

9-30-2010

# Forest Futures Visioning Process: Evaluation Report

Madhawa Palihapitiya

*University of Massachusetts Boston, madhawa.palihapitiya@umb.edu*

Follow this and additional works at: [http://scholarworks.umb.edu/mopc\\_pubs](http://scholarworks.umb.edu/mopc_pubs)

 Part of the [Environmental Policy Commons](#), [Policy Design, Analysis, and Evaluation Commons](#), and the [Recreation, Parks and Tourism Administration Commons](#)

---

## Recommended Citation

Massachusetts Office of Public Collaboration (MOPC). (2010, September 30). Forest Futures Visioning Process: Evaluation report. Boston: Massachusetts Office of Public Collaboration (MOPC), University of Massachusetts Boston.

This Research Report is brought to you for free and open access by the Massachusetts Office of Public Collaboration at ScholarWorks at UMass Boston. It has been accepted for inclusion in Massachusetts Office of Public Collaboration Publications by an authorized administrator of ScholarWorks at UMass Boston. For more information, please contact [library.uasc@umb.edu](mailto:library.uasc@umb.edu).

# Forest Futures Visioning Process

## *Evaluation Report*

September 30, 2010

**Massachusetts Office of Public Collaboration**

**University of Massachusetts Boston**



---

This evaluation report presents an assessment of how effectively the Forest Futures Visioning Process (FFVP) met the goals and objectives set by the Department of Conservation and Recreation as a collaborative public engagement process. The FFVP was designed and administered by the Massachusetts Office of Public Collaboration, a free-standing institute at the University of Massachusetts Boston.

For over 20 years, the Massachusetts Office of Public Collaboration has been providing effective forums for conflict resolution, collaborative processes that enhance public decision-making and community involvement on contentious public issues, and capacity building for public agencies. The office serves as a neutral forum and state-level resource for skilled assessment, systems design and process management services, and access to qualified mediators and collaborative practitioners for service on public contracts.

---

## Contents

I.	Executive Summary .....	4
II.	Evaluation Findings & Observations.....	7
	a) Long-Term Goal #1 .....	7
	1. Design and Implementation of a Collaborative Process .....	7
	2. Exploration of Different Value Systems – Social and Ecological Values.....	8
	3. Effectiveness of Process Facilitation .....	10
	b) Long-Term Goal #2 .....	15
	1. Broad Engagement of Stakeholders .....	15
	2. General Receptivity to and Acceptance of the FFVP Recommendations.....	21
III.	Summary of Key Findings .....	22
IV.	Recommendations.....	23
V.	Conclusion .....	24
	Attachment A: Process Description.....	25
	Attachment B: Process Map.....	28
	Attachment C: Evaluation Approach .....	29
	Data-Gathering and Analysis .....	29
	Key Evaluation Tasks .....	30
	Literature Review .....	30

## I. Executive Summary

The Forest Futures Visioning Process (FFVP) was sponsored by the Department of Conservation and Recreation (DCR) and facilitated by the Massachusetts Office of Public Collaboration (MODR)<sup>1</sup> at the University of Massachusetts Boston to develop policy recommendations for the future stewardship of Massachusetts forests. The goals of the FFVP were as follows:

Goal #1: Create a facilitated collaborative process to engage a group of selected experts and stakeholders as well as the general public on social and ecological values for long-term forest stewardship in Massachusetts.

Goal #2: Create a set of consensus recommendations with broader engagement, consultation and communication from numerous stakeholder types.

The FFVP, as a collaborative process, had a number of interconnected components. The basic elements included: a) a steering committee that developed recommendations for DCR based on scientific or other technical expertise (Technical Steering Committee – “TSC”), b) input from a representative group of the organized stakeholder community (Advisory Group of Stakeholders – “AGS”) and c) input from a broad cross section of the general public through open public forums, site visits and online surveys. The FFVP resulted in a set of recommendations to DCR on a 100-year vision for the future stewardship of Massachusetts forests. These recommendations were released to the public in April 2010. See [Attachments A and B](#) for Process Description and Process Map.

A MODR team, which included Deputy Director Loraine Della Porta and Senior Affiliates William Logue and John Goodrich under the oversight of Executive Director Susan Jeghelian, provided process design and facilitation services for the visioning process, various meetings and public forums from December 2008 through March 2010.

At the conclusion of the FFVP, MODR Associate Director Madhawa Palihapitiya conducted an evaluation of the implementation of the FFVP process using an evaluation approach and summative survey instruments developed by MODR based on state-of-the-art methodologies used in the fields of collaborative environmental governance, collaborative natural resource management and collaborative environmental planning.

The evaluation method used for the FFVP was a logic model, successfully applied in evaluating environmental policy-making projects by many federal agencies including the U.S. Institute for Environmental Conflict Resolution<sup>i</sup>, the U.S. Environmental Protection Agency<sup>ii</sup>, the National Fish and Wildlife Foundation<sup>iii</sup> and a host of other national<sup>iv</sup> and international organizations<sup>v</sup>. This model has been used for the evaluation of collaborative environmental governance projects and also for research to assess environmental impacts<sup>vi</sup>. The logic model enabled the FFVP evaluation to examine components of the project and distinguish between its goals, objectives, activities, inputs, outputs, outcomes as well as indicators of and means of verifying success.

---

<sup>1</sup> The office is known as “MODR” due to its former name Massachusetts Office of Dispute Resolution.  
FFVP Evaluation Report, Massachusetts Office of Public Collaboration, September 30, 2010

Data gathering was conducted primarily through structured summative questionnaires administered online. There were a total of 68 responses to the evaluation survey: 6 TSC members, 11 AGS members, 45 participants from the general public forums, 3 facilitators and 3 sponsor surveys from key DCR/EEA staff, including input from the DCR Commissioner. Roughly 50% of the membership of the TSC and the AGS completed the survey, and 10% of the attendees of the general public forums. The response rate overall is satisfactory. In addition, qualitative data from an end-of-process facilitator debriefing and joint facilitator-sponsor debriefing was used to supplement the findings.

The survey allowed multiple answers to some questions. The established range for survey ratings was from 1 to 10. For the purposes of analysis and reporting, the scattered ratings from the responses were clustered into two categories to indicate positive/high responses (ratings 6 to 10) and negative/low responses (ratings 1 to 5). See [Attachment C](#) for further details on evaluation methodology, data-gathering, key evaluation tasks and literature review.

Based on input from the surveys and facilitator/sponsor debriefings, the evaluation found that the goals established by DCR for the FFVP were met. The following is a summary of key evaluation findings:

1. The FFVP made environmental policy planning accessible to many through a collaborative public engagement process. This was achieved by providing a platform for sharing access to technical and scientific knowledge. The FFVP created a space for various groups of scientists and stakeholders to analyze, question and weigh technical and scientific data alongside social and ecological values. As a result, various groups operated on a more equitable basis than in a traditional policy-making process resulting in more thoughtful deliberation of costs, benefits and options associated with various approaches to forest stewardship.
2. The FFVP met three vital criteria for successful collaborative public engagement processes: 1) deliberative processes with an emphasis on consensus; 2) two-way communication among participants and between participants and government; and 3) commitment to the process by government.
3. The role played by DCR as the state agency whose work was at the center of the collaborative process is noteworthy. Agency commitment to the collaborative process was demonstrated through: 1) investment of time, money and staff resources and active engagement in the FFVP as the sponsor; 2) willingness to be guided by the MODR facilitators in designing and conducting the FFVP in accordance with established best practices; 3) flexibility in supporting expanded public meetings and public communication methods; and 4) visible leadership throughout the process from agency decision-makers, such as the DCR Commissioner and DCR/EEA senior staff.

4. The FFVP enabled forest stewardship policy development in Massachusetts to move from traditional public opinion formulation, which may not always be well informed or contain a balance of opinion and tends to be transient, to a process that created informed public judgment with potential for consistency and stability over time.
5. There is a broad overall acceptance of the FFVP recommendations by engaged stakeholders and member of the general public, although the stakeholders and the general public do not support all recommendations equally.
6. The FFVP leveraged substantial in-kind resources from the public, private and civic sectors, in terms of technical, scientific and other kinds of expertise and services. Donated services were provided by TSC members, AGS members, MODR facilitators and citizens attending public forums and meetings. Additional benefits include increased social capital not measured by this evaluation.

In sum, the evaluation found that the FFVP not only met the goals set by DCR, but it also met the best practice standards for public engagement in the field of collaborative environmental governance, secured substantial additional resources for the Commonwealth, and transformed divergent public and private interests into a common, generally-accepted vision for forest stewardship in the state.

## II. Evaluation Findings & Observations

### a) Long-Term Goal #1

This section provides an analysis of whether the FFVP met the first long-term goal and short-term objectives set by DCR which were as follows:

Create a facilitated collaborative process to engage a group of selected experts and stakeholders as well as the general public on social and ecological values for long-term forest stewardship in Massachusetts.

- Review the myriad public benefits and values of DCR's forestlands and examine their inter-relationships.
- Design a public-input process for developing a shared vision among relevant stakeholders and the public for managing DCR's 280,000 acres of forest.

To verify achievement of the goal and objectives, three lines of inquiry were used in the evaluation survey questions: 1) the design and implementation of a collaborative process; 2) the exploration of different value systems; and 3) the effectiveness of process facilitation. Below is a discussion of each.

#### 1. Design and Implementation of a Collaborative Process

The following *indicators* of a collaborative process were verified through the evaluation:

Forest Futures Visioning Process designed by MODR with input from DCR and stakeholders:

- Consultation meetings with DCR and EEA
- Interviews with internal and external stakeholders
- Process goals, description and process map posted on DCR FFVP website

Meetings/forums with stakeholders and the general public facilitated by MODR:

- Selection and formation of Technical Steering Committee (TSC)
- Selection of Advisory Group of Stakeholders (AGS)
- Twelve TSC meetings
- Two AGS meeting
- Five TSC-AGS joint meetings
- The Harvard Forest Forum
- Two walks in the woods followed by two public forums
- Five public forums and one public hearing on FFVP recommendations
- Meeting with citizen stakeholder advocates
- Meeting with DCR foresters
- Google group discussions

Communication and consultation with the general public:

- Posting of information on DCR FFVP webpage
- Presentations and distribution of information at public meetings

- Written comments from the public
- Public comments presented at the dialogue forums and testimony hearing

Communication and consultation meetings with DCR and EEA regarding information sharing with the TSC, the AGS, the general public, the Stewardship Council and other public agencies.

Documentation resulting from the TSC, stakeholder and public meetings/forums:

- Meeting agendas, summaries, and presentations
- Draft Recommendations
- Final Recommendations

The following is a list of the *means of verifying* implementation of the above indicators:

- Public engagement meeting documents/summaries (TSC, AGS, public forums)
- Public communication (DCR website, emails with the public)
- TSC recommendations
- Written comments (Google groups, emails)
- TSC and AGS presentations
- Presentations and documents by external experts
- Evaluator observations and survey responses

Another indicator of implementation of the FFVP is evidenced by the in-kind resources committed by the members of the TSC, AGS, MODR facilitators and the general public. The project leveraged a substantial amount of donated expertise and services of various kinds and social capital that is beyond the measure of this evaluation. The following are estimates of in-kind contributions reported by some but not all FFVP participants (these values would have been higher if all TSC and AGS members had provided estimates):

- Dollar value of hours contributed by 3 lead MODR facilitators \$55,500
- Dollar value of hours contributed by 4 of 11 TSC members \$60,148
- Dollar value of hours contributed by 5 of the 22 AGS members \$39,100
- Hours contributed by 35 members of the general public participants 3,000

## 2. Exploration of Different Value Systems – Social<sup>vii</sup> and Ecological Values<sup>viii</sup>

The method used in evaluating the above success criteria includes evidence of the engagement of social and ecological values gathered from feedback provided in the surveys by the TSC, AGS and the general public as well as the facilitators, and documented in meeting summaries and comments generated during the FFVP. This line of inquiry has indicators that are more qualitative in nature.

Evidence of satisfactory exploration of social and ecological values can be found throughout the project. There is evidence that the facilitators approached the design and implementation of this exploration thoughtfully, although the amount of value-based perspectives gathered may not have been sufficient enough, according to one of the facilitators. In response to a question in the survey, one facilitator stated: “We tried to gather value-based perspectives from the public and AGS to inform the TSC. This was not done explicitly enough. We did not have sufficient economic information brought to the discussion (in large part because it does not seem to be available).”

Despite this, there were many instances where social and ecological values were deliberated on by both the TSC and the AGS and to some extent the general public during those respective meetings. The joint DCR/EEA response to the survey identified “Bringing to successful resolution issues that were value-laden and politically charged” as an important benefit for DCR.

These value explorations, including deliberation on the types of values, their meaning to the context and trade-offs, form an integral part in the discussions that resulted in the formulation of many of the FFVP recommendations. Evidence of this can be found in public comments, meeting summaries and presentations made during FFVP meetings.

According to another facilitator, even the TSC, which comprised members chosen specifically for their scientific expertise, had to contend with social values: “The TSC engaged in its discussion in a less scientific manner than I anticipated. Perhaps this was because so many of the issues are driven by underlying values.”

The task of the facilitators was to balance these different values. One of the facilitators had this to say about balancing these different values: “I think the way we accomplished this was to make sure everyone involved had a voice and an opportunity to present their issues. No one group (scientists, public, etc.) was allowed to dominate and we stressed everyone had an equal right to express their concerns/values and that there was no one right answer.”

One respondent summed-up as follows: “This whole thing was more about the art of forestry than the science of forestry...what does the public really think? You are never going to get the pure sciences. It’s also about values.”

### *Findings and Observations*

The FFVP supported the democratic ideology that people must be able to influence policy decisions that affect their lives through a process of collaborative governance. While environmental policy planning processes, such as the FFVP, focus on technical and scientific discussion and analysis, they must also focus on a myriad of social values for the policies to be accepted by those who are not pure technical or scientific experts but are affected by the policies.

The statements recorded during TSC, AGS and general public meetings indicate an exploration of a broad array of values that can be generally grouped into social and

ecological values. These were observed at times even when the dialogue or deliberation was focused on the science of forest stewardship.

For the FFVP, engaging social values alongside ecological values was critically important, both because it was a process goal but also because it is vital for the quality and effectiveness of the deliberations. Public sentiment in the FFVP reflected non-technical considerations. In some cases, it was not really the technical evidence itself that influenced or changed people's thinking, but mainly the value priorities.

A key finding from this evaluation is that the FFVP has made environmental policy planning accessible to many through a collaborative process. A DCR/EEA survey response indicated that "the reason for a collaborative process was that there were stakeholders and organizations with strong interest and views on the subject who wanted to be included. Because of the significant controversy surrounding the issues, there was also a need for an inclusive process that allowed points of view to be aired."

In the FFVP, access to technical and scientific knowledge created a space for various groups of stakeholders to analyze and question scientific data and social values on forest stewardship. This enabled various interests to operate on a more equitable basis than in traditional policy-making processes and resulted in thoughtful consideration by those engaged of costs and benefits associated with each approach to forest stewardship.

In this regard, the FFVP was in line with the established best practices in the field of collaborative governance. The National Research Council best practice lines of inquiry include:

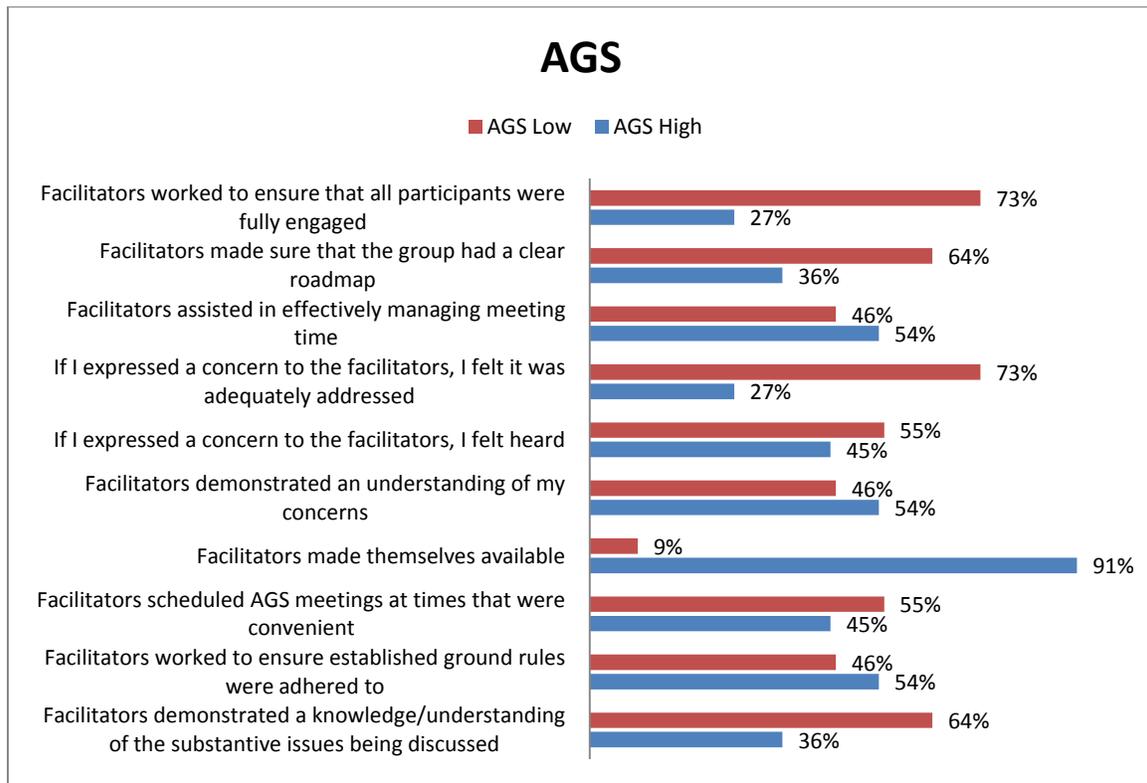
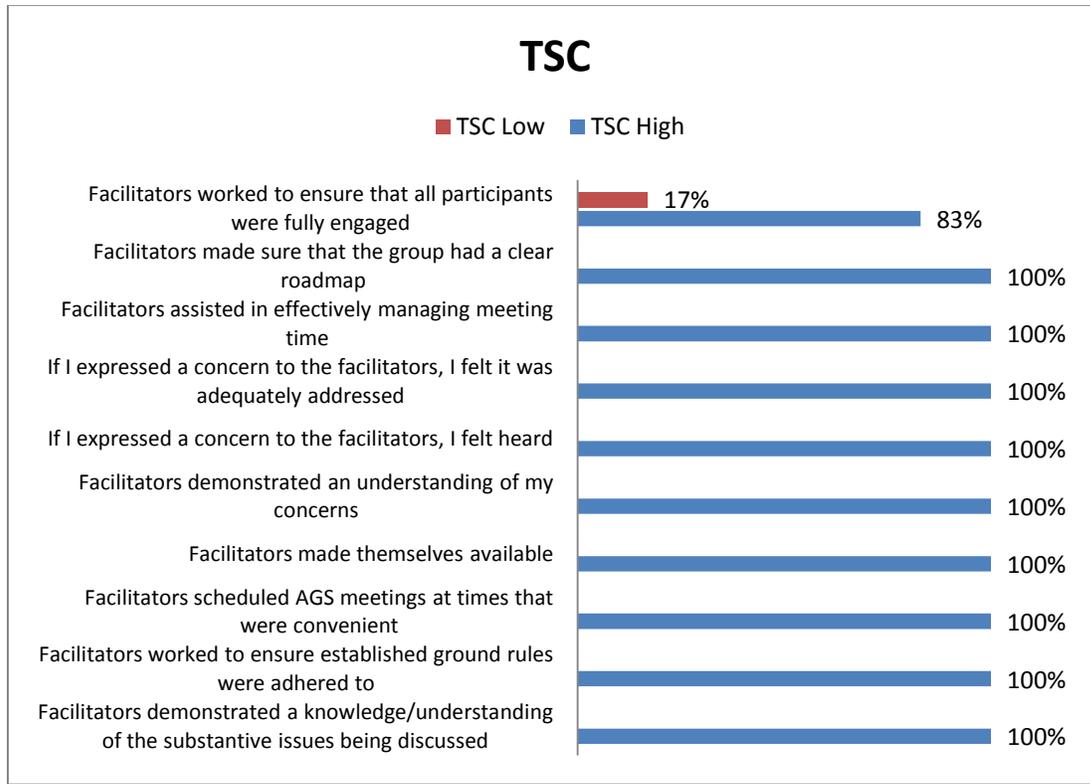
- Identification of values, interests, and concerns of all who are interested in or might be affected by the environmental process or decision;
- Identification of a range of actions that might be taken;
- Identification of and systematic consideration of the effects that might follow and uncertainties about them; and
- Use of the best available knowledge and methods relevant to the above tasks.

Based on field observations, meeting facilitation, documentation, surveying and document review, the evaluation established that these best practices were satisfactorily met by the FFVP.

### 3. Effectiveness of Process Facilitation

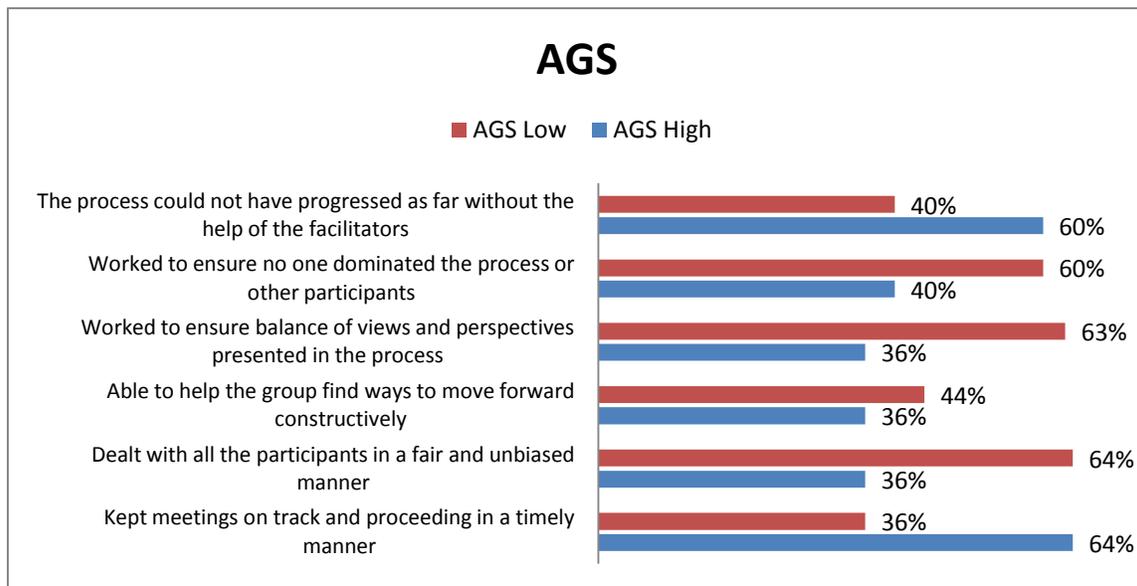
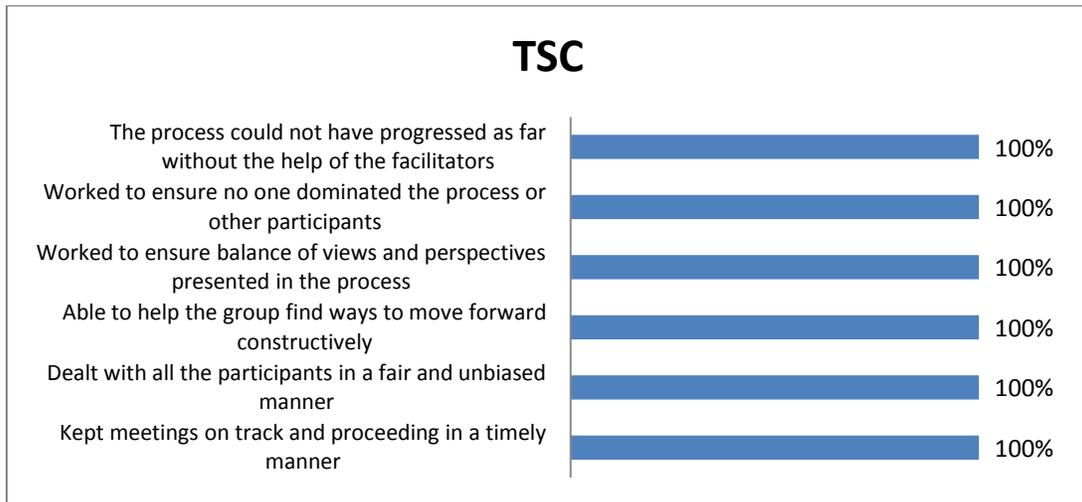
Overall, sponsor and participant evaluation survey responses recognized that the FFVP could not have succeeded without the help of the process facilitators. There is however differences of opinion in responses to specific questions. For example, the evaluation survey results indicate that there is a difference of opinion between the TSC and the AGS on the effectiveness of the process facilitation. The question posed to both groups was "Please rate how effective the MODR facilitation team was in their facilitation of the FFVP." The two graphs below illustrate this difference of opinion. For the purposes

of analysis and reporting, the scattered ratings from the responses were clustered into two categories to indicate positive/high responses (ratings 6 to 10) and negative/low responses (ratings 1 to 5).

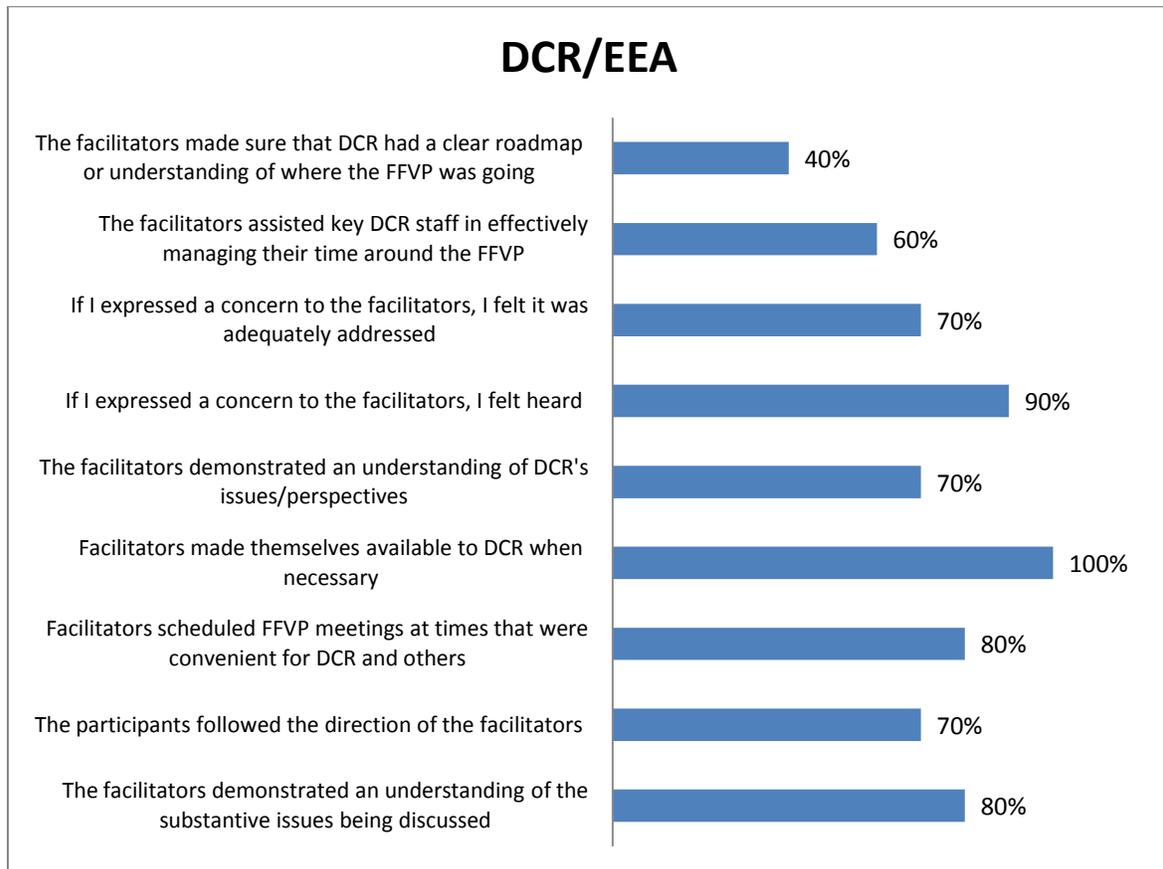


The TSC rated the facilitation of the collaborative process very highly. The members of the AGS gave relatively low ratings to the process facilitation, except in four areas: the effective management of meeting time, facilitators demonstrating an understanding of the AGS members’ concerns, the facilitators making themselves available to members of the AGS, and the work done by the facilitators in establishing ground rules and working to ensure that they were adhered to.

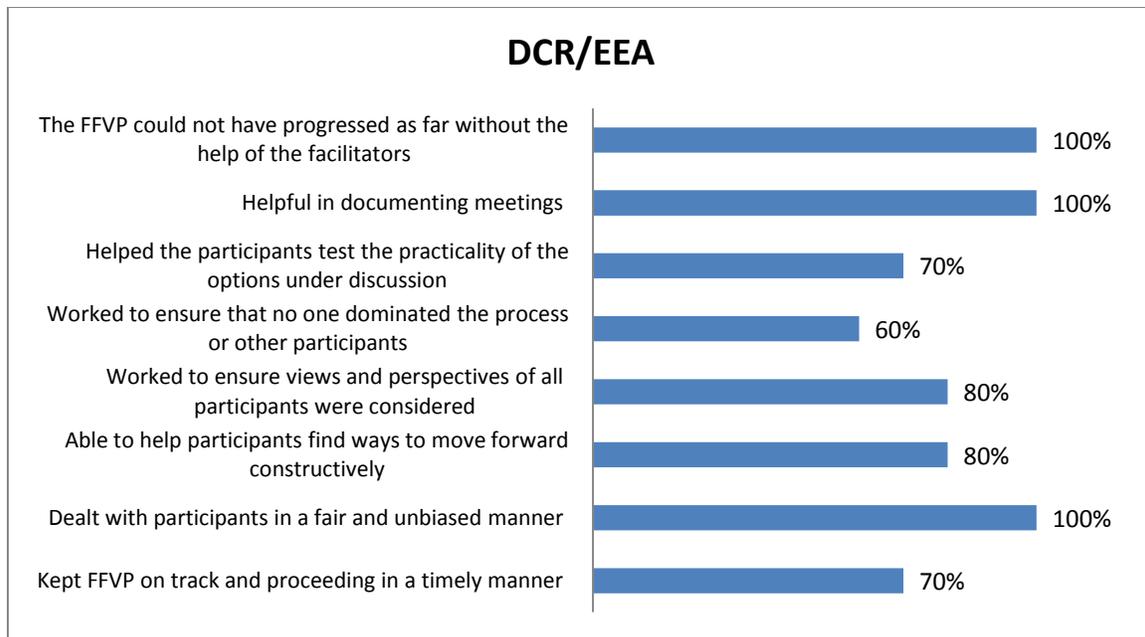
A level of difference of opinion also exists in TSC and AGS survey responses on the role of the facilitators. The question posed to both groups was “Please rate the following key process management skills of the MODR facilitators who worked with the TSC.” Again, the TSC has given top ratings. However, the majority of the AGS disagree. Yet, both groups agree that the FFVP collaborative process could not have progressed without the role played by facilitators. The two groups were also in agreement that the facilitators kept the collaborative meetings on track and proceeding in a timely manner, a success measure for collaborative processes (see combined TSC and AGS responses in graphs below). See endnotes for standard deviation analysis.<sup>ix</sup>



DCR/EEA also indicated satisfaction with MODR process facilitation. One sponsor survey response stated that “The agency is proud that some have called the process a model and cited it as the ‘gold standard’ for collaborative processes.” The graphs below contain sponsor feedback on more specific aspects of process facilitation. The first graph shows DCR/EEA feedback on the facilitators’ process management skills. The only low rating was in regards to furnishing DCR with a clear roadmap of where the process was going.



The graph below indicated the responses of DCR/EEA regarding the neutrality of the facilitation services and the creation of a neutral forum for the FFVP. Ratings are generally satisfactory. Exceptional ratings were given for fairness and lack of bias as well as for documentation services by MODR facilitators.



### *Findings and Observations*

It is evident that in designing and facilitating the FFVP, the MODR facilitators strived for: a) a functional separation of the “groups” engaged, and b) a separation in terms of the process used for public participation/engagement, consultation and communication.<sup>x</sup> In fact, the choice of engagement, consultation or communication was based on the assigned role in the FFVP of the TSC, AGS and the general public. For example, the TSC meetings were a process of engagement or two-way communication among the TSC members at the table and any other experts or entities the members decided to engage, including DCR. This was by design. The AGS’ role was designed to provide input when required through a consultative or one-way communication process.

The TSC as a group was tasked with examining, deliberating, drafting and finalizing consensus recommendations. The AGS members were tasked individually to provide input and advice to the TSC. This separation of function and process may not have been completely understood or even accepted by all or some members of the AGS. As one facilitator noted:

“The MODR team designed a clear role for the AGS at the outset of the process, that is, they were selected based on their representation of certain stakeholder communities to provide input/advice to the TSC. The AGS interpreted their role quite differently. Some members seemed to want to operate as a parallel TSC and develop their own set of consensus based recommendations. The MODR team's efforts to clarify the AGS’ role in the process did not entirely meet with success. There was a continuing perception by some AGS members that their role in the process should have been elevated.”

One DCR/EEA response mentioned a similar sentiment as follows: “The concept of having an AGS was sound; however it was challenging to define the group's role. Members of the AGS contributed to the formulating of the recommendations however

the AGS as a whole did not make deliberative contributions - rather, individual members offered their opinions.”

## **b) Long-Term Goal #2**

This section provides an analysis of whether the FFVP met the second long-term goal and short-term objectives set by DCR, which were as follows:

Create a set of consensus recommendations with broader engagement, consultation and communication from numerous stakeholder types.

- Develop recommendations to ensure forest stewardship on DCR lands in the context of the broader forested landscape that is coordinated and implemented consistently with public benefits and values and DCR’s legal mandates.
- Develop strategies and processes for continuing to strengthen public dialogue and understanding of forest management principles and practices that support public benefits and values.
- Review and identify conditions and criteria under which forest management practices should be prescribed or prohibited on DCR lands.

To verify achievement of the above goal and objectives, two lines of inquiry were used in the evaluation survey questions: 1) broad engagement of stakeholders; and 2) general receptivity to and acceptance of the FFVP Recommendations. Below is a discussion of each.

### **1. Broad Engagement of Stakeholders**

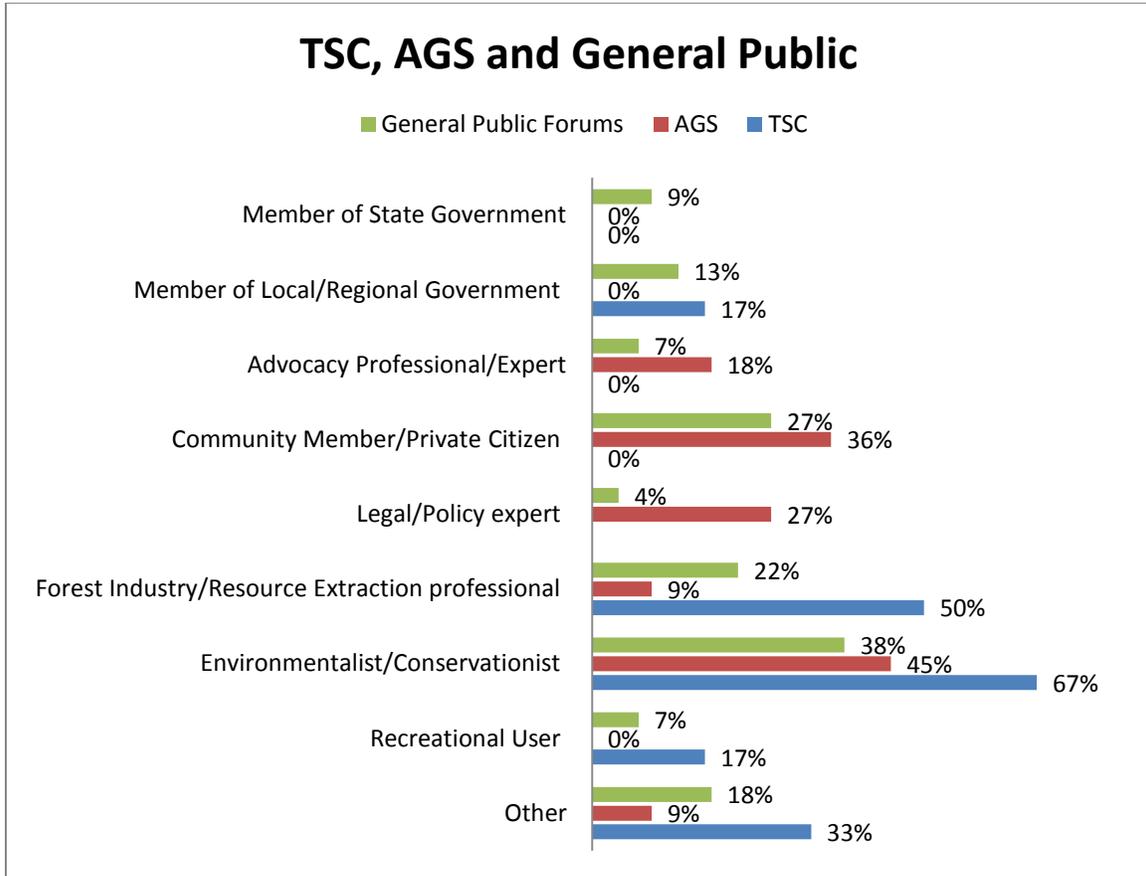
The FFVP engaged a multitude of stakeholders. The TSC and the AGS involved a variety of technical and scientific experts, including biologists, forest ecologists, legal experts, policy analysts, landscape ecologists, climate change experts and experts in silviculture and wildlife habitat. Other experts involved in the FFVP included experienced private foresters and/or timber harvesters, non-commercial land-owners, citizen stewards and recreational users who brought in their own economic, social, recreational/aesthetic values and interests to the visioning process.

Survey responses indicated that the types of engaged stakeholders noted above may not have included all interests at optimal levels, for example, it was noted by a few respondents that there could have been more representation from the private landowner community and from municipalities in the western part of the state.

Another survey respondent mentioned that “more wildlife management expertise [was] needed vs. general conservation biology” and that “approximately 20/25 non-forestry interests; small towns [were] not well represented.”

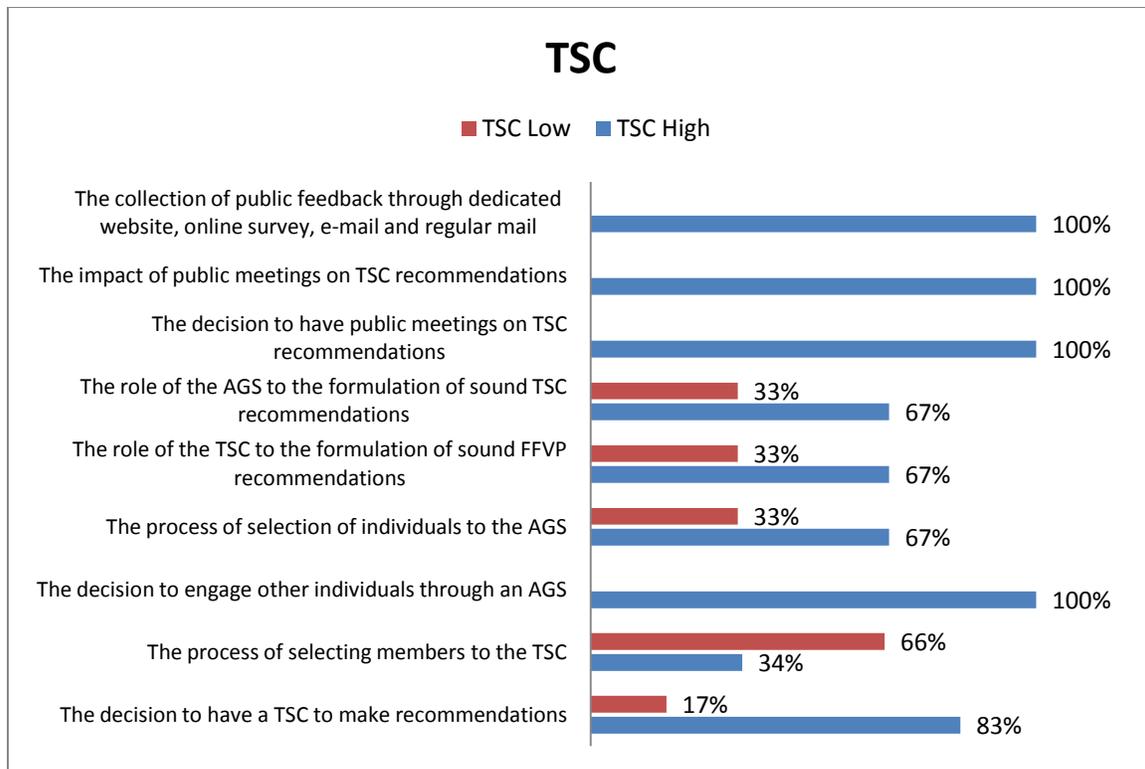
Facilitator surveys indicated that the limited time and resources allocated at the stakeholder assessment phase may have narrowed the array of stakeholders being identified for engagement by the FFVP. Sponsor responses recognized time and resource constraints as well.

Despite the above observations, it is evident from survey responses that the FFVP engaged a multitude of stakeholders ranging from state government representatives to recreational users. The graph below shows how members of the TSC, AGS and general public grouped themselves in response to a survey question asking about stakeholder categories. Survey responders were allowed to select multiple affiliations.



While there may be a number of stakeholder interests not engaged through the TSC and AGS meetings, those that were engaged or consulted -- through Google Groups, the survey on draft recommendations (over 250 took this survey) and emails to facilitators -- brought a much broader array of values and interests into the visioning process. For example, in the “Other” category, survey responses were submitted by persons claiming to represent groups interested in cultural resources and forest fire management.

The graph below indicates TSC member responses evaluating themselves, the AGS and the general public. The TSC gave very high ratings for engagement of the general public at the public meetings and through other vehicles. These ratings were comparatively higher than the rating given to the engagement of the AGS. For the purposes of analysis and reporting, the scattered ratings from the responses were clustered into two categories to indicate positive/high responses (ratings 6 to 10) and negative/low responses (ratings 1 to 5).



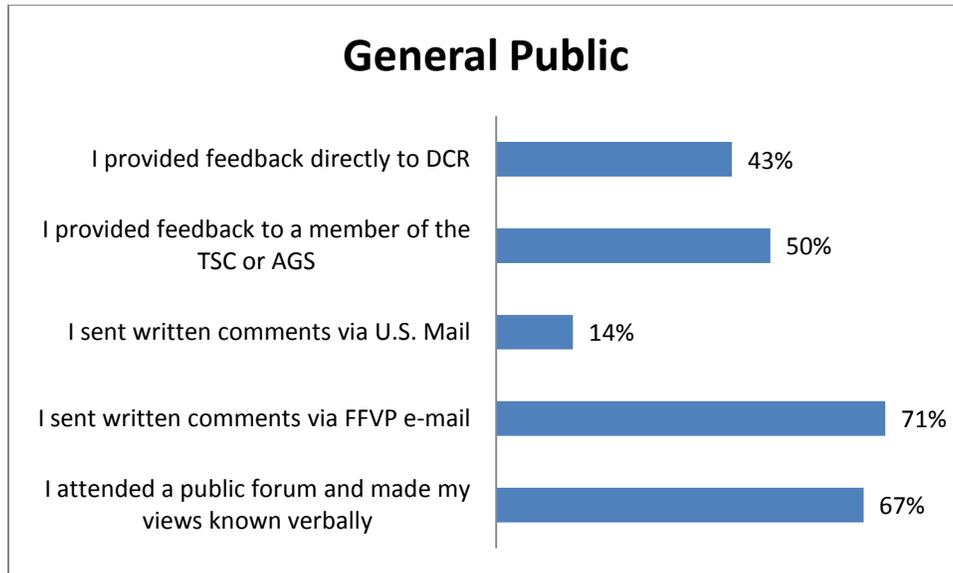
The six public meetings/dialogue forums were designed to engage the general public on the TSC’s draft recommendations. The AGS meetings and the general public forums were consultative in design. In the graph above, the role of the AGS is again rated lower by the TSC than that of the engagement of the general public.

The graph indicates dissatisfaction of the majority of the TSC members regarding TSC selection. It is unclear whether this dissatisfaction relates to the selection process or to the individual TSC members. A similar dissatisfaction is reflected by the AGS and the general public in their respective surveys. Respondents provided no explanation for these ratings.

According to the facilitator surveys, the membership of the TSC was selected during the FFVP design phase, after a preliminary stakeholder assessment. The TSC was formed through a selection committee consisting of stakeholders using an open and inclusive nomination process and a criteria-based screening matrix. The AGS was a self-selecting group.

The FFVP ultimately consulted a broader cross-section of the public on the collaborative vision, than was originally expected. This effort was successful. The six general public forums/meetings on the recommendations, in particular, brought DCR closer to the general public as evidenced in the below graph where 43% of the members of the surveyed public indicated that they were able to provide feedback directly to DCR through the public forums. Another 50% of the survey respondents from the general public indicated that they provided feedback directly to members of the TSC or the AGS at the forums. This process of bringing the agency, the technical experts, the

stakeholders and the general public together was purposefully planned and implemented through the collaborative process. This is how one of the facilitators described this engagement: “DCR/EEA staff attended every TSC, AGS and public forum. Their role was to provide agency information and support to the process and to make themselves available to the TSC to answer questions, etc.”



Another indicator of this purposeful process design was in the use of deliberative dialogue processes in the general public meetings/forums. According to one facilitator:

“[W]e designed the public forums to be deliberative dialogues among citizens rather than traditional public testimony. We received resistance from certain groups asking that the format be changed so that they could stand up and give their testimony. We held tight to what we knew about good public process and as a result, everyone who attended the public forums (500+) had an opportunity to speak and be heard. We did accommodate the request to have a more traditional format following one of our public forums. Between 25-30 people signed up to speak.”

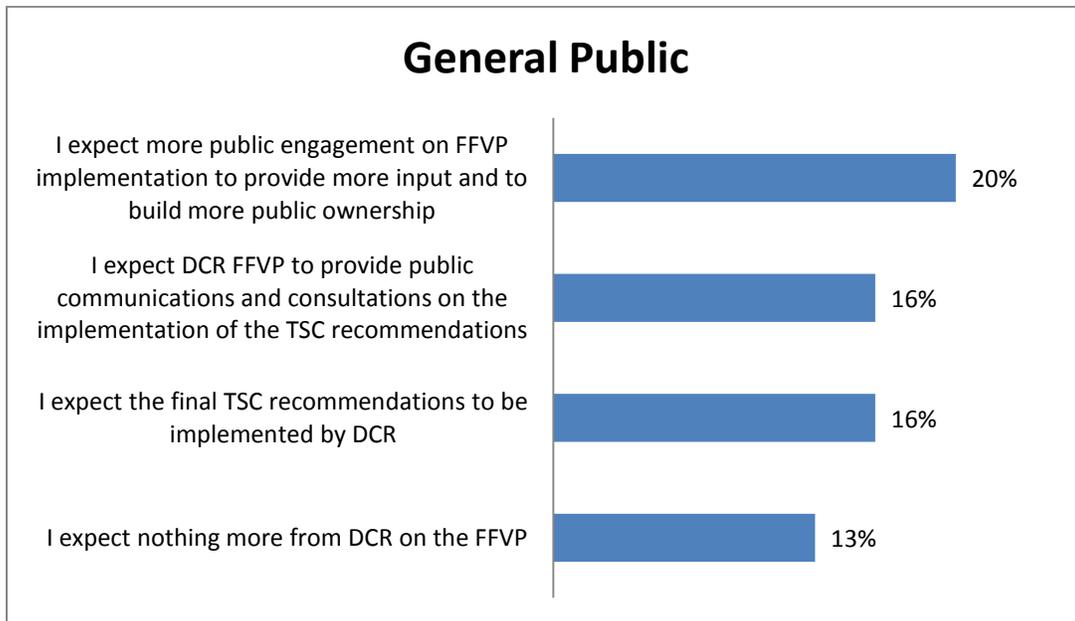
67% of the surveyed general public indicated that they had the opportunity to provide their feedback verbally at the six public forums/meetings, which is an indicator of successful public consultation. Electronic communication such as email was also used widely in the FFVP to communicate with and consult the public. One of the facilitators described the usefulness of the general public forums and the importance of the various methods of public consultation in this way:

“The opportunity for the public to comment with a variety of ways they could do it was key: it showed that there were many more people interested...and it showed the wide range of viewpoints.”

A DCR/EEA senior staff member, in the end-of-process debriefing stated that “the public forums were one of the most successful parts of the entire process. This is really

genuinely engaging the public. Before that, we were hearing from a very small section who were more organized...it was really illuminating”

Indeed, the beneficial outcomes for genuine public engagement on complex multi-party issues cannot be overstated. There seems to be unanimity among all stakeholders engaged in the FFVP as to the need and importance for genuine public engagement. A majority of the members of the general public who took the survey had also indicated the expectation that they will be engaged in future policy-making around forest stewardship in Massachusetts (see graph below).



It is clear that with DCR/EEA being exposed to ‘genuine’ public engagement through the FFVP, there is a likelihood of future public engagement opportunities sponsored by the agency. A DCR/EEA senior staff member commented that the bar set for public involvement in the FFVP was high and that the agency hopes to mimic that in the future. However, this evaluation recognizes that certain practical realities such as budget cuts and limited process management resources must be considered as they relate to maintaining and sustaining public engagement around forest stewardship.

### *Findings and Observations*

#### Assessment Phase

The time and resources initially committed to the FFVP at the assessment phase may have been inadequate to fully identify the dynamics of vociferous activism and the wide range and diversity of interests affected by forest stewardship issues. More investment of time and money at the assessment phase could have enabled the design of structural components capable of addressing those dynamics.

A more thorough assessment would have assisted DCR/EEA in terms of allocating more internal resources to the FFVP and to obtain greater buy-in from its own staff. Sponsor

evaluation input indicated that agency staff had varying degrees of experience engaging in collaborative processes and that in the future, the agency would do more internal planning and preparation.

Given the complex nature of the issues, a history of mistrust and insufficient opportunities for collaboration between stakeholders, an investment of time and resources at the assessment phase would have assisted the design and implementation of the process design by identifying issues, stakeholders, interests, expectations, scope, resources needed and benchmarks of success that would have enabled a cleared roadmap for the process.

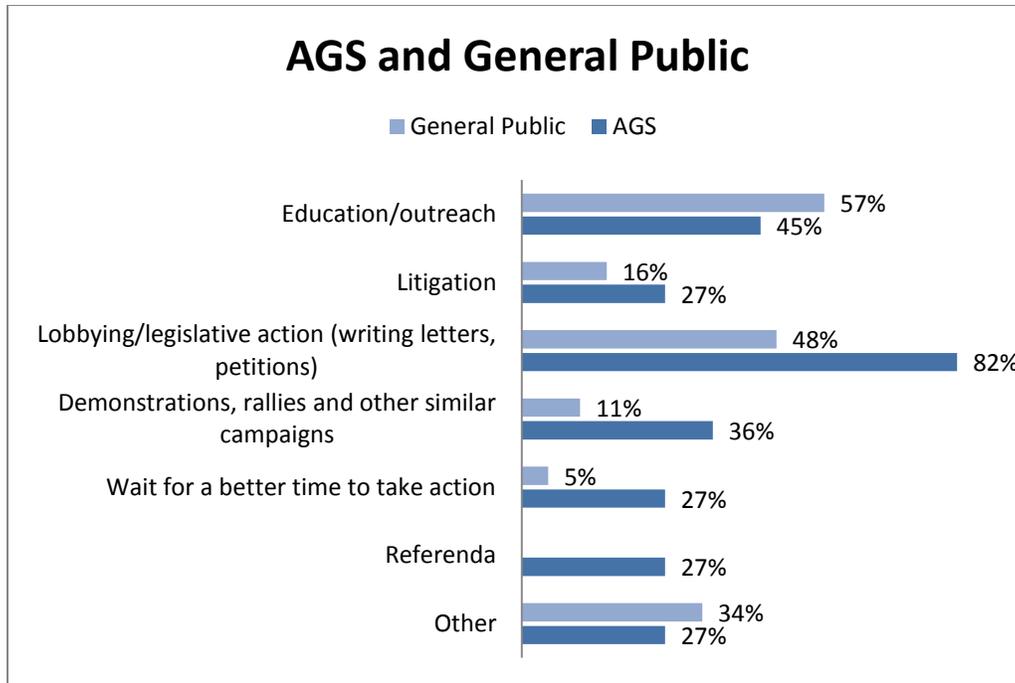
### Public Engagement

Broadening the public engagement could broaden acceptance of future DCR forest stewardship policies and practices. The merits of the FFVP are clear in that it had designed and implemented a public engagement process that created informed public judgment and moved away from traditional public opinion formulation, which may not always be well informed or contain a balance of opinion and tends to be transient. Informed decisions or public judgments tend to become consistent and stable over a period of time. In the absence of continuous and actual public engagement, the opposite may become true. The process of public engagement is achieved through well designed collaborative processes where facilitated public deliberation provides access to scientific and other information and creates sufficient knowledge about forest stewardship issues and remedies, and balances the interplay between various values and interests.

Providing feedback in the evaluation survey, key DCR/EEA staff reported positive results from the FFVP:

- Allowing for a full airing of a controversy that was undermining other agency goals and efforts.
- Improving DCR's reputation and relationship with stakeholders by demonstrating the agency's willingness to listen.
- Bringing to successful resolution issues that were value-laden and politically charged.
- Providing substantive advice on key aspects of the agency's mission.
- Creating a catalyst for change the agency couldn't have achieved on its own.

In the surveys, the AGS and the general public were asked to identify what actions they would have taken if such a collaborative process (FFVP) did not exist. 82% of AGS members said they would have engaged in lobbying or seeking legislative action (see graph below) while only 48% of the general public said they would resort to such action.<sup>xi</sup> A large majority of respondents from both groups said they would have selected an adversarial process like litigation or, in some cases, activism such as demonstrations and rallies to engage issues on forestry in Massachusetts.

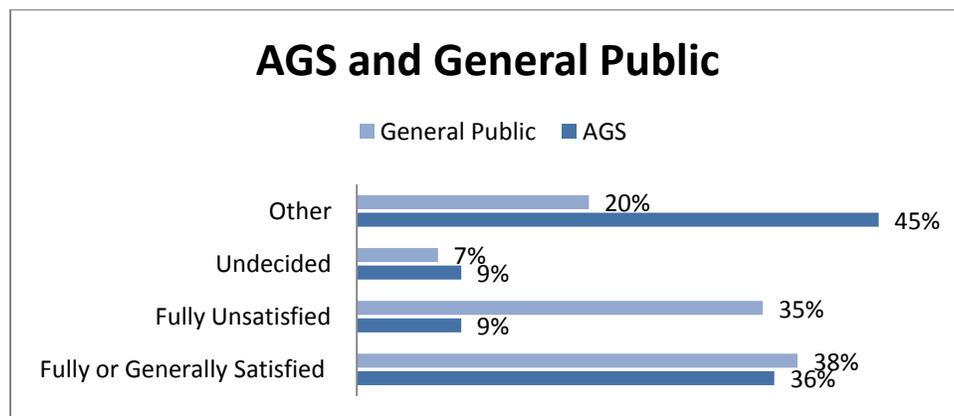


The survey responses confirm that stakeholders and the general public were provided with an effective alternative forum in the FFVP for voicing their interests and seeking solutions for addressing those interests. Participation in the FFVP reduced the risk of many citizens seeking recourse from adversarial processes and activism, which may have escalated existing tensions.

In offering survey feedback on the FFVP, key DCR/EEA staff concluded: “Because of this process, the agency is in a much better position, not only on issues related to forestry, but overall and its image with the public and stakeholders has improved.”

## 2. General Receptivity to and Acceptance of the FFVP Recommendations

A general acceptance of the FFVP recommendations by engaged AGS stakeholders and members of the general public is evidenced from the graph below. As shown, general support for the recommendations is high<sup>xii</sup>. However, according to survey responses, AGS members and the general public do not support all recommendations equally.



The AGS members who inserted comments under “Other” in their survey responses were mixed in their attitude towards the FFVP recommendations. Here is a sample of those comments:

“Better than I expected, but not good enough.”

“This is a step in the right direction. More public lands should have been included, and more public lands should have been protected... and there were no provisions for oversight, enforcement and accountability in whatever forestry is allowed.”

“I think there is good in the recommendations, but I have reservations with more than a few of them.”

“I really don't have strong feelings.”

“I don't think much of anything will change. Too many of the decisions seem to have been decided prior to the meetings.”

At an end-of-process debriefing, a senior DCR/EEA staff stated that “[the] main portion of the recommendations were implementable”.

### *Findings and Observations*

Given the diversity of interest, strong public opinion and the complexity of the issues taken up at the FFVP, it is noteworthy that the TSC reached consensus on their recommendations and that these recommendations were generally supported by the AGS and the members of the general public responding to the survey, as well as sponsor respondents. It is important to keep in mind that any approach to creating significant and long-lasting policy on forest stewardship will likely displease some segment of the community. For example, there are a few who question the validity of the technical or scientific data that formed the basis of the FFVP recommendations, and this dissonance could continue to be an ongoing issue in future. However, overall, the FFVP recommendations are a demonstration that collaborative processes can assist certain traditional functions of government that needs broader public support.

### **III. Summary of Key Findings**

Below is a summary of key findings from the FFVP evaluation.

1. The FFVP made environmental policy planning accessible to many through a collaborative public engagement process. This was achieved by providing a platform for sharing access to technical and scientific knowledge. The FFVP created a space for various groups of scientists and stakeholders to analyze, question and weigh technical and scientific data alongside social and ecological values. As a result, various groups operated on a more equitable basis than in a traditional policy-making process resulting in more thoughtful deliberation of costs, benefits and options associated with various approaches to forest stewardship.

2. The FFVP met three vital criteria for successful collaborative public engagement processes: 1) deliberative processes with an emphasis on consensus; 2) two-way communication among participants and between participants and government; and 3) commitment to the process by government.
3. The role played by DCR as the state agency whose work was at the center of the collaborative process is noteworthy. Agency commitment to the collaborative process was demonstrated through: 1) investment of time, money and staff resources and active engagement in the FFVP as the sponsor; 2) willingness to be guided by the MODR facilitators in designing and conducting the FFVP in accordance with established best practices; 3) flexibility in supporting expanded public meetings and public communication methods; and 4) visible leadership throughout the process from agency decision-makers such as the DCR Commissioner and DCR/EEA senior staff.
4. The FFVP enabled forest stewardship policy development in Massachusetts to move from traditional public opinion formulation, which may not always be well informed or contain a balance of opinion and tend to be transient, to a process that created informed public judgment with potential for consistency and stability over time.
5. There is a broad overall acceptance of the FFVP recommendations by engaged stakeholders and member of the general public, although stakeholders and the general public do not support all recommendations equally.
6. The FFVP leveraged substantial in-kind resources from the public, private and civic sectors, in terms of technical, scientific and other kinds of expertise and services. Donated services were provided by TSC members, AGS members, MODR facilitators and citizens attending public forums and meetings. Additional benefits include increased social capital not measured by this evaluation.

#### IV. Recommendations

Below are recommendations offered by the MODR evaluator for consideration in future collaborative environmental governance processes.

1. Regular, broad public engagement and deliberation on scientific and technical information together with social and ecological values should continue to be undertaken around forest stewardship in Massachusetts. This will provide an opportunity, not only to update the sciences on which the FFVP 100-year vision is based, but also to reduce the inherent friction that exists between scientific expertise and public values in environmental policy-making.

2. To the degree resources allow, DCR/EEA should continue its leadership and commitment to public engagement and implementation of the FFVP recommendations. Such commitment and leadership will build on the progress made through the visioning process.
3. Adoption of the collaborative stewardship<sup>xiii</sup> model as a value by all stakeholders would help to maximize the gains of the FFVP rather than sliding back to a more traditional approach to forest policy-making.
4. For future public engagement projects, sufficient investment should be made in assessment as the foundational step in designing and implementing successful collaborative environmental governance processes.

## V. Conclusion

In sum, the evaluation found that the FFVP not only met the goals set by DCR, but also met the best practice standards for public engagement in the field of collaborative environmental governance, secured substantial additional resources for the Commonwealth, and transformed divergent public and private interests into a common, generally-accepted vision for forest stewardship in the state.

## Attachment A: Process Description

### The Forest Futures Visioning Process

#### **Roles**

*The Role of MODR as the Neutral Forum:* The Massachusetts Office of Public Collaboration (MODR) at the University of Massachusetts Boston served as the neutral forum for this initiative and ensured that the collaborative structures and processes are developed and conducted in an unbiased environment suitable for discussion and deliberation.

*Role of MODR Facilitators:* The MODR facilitators served as independent process managers accountable to the sponsor and all other participants for ensuring effective communication and implementation of the public participation process. Facilitators conducted meetings impartially according to jointly agreed-upon ground rules. They did not act as advocates for anyone on any substantive or procedural issue.

*Role of DCR as Sponsor and Convener:* As the sponsor and convener of this process, DCR determined the goals and objectives of the process and how the outcomes was to be used, secured the endorsement of leadership and engagement of participants, planned and organized the process with MODR, and secured sufficient resources to see the process through to conclusion.

*Role of DCR Project Manager:* The designated DCR project manager managed project goals and DCR staff participation in the public engagement process, coordinated communication and information requests to DCR, collaborated with the MODR facilitation team, served as liaison to the Steering Committee, and provided technical support for meetings and forums.

#### **DCR Project Goals**

Develop a renewed vision for stewardship and management of DCR forest lands through an open, interactive dialogue with experts, stakeholders and the general public. Formulate recommendations through a Forest Futures Technical Steering Committee, with input from stakeholders and the general public that can be implemented to ensure a balanced integration of public values and ecological and social benefits for today and into the future.

#### **Key Goals**

Review the myriad public benefits and values of DCR's forestlands and examine their inter-relationships. These include: recreation, tourism, aesthetics, renewable forest products, habitat diversity, local economies, landscape ecology, water quality and climate change mitigation and adaptation.

Develop recommendations to ensure forest stewardship on DCR lands in the context of the broader forested landscape that is coordinated and implemented consistently with public benefits and values and DCR's legal mandates. Review and identify conditions and criteria under which forest management practices should be prescribed or prohibited on DCR lands.

Develop strategies and processes for continuing to strengthen public dialogue and understanding of forest management principles and practices that support public benefits and values.

The desired outcome of this process was two-fold: first, to build a common framework for stewardship of DCR forest lands based on the public benefits and values involved and the productive sharing of information and varying points of view; and second, to generate recommendations regarding forest stewardship that are informed by this common understanding, respect public values, and are consistent with widely accepted science.

### **Public Participation Process Goals**

Design a flexible process that includes ways of incorporating broad public input, creating dialogue among more organized stakeholder groups and bringing credible scientific information into any recommendations for a DCR vision going forward. As needed and as issues emerge, adjust and adapt the process. Incorporate ideas and information from discussions with DCR and EOEEA staff and 20 interviews with a cross section of the stakeholder community. Design a process to bring clarity to the mandates and values reflected in DCR forest management, to be informed by science from a variety of disciplines to establish criteria for forest management and cutting that will address on-the-ground issues for the context and implementation of forest management, and to be transparent to the participants and the public.

### **Process Components**

The public participation process had a number of interconnected components. The basic elements included: information from a broad cross section of the public through online surveys, site visits and open public forums; a dialogue among a representative group of the organized stakeholder community; an expert steering committee that developed recommendations for DCR based on their scientific or other expertise and from the information generated by the surveys, forums and stakeholder dialogue. Throughout this, MODR helped organize and facilitate the meetings and drafted meeting summaries and other documents related to the process which was made available to the public and participants.

- **Public Forums and Site Visits.** Site visits were conducted at several representative forests and parks. These involved technical experts who were familiar with the on-the-ground issues. These site visits were immediately followed by facilitated open public forums to elicit feedback about public values, goals and concerns going forward. Local legislators assisted with meeting outreach in their districts and stakeholder groups were encouraged to have their members attend. Additional public forums were provided to review proposed recommendations.
- **Surveys.** A web-based survey was deployed to gather information about public opinion and values concerning forest management practices and provide feedback concerning recommendations.
- **Technical Steering Committee and Advisory Group of Stakeholders.** The MODR facilitation team oversaw the process for identification and selection of two groups – a Forest Futures Technical Steering Committee (TSC) who developed consensus recommendations for DCR and an Advisory Group of Stakeholders (AGS) who surfaced issues, developed ideas and suggestions for the TSC and provided feedback to the TSC on draft recommendations.

### **Meetings**

Several types of meetings occurred in addition to the Public Forums mentioned above. The AGS and TSC had opportunities to meet both together and separately. The MODR team helped the members prepare for meetings, share information, and resolve issues between meetings. After each meeting the team prepared meeting summary or draft recommendations to create a shared memory of the process. The MODR team also drafted ground rules, and outlined roles and responsibilities for meetings and the public forums.

### **Formation of the Advisory Group of Stakeholders and Technical Steering Committee**

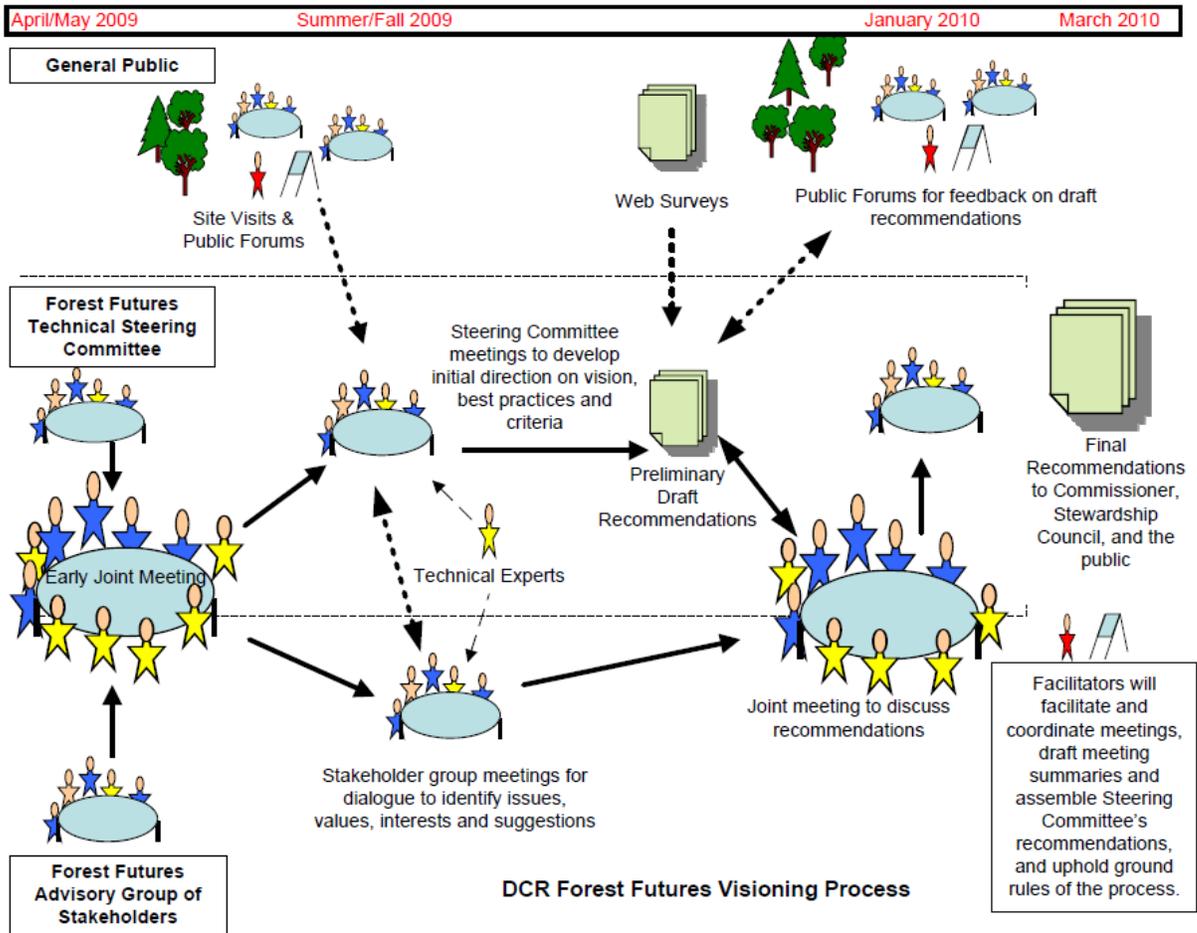
*Technical Steering Committee (TSC):* The TSC was composed of individuals who had a high level of expertise through their background, formal educational degrees in the area, and continued research or professional practice so that they were current on the issues, trends, and best practices. They advocated for good science, good forest management and good process, and also were highly regarded by a broad cross section of stakeholders. The areas of expertise was from various specialties: forestry (including silviculture, habitat/wildlife management, landscape ecology, insect and disease/invasive species control, natural resource economics, forest fire management and ecology, watershed management and protection), forest sociologist/policy, forest recreation management, natural resource lawyer, natural resource planner, and climate change and forest impacts.

The MODR facilitation team had solicited names of potential TSC members from assessment interviewees. One individual each from the forestry, landowner, environmental and citizen stewardship communities were invited to be advisors in the selection process in order to arrive at a final group of 10-12 individuals to sit on the Steering Committee.

*Advisory Group of Stakeholders (AGS):* A representative group of stakeholders who reflected the various interest categories was convened to engage in a dialogue to surface and discuss the issues, develop ideas and suggestions for the TSC and to provide feedback to the Committee on draft recommendations. The AGS had approximately 20 members drawn from the forestry, environmental, citizen stewardship/recreational, land owner, wildlife/habitat, economic development, and government/municipal stakeholder interest group communities. The MODR team made recommendations concerning the categories of composition of the group and worked with the various stakeholder communities to identify appropriate representatives. Invitations to participate were extended by the DCR Commissioner. Several criteria were used to select participants:

- Typically represent stakeholder groups or interests not just themselves (individuals will be able to participate in the process through the public forums)
- Knowledgeable about forest management issues on both a statewide and, if possible, a regional or national basis
- Have authority and/or trust, respect and support of their constituencies or group(s)
- Ability to articulate their group(s) perspective and have the capacity to represent the larger interest group (i.e., capable of speaking to the issues of more than one organization)
- Ability to communicate back to their group(s)
- Able to work productively with others
- Represent the geographic areas and demographics of their group(s)

## Attachment B: Process Map



## Attachment C: Evaluation Approach

Before being evaluated, the Forest Futures Visioning Process (FFVP) had to be defined based on similar processes categorized as collaborative environmental governance<sup>xiv</sup>, collaborative natural resource management<sup>xv</sup> and collaborative environmental planning process<sup>xvi</sup>. The FFVP evaluator studied the merits of these processes as they compared with the FFVP in formulating the FFVP evaluation approach.

The FFVP evaluation was based on a method of systematic acquisition and assessment of information on the achievement of DCR's FFVP Goals. The evaluation gathered data using summative evaluation instruments.

Two sets of goals were established for the FFVP, one titled DCR Goals and the other Key Goals. The DCR Goals were the overall goals attainable over a longer time horizon starting with the FFVP project. The Key Goals were the short-term project objectives achievable through a much shorter time horizon - specifically the timeframe of the FFVP project (see [Attachments A and B](#) for Process Description and Process Map).

FFVP goals, objectives, outputs and outcomes were evaluated based on five lines of inquiry: a) the design and implementation of a collaborative process; b) the exploration of different value systems; c) effectiveness of process facilitation; d) broad engagement of stakeholders; and e) general receptivity to and acceptance of the FFVP Recommendations. The indicators show whether the goals, objectives and outputs have been achieved. Data from observations of TSC, AGS and general public meetings in session by the evaluator and feedback from a set of structured instruments was used to verify success based on each specific line of inquiry. This data is presented in graphs as well as in more qualitative forms such as statements made as answers to questions in the surveys and end-of-process debriefing meetings. The elicitation of information was based on available standards of practice and evaluation of similar processes with adaptation for this specific project.

### Data-Gathering and Analysis

Data-gathering was conducted primarily through structured summative questionnaires administered online. The types and number of instruments was determined based on stakeholder functionality in the FFVP. These were as follows:

- *Sponsor (DCR) Questionnaire.* The sponsor was the initiator and convener of the project who is seeking a return on investment. Government agencies have basic standards of practice to follow in designing, implementing and improving their collaborative efforts.
- *Participant (TSC) Questionnaire.* TSC members were members of the public selected for technical/scientific expertise in a particular field in order to function as consensus-based group for the development of the recommendations
- *Participant (AGS) Questionnaire.* AGS members were members of the public selected as representatives of certain key stakeholder interests in order to function as individual advisors to the TSC, not as a consensus-based group
- *Participant (General Public) Questionnaire.* The members of the public engaged in the FFVP public meetings who represented a broader cross-section of public interests and values.
- *Facilitator Questionnaire.* The lead facilitator, assistant facilitators and project manager.

Many of the questions posed in the FFVP evaluation survey instruments were based on the constructs found in previous evaluations of collaborative environmental governance projects. This ensured that established best practices in collaborative governance, public engagement, stakeholder/situational assessments would be evaluated based on established standards. The survey instruments were reviewed by a team comprised of two MODR FFVP facilitators and MODR's Executive Director. They were then uploaded to Zoomerang.com, a web-based survey platform and emailed to participants, including appropriate members of the DCR staff, TSC, AGS and the general public who attended forums and provided their email addresses. There were a total of 68 survey responses: 6 TSC members, 11 AGS members, 45 members from the general public forums, 3 sponsor survey responses from key DCR/EEA staff including the Commissioner and 3 facilitators.

The survey instruments had many rating questions. The established range for the ratings was from 1 to 10. Although this was intended as a measure to provide a broader range of possible ratings for respondents to answer respective queries, for the purposes of analysis, the scattered ratings from the responses were clustered into two categories to indicate positive or negative experience/opinion. Ratings from 1 to 5 were ranked as negative experiences or opinions which, depending on the question being asked, may be shown as "Low" in the graphs while responses with ratings from 6 to 10 were ranked as positive experiences/opinions and are shown as "High" in the respective graphs. The responses to the qualitative questions, which comprised the rest of the survey, were used in appropriate places of the report where more description was needed. The FFVP evaluation report includes only the data that relates to the selected indicators.

### **Key Evaluation Tasks**

- Understand FFVP goals and process, and preliminary scoping of evaluation goals from preliminary meetings and project documentation
- Field observations to inform evaluation design
  - Identify thematic areas of issues in line with FFVP goals
  - Identify and understanding stakeholder types, roles, functions and interests
- Research to identify a comparable collaborative process that best describes FFVP, gain a better understanding of the depth of the issues identified during observations (values vs. science, trust, lack of public engagement etc); identify best practices in collaborative processes, public engagement processes.
- Research to identify an appropriate evaluation design
- Develop FFVP evaluation design
- Develop summative evaluation survey
- Review of instruments
- Launch survey
- Data analysis and report-writing
- Report finalization and distribution

### **Literature Review**

A review of literature on environmental policy-making such as public engagement, science vs. social values, science and technical expertise in environmental policy-making was conducted to gain a better appreciation of the substantial issues being observed and documented by the evaluator during TSC, AGS and general public meetings. In addition, a review of the standards of

practice in the field of collaborative environmental governance process design and implementation was also conducted. A review of literature on evaluation methods was undertaken to identify the best possible method for evaluating the FFVP (see below for a sample of the citations for the literature reviewed.) Below is a sample of the topics covered in the literature review:

- Public Participation Process in Environmental Assessment and Decision Making
- Values, Conflict, and Trust in Participatory Environmental Planning
- The Political Impact of Technical Expertise
- Sociological Perspectives of Environmental Conflicts
- Balancing Science and Politics in Environmental Decision-Making
- Adaptive Governance—Integrating Science, Policy, and Decision Making
- Managing Scientific and Technical Information in Environmental Cases: Principles and Practices for Mediators and Facilitators
- Best Practices for Government Agencies: Guidelines for Using Collaborative Agreement-Seeking Processes
- Evaluating the Performance of Collaborative Environmental Governance
- Evaluating Collaborative Natural Resource Management

The following is a list of the literature reviewed to inform the design of the FFVP evaluation:

National Research Council, prepublication, *Public participation in environmental assessment and decision making*: National Resource Council: Dietz, T. and Stern, P.C. (eds.), The National Academies Press, Washington, D.C.

Beierle, T.C & Konisky, D.M. Values, Conflict, and Trust in Participatory Environmental Planning. *Journal of Policy Analysis and Management*, Vol. 19, No. 4 (Autumn, 2000), pp. 587- 602.

Nelkin, D. The Political Impact of Technical Expertise. *Social Studies of Science*, Vol. 5, No. 1 (Feb., 1975), pp. 35-54. Sage Publications.

Ozawa, C.P. Science in Environmental Conflicts. *Sociological Perspectives*, Vol. 39, No. 2, Environmental Conflict (Summer, 1996), pp. 219-230. University of California Press.

*(DRAFT) Susskind, L., Herman, K. 2009. Balancing Science and Politics in Environmental Decision-Making: A New Role for Science Impact Coordinators.*

Brunner, R.D., Steelman, T.A., Coe-Juell, L., Cromley, C.M., Edwards, C.M., & Tucker, D.W., 2005, *Adaptive Governance—Integrating Science, Policy, and Decision Making*: Columbia University Press, New York, 319 p.

Adler, Peter et al. 2000. *Managing Scientific and Technical Information in Environmental Cases: Principles and Practices for Mediators and Facilitators*. US Institute for Environmental Conflict Resolution, Western Justice Center Foundation, RESOLVE INC. Washington DC.

Kenney, Douglas S. *Arguing About Consensus: Examining the Case Against Western Watershed Initiatives and Other Collaborative Groups Active in Natural Resources Management*. Natural Resources Law Center, University of Colorado School of Law.

*Best Practices for Government Agencies: Guidelines for Using Collaborative Agreement-Seeking Processes.* Society of Professionals in Dispute Resolution [Now the Association for Conflict Resolution], January 1997.

Arnstein, S.R. 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners.* 35: 216-224.

Thomas, C.W., Koontz, T.M. *Evaluating the Performance of Collaborative Environmental Governance.* School of Environment & Natural Resources. Ohio State University.

Conley, A., Moote, M.A. Evaluating Collaborative Natural Resource Management. *Society and Natural Resources:* Volume 16, Number 5, May-June 2003, pp. 371-386(16).

## Endnotes

---

<sup>i</sup> An example of USIECR Logic Models

<http://cooperativeconservation.gov/howworks/USInstECEvalFrameworkLogicMod907.pdf>

<sup>ii</sup> [http://www.epa.gov/evaluate/about\\_environe.htm](http://www.epa.gov/evaluate/about_environe.htm) and <http://www.epa.gov/evaluate/tools.htm>

<sup>iii</sup> [http://www.nfwf.org/AM/Template.cfm?Section=Logic\\_Framework\\_Examples](http://www.nfwf.org/AM/Template.cfm?Section=Logic_Framework_Examples)

<sup>iv</sup> See <http://yosemite.epa.gov/R10/ECOCOMM.NSF/webpage/measuring+environmental+results>

<sup>v</sup> <http://cooperativeconservation.gov/howworks/index.html>

<sup>vi</sup> Thomas, C.W., Koontz, T.M., *Evaluating the Performance of Collaborative Environmental Governance*. School of Environment & Natural Resources. Ohio State University. April 2008. Page 4.

<sup>vii</sup> Shalom H. Schwartz defined values as "conceptions of the desirable that guide the way social actors (e.g. organizational leaders, policy-makers, individual persons) select actions, evaluate people and events, and explain their actions and evaluations." in Schwartz, S. H., Lehmann, A., and Roccas, S. (1999), 'Multimethod probes of basic human values', in: J. Adamopoulos and Y. Kashima, (eds.), *Social Psychology and Culture Context: Essays in Honor of Harry C. Triandis*. Newbury Park, CA: Sage. 24-25).

<sup>viii</sup> Ecological values are defined by some experts as "the level of benefits that the space. water, minerals, biota, and all other factors that make up natural ecosystems provide to support native life forms." in Cordell, H. Ken; Murphy, Danielle; Riitters, Kurt H.; Harvard, J.E., III. (2005) *The Natural Ecological Value of Wilderness*. The Multiple Values of Wilderness: 205-249.

<sup>ix</sup> The standard deviation of the 6 TSC responses was only 4.82 (with an average satisfaction of 98.5%) while the standard deviation of the 11 AGS responses was higher at 18.39. The standard deviation of the 6 TSC responses was 0 (with an average satisfaction of 100%) while the standard deviation of the 11 AGS responses was 12.9.

<sup>x</sup> The typology developed by Gene Rowe (in Rowe, Gene. 2005. *Science, Technology & Human Values*, Vol. 30, No. 2, 251-290) by differentiating the nature and flow of information in a process. Here, information is elicited from all appropriate sources, transferred to and processed by all appropriate recipients, and combined when required to give a consensual response.

<sup>xi</sup> The standard deviation between the response from the AGS and the response from the general public is high at 24 although the standard deviation value for choosing litigation is only 7.7

<sup>xii</sup> The standard deviation between the AGS and general public responses indicating full or general satisfaction with the recommendations is low at 1.4 but the standard deviation between the AGS and the general public responses indicating complete dissatisfaction is higher at 18.4.

<sup>xiii</sup> The USDA Forest Service's National Collaborative Stewardship Team describes collaborative stewardship as "a process of scientists, government, and citizens working together to agree upon and attain goals and objectives that are environmentally responsible, socially acceptable, and economically viable."

<sup>xiv</sup> Thomas, C.W., Koontz, T.M., *Evaluating the Performance of Collaborative Environmental Governance*. School of Environment & Natural Resources. Ohio State University. April 2008. "Collaborative environmental governance" refers to any local, state, or federal effort to solve an environmental problem within partnerships among public, private, and nonprofit organizations.

---

<sup>xv</sup> Conley, A., Moote, M.A., Evaluating Collaborative Natural Resource Management. *Society and Natural Resources*: Volume 16, Number 5, May-June 2003, pp. 371-386(16). Collaborative approaches to natural resource management include watershed management (Natural Resources Law Center 1996), collaborative conservation (Brick et al. 2000; Cestero 1999), community forestry (Brendler and Carey 1998), community based conservation (Western and Wright 1994), community-based ecosystem management (Gray et al. 2001), grass-roots ecosystem management (Weber 2000), integrated environmental management (Born and Sonzogni 1995; Margerum 1999), and community-based environmental protection (U.S. Environmental Protection Agency 1997).

<sup>xvi</sup> *Developing a Collaborative Model for Environmental Planning and Management* by Steve Selin and Debbie Chavez. Research paper 9423. Available at <http://www.rri.wvu.edu/pdffiles/wp9423.pdf>