

When Should Shared Vision Planning Be Used?

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Abstract

We created shared vision planning in the early 1990s. Shared vision planning is a modified form of traditional water resources planning that includes new approaches to public involvement and the use of computers for planning and decision making. Since then, shared vision planning has been used in many water conflicts – usually in situations that had defied resolution using other means. In some cases, shared vision planning improved water management and in some cases it did not. In this paper, we review some of our case studies and reflect on the factors that might predict whether shared vision planning is an appropriate tool to use. We conclude that shared vision planning is a legitimate option almost any time planning is appropriate, but there are many instances when planning of any sort is unlikely to be successful. We find that planning will not be effective if a decision maker or major stakeholder believes they can achieve a better outcome through some other route such as lobbying, adjudicating or stonewalling to preserve the status quo. Accordingly, we recommend that planners try to answer the five triage questions we pose, educate themselves on the political dimension of the issues they are working on, and consider how they would pursue their interests if they were the stakeholder, and then decide whether planning should begin or continue.

Introduction

Decisions about how water is controlled and distributed are made using a combination of approaches including markets, legislation, adjudication and administrative policy making. Planning – broadly, the consideration of consequences before making a decision – typically is used to evaluate and justify investments in water projects and changes in the operation of existing projects. Federal water project investment planning is conducted according to a highly detailed set of rules called Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (the P&G) that is supported by decades of practical experience and numerous books, reports and papers with consistent and sound advice on the application of the guidelines. On the other hand, there is no “bible” for three newly important forms of water resources planning – watershed planning, reservoir control studies, and the environmental impact studies associated with the issuance of permits for water projects.

Shared vision planning is one type of water resources planning. We led the initial the development of that approach in the early 1990s and have led numerous studies using shared vision planning since. The question addressed by this paper is ‘when is shared vision planning appropriate?’

This paper builds on previous efforts we have made to organize and publish our mostly subjective analysis. The paper first describes shared vision planning in the context of the history of water resources planning in the United States, briefly reviews the main reasons we see for failed case studies, and then proposes five “triage” questions that should be answered affirmatively before one decides to use shared vision planning.

Essential attributes of shared vision planning

There are three essential attributes of shared vision planning:

- A traditional planning process based on Federal water planning principles, but expanded to address multiple decision makers and (in some cases) an operational and adaptive management phase;
- A rigorous but efficient form of public involvement called “Circles of Influence” that is used to assure that the concerns of the public are addressed;
- The engagement of stakeholders, experts and decision makers in the development of a shared vision computer model that encompasses all the important impacts of possible decisions.

Until three decades ago, there was a substantial intellectual and political interest in the subject of water resources planning that focused on the rules for making investments in new federal water storage and control projects. Three works from that period were arguably the most influential on water resources planning; Gilbert White’s 1942 thesis, *Human Adjustment to Floods* and Arthur Maass’ two books, “*Muddy Waters*” (1951) and the “*Design of Water Resources Systems; New Techniques for Relating Economic Objectives, Engineering Analysis, and Governmental Planning*” (1962) a textbook by participants in the Harvard Water Project which Maass led. White is considered the father of floodplain management, the central example of his broader concept that engineers should not automatically control water if adjusting behavior provides a better result. In *Muddy Waters*, Professor Maass argued that a Federal executive branch agency was obliged to design water projects that served the President and national interests rather than (just) the desires of special interests and individual Congressmen. *Design of Water Resources Systems* suggested an analytic approach and likely national objectives for that design. Professors White and Maass and other participants from the Harvard Water Project worked in and outside government to develop practical planning guidelines that operationalized their principles. There is a traceable path from their work to the P&G. Shared vision planning uses the same basic planning process except that it includes methods to determine and apply the decision criteria of multiple decision

makers and it goes beyond the recommendation phase and can be used operationally or in adaptive management.

The shared vision model is a single computer model of the system being studied that decision makers, experts and stakeholders all use to test new management ideas and investments. Models like this were imagined by C.S."Buzz" Hollings when he wrote about adaptive management in the 1970s. Richard Palmer used a interactive simulation model to help resolve conflicts over how to supply water to the Washington, D.C. metro area in 1980, and it was he who introduced the idea of the shared vision model to the National Drought Study team more than a decade later. The three figures below show an example of the shared vision model being developed for a study of the regulation of Lake Ontario. The first Excel spreadsheet is a control panel that allows the user to design plans and select forecasting approaches. The second figure is of the STELLA model where the simulation is done using values set on the Excel control panel. The third figure is of the Excel spreadsheet that helps rank plans and visually compares them. All three models are dynamically linked to exchange information automatically.

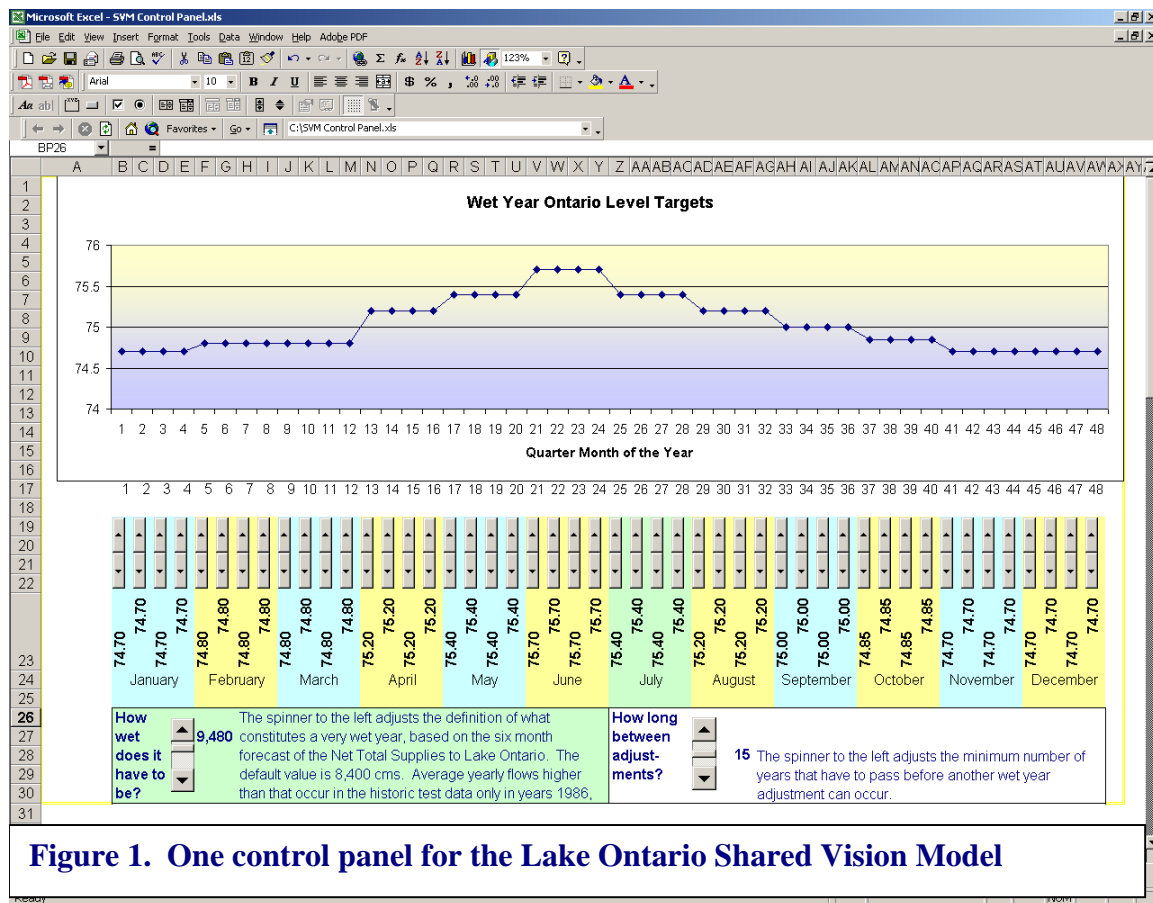


Figure 1. One control panel for the Lake Ontario Shared Vision Model

The Circles of Influence approach to public involvement begins with the traditional attempt to identify impacted parties, but actively seeks to engage them using existing relationships such as professional and trade societies to build trust and reduce costs.

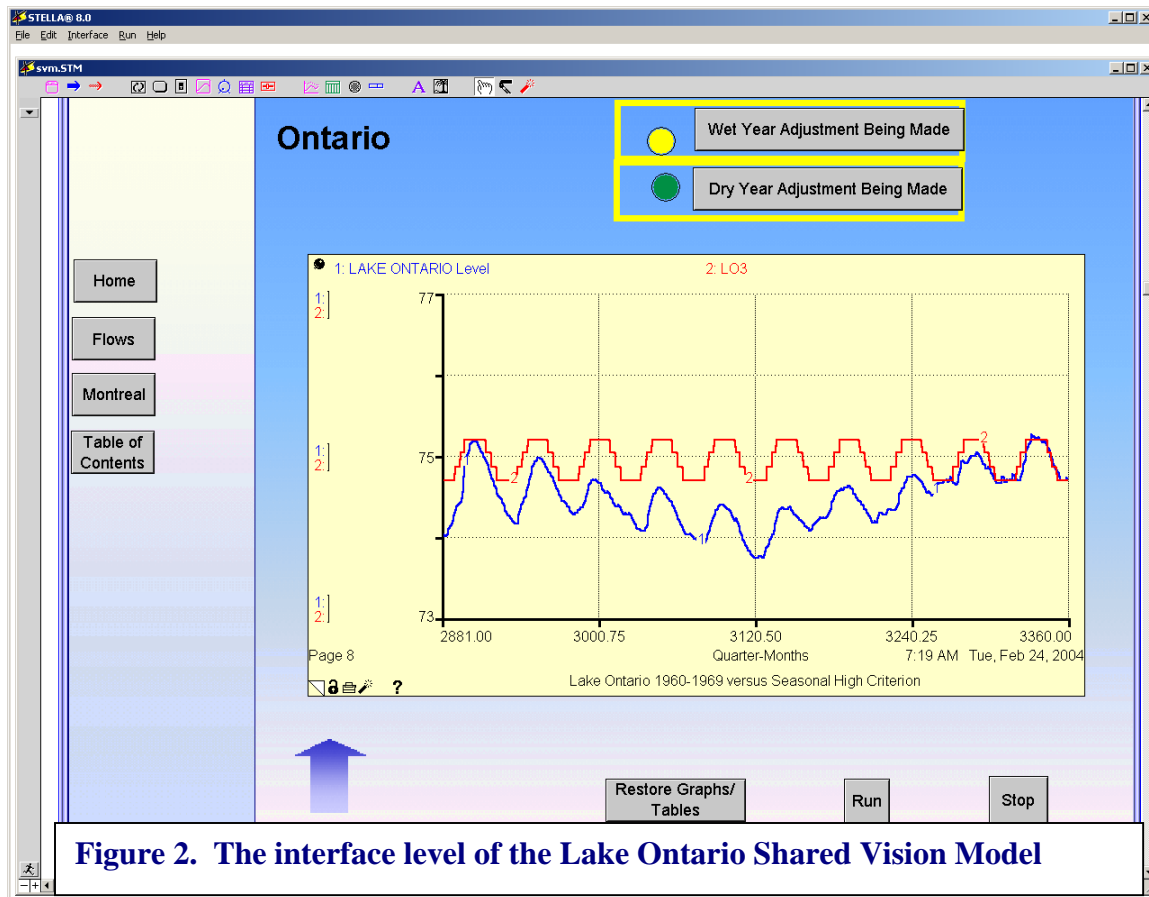


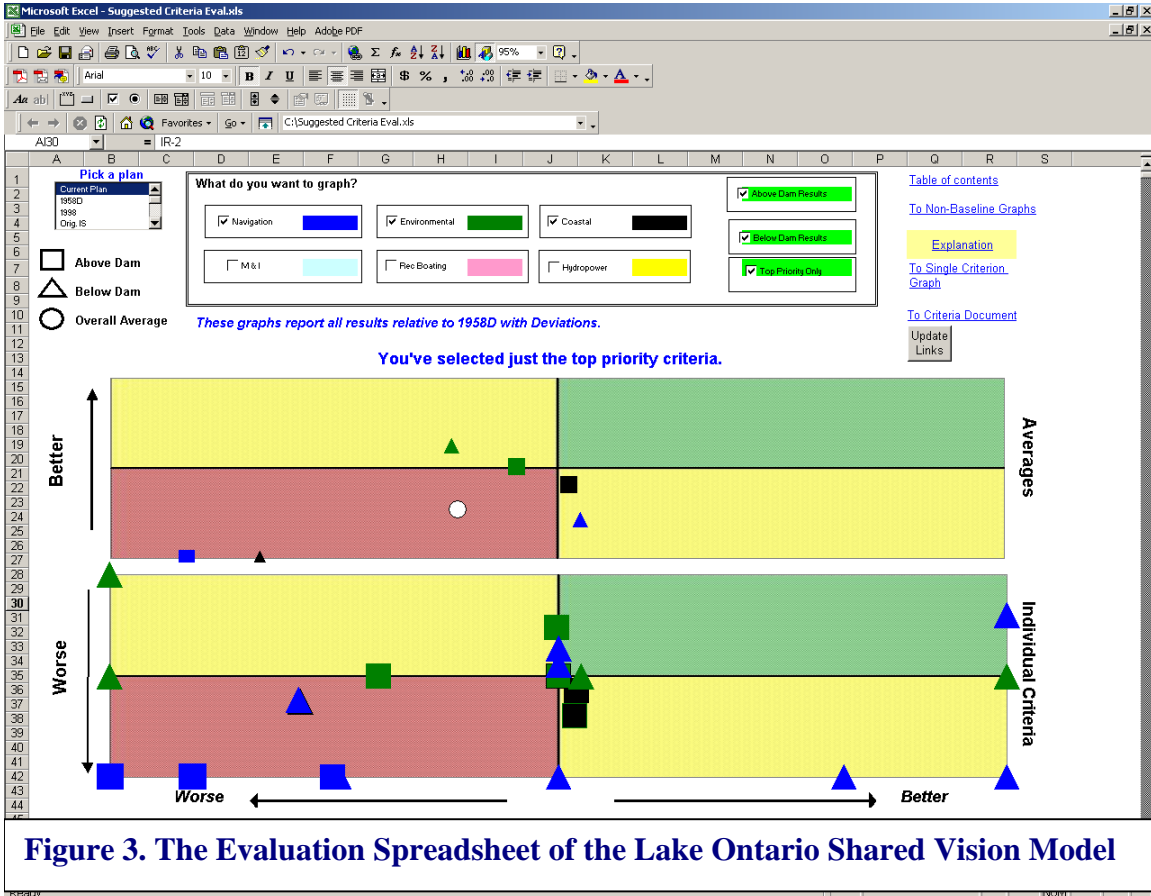
Figure 2. The interface level of the Lake Ontario Shared Vision Model

We used shared vision planning during the Corps' National Drought Study (1990-1994), for drought planning. After the National Drought Study we (and others) modified the approach for use in other types of water resources planning including virtual floods and droughts and the management of water in reservoirs and lakes. We have applied shared vision planning in over a dozen case studies here and outside the United States since.

In retrospect, the case studies seem to fit one of three categories: *successful*, *unsuccessful*, and *verdict pending*.

Success Stories

In each of these cases, such as the Washington Metropolitan Water Supply Study and the Kanawha River Basin Study, a test case conducted as part of the National Drought Study, it was clear that the solutions were implemented because of shared vision planning that had not been credible or even imagined before, and the benefits greatly exceeded the costs of the analysis.



In the Kanawha study, whitewater rafters had lost considerable income because whitewater releases had been reduced to conserve water needed to provide minimum flows for wastewater dilution. Dr. Richard Punnett led a workshop using a shared vision model in which he demonstrated reservoir operating rules that would improve both water quality and whitewater dependability. Previous operations studies just a few years before had not revealed these solutions. All the necessary decision makers and stakeholders had participated in the planning and model building process, essentially agreeing to the changes at the meeting, so new operating rules were put in place quickly. Participants estimated that the new plan would save \$10 million in regional tourism revenue during the next severe drought while also improving water quality. In Tacoma, Dr. Palmer and the Corps conducted a “Virtual Drought” that simulated several months of drought in a seven-hour workshop. The “drought” proceeded in two-week intervals. At the end of each interval, a “forecast” would be made and the “press” would characterize conditions and criticize decisions. Decision makers all used the model they had helped build to assess water supplies and demand, and to analyze and negotiate decisions as the drought progressed. Discussions were sometimes heated, but by day’s end participants reported increased faith in their model and its potential to help them manage collaboratively. The model and the relationships developed in this exercise helped reduce the time, effort and stress in subsequent reservoir management decisions in the basin.

Unsuccessful case studies

Two factors predominate in the failures; the limitations of planning talent and the perception by a key player that there was a preferable alternative to planning. The names of the case studies are not used here, but the examples are real.

Failures due to the limitations of planning participants

Our experience applying shared vision planning here and in other countries suggests that there are some typical human shortcomings that are likely to undermine a planning effort; lack of technical competence, especially in the field of planning, and a disposition to follow process rather than produce change.

The lack of technical competence, in our experience, has two roots. The first, widely documented, is that government is not attracting the best and brightest employees, and the government often has the core responsibility for managing water conflicts. The second is that the vast majority of people working to resolve the major water conflicts of the day are unaware of the work of Maass and White and their contemporaries.

Unfortunately, we see significant incompetence too often. Creating the systems model that mathematically relates changes in water levels and flows to impacts that people care about demands a broad range of skills. The skills of modeler, facilitator, planner and leader must either be found in one person or in a small team that can understand and appreciate each other's work.

But more common problem is the need to revisit technical issues that were raised and answered (if not infallibly, then certainly impressively) decades before, especially in the areas of public involvement and evaluation. The droughts of the mid and late 1980s and the requirements under the Clean Water Act to control Total Maximum Daily Loads of pollutants call for the same sort of systemic management that White and Maass had written about, but the people assigned to those problems were not familiar with that literature. The result is often what some call "garbage can planning" – an approach in which groups of agencies gather data, build models, hold open discussions with the public and try to reach consensus on a solution without any formal requirements (such as the use economic analysis). Two published reports document what many professionals have argued for some time. A report from the John F. Kennedy School of Government at Harvard University (Coglianese) makes a case that "public involvement" as it is practiced too often raises the interests of special interest stakeholders – for example, people who live around the shores of a reservoir – over the interests of the general public such as people who use electricity produced at the reservoir. Two reports from the University of Colorado, Boulder (Kenney, NRLC) show that although the concept is still promising, there are often no central principles that underlie so-called "watershed" planning or management efforts and that most watershed efforts have yet to show success. Our experience suggests that these reports are right and should be more widely read.

The second form of incompetence we often see is a disposition to process rather than product. This typically takes one of the following forms:

- Planners who believe the end product is a report rather than an improvement in the way water is managed.
- Technical experts whose view of the world is narrowed too much by their professional perspective. There are many variations, but to name a few:
 - Meteorologists who measure skill by the accuracy of forecasts rather than the impacts on the people who use the forecasts.
 - Modelers who try to impose their modeling approach on a problem rather than fashioning the model to the problem.
 - Economists and lawyers who believe that only the market or only the law is important in the allocation of resources
 - Environmentalists who review plans to find what is wrong rather than design plans to achieve what is right.

Failures due to perception by a key player that there was a preferable alternative to planning

The second factor we identified in those cases where shared vision planning was not effective was the belief by one or more key players that their interests could best be served by a solution path outside planning. In those cases no planning approach is likely to work, but shared vision planning is probably more likely to identify the problem and (at least) make it evident that further planning would be a waste of time and money.

In this case, the experience of traditional planners is part of the problem. Federal water project planning was a required path to Federal water project funding; if you wanted a voice in how that investment was made, you had to participate in the planning effort. That led to a perception that stakeholders would participate if given the opportunity, so the main obligation of the planner was to make sure stakeholders knew they could access the process. But stakeholders consider a planning study differently if it is not the door to funding. When planning is being done to allocate water, or a make a regulatory decision, or change the operation of an existing system, this old planning axiom may be naive.

Three examples abstracted from our experience illustrate the point:

- A city that does not want its suburban customers to understand their water supply system so well that they would sue the city for failure to live up to its contractual responsibilities.
- A government that prefers a pre-ordained water solution that has been negotiated at a political level to address water and non-water issues such as sovereignty, protection of traditional culture, rivalry and distrust among governments in the same river basin, or transportation and police services.

- Stakeholders who have a legal right to use water in ways that are uneconomic. This is common and while one can argue that it is wrong, it is not necessarily sinister. For example, it is common around the world for government to consciously and formally subsidize water for farming because of the social significance of farming and because of concerns about being dependent on foreign food. Economists generally oppose such subsidies and most planning studies would not support them. Just as Bill Gates would not be interested in a study to determine the best allocation of his money, these stakeholders are likely to resist communal efforts to find a better allocation of the water they now have a right to use.

It is important to realize that in these three cases, the aversion to planning may not be overt, but may take the form of missed meetings, delays in work product contributions, or technical challenges on issues that do not affect the decision being planned.

Success pending

We often feel study team elation at the success in the team building and evaluation phases. It is tempting to declare success then, but taxpayers expect planning studies to result in real world improvements. So at moments like this we declare success pending. Sometimes success never comes.

We were asked to intervene in the Alabama-Coosa-Tallapoosa Apalachicola-Chattahoochee Flint (ACT-ACF) River Basins study when the Corps of Engineers and the three states involved (Alabama, Florida, and Georgia) reported to us that their efforts to resolve their conflicts were at the point of failure and their only options were to return to court or try what was then a new approach, shared vision planning. We worked with the four “partners” for over two years to apply shared vision planning in that basin despite considerable resistance from some of the parties involved for many of the reasons described above (although we should be clear that the abstractions we use are truly drawn from many case studies, and none of the ones listed above were drawn from the ACT-ACF). BY the time we left the study, we had a working shared vision model for each basin, with the impacts in every area modeled at some substantial level and after the states had agreed in principle on the design of an interstate compact for each basin. The compact design was informed by the brilliant research and patient advice of Professors Bill Lord and Doug Kenney. The compacts were eventually signed into law by the three governors and President Clinton – the first water compacts in decades and the first ever in the Southeastern U.S. The “only” thing left to do was to use these tools to reach an agreement on how to allocate water.

For years after we left, we touted the ACT-ACF as an example of shared vision planning but were always careful to report that we did not consider it a success yet because for all the technical accomplishment, it had not yet led to better water management. In fact, one might say similar things about efforts to manage the

Columbia, the Missouri or the Colorado; that is, the process is still underway but the rules for management are still essentially the same as they were twenty years ago.

We now believe that the ACT-ACF case study can be put in the “failure” category. After years of extensions of the sunset clause of the compact, the states, by their failure to agree on yet another extension of the compact, have all but assured that the resolution will take place in court. This solution was available to the states in 1992, before they spent tens of millions of dollars on planning, and before the risk of water shortage in Atlanta area grew so much. All parties have to accept the fact that the courts will rule based on the law, including case law. Others have documented what we have observed, that court decisions on water often surprise and disappoint all the litigants. But that is just one part of the failure. The compact gave the states extraordinary power to make decisions; the Federal representative was not allowed a vote and could only veto a state supported decision if the decision demonstrably violated Federal law. Although the future is uncertain, and the legal issues would have to be sorted out in court, there are certainly reasons to believe that the states will have much more difficulty doing what they want without the compact. For example, if Georgia does pursue a “West Georgia” reservoir for water supply, they will have to apply to the Corps for a Clean Water Act permit. The Two Forks (Denver, Colorado), Gaston Pipeline (Virginia Beach) and King William Reservoir (Newport News, Virginia) cases demonstrate that the permitting process for controversial water supply projects can take years and cost millions of dollars.

Five triage questions

1. How can planning improve water management? Participants should try to imagine the planning study is over and they are very happy, then explain how the planning study changed things. If success cannot be imagined, how can it be managed?
2. Is the planning effort likely to be subverted by lobbying or adjudication? If possible find a political scientist at a local university or hire a retired politician with analytic skills to provide this background. We never failed to be amazed by what we did not know.
3. Is the necessary openness of shared vision planning in itself contrary to the interests of a major stakeholder? This may be revealed in the political analysis or belied by the resistance of a study partner to help make progress. Consider each major player and ask if there could be openness issues.
4. Is water the issue or the stage for other conflicts to play out on? Our political studies often showed that the real issues were outside water. Ask if changes in water management would help new people move to the area, and see if those who would be hurt by that immigration are resisting the study.
5. How likely is it that planning will occur? Does the study plan begin with data acquisition? Is there a suitable budget for plan formulation and evaluation? In a surprising number of cases, planning schedules and budgets assume that solutions will appear from the data, and the evaluations and rankings will be obvious once the data are collected.

Conclusions and Recommendations

We have argued for some time that the future of planning is shared vision planning, whether that name or every technical aspect of shared vision planning survives. We can disagree about when, but does anyone believe that at some point in the future we will not test all civil engineering solutions in some sort of virtual reality? And could these tests be useful if the stakeholders and decision makers involved believed the virtual reality was biased towards one party or solution?

But we also acknowledge that there are reasons, many identifiable, that shared vision planning can fail. We recommend that planning participants reject the notion that partial success can be declared because a planning effort has generated data, models or even a more collaborative spirit and greater trust. The only measure of success is better water use, and until that happens the data, the models and the trust building are investments that may or may not pay off.

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