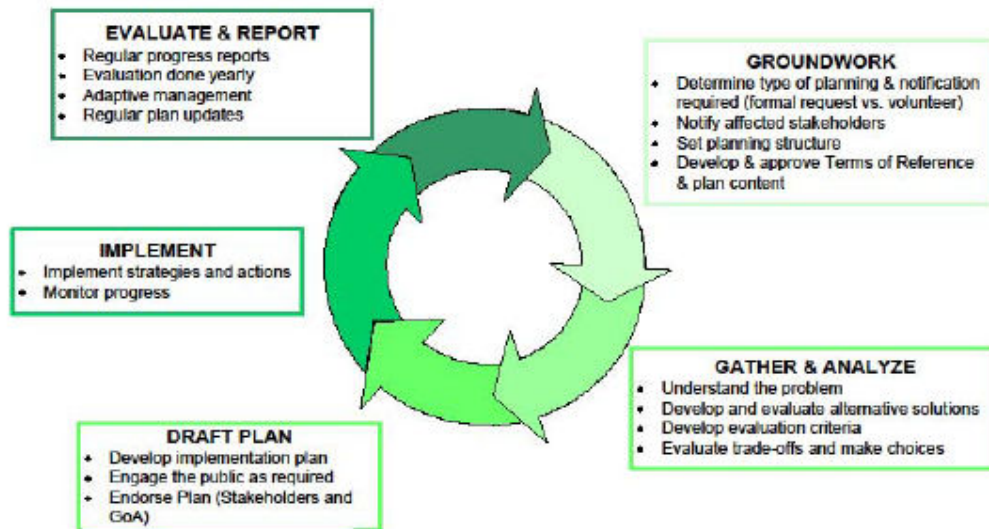


Figure 2–1 Planning process to be followed for a Bow River Phosphorus Management Plan
(Source: Terms of Reference, Oct 2012:10)

3. Support for the plan concept and project team

As stated by one ESRD participant, a personal finding from the process has been that the learning cycle is continuous. Especially given the prototype nature of the project, there is a need to be open, to give team members the space to learn and grow, and that such an ethic leads to open communication and positive outcomes. It is important to focus on what has been achieved to date, to recognise contributions, and to celebrate the team's success. Below is a summary of comments that reflect the positive aspects of the prototype and a recognition of the effort and good work done to date in delivering the project.

Stakeholders were particularly appreciative of the efforts taken to meaningfully engage and involve them in the process to develop the plan. With the understanding that the process is a prototype, the six stakeholders surveyed ranged in their overall level of support, from commitment (with frustration), to neutral contentment (with some reservations), to whole-hearted admiration for the process and the ESRD team. This range of views can be expected in a process that involves significant change. On the positive side, the frustrations and reservations expressed were specific and may be resolved by refining the project delivery and/or plans for future cumulative effects management initiatives (refer to later sections for details). Supportive perspectives offered by stakeholders included:

- Strong support for the level of stakeholder collaboration, in terms of emphasis, meaning, and/or quality of representation observed (4).
 - Several commented that the model provided an example that ought to be used for future similar exercises e.g., the degree of stakeholder engagement demonstrated “the way it should be done”; the attitude of ESRD staff in seeking to engage stakeholders was “a wonderful thing...truly collaborative”.
- Firm agreement from some stakeholders that they would wish to be involved in similar exercises e.g., “definitely” (2).
- Recognition of the “excellent” educational aspects of the prototype (2).
- Strong belief of the concept of cumulative effects management, the importance of the environmental issue, and the process (1).

In terms of managing the process as a prototype, one stakeholder commented that ESRD “have been smart to back up and reflect, think through the timing, and rethink the process and the product”, with the sense that the team are now “on top of how we are doing, modifying the process to ensure integrity of process”.

The efforts to gather information from multiple sources in developing a shared information base was recognised, with several of the stakeholders interviewed (3) reflecting on the importance of information and in making data available to stakeholders. One commented that the data efforts

made by ESRD were “commendable” and the shared information base developed by the data task team had “huge” potential for assisting the process.

Other non-ESRD survey participants, including consultants and Government of Alberta employees from another department, recognised the efforts of the project team in embarking on such an innovative project. One participant marvelled that few ministries have ventured into such collaborative approaches to stakeholder engagement, and that this in itself was highly commendable. Two others remarked with similar support that the ESRD team (particularly the sponsors) should be regarded as “champions” for testing the prototype, and that the participants seem very willing and collaborative related to the “good job” Louella has done in managing the project. Several emphasized that the project sponsors had had an important and very positive influence in communicating the direction of the project at key times during meetings among stakeholders i.e., being able to speak to the boundaries of the project, and able to negotiate the project scope on behalf of ESRD.

The ESRD team in general has an enthusiastic and positive culture, with recognition and support of fellow staff and team members; this culture was reflected in their comments. Examples of compliments from ESRD staff to their team members, and their support for the project include:

- “The energy and effort put in by the team members has been verging on heroic. What the project is trying to accomplish is enormous on so many levels” (project management, assembling scientific information, public engagement, education, testing new systems).
- Optimism that the project structure makes “sense”, that the project has been “worthwhile”, that the overall project concept is “strong”, and that a “ton” of work has been done to date, with the project now coming together.
- Outsiders are “impressed” that the government is embarking on such a process. The study is “groundbreaking” yet complex. Great support from the ESRD team is what is keeping the project together.
- The project adopts an open approach to stakeholder engagement, where government does not have all the answers. The project is personally of interest as it is a tangible example of cumulative effects management that goes beyond aspiration statements.
- The sponsor’s involvement in the Steering Committee worked very well; Heather is candid and can answer concerns straight away – this helps in building trust.
- Sense of personal engagement to the project as a citizen, in wanting to be part of the solution rather than the cause.
- Observation of significant personal growth within the team, including project management experience, taking on roles and mastering new tools (e.g., Bowtie), communications, and now facilitation training. The project was a vehicle for enabling teams within ESRD to come together, including the planners, modellers, and those with science expertise – the project was

“groundbreaking” in this sense. The prototype nature seemed to assist in staff engagement, creativity and experimentation. The relationships developed in some task teams, such as the urban point source team, will benefit other processes in the future.

- The planning team has done an “awesome” job with the stakeholders. Another: “impressed” at the numbers and ongoing engagement of stakeholders.
- Louella and Tanya did a “great job” of supporting the urban point source team in facilitating, getting out information, meeting planning and organisation. Some team members were very enthusiastic and committed, doing “far more than what was asked” e.g., Wendell. Cindy was an “excellent resource” for contract management advice. Lots of networking occurred as a result of the project, expect that our usual ESRD duties will now be easier to perform due to the relationships formed. This networking should help create success in managing cumulative effects.
- Data sources were combined into one source – this has “never been done before”.
- The ESRD Project Manager (Louella) has excellent tracking skills in documenting discussions – this activity was “needed and done well”. From another: Louella kept the project together, being a constant designated resource with complete knowledge of the project.
- Data task team did “a brilliant job” in responding to the information needs of the project.
- It is “terrific” that the initiative is stakeholder driven, as regulation is not always the answer. The process gives ESRD a different face, and builds our reputation for working with stakeholders – I hope ESRD does more of these kinds of processes in the future.
- Sense of lots of enthusiasm within the team. Appreciation of the visionary leadership. The process has felt like “real team work”, with easy communication and sharing. The level of autonomy and trust given by the project leaders to team members as professionals was “unbelievable”, which in turn drove the passion and engagement of the team.

A common observation (among 4 ESRD participants) was that the momentum has been building and that the project is now “coming together”.

Clearly there is tangible success to be found in the process adopted to date. The challenge is to build on these positive aspects and the support among the team in coming together to respond to the feedback on lessons learned to refine the prototype.

4. Process and work plan

To date, the process for the development of the plan has involved the initial gathering of stakeholders and informative presentations, discussion of terms, and information gathering and analysis. Task teams of stakeholders and ESRD staff were formed to undertake activities in relation to the following topics:

- Urban point sources of phosphorus
- Urban non-point sources of phosphorus
- Rural non-point sources of phosphorus, and
- Data collation.

In general, participant feedback was similar regarding the process and work plan, particularly in relation to the length of the process, confusion on the sequence of activities, and the difficulties in managing team dynamics. As described by one stakeholder, a challenge in developing the new process has been “to collectively understand how a stakeholder process will develop a management plan that we *all* own – a co-management plan”.

4.1 Length of process and resource use

Many survey participants (5, ESRD and other) stressed that the length of the project has been too long. This length created problems in allocating time to participate in the project and balance this with other employment duties, and when combined with a lack of progress this has tested patience levels and interest in the project. In contrast, two stakeholders surveyed were comfortable with the length of the process, with each explaining that it takes time for stakeholders to be informed, and that the span was short compared to that needed to observe changes in rural farming practices.

Reasons given for the slower-than-expected progress of the project included:

- Recognition that stakeholder engagement takes time
- Adoption of a trial and error approach to developing the process
- Data collation and responding to information needs
- Group dynamics, including team diversity and changes in team composition
- A need for greater project management and leadership at the start of the project, including role assignment and accountabilities, common goal and vision for project.
- Excessive focus on administration and process e.g., defining consensus decisions.

Other time delays included a review of FOIP Act compliance in the case of the social network analysis.

Within the ESRD team, it was felt that even though upfront planning had been done, the project's large scale had been underestimated and members were "unable to appreciate the enormity of the task at hand".

In terms of resource use, it was mentioned that the amount of resources assigned to the plan development was "unsustainable" for future processes (equivalent to approx. 7 full-time staff over 2 years). Comments reflected the opportunities for efficiency improvement, given there appeared to be "lots of meetings" that add to the time length and cost of the project. It was suggested that greater ESRD resources were needed in terms of the degree of sponsor involvement. Several participants (non-ESRD) noticed that key staff had pulled back from the project, one of whom was critical that the South Saskatchewan Regional Plan had been given a higher priority.

4.2 Work plan formation and sequence

A common concern, both among stakeholders and other survey participants, was confusion regarding the work plan, in terms of the links between steps and how these relate to the end product. The process was described by stakeholders as being unclear, "a real work in progress", "ad hoc" (2), with a lack of cohesion between meetings and ideas. One stakeholder's opinion was that the work break down structure was "high level", but didn't get into the "how and sequencing" with steps appearing "out of sequence" and in turn creating confusion for participants.

ESRD staff involved in devising the work breakdown structure commented on the frustration and amount of time consumed in this task. It was explained that a draft structure was produced and then put on hold until there was a better understanding of the project structure, external roles (contracts), and basic governance arrangements. External project management consultants were hired, who "took milestones and end dates and worked backwards" to figure out timelines and agendas using an administrative approach (3).

It was found that an updated work plan was not easily accessible for team members to reference if needed, and was not being regularly referenced by participants. It was commented that the team "haven't really used the work breakdown structure during the project", as the project was unknown and in hindsight a more concise conceptualisation of the project was needed from the beginning (ESRD). It was observed that, rather than adherence to the project plan using the work breakdown structure, the "evolution of discussion among technical experts" within each team has been driving the project.

Several commented that the process was missing some key pieces that outline a vision for the plan. For example, a "good context piece" that sets out the project concept in terms of "what is

the issue, what is the urgency, and why are we talking about the issue” (part of which was later addressed in an ESRD context presentation to the Steering Committee in January 2013), using simple, non-technical language. It was suggested that this would help ground the discussions among the various teams, and help with team turnover and new membership. Another missing piece was an answer to the question: “so what?” A vision from ESRD is needed on what implementation might look like from the beginning, in order to set the stage for what will be done with this plan. Another described this as “reverse-engineering the process” – that is, starting with the end in mind so that the group knows what it is aiming toward.

One ESRD participant recommended that team members be deliberately assigned to lead components of the work plan, who would then produce detailed plans using a common template (to be updated monthly) that would feed into updates of the work breakdown structure. Allocating more time for all task teams to define their purpose and deliverables was also recommended to clarify how their work related to the plan.

Many surveyed spoke of the need for the process to serve the outcome, rather than the process being treated as an end in itself. For example, in the case of the use of modelling and tools, the importance of first understanding the inventory of available models was mentioned, in terms of what each is able to offer, the timing for when to bring these into the process, and how the output from each model may then be used. It was explained that part of the issue in devising a coherent work plan is that a clear purpose at the start was needed, beyond the “fuzzy” purpose of the Terms of Reference, given there is a “sense that we’ve lost sight of what we want to do”. A focus within the ESRD team on process rather than outcomes has created disillusionment among most of the stakeholders surveyed (5) e.g., “it seems as though the process is more important than the content of the plan to some ESRD staff; which seems illogical”. This comment likely stems from the process forging ahead into describing actions prior to setting a concise water quality goal for the plan.

Three external participants expressed frustration regarding the work plan to the point of withdrawing from the project; these participants felt that their time was not being used productively in meetings and they were not seeing results from their efforts. One commented that agreeing to another meeting was affecting “sanity levels”, and there was a need to keep activities “discrete” (no scope creep) as people want to see “a product within a certain timeframe” to avoid stakeholder fatigue. To avoid this frustration, several external participants recommended that they ought to have been brought in at a later stage, once data products were available.

4.3 Role of information

The project was launched with stakeholders in June 2011 under the assumption that the information gathered was sufficient. Instead, data gathering was found to be a “huge slowdown” during the project that came as a surprise for the ESRD organisers. In response, the project was

adjusted by creating a data task team to fill in the gaps. It was found that information gathering was necessary though was a risk in terms of the length that this added to the project time span.

Survey participants were asked how much information was needed to move forward in developing the plan. There was a spread of responses received, from acknowledgement that information collation and review is a continuous cycle, to perceptions that there was no ability to move forward due to a lack of information. Several participants (in project support roles) commented that part of the issue related to personality types and risk-averse participants. Information was found to be a particular impediment for the rural sector. One observed that there was an “unwillingness to step-out-of-the-box” to find solutions on the way forward among the rural sector, and that participants don’t seem to value their own knowledge enough, nor recognise that one doesn’t need “95% confidence” in order to recommend a solution (non-ESRD). Another suggested that if participants had named their “top 5” actions from the start of the process these were unlikely to change with additional information, though advocating an approach of adaptive management was causing some discomfort (ESRD). Participants from the rural sector (4) emphasized the importance of information in order to mobilise change. Three of the four surveyed questioned the impacts of rural land-use on phosphorus in the Bow River, and were not convinced that sufficient information had been shown to indicate that the sector should form part of the solution at all.

Several participants (one stakeholder and several ESRD staff) commented that, for future processes, key information needs to be gathered beforehand. This was balanced by comments from ESRD participants involved in the data gathering that the information would not have been collated to the extent done without the prior launch of the project with stakeholders, though an initial data assessment would likely assist future processes. One participant (ESRD) offered the following examples of information that would have been better to collect and understand before the start of the process:

- Collation of storm water data from the City of Calgary
- Calculation of maximum acceptable loads for discharge of phosphorus to keep within the water quality guidelines
- Extension and update of the water quality model
- Links between a Bow River phosphorus management plan and water quality guidelines
- Links between a Bow River phosphorus management plan and regulatory approvals for point-source stakeholders.

Several non-ESRD participants recommended that the ESRD role at the start of the process be focused on data provision. One commented that the “process helped to build awareness and education”, but given the frustration of slow progress it would have been better to come together instead “once products are available”. Another stakeholder was adamant that all technical information should be brought forward up-front by ESRD, so that discussions can start from “a

platform” of technical information. This stakeholder felt that the government ought to lead the technical support and provide up-front preparations in terms of modelling, risk assessment, decision tools, and human resources, in order to provide information to inform stakeholders and stakeholder decision-making. If information gaps could not be resolved then it was felt that it was important for ESRD to explain what the information is suggesting, the context, the limitations, and how the information gaps will be addressed.

It was explained by several stakeholders that the rural sector will want to see specific information before they will act e.g., the proportion of the phosphorus load from tributaries attributable to the various sectors. It was explained that “some people need the facts on the source of the problem before action can proceed”, with the need to assess and discount potential other sources e.g., municipal WWTP discharge. The impact in not having this information was uncertainty in terms of the relevance of suggestions and discussion of actions. It was felt that at present the extent of the problem is not known, and that even with cursory examples (“straw dog”) there will still be push back to obtain evidence to support a decision due to “discomfort by public representatives as to whether they as a group member ought to be recommending such solutions”. The pie charts of phosphorus inputs displayed in June 2011 were dismissed as only covering the main stem of the Bow River, and not the tributaries which will be the source of where the activities will occur.

While those surveyed from the rural sector all had strong opinions on information needs, others were less tense. One explained that the “project team is now trying to adapt, which may mean that the report is more strategic in nature rather than detailed”. The information available affects “what’s possible”, with a need to adapt the process and product expectations accordingly. This stakeholder was “confident” that there was sufficient information, and that the information generation and review process would be ongoing, leading to eventual revision of the agreed plan at a later date.

4.4 Task teams

The participants surveyed saw the value in splitting tasks among the task teams, and thought that this division made sense (caveat from a rural non-point source team member: so long as the teams “do something”).

The urban point source task team was widely acknowledged as being successful in completing the tasks assigned. Reasons given were leadership within the group, expertise and mix of members. The nature of the topic itself was also an explanation, as information is more readily available on point sources of phosphorus, especially from mechanical wastewater treatment plants, compared to other sources. The stakeholders are accustomed to regulation by ESRD and commented that they are committed to the process given their regulatory responsibilities. Even with the success of this team, it was still commented that efficiency would have increased with the use of an external facilitator to keep discussions at the right level of detail. A participant described that they first spent some time trying to understand the objective of the project, as this was unclear to them, and that once they agreed on a concise goal “the group was then able to

focus more on solutions to the problem”. A key challenge for the team was that the “goal of the project was unclear”, with uncertain expectations given the voluntary nature of the project. It was commented that meeting times were “half learning, half working”, as some were unable to review information prior to attending.

The urban non-point source team was remarked as having difficulties in group dynamics and balance of membership. The presence of consultants as members was identified as a concern (3) that was linked to resistance in completing the assigned tasks.

Rural non-point source team participants commented that their slow progress has been related to group dynamics. One stakeholder explained that the group is diverse, and there was a need to “get comfortable with each other, get past agendas” and dynamics were also perhaps related to some “strong personalities”. This participant advised of the need to understand who is representing whom, and to note that among the members “nobody has a mandate from farm groups, people don’t want to over-step their marks”. It was discussed that the notion of practice change was on a different timescale in rural areas, and that the concept of environmental cumulative effects management is still very new to rural stakeholders in general. Among the three stakeholders surveyed on this team, all were unconvinced of the information and the links between rural practices and water quality, and recommended a different project concept and process.

It was commented that work on the rural non-point source team has struggled with a lack of clarity on objectives (timeline, end goals and outcomes) and not enough information to make progress e.g., data along specific reaches. Membership was noted as being too large, with the constant addition of new people creating an ongoing “rehashing and relearning of previous steps” that was a key frustration for team members. It was felt that the team “can’t continue to grow” and that there was a need for a “core” team (though when asked during the process whether the team wished to split, there was a decision to remain together). The risk analysis using Bowtie was felt to be time consuming and not worthwhile given that the information gathered was available by other means (3). It was explained that the “problem seems to be that the Project Support Team is overly committed to process – too much focus on process, rather than outcomes”. Another explained that seeking the more logical alternative of getting members to assess their own risks was not taken as there was not an understanding of the intent of the exercise, with a lack of information given to members on the meeting goals in advance so that they could prepare.

The data task team was small, comprising of five members. A one-day planning workshop was held in person, which assisted with team building. It was found that several were unable to attend meetings due to their regular employment duties, and so the work for this team was mostly done by a couple of members. This team found data gathering from numerous sources to be “cumbersome” and slow-going, due to the need to interact with different data providers using different processes. The team contracted out the data gathering due to a lack of internal resources, though the use of an external consultant also helped “optics” in terms of demonstrating a neutral analysis. It was explained that the data task team provided an important role as

stakeholders were ultimately looking for information on which to base their decisions and to justify their involvement in the project, and saw ESRD as the information provider. It was also mentioned that the task of the data team provided an opportunity for collaboration, with “everybody getting a chance to input their data”. The task also served to educate others of the challenges of integrating data sets. To manage the time required to collect data, it was recommended that data collation be explicitly built into the planning of the project. A current challenge has been finding the time for team members to share progress with other task teams and to feed their results into the project.

4.5 Suggestions for the future

Recommendations based on the feedback from participants on the process and work plan are listed in Table 4–1.

Table 4–1 Recommendations for process and work plan for remainder of plan development phase

Priority	Action(s)
High	Clarify the vision for a Bow River Phosphorus Management Plan. Set the framework for the remaining process of developing the plan.
Medium	Ensure involvement of sponsors in stakeholder meetings. Package available information into a context document for public release. Bring forward the issue of rural participation to the Steering Committee; consider adapting the tasks of the rural non-point source team to focus on outcomes.
Low	Review membership of task teams. Communicate the results of task teams to participants and link results to the plan development. Reconsider process and resource allocation to improve efficiency (time and costs). Make process plan (work breakdown structure or other) available to participants in an accessible, useful format.

5. Tools

Various tools were used to analyse stakeholder relationships, identify risks, conceptualise the issue, support decisions to prioritise projects and activities, along with project management tools including compilation of a detailed work breakdown structure (Microsoft Project).

Some of the main tools utilised in the plan development to date include:

- A Social Network Analysis Pilot Project (SNAPP, Phase I), that involved an electronic survey to identify connections among stakeholders, and gaps and opportunities for stakeholder engagement.
- A risk identification and response analysis using “Bowtie” software.
- The Investment Framework for Environmental Resources (INFFER), a decision support tool.
- Other tools, including document access using a SharePoint internet filing site.

Feedback from the survey on the merits of these tools is summarised below.

5.1 Social Network Analysis

The Terms of Reference document mentions that stakeholder engagement during the process would be informed by a Social Network Analysis Pilot Project. The social network analysis is an approach to identify, quantify and graphically represent connections between stakeholders. Phase one of the social network analysis has been made publically available (Hughes and Mutyala, 2012).

The survey results showed a significant disconnect regarding the stated benefits of the Social Network Analysis Pilot Project (“SNAPP”) and the perceptions among others in the ESRD team and stakeholders (2). One stakeholder offered that the analysis “seemed unproductive”. Another quipped that it was “analysis paralysis” and explained that rural networks are already known, particularly among producer groups of several hundred farmers that coordinate their production under supply management laws. It was discussed that the situation is different for primary food and livestock producers, where groups are more diverse and the number of producers is much higher (e.g., 10 000 rather than several hundred); in such cases change occurs by neighbours “looking over the fence” and “chit chat” with innovative leaders among the farming community. This participants’ view was that so long as sufficient evidence can be produced that demonstrates the environmental effectiveness of change, accompanied by incentives that provide a financial reason for change, then existing social networks will become engaged in the process.

Several within the ESRD team were unsure of the practical usefulness of the social network analysis (3), reflecting that the approach and results to date seemed “academic” (2). Two other

participants emphasized the importance of clarifying how the social network analysis and other tools fit within the process, and to identify the link between the output of the tool and the plan components that relate to communications and stakeholder engagement. It was recommended that advice be sought on linking the analysis when preparing strategies on communications and stakeholder engagement for the plan implementation.

5.2 Bowtie risk identification and response

Bowtie is a risk identification and response tool that uses a specialised software package. It was explained that the tool was originally selected as a means to encourage stakeholder interaction and involvement in the process, rather than necessarily for the purpose of risk identification per se.

The benefits of Bowtie were reported to be in its use as a brainstorming tool, and in helping for team building. It was observed that “members were initially reluctant to speak up and mention solutions, as solutions cost the communities money”, and that Bowtie “got discussions going, provided focus and speaking points”, while bringing “the right people together” (ESRD participants). In terms of its contribution to outcomes, the tool was “not the best” but at least provided an “information dump” for each of the topic areas.

Several described the energy the urban point source team devoted to the Bowtie process, who became perhaps a little “too enthusiastic”, with discussion that seemed to get “bogged down” and “off-track” in examining peripheral solutions to a level of detail that may be unsuitable for including in the plan. The urban non-point source team were also mentioned as taking the analysis to a fine detail, with the time-consuming task of then sifting through hundreds of potential actions to prioritise into a short-list. To assist in managing the actions coming from the Bowtie analysis, these were categorised into regulation/policy, best management practice, education and research, and the top 8 to 10 actions then transported for prioritisation using INFFER. One ESRD participant commented that “without Bowtie, we wouldn’t have got to where we got with INFFER, though Bowtie can get discussions off-topic...”

Several stakeholders commented on the “struggle” in transitioning the results of Bowtie for the purposes of prioritisation using INFFER, and that a better relationship was needed in linking the results of these steps. It was suggested that when actions are identified that these are prioritised “right from the start” (2) so that discussions remain at the right level, and the need for a professional facilitator to assist this process.

All participants surveyed from the rural sector (4) were not impressed by the Bowtie process and felt that this “made a simple risk analysis complex”. One explained that risk analysis “is not rocket science” and with each spending half a day of personal time the same solutions would have been possible. Another sensed that Bowtie was “busy work” brought in with little context. An outcomes focus (risk assessment) rather than a process focus (Bowtie) was advocated by rural participants in order to make the best use of their time. The rural non-point source team had

significant issues with group dynamics, in particular the entry of new members (with the frustration of repeated discussions), that contributed to their lack of support of this tool.

5.3 Investment Framework for Environmental Resources

The Investment Framework for Environmental Resources (INFFER) is a decision-support tool that prioritises projects based on cost-effectiveness in meeting an environmental goal. The selection of the tool was partly due to its ability to generate discussion and interaction with stakeholders.

It was originally hoped that INFFER would help the stakeholders to think about the problem differently in linking social, environmental and economic aspects, which in turn would assist in driving the development of the plan. It was described that the tool is able to bring in important aspects to the discussion in terms of selection of on-the-ground actions, likelihood of adoption of actions, ranking of actions, and testing of “what-if?” scenarios such as the use of rural actions to offset the impacts of urban population growth. The tool is not able to evaluate policies, regulations, or codes of practice; instead it was recommended that these forms of solutions be built in as principles of the plan.

It was found that INFFER was brought in too early in the process. Prior to introducing the tool, a concise statement of the environmental goal is needed. Other prior steps are the identification of actions, and gathering of available information that links management actions to phosphorus reductions (e.g., modelling output). It was also suggested that a contextual understanding was needed of whether, in principle, a prioritised action plan is appropriate in this case and whether this fits with the vision of the plan. In particular, it was mentioned that there is a risk that some stakeholders vested in particular solutions (e.g., urban stormwater retention wetlands) may react against the findings of the INFFER analysis.

Stakeholders comments discussed difficulties in understanding the differences in categories between strategies, barriers, actions, goals and objectives; and the confusing sequence that led to introducing the tool (with a preference for an “evolving learning process”). Part of the confusion was mentioned to be due to the purpose of the prior step (Bowtie) not being clearly communicated to participants. Several discussed the need to segment the problem for the identification and assessment of rural actions, as the spatial area of a river basin is too large and INFFER is more suited to assessing actions on a smaller scale.

5.4 SharePoint

Efforts were made by the ESRD team to define a process for information management and to educate participants on the use of SharePoint. SharePoint received mixed reviews. One stakeholder observed that SharePoint was “not widely accepted” though was “great for access” to standard documents stored in the one location. Another external participant commented that SharePoint was “irritating” and that ESRD should “not make their system our system”, and that

many of the documents were not of use to the stakeholders anyway. Two external participants suggested that a secure website would have been preferred for access to key documents, for example:

“My other main challenge is lack of ability to consistently access all work to-date via “Sharepoint and Links”. It would be much better if access was much simpler (website?). I believe that more participants would stay engaged (fingers on the pulse) in proceedings, with easier access to project status”.

SharePoint was used by the data task team, including load duration information. SharePoint was also used to store important information including an on-boarding package for new stakeholders, and links to contract management templates, though access was an issue in terms of sifting through the large amount of stored information. One ESRD participant commented that they are not personally using the site, relying instead to e-mail attachments to the Project Support Team.

5.5 Other tools

A logic model was used that linked outcomes, steps, and the work of the task teams to the project, along with a “causal networks” analysis. A challenge mentioned in working through a logic model was that the team had many objectives, and that there was a need to step back, slow down, and “answer some fundamental questions” concerning the scope of the project including what outcomes were desired, and what steps could be taken within a realistic timeline.

For the start of a process, it was mentioned that the City of Calgary used the SMART approach to goals setting, using a session run by a professional facilitator (for details contact Margaret Beeson of the City of Calgary). This tool was recommended as being efficient.

Several commented on the difficulty in keeping the team discussions at the right level to ensure that this directly contributed to the development of the plan. It was observed that progress was at times stalled by “intellectual discussions”, including within the better performing urban-point source team (e.g., “members like to chat, it was a struggle to move from the details to bigger picture issues”). For this reason, a highly recommended “tool” for a stakeholder-driven process is a professional external facilitator (6+). Some considered an external facilitator to be essential as this assists in creating a neutral process with stakeholders (both perceived and actual neutrality), and keeps discussions on track and at the right level.

Food was also mentioned as a “tool” for encouraging meeting attendance, and generating an environment for side discussions.

5.6 Suggestions for the future

Recommendations based on the feedback from participants on the process and work plan are listed in Table 5–1.

Table 5–1 Recommendations for tools for remainder of plan development

Priority	Action(s)
High	Hold the assessment of actions by sector until the environmental goal has been clearly defined.
Medium	Explore how the results of the social network analysis will fit with the communication and engagement strategy of the plan. Suspend the completion of the Bowtie analysis. <ul style="list-style-type: none">▪ The level of detail generated by the process is unlikely to contribute to plan (outcome).▪ A short-list of actions by sector is premature until the environmental goal is set and agreed upon.
Low	Revise information access for participants; consider external website for selected documents.

6. Management aspects

6.1 Team work

Tasks carried out by stakeholders has formed a key component of the prototype, and many participants (ESRD and other) commented that team work has been a challenge. Performance across the teams varied, with some functioning more smoothly (data, urban point source) compared to others (rural and urban non-point source task teams). The comments suggest that the issues encountered can be largely explained by group dynamics, in particular the impact of new entrants, along with uncertainty regarding roles, outcomes, and connections between tasks and the plan.

The turnover of team members in several teams was found to be a real impediment to progress and morale. Those who entered later in the process were quick to explain their sense of uncertainty, and that they lacked an understanding and/or agreement with the intent of the process. The transition was troublesome for new entrants (e.g., some project team members found their late entry “*very difficult...overwhelming*”, “*a struggle*”), as well as for teams in accommodating new members. Members of the rural task team explained that the constant addition of new members required repeated discussions, and that this delayed progress and caused frustration and disengagement. It was mentioned that for the success of the process and the plan itself, the continuity of people involved in the project is important (stakeholder comment).

One participant went further to explain that the flux of people moving in and out of the project “creates information gaps” and in turn the need to fill in these gaps. Team members having the same contextual background and understanding of the issue helps to create the sense that everyone is on “the same team”. To avoid repeated discussions, several support team participants recommended that efforts be made at the start of a project to set and fix the team where possible (including availability expectations), and then minimise and restrict the invitation of new members. It was also recommended to design the terms of reference to be consequential, where a choice to refuse agreement with the boundaries and rules of the process would in turn affect the degree of participation in the process.

The slow progress and length of time taken to perform group work was unexpected. It was found that the task teams needed far greater time than planned, with work taking 8 months to date compared to the original 2 month plan. An important finding was to allow time for stakeholders to be involved in the design of the questions to be answered, in order to generate buy-in and engagement with the process.

A useful tool for setting up and leading groups through team work is the observation of four common, sequential stages of group development by Tuckman (1965): “forming”, “storming”, “norming” and “performing”.

6.2 Organisation structure

6.2.1 Project governance and membership

The organisation structure for the plan development has a focus on stakeholder involvement (Appendix B).

The Steering Committee was designed to consist of directly-affected stakeholders. Members were added during the process as new sectors were identified who had an impact on phosphorus. Participants agreed that the committee was not performing the function of a true steering committee, at least not yet (“in name only”), as it was yet to perform decision making and project direction duties. Many participants (6+) recommended that the size of the Steering Committee be reduced to enable a practical decision-making process e.g., to between eight to 10 members.

The personal styles of those selected to participate in the process was mentioned as a factor that has slowed progress. Many of those surveyed (5) suggested that the current stakeholder membership was weighted toward those focused on details, who appeared unwilling to manage risks and provide practical advice when faced with uncertain and/or incomplete information. One participant offered their experience with the Bow River Basin Council (development of a water quality plan), in which there was a strategic intent to select stakeholder committees comprising of “big-picture” thinkers rather than details-focused members. To assist in moving the conversation forward, the use of time constraints, “parking lots” for side topics, and a skilled facilitator were all suggested.

Comments from stakeholders reflected that they had not yet sensed being empowered by the process, with one commenting that Steering Committee members were disillusioned after attending another unproductive meeting, with confusion and a need to clarify *why* they are part of the process. In practice, it was noted that the Project Support Team (ESRD) has set the agenda for Steering Committee meetings, and doesn’t always ask for feedback. One suggestion was to encourage the Steering Committee to become more involved in setting their own meeting agenda, though this would require ESRD to “slow down” to a pace that allows greater stakeholder participation (ESRD participant). Another agreed that giving more ownership of the process to the stakeholders would assist in creating buy-in, given an observation that when processes have stalled during meetings it has been “automatic” for stakeholders to look to ESRD to fix the problem.

A non-ESRD participant recommended that the process be refined as follows:

“Instead of the present arrangement, there needs to be some kind of joint cabinet comprised of government and non-government stakeholders, of a size of about 10 - a group that is prepared to say here’s the problem, here’s how we will answer the questions arising, here’s how we will move forward, with some assurance of commitment to the process.

At present, the Steering Committee is comprised of everybody listed in the Terms of Reference – far too many. Ideally, should be 6 members. Should meet regularly, with a very clear mandate, per diem compensation for meetings (for volunteers), with an ability to set homework where needed to address the problem. This committee could then call on an advisory committee when needed, to seek and ask: “can you help us with this problem?”

One stakeholder commented that the current make-up of the Steering Committee had been excellent for learning purposes, with a desire for this group to continue in a learning capacity. It was suggested that this learning could be improved by presentations by members to other members on their perspectives e.g., similar to the educational events of the Bow River Basin Council.

Several participants, including one stakeholder, were concerned that there was no representation from aboriginal reserves that are responsible for a large tract of land adjacent to the river.

6.2.2 Role of ESRD as lead organisation

ESRD has a regulatory role yet has sought to launch the plan development as a voluntary process. Many ESRD participants were enthused by the level of stakeholder involvement generated, and supported the aim that ESRD facilitate but purposely avoid a leadership role in the process so that stakeholder involvement is meaningful and influential. Stakeholders generally appreciated their involvement, though the facilitation role of ESRD was found to be a challenge (refer to Section 6.3.2).

Several participants, including two stakeholders, commented on the perception of ESRD as an environmental regulator. Due to ESRD’s regulatory role, it was mentioned by one stakeholder that the launch of a “voluntary” project seemed disingenuous. Several noted that some push-back had occurred during discussions related to the perceived threat of regulation by ESRD (3+). It was noted that there was some cynicism that ESRD was off-loading its responsibilities onto others (e.g., “don’t tell us what to do” mentality), and that there is a trust “hurdle” to overcome in achieving the cooperation of stakeholders.

One participant (non-ESRD) recommended external contract management and wondered whether this would assist in overcoming the silos between government departments in the search for effective solutions. Another noted the risk in government actively participating in a shared-governance model, as participants will expect government to fund the implementation of actions; then if no budget is made available this becomes an obstacle to the success of the project.

Several stakeholders confirmed that budget was an issue that will likely arise during the discussion of agreed actions.

The impressive extent of stakeholders gathered at meetings was felt to be due to ESRD’s regulatory role. When asked whether other organisations may be better to lead similar projects, one stakeholder explained that Water Planning and Advisory Councils (WPACs) were not an effective alternative. It was felt that WPACs were “not taken seriously” as they did not have authority, were at various stages of development, were not well funded, do not have a clear role, and were not able to engage stakeholders to the extent seen in this prototype.

6.2.3 Task team membership

Membership of the task teams was purposely kept undefined, with no designation of core versus other members. Leaders for each team were also undefined, to be based on a self-selection process. This open model of team membership and management has ramifications for productivity (Section 6.1). It was mentioned that the task teams were asked to assist in organising their role, including to complete their own terms of reference, but that this was set aside and not carried out.

Comments on the membership of particular task teams are listed below (Table 6–1).

Table 6–1 Task team composition comments

Team	Comments
Urban point source	<p>Only half were active participants, active members were those for whom the task was more relevant (others wanted to be engaged more generically in the project, including participants from outside the basin).</p> <p>Commitment highest among key stakeholders and ESRD (Tanya, Louella).</p> <p>Did not include small municipalities, some key ones missing (Airdrie, Crossfield).</p> <p>Only one or two members with expertise on wastewater lagoons – would have preferred more.</p>
Urban non-point source	<p>Too many ALIDP members, lots of consultants – composition with vested interests is interfering with completion of tasks (4).</p> <p>Possibly missing the developer community e.g., Urban Development Institute, and expertise for managing run-off from roadways.</p>

Rural non-point source	<p>Team is too large at 15 to 20 members, need “a core team” for the rural sector.</p> <p>Team is diverse. Some difficulties with membership turnover. Members themselves decided they wanted to continue as one group.</p> <p>Some strong personalities present in group.</p> <p>Team consists mostly of government participants, few stakeholders.</p>
Data	<p>5 members, several of whom were unable to attend due to regular employment duties. Workload carried mostly by a couple of members.</p>

One participant (ESRD) recommended that the task teams be comprised of a core team defined from the start, consisting of a facilitator, recorder, and those with experience or expertise on the topic. Another suggested that the task teams be limited to no more than 10 participants.

A professional writer was hired for recording the meetings of task teams, though the documentation produced was found to be too dense to be useful, with a need instead for the note taker to have an understanding of the context and problem in order to provide useful notes.

Several participants (non-ESRD) mentioned that the task team process was beneficial from an educational perspective, though due to the length of time and frustrations with undefined membership it would have been better from a practical perspective for the teams to review rather than produce the information products used to develop the plan.

6.2.4 Project support roles

The ESRD team supporting the plan development was also challenged by changes in team composition due to staff availability, with members entering and leaving the process. Several of the ESRD team have been core, highly committed members, while others were strained by the workload and have opted to manage their availability given their other duties. ESRD has recognised the capacity and resource issues within the team and has sought to address this with training (facilitation, project management) and external contracts.

Several commented that the role designation within ESRD did not appear to be aligned with skill bases, with a need to ensure that the team is set up “with the right people in the right place doing the right pieces”. The need for greater technical expertise was mentioned as a concern (5+ responses), along with a sense that resources appear to be “stretched thin” (2, non-ESRD). A stakeholder explained: “there has been too little technical expertise represented by the participants, which makes it hard to know if we are on the right track”. Two participants (ESRD) mentioned that the project would have benefited from a strengthened and coordinated role of the modelling component; requiring expertise in understanding the role of modelling and how it can

assist the planning process. Additional expertise may also have assisted in planning for the data requirements of tools used during the process (e.g., INFFER).

Views on the topic of technical capacity of the team included one concerned of the risk that expertise within ESRD may be “hollowed out”, and that there was a need to keep expertise within ESRD both to achieve organisational aims (scientific, policy-driven approach) and to have sufficient capacity to work with contractors to get the most benefit from contracts (ESRD response). Several ESRD participants commented on the helpful assistance received from contractors, though expectations regarding leadership had not materialised (3). It was explained by several contractors that there was a reticence to take on leadership related to uncertainty regarding the objectives, role expectations, and process (because of its prototype status, unfamiliar topic, and due to entering part-way in the process), an inability to speak or negotiate on behalf of ESRD, and/or a perceived lack of credibility with stakeholders. One explained the difficulty in knowing when to “reign in” discussions that seem to go off-track, as part of the stated value and focus of the prototype is in collaboration and discussion among the stakeholders. It was advised that incorporating team members in key roles from the beginning of a project (whether ESRD or external contractors) would enhance the ability to take on greater leadership, and to ensure that project plans are detailed and sufficient.

Team members including contractors stressed that the sponsors have an important leadership role in responding to questions regarding the scope of the project, and that meetings were much smoother when the sponsors were in attendance (3). It was recommended that the sponsor’s profile be more visible and vocal, as participants are “looking for a leader with clear direction and focus”, who can provide ongoing communications to manage “the human side of change”, and to create a sense of urgency to complete tasks when none is present otherwise (e.g., urging that “we need to finish this off”).

6.3 Stakeholder engagement

Comments from stakeholders reflected a strong appreciation for their level of involvement in the plan development, and thought that had indeed been meaningful and influential. It was mentioned that the project is an example of empowerment (Figure 6–1), that is unorthodox in Alberta.

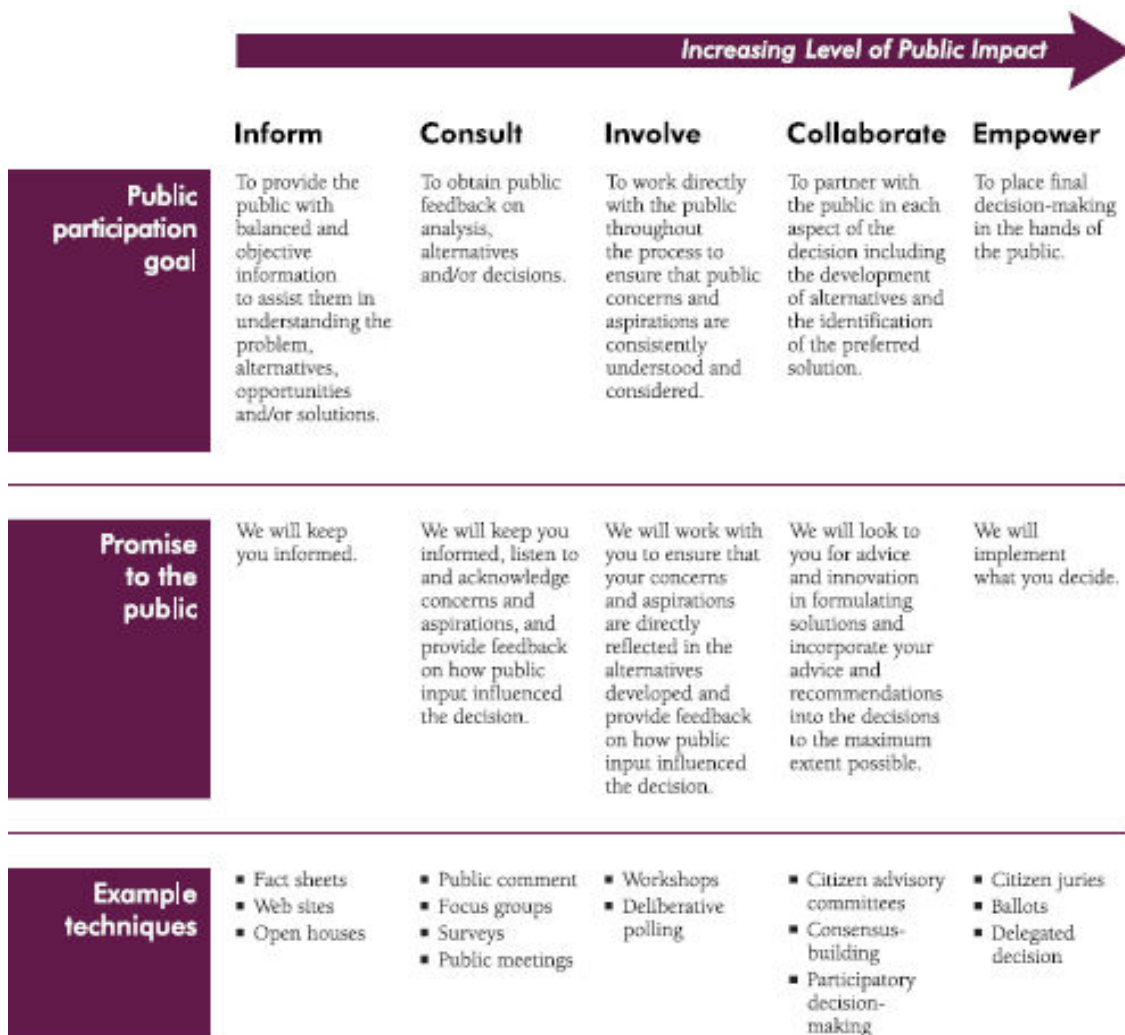


Figure 6–1 Spectrum of public participation (International Association for Public Participation, 2007 [cited by Alan Pryor])

The spread of comments among stakeholders reflected some variation in engagement levels, from one who was fully committed to the stated vision of the plan, to others that appear to be observing and distancing themselves from the proceedings.

6.3.1 Participation

Several ESRD participants expressed their surprise that the stakeholders “keep coming out” to meetings, and that this suggests that levels of engagement are still high.

Non-ESRD participants were concerned that continued stakeholder engagement had become a risk, as confirmed by comments of frustration from the stakeholders surveyed. It was observed that “levels of engagement have dropped considerably” since September 2012, with volunteer

burnout apparent based on turnover and a lack of turnout from members. One observed that the momentum of the Steering Committee had declined, with less robust discussions. Given that the format is “a lot to ask” of volunteers, it was suggested that holding fewer meetings, perhaps with larger groups and breakout sessions for focused discussion, would assist. One stakeholder confirmed that volunteers give their time and spend resources in travelling to meetings, and that this had become an issue due to the unproductive use of their time.

The importance of clear boundaries and expectations regarding participation were mentioned by several participants (3, non-ESRD). It was found that due to the large number of stakeholder representatives with the assignment of delegates, along with the long duration of the project (recognising that it is impractical to confirm availability over a 2-year period), this has created “inconsistencies in base knowledge across the board” that has stunted the progress of discussions. It was recommended that if members are to assign alternate delegates, then the responsibility of the delegate for communicating to his/her counterpart needs to be made clear from the start of the project. This responsibility could form part of the terms of reference.

One stakeholder noted that some missed meetings were due to dates coinciding with council schedules over an extended period.

6.3.2 Leadership and stakeholder engagement

It was discussed that the plan is envisioned by ESRD to go “way beyond” the current level of engagement (under the present 150 member Stakeholder Advisory Committee), though there was disappointment that some participants are not taking responsibility in acting as representatives and actively communicating with their “constituents”, and are instead resisting bringing forward options and action items. It was observed that some are choosing to remain quiet rather than adding their expertise, and that progress and performance had been stunted related to strong personalities and an expectation that ESRD will step in. A practical recommendation (made by an ESRD participant) was to emphasize participants’ responsibilities by asking pointed questions as part of a round table discussion of what representatives have done recently and what they have found i.e., “go beyond the usual questioning to create a sense of accountability at Steering Committee meetings”.

It was explained that part of the reluctance to nominate solutions is that “nobody has a mandate” and that stakeholders “don’t want to step over their mark” in offering solutions where no practical authority as “actual representatives” has been assigned to them. There is also a reluctance given a lack of acceptance with the overall concept of the plan e.g., “first of all, we need to define the problem”, and “understand the basic framework of the plan”, as there is concern that the “hypothesis and major assumptions may be wrong” and that these “need to be caught early”. Another stakeholder advised to “be clear on who is representing whom”, and check whether the individual selected as a representative is really able to represent the group e.g., example of Strathmore (question of whether the Strathmore representative is practically able to represent small to mid-sized municipalities).

To improve stakeholder engagement, four of the stakeholders (of the six surveyed) requested stronger leadership from ESRD. One reflected that there was “no recognised strong leadership” in the process, as demonstrated by the loose work plan. Another observed reluctance in others, who were questioning what needed to be accomplished and were seeking definitive answers, with varied views in terms of “different levels of acknowledgement of the need for change”. This stakeholder found uncertain expectations to be a main challenge, and would have preferred a “stronger position” from ESRD on “this is where we are, and this is where we would like to go” using a leadership style that reflects a change management approach to the issue. For example, it was mentioned that information from the June 2011 initiation meeting was not accompanied with a position from ESRD on whether the loads were acceptable or not i.e., an answer to the question: “So what?” It was felt that this purpose was missing from the beginning, in terms of whether a total reduction in loads were required, whether to preserve the current situation or improve the current level of water quality.

Due to sensing a leadership void, one participant described being personally tempted to take on a leadership role in the project, though resisted as he/she was not formally asked, does not have the time, and does not want to “interfere” as the project is not “our” project from the point of view of the participant’s organisation. Instead there was a desire for ESRD to lead, given it is “not clear where they want to go and why”, or to “at least facilitate the process” to a greater extent by clearly outlining timelines, objectives, end goals and outcomes.

With the understanding that the approach is to be driven by stakeholders, one participant (non-ESRD) stressed the need for ESRD to at least lead some aspects, in terms of outlining what the written plan is going to look like e.g., heading titles, questions to be addressed in each chapter. At the same time, the plan development would benefit from stakeholders having greater ownership of the process itself, such as *how* actions will be prioritised, so that “strategies belong to the group” and constituents will in turn be engaged. Participants need to have input into creating the process, but are looking toward ESRD to outline the framework of the exercise. A particular challenge in facilitating a stakeholder-driven process arises with modelling; modelling is a refined skill, and it was explained that those on the present Steering Committee do not have the capacity to understand how modelling may assist the process.

6.3.3 Terms of reference

ESRD participants mentioned that few stakeholders have agreed to the terms of reference, with only eight signatures (“about half”) obtained to date. One participant mentioned that this was a key component of project management that needed to be addressed. It was pointed out that some of the participants who were resisting tasks had not signed on to the terms of reference.

One stakeholder suggested that omitting to sign the terms of reference was due to simple confusion, as some had thought that they had signed a similar document earlier in the process. Another suggested that the title “terms of reference” was a mix-up in nomenclature, and that an authentic terms of reference agreement is a clear document of about 1-page in length. It was

explained that a 45-page document is not practical to be taken back to representative organisations to then read and sign (unable to “make sense” of it given its length), and that there was confusion as the document changed over time and was too detailed, and this in turn “overburdens the capacity” of Steering Committee members. Another participant described the terms of reference as “broad and overarching”, though appeared to have been so broad that this led discussions off track e.g., detailed discussion of the costs of phosphorus reduction per capita.

6.4 Project management

The administrative role of project management was commented as being performed well. Participants surveyed indicated that management of the project to date has focused on coordination and administration aspects (e.g., meeting organisation and checking of action items), rather than a more complete management role that takes into account the vision, incorporation of technical components, the function of tasks and roles, and the fit of tasks within the process.

A key difficulty in enhancing the role of project management has been a lack of definition of the shape of the end product. Instead, a “trial and error” process was adopted where elements and tools were brought in during the process in an effort to assist the process (rather than to reach an outcome). This approach was related to the project basis to empower rather than lead stakeholders. It was suggested that project management planning could be more inclusive so that stakeholders have a sense of the end result and their contribution, with meetings focused on project design and strategy, and members who can ask good filter questions.

Many within ESRD sensed the need for more upfront preparation to scope out the management and vision of the project. It was mentioned that the project structure had been too vague to date, with a lack of vision, understanding of tasks, timelines, and fit of tasks within the overall plan. Several discussed the distinction between “big P” and “little p” project management, and that a greater focus on the former, done at the start of the project, would have assisted in creating a more efficient process. For example, understanding the form of stakeholder engagement (Figure 6–1) and the time that this requires would have helped to define realistic expectations regarding the length of the project. Suggested elements for this upfront planning included the use of a process map, defining key outcomes, sub-tasks, components, timing, and dependencies. Understanding this structure may have helped to avoid discussions that emphasized “how” the process would be done, rather than focusing on “what” would be done. One suggestion was to spend one year in advance of the process to plan the project and gather information.

A textbook approach to the discipline of project management, “plan, prepare, execute”, was advised by one participant, with use of controls to manage changes in the plan. This approach was advised given the greater uncertainty involved in the project which in turn creates risks of extended timelines. Ideally, a disciplined approach to project management needs to be observed from the outset to manage the expectations of participants. Part of this approach would be to set realistic agendas, to focus on and achieve each agenda, and to stay within time limits (e.g., create

a sense of urgency that “we need to make a decision”). One suggestion was to create a physical project map to manage the project, with start and end points, that would assist in understanding dependencies and being able to schedule and track progress. This includes outlining where future components fit into the process in the short term (e.g., to June 2013, as recently completed by the rural non-point source task team).

A key component of project management is role definition. Project management for the prototype has involved several project managers, one within ESRD and one external project managers (MNP, plus an alternate), and two project sponsors within ESRD. This duplication has required enhanced coordination and communication across roles. Project management was also challenged by the inclusion of external project managers mid-way during the process. Several discussed the need for better definition of project roles, with a recommendation to set and communicate clear roles and responsibilities for team members from the start, rather than to assume roles, and to remind other team members of their roles when needed (3). Role confusion was suggested in relation to contract management (administration, project management), modelling (“seemed to be two different outlooks between planning team and modelling team”), recording meetings (purpose, format), and project leadership and management. A common theme was that having roles defined early, with all members of the team involved from the start, rather than coming in part-way along the process, would enhance planning and the efficient and effective delivery of the project. For example, a complete knowledge of the context of the project would assist a facilitator in responding to process questions and leading the discussion through each step of the project. It was suggested that defining a “fuller role” for a contracted project manager in future processes may assist in defining and articulating roles, including for each group within the overall project structure.

Management of external contracts was another aspect of project management raised during the survey. It was mentioned by two participants that contract management had required more effort from ESRD than anticipated, with time required for contract preparation, answering questions during the bidding process, and actively managing activities over the duration of a contract. In one case it was mentioned that a lack of understanding on the contract requirements (between the team and the contractor) had in turn led to delays. The importance of keeping track of the critical path of inputs and outputs of process steps from a contract management perspective was mentioned, so that future stages are not delayed and contract costs are managed.

Other issues mentioned regarding project management related to capacity and project management training, office locations, and the need for the team to keep the external project manager informed of progress (in addition to the ESRD project manager).

6.5 Communications

A common response regarding communications for the project (by ESRD and others) was that the capacity of participants to keep up had become a challenge, with too many meetings and/or e-mails. It was acknowledged that communications were difficult to balance due to the size of the

project. Repetition of discussion was mentioned as an issue (related to turnover of team membership), as well as inefficient use of meeting time. One commented that there was “always too much on the agenda”, with a need to reduce the number of items recognising that good discussion with stakeholders takes time.

Face to face meetings were found to be important for team building (3+), and that tools such as Live Meeting were useful for subsequent meetings to enable attendance e.g., as used by the urban point source task team. ESRD and other team participants indicated that meetings that involved strategic planning (milestones, addressing purpose and defining the form of products) rather than administration were most valuable. For weekly Project Support Team meetings, it was suggested that these could be altered to better suit the needs of the project; one suggested a focus on project management and process with some discussion moved to the Decision Support Team meetings, though others suggested using the time to instead focus on tackling present issues and outcomes rather than a focus on dates.

In terms of communications and meetings with stakeholders, several suggestions were made. One stakeholder requested that the constant use of acronyms by ESRD were a barrier to communication and ought to be kept to a minimum, otherwise to provide an acronym reference list to improve communications. Another stakeholder (rural) requested that meeting facilitators try their best to ensure that one or two strong personalities do not dominate discussions, to ensure a spread of meaningful input to the conversation.

The quality of discussions were mentioned by several participants (external to ESRD). Use of information was encouraged to move beyond a discussion format toward technically-sound conversations, given that perceptions may differ from the data. For example, one suggested that the information be packaged into a formal document so that this can be debated based on a common, accurate understanding. Another stakeholder suggested that technical presentations by stakeholders to stakeholders would assist the process, increasing the level of understanding between different groups (e.g., rural stakeholder perspective, experiences of the City of Calgary in adopting total load management, regulatory perspective from ESRD and ties to cumulative effects management – similar to the BRBC educational forums).

6.6 Suggestions for the future

Recommendations based on the feedback from participants on management aspects of the process are listed in Table 6–2.

Table 6–2 Recommendations for management aspects for remainder of plan development

Priority	Action(s)
High	<p>Set vision for plan, and framework for plan development.</p> <p>Allow Steering Committee to select process within the framework.</p> <p>Increase role of project management</p> <ul style="list-style-type: none"> ▪ Map out future tasks and timelines for completion of plan. ▪ Ensure agendas and timelines are realistic.
Medium	<p>Reconsider strategy for stakeholder engagement to facilitate active representation of constituents and encourage deliberative decision-making.</p> <p>Communicate information in a format that encourages informed discussion and decision-making.</p> <p>Avoid change in membership of teams; consider benefit versus cost to team cohesion, productivity and engagement.</p> <p>Continue to seek the involvement of aboriginal representatives for plan development.</p> <p>Make preliminary inquiries of budget available for plan implementation.</p>
Low	<p>Reconfigure organisation structure to obtain a Steering Committee of workable size whom performs project direction role.</p> <ul style="list-style-type: none"> ▪ Ensure members have ability and capacity to set strategic direction. ▪ Complete new terms of reference; ensure formal agreement from members. <p>Delegate by clearly defining roles and responsibilities for the remainder of project</p> <ul style="list-style-type: none"> ▪ Outline roles in writing. ▪ Ensure that role fits with capacity. ▪ Avoid duplication of roles. ▪ Coach others to meet role expectations. <p>Alter format of weekly Project Support Team meetings to improve efficiency.</p> <p>Keep the external project manager (MNP) informed of progress.</p> <p>Update terms of reference for remaining stages of plan development. Ensure participants agree to terms, and that agreement affects form of involvement.</p> <p>Schedule educational presentations from members of current Steering Committee to increase understanding between different sectors.</p> <p>Define role of WPAC in relation to a Bow River Phosphorus Management Plan.</p> <p>Monitor ALIDP participation in process and actively manage if needed to ensure participation fits with terms of reference.</p>

7. Other feedback

7.1 Outlook for developing and finalising the plan

Most survey participants were cautiously optimistic regarding how the process will come together, based on a consensus decision model, for preparing the draft plan.

It was suggested that the work done to date has been “the easy part”, involving learning and issues exploration, and the more challenging and fundamental part of the process (and potentially the most time consuming) would be the upcoming decisions in determining the key content of the draft plan. It was suggested by a stakeholder that, for efficiency, a core group be formed to produce the draft recommendations. This group could perhaps comprise of two members from each of the task teams along with ESRD. Results could then be reviewed in a workshop format with the Steering Committee.

Several experienced participants suggested that the present timelines were potentially “too optimistic” (2). Reasons given were that stakeholder processes are uncertain, the decision stage can “take the longest”, with possibly several months needed to agree on actions, good discussion among stakeholder groups takes time, and within ESRD itself the draft plan content will need time to be vetted by directors.

A background issue mentioned by several stakeholders (4) and others was money, both for the rural sector and municipalities. It was explained that communities will in general seek to delay upgrades to reduce costs and the need for municipal tax increases, and that it is easier for municipal utility workers to speak to their council if there is a message that “we have to do this” rather than the project being voluntary. Given that trade-off decisions may become necessary to stay within ecological thresholds, the issue was mentioned as being similar to the 2006 decision to stop issuing new water licences in the South Saskatchewan River Basin (ESRD participant). One stakeholder suggested that if the process really were voluntary then municipalities may judge that the present river conditions are “OK”, with a recommendation to monitor the situation.

One observed that there seemed to be a morale issue among stakeholders, with “a general level of distrust in the potential for success”, either in terms of concerns that there may be implementation (actions downloaded onto rural recipients), or concern that there will be no implementation (“just another plan sitting on the shelf”) i.e., “half-full, half-empty” concerns. This suggests that a change management leadership style may assist to overcome inertia and move the process forward.

Obtaining adequate participation from the rural sector is likely to be a particular challenge, with comments suggesting that a custom approach may be necessary. Rural sector participants were concerned that discussions were aspirational and would only lead to broad recommendations. Because participation by this sector is voluntary, and options are expensive for farmers primarily

concerned with farm productivity, doubts were expressed that the plan content would include anything other than an improved awareness of the issue, a motto to just “do what we can”, that in turn would have an insignificant impact on phosphorus loads. Under the current process, resistance is likely to continue from the rural sector (e.g., it was observed that a member of the rural non-point source task team “actively blocked” a process to arrive at recommendations), with some survey participants disagreeing that phosphorus even ought to be the subject of a water quality plan (e.g., consider pesticides instead). Another suggested a different approach be taken for the rural sector using a custom process that recognises the need for broader outreach and longer time scales for rural practice change e.g., one year process to communicate with constituents and bring forward solutions (once information available). One participant noted the potential for synergies for funding on-farm projects, in particular the Growing Forward program, which may present an opportunity for rural sector actions if barriers between government departments can be overcome.

7.2 Vision of success

Several participants offered their perspectives on what a successful Bow River phosphorus management plan might look like.

It was offered by a stakeholder that the plan would be a success if the stakeholders feel good about the process, and that the output was a good reflection of the interests worked through during the process. A key step will be having a very clear, measurable goal regarding the phosphorus content in the Bow River. The next step will be deciding on the most effective actions, and which stakeholders are in the best position to implement, as agreed by the Steering Committee. This would include targets from each of the major categories – urban point source, urban non-point source, and rural non-point source, and interim targets or indicators for longer-term initiatives.

For implementation, actions will need to be coordinated “so that everybody owns the problem”, by defining who will do what, how communications will continue, and how results will be measured over time and that the plan does not fall back on ESRD to implement. Another comment was that success would mean that “somebody is still paying attention six years from now”, similar to the SSRB Water Management Plan implementation where this has formed part of someone’s job description and continues to be actively reviewed.

7.3 Using the prototype as a model for cumulative effects management

Many participants felt that a high level of stakeholder involvement, similar to the prototype, was vital for cumulative effects management (6+, ESRD and stakeholders). One participant (ESRD) offered that the components should include stakeholder engagement that is meaningful, where

stakeholders are treated as the experts for which advice is sought in an open process using an external facilitator.

It was recognised (by several ESRD participants) that the process for cumulative effects management and stakeholder engagement will differ depending on whether the issue involves point source impacts and/or non-point sources. For non-point sources, relationship building and stakeholder engagement will be a priority, whereas for point source issues, stakeholders are already regulated and so the process will differ due to the existing relationships with ESRD.

Two participants (ESRD) mentioned the need for greater emphasis to be placed on information and data inputs. For example, it was recommended that understanding the potential limits of allowable impacts, and undertaking an initial data assessment (e.g., a current situation report) may be useful prior to starting the process. Depending on the project, a data task team may help to fulfill this role.

It was felt that responding to the lessons identified will assist in making the process more efficient, and that this was a good step in moving from a prototype to a model for other processes (2).

7.4 Suggestions for the future

Recommendations based on the feedback from participants on other aspects of the process are listed in Table 7–1.

Table 7–1 Recommendations for other aspects for remainder of plan development

Priority	Action(s)
High	Define process for setting draft content of plan, review duties and set aside time for planners to commence task. Ensure timelines are realistic. Set clear, measurable target for environmental goal of plan. Review process to obtain buy-in (starting with the basic concept of a phosphorus plan) from the rural sector.
Medium	Adopt a change-management approach to leadership and communications. Set targets by sector for input into the plan.
Low	Investigate current subsidies for on-farm environmental projects.

8. Summary and recommendations

8.1 Lessons learned

The development of a Bow River phosphorus management plan has been a test of a prototype to manage cumulative environmental effects at a sub-regional scale, where the environmental issue is an ongoing concern i.e., chronic in nature. An open format was used with the aim of generating as many connections among stakeholders to the plan as possible. This included open membership of teams tasked with providing input to the plan by sector (urban point source, urban non-point source, rural non-point source), regular addition of new stakeholders once contacts were made, and allowance to continue in the process without agreement to a terms of reference.

Stakeholders in general appreciated the form of engagement, and thought that this was meaningful, influential, and “the way it should be done”. Because the issue involves both point and non-point source contaminants, regulation is not a complete solution and a participatory approach has instead been sought. In this sense, the prototype concept is sound and has the support (in principle) of participants.

Issues have arisen in testing the prototype in practice. The open membership format has been difficult for generating a productive environment for developing the plan. Team productivity has stalled with repetition of discussion when new members have joined, or when others have come and gone from the process. Some members appointed alternates, though this was found to cause similar issues of time-consuming, repeated discussion due to a lack of common understanding. These issues of group dynamics have created disengagement among existing participants, and frustration at the lack of progress (those disgruntled are participating for the outcome, and do not see the process as a benefit in itself). Changes within the ESRD and support team were also found to impede the capacity of the team to delegate and lead due to uncertainty of the process. A shorter process was a common recommendation to avoid some of these issues.

The vision for the plan implementation is for stakeholders to take initiative and lead in their own sectors to lower phosphorus releases to the river. ESRD has purposely chosen to facilitate but not lead the process of plan development to encourage “bottom-up” stewardship across sectors. The concept of community-driven leadership of the prototype is supported, particularly by those with a strategic mindset. In practice, a lack of agreement within a concise terms of reference reduces the legitimacy of the process and undermines the authority of participants to act as representatives of their sector. Participants have been frustrated by a leadership void, and are seeking more guidance from ESRD on the framework of the plan. Discussion has moved ahead into action identification prior to a clear environmental goal being set (one successful task team set their own goal in order to move forward). Survey comments reflected that a goal needs to be clearly defined i.e., measurable, preferably at the beginning of the process. Participants have reacted against steps in the process when introduced without context or an understanding of how these steps directly contribute to the development of the plan. A common recommendation was

to let the stakeholders determine how the process occurs, so long as ESRD outlines what is expected in greater detail (the form of the outcome). Adoption of a change management style of leadership, with greater visibility of those who can guide and confidently answer questions on scope, was encouraged.

Information was found to be a key tool for mobilising a change – that is, generating a sense that something needs to be done. It was observed that the stakeholders responded favourably when presented with information and technical analysis. Though significant water quality modelling had been undertaken prior to the launch of the prototype, and these results were presented at the launch of the prototype in June 2011, in practice it was found that participants have had an insatiable desire for more information. Stakeholders stressed the importance of information, and detailed information was found to be needed to prioritise actions. In response, the prototype was redesigned with additional resources allocated to gather data, update modelling, and undertake further analysis (e.g., water quality trends). Part of the issue was thought to be related to membership, with a need to select participants who are willing and able to make strategic decisions given the available information, recognising that information will usually always be incomplete. Technical expertise to assist the project planning and direction was also recommended.

For moving forward, it is important to note that the rural non-point source sector is unlikely to agree on actions for a phosphorus management plan. The concept of a phosphorus plan itself, and the need for the involvement of the rural sector, is not presently accepted. It was recommended that a background document be produced that outlines the available information into an accessible format. Participants spoke of the need for an alternative approach for the rural sector, that takes into account the longer period required for community engagement of this sector, and produces recommendations at a practical, smaller scale (e.g., sub-basin plans).

Money was also raised as an upcoming issue for both the urban and rural sectors in recommending actions. The form of stakeholder engagement adopted for the prototype, where government “sits at the table” and stakeholders are empowered to bring recommendations forward, is expected to encourage requests for government funds. The expectation of a common source of funds is also encouraged by use of a tool that prioritises investment decisions (INFFER). To counter this risk, expectations will need to be managed regarding the level of funds available.

Several participants spoke of the need to recognise staff efforts and success. Many of the ESRD and support team were identified as going “above and beyond” what was asked of them. There has been personal growth, with improved skills, collaboration and capacity within the team. Though the scale of the project was underestimated, and team members have had to adapt, there is still much enthusiasm and support among the team to refine the prototype and assist stakeholders to develop a successful plan. The prototype has generated many lessons that can be used to inform initiatives to manage cumulative environmental effects in the future, and this in itself is a great success.

8.2 High priority recommendations

For the remainder of the plan development phase, recommendations and suggestions considered to be highest in priority are as follows:

- Clarify the vision for a Bow River phosphorus management plan.
- Set a clear, measurable environmental target prior to further identification and assessment of actions.
- Set the framework for the remaining process of developing the plan. Review roles and set aside time for planners to commence task.
- Allow the Steering Committee to select the process to adopt within the framework.
- Increase rigour of project management
 - Map out future tasks and timelines for completion of plan.
 - Ensure agendas and timelines are realistic.
- Review process to obtain buy-in from the rural sector, starting with generating acceptance of the basic concept of a phosphorus plan.

Other recommendations arising from the feedback are summarised in Appendix D.

9. References

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Appendix A Survey participants

Twenty participants were interviewed, and three additional participants provided written responses. The survey participants included 12 participants from ESRD, and 6 stakeholders.

Table 9–1 List of survey participants (interview or written responses)

Name	Organisation
Alan Pryor	Alan Pryor Consulting
Janna Casson	Alberta Agriculture and Rural Development
Andrea Kalischuk	Alberta Agriculture and Rural Development
Louella Cronkhite	Alberta Environment and Sustainable Resource Development
Monique Dietrich	Alberta Environment and Sustainable Resource Development
Cindy Hughes	Alberta Environment and Sustainable Resource Development
Courtney Hughes	Alberta Environment and Sustainable Resource Development
Wendell Koning	Alberta Environment and Sustainable Resource Development
Tanya Melnyk	Alberta Environment and Sustainable Resource Development
Anish Neupane	Alberta Environment and Sustainable Resource Development
Deanne Newkirk	Alberta Environment and Sustainable Resource Development
Courtney Scott	Alberta Environment and Sustainable Resource Development
Rob Simieritsch	Alberta Environment and Sustainable Resource Development
Heather Sinton	Alberta Environment and Sustainable Resource Development
Kate Vasicek	Alberta Environment and Sustainable Resource Development
Richard Phillips	Bow River Irrigation District
Bob Miller	Calgary Regional Partnership
Barry Kobryn	City of Calgary
Todd Faith	Corix Utilities
Ron Axelson	Intensive Livestock Working Group
Brian Ilnicki	Land Stewardship Centre
Nazimah Gilani	MNP Consultants
Shirley Pickering	Water Stewardship Groups representative, Highwood-Sheep Rivers

Appendix B Organisation structure for plan development

The Terms of Reference for the Bow River Phosphorus Management Plan (Oct 23, 2012) outlines the governance structures and roles. Key elements of the project organisation include:

- Project sponsors
 - Responsible for resourcing and project alignment with business priorities.
- Stakeholder Advisory Group
 - Identified agencies and community stakeholders affected by the plan and/or needed to resource and implement the plan.
- Steering Committee
 - Stakeholders with the interest and resource capability to provide knowledge and expertise to develop the plan. Decision-making body for the project.
- Project Support Team
 - ESRD staff providing project leadership, management and administrative support to coordinate project activities.
- Technical Support Team
 - Comprised of Task Team chairs, Steering Committee chair, and ESRD staff to provide information flow from the Task Teams.
- Task Teams
 - Formed to complete specific tasks as requested by the Steering Committee. Membership based on task requirements, with work coordinated by the Project Support Team and results reported through the Technical Support Team.

Appendix C Survey templates

A.1 Interview template

This interview is to gather views on the process followed for developing a Bow River Phosphorus Management Plan over the period of your involvement. Responses will be aggregated and presented into a report and presentations to assist ESRD in planning future activities to address chronic environmental issues arising from cumulative impacts. The purpose is to harness ideas (“lessons learned”) for continuous improvement.

The interview is structured under the following themes:

1. Impressions of the overall process
2. Tasks and roles: you and/or your team
3. Information
4. Communication and stakeholder engagement
5. Governance
6. Review: identifying solutions and recommendations.

1. Impressions of overall process

1a. What are your general impressions of the activities undertaken to date to develop a Bow River Phosphorus Management Plan?

Given the opportunity, would you agree to participate in a similar process in the future?

2. Tasks and roles: you and/or your team

2a. Describe your role and the processes you were involved in for the preparation of the Bow River Phosphorus Management Plan. What were some of the challenges?

Consider:

- *How you became involved.*
- *What were your major activities? Were objectives and tasks clear?*
- *Work breakdown structure*
- *How did your work contribute to the formation of the prototype?*
- *Teamwork: team formation, roles, and team processes.*

2b. Was the project, and your team (if applicable) comprised of a “good mix” of participants in terms of capacity, representation, and size?

For members of teams: was a team structure necessary for the task?

2c. What tools did you use to assist your activities?

Would these be useful for future, similar processes? What other tools might have helped?

2d. Do you have the sense that the outcomes arising from your work, and the processes you were involved in, are a good reflection of the time and effort that was put in?

What would make the process more efficient?

3. Information

3a. Was your team able to gather sufficient information to perform the tasks at hand?

What challenges did you face in terms of information access and availability?

Did you find ways to move forward with sufficient rather than complete information?

3b. Will others be easily able to access the information gathered by your team if needed?

How could the information products be made more accessible to others?

Government employees: would the information uncovered by your team assist in other ESRD activities e.g. compliance, policy development, communications?

4. Communication and engagement

4a. Describe the communications that occurred within your team.

Consider:

- *How was information exchanged*
- *Frequency of communications*
- *Format of communications*

4b. How did your team communicate its findings back into the broader project structure? *Was this effective – will the findings be used?*

4c. How committed were your team members to the task?

Did levels of engagement change over time?

Stakeholders for developing a Bow River Phosphorus Management Plan include regulatory and non-regulatory stakeholders. The Terms of Reference document mentions a need for stakeholder involvement that is “meaningful, influential, and occurs at appropriate times”.

4d. Was stakeholder involvement meaningful? Influential? Did it occur at appropriate times?

What form and level of stakeholder involvement is necessary during plan development in order to generate success during plan implementation?

5. Governance

5a. The Terms of Reference outlines the project structure for developing the Bow River Phosphorus Management Plan. What are your impressions and observations of the project structure?

Simple or complex? Is the structure “fit for purpose”?

Do you have any suggestions on project structure for future, similar activities?

5b. How did the organisational structure and decision-making processes change and evolve over time?

5c. To what extent was the project influenced by top-down direction, versus bottom-up contributions?

Was more influence needed of one form rather than the other?

5d. The Terms of Reference document outlines that decisions will be made by consensus. What major decisions were made, and how were decisions arrived at?

Were principles used to guide decision-making?

What are your thoughts on the potential to find agreement when it comes time to finalise and implement the plan?

6. Review: identifying challenges, solutions, and recommendations for future, similar activities.

6a. What was the main challenge you observed during the process of plan development?

What solutions do you suggest?

6b. What processes would you like to see preserved for finalising and implementing the plan?

What worked particularly well?

6c. For developing similar cumulative effects plans, to what extent does the process need to be fit-for-purpose or generic?

Would you recommend the prototype as a model for others?

6d. Is there anything else you'd like to add in terms of “lessons learned”?

Consider:

- *Bow River Phosphorus Management Plan*
- *Development of a generic prototype for cumulative effects management*
- *Any further ideas on how to streamline the process*

A.2 E-mail short questions template

For the purposes of continuous improvement, Alberta Environment and Sustainable Resource Development (ESRD) is seeking to identify lessons from the process of developing a Bow River Phosphorus Management Plan - a prototype for cumulative effects management. The information captured will be used to inform the development of other cumulative effects management projects.

If you have feedback and suggestions on the process followed that you wish to share, please respond via e-mail using the below questions as a guide. Responses will be aggregated and will not identify the individual responding.

1. What are your impressions of the process used to develop a phosphorus management plan for the Bow River?
2. What were some of the challenges you found in participating in the process?
3. Do you have suggestions on how to address these challenges and/or streamline the process?
4. What elements of the process worked well, and why?

Appendix D Summary of suggestions for plan development

Table 9–2 High priority recommendations for remainder of plan development

High priority actions
<p>Clarify the vision for a Bow River Phosphorus Management Plan.</p> <p>Set clear, measurable target for environmental goal of plan. Hold the assessment of actions by sector until the environmental goal has been clearly defined.</p> <p>Set the framework for the remaining process of developing the plan. Review roles and set aside time for planners to commence task.</p> <p>Allow Steering Committee to select process within the framework.</p> <p>Increase rigour of project management</p> <ul style="list-style-type: none">▪ Map out future tasks and timelines for completion of plan.▪ Ensure agendas and timelines are realistic. <p>Review process to obtain buy-in from the rural sector, starting with the basic concept of a phosphorus plan.</p>

Table 9–3 Medium priority recommendations for remainder of plan development

Medium priority actions
Ensure involvement of sponsors in stakeholder meetings.
Package available information into a context document for public release.
Bring forward the issue of rural participation to the Steering Committee; consider adapting the tasks of the rural non-point source team to focus on outcomes.
Explore how the results of the social network analysis will fit with the communication and engagement strategy of the plan.
Suspend the completion of the Bowtie analysis (short-list of actions by sector is premature until the environmental goal is set and agreed upon).
Reconsider strategy for stakeholder engagement to facilitate active representation of constituents and encourage deliberative decision-making.
Communicate information in a format that encourages informed discussion and decision-making.
Avoid change in membership of teams; consider benefit versus cost to team cohesion, productivity and engagement.
Continue to seek the involvement of aboriginal representatives for plan development.
Make preliminary inquiries of budget available for plan implementation.
Adopt a change-management approach to leadership and communications.
Set targets by sector for input into the plan.

Table 9–4 Low priority recommendations for remainder of plan development

Low priority actions
Communicate the results of task teams to participants and link results to the plan development.
Reconsider process and resource allocation to improve efficiency (time and costs).
Make process plan (work breakdown structure or other) available to participants in an accessible, useful format.
Revise information access for participants; consider external website for selected documents.
Reconfigure organisation structure to obtain a Steering Committee of workable size whom performs project direction role.
<ul style="list-style-type: none">▪ Ensure members have the ability and capacity to set strategic direction.▪ Complete new terms of reference; ensure formal agreement from members.
Delegate by clearly defining roles and responsibilities for the remainder of project
<ul style="list-style-type: none">▪ Outline roles in writing.▪ Ensure that role fits with capacity.▪ Avoid duplication of roles.▪ Coach others to meet role expectations.
Alter format of weekly Project Support Team meetings to improve efficiency.
Keep the external project manager (MNP) informed of progress.
Update terms of reference for remaining stages of plan development. Ensure participants agree to terms, and that agreement affects form of involvement.
Schedule educational presentations from members of the current Steering Committee to increase understanding between different sectors.
Define role of WPAC in relation to a Bow River Phosphorus Management Plan.
Review membership of task teams. Monitor ALIDP participation in process and actively manage if needed to ensure participation fits with terms of reference.
Investigate current subsidies for on-farm environmental projects.