

Can the private sector inform the government in water resources management? one watershed-one plan: a new approach to watershed management

Abstract

Minnesota, USA has developed a watershed management approach called One Watershed One Plan (1W1P). 1W1P is a statewide program that seeks to manage water along natural boundaries, defined by hydrologic unit code 8 (HUC-8) watersheds. Historically, Minnesota relied upon each county to develop their own water management plan. State funding through the Minnesota Board of Water and Soil Resources (BWSR) was allocated based on proposed project applications sent to a review committee which then decided which project in a given county would get funding. This approach provided a vehicle for transferring state tax money back to the local government but failed to really solve trans-county, integrated water management problems. To solve both water quality and quantity issues a more focused approach with a larger payload of funding for a longer period of time was needed. Government alone cannot solve intrinsic water issues because most Minnesota landownership is private. In this paper we discuss how the private sector must be engaged up front in the water planning process for successful water management. We illustrate how public-private partnerships are essential for better water planning and management. 1W1P has now developed across Minnesota allowing for better targeting and prioritization of local water issues.

Keywords: public-private partnership, water resources management, water resources planning, one watershed-one plan

Volume 7 Issue 5 - 2023

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Received: October 15, 2023 | **Published:** November 03, 2023

Abbreviations: 1W1P, one watershed, one plan; BWSR, board of water and soil resources; HUC-8, 8-digit hydrologic unit codes

Water resources management and the private sector

How to best manage water resources—where to focus on terms of geographic scale,^{1,2} who to involve from various stakeholder groups,³ how to fund management work—is a core concern of water resource managers. Many studies address *what* must be done to maximize results from natural resources management—defined as “the sustainable utilization of major natural resources, such as land, water, air, minerals, forests, fisheries, and wild flora and fauna”.⁴ This paper addresses the question of *how* to manage natural resources, specifically water resources. Its case study is Minnesota’s state-wide 1W1P program, which aims to manage water along its natural flow path as defined by the 63 hydrologic unit code 8 (HUC-8) size watersheds within the state (See Minn. Stat. §103B.101).⁵

The article identifies solutions to problems and challenges identified by water professionals and others charged with planning for and implementing management of Minnesota’s water resources under the state’s 1W1P program. The article relies on feedback on Minnesota’s 1W1P program gathered through interviews with individuals from around Minnesota involved in 1W1P to highlight key areas of opportunity in the 1W1P program and in water management more generally in Minnesota. It concludes with the suggestion that public-private partnerships are essential to successful integrated water resources management in Minnesota.

Assessment methodology and brief background

In 2011, Minnesota embarked on a journey to manage the state’s water resources on a watershed scale, instead of county or other scale. The plan was called One Watershed, One Plan (1W1P) and its purpose was to establish the hydrologically defined major watersheds as the scale at which watershed management takes place; to streamline plans under Minnesota statutory requirements and state programs; and to make funding for watershed projects more predictable and equitable.⁶

Elizabeth Henley, a former graduate student in the University of Minnesota’s Water Resources Science master’s program, worked from 2015 and 2016 as a research assistant at the Minnesota Board of Soil and Water Resources (BWSR). She interviewed participants at local and state agency levels and conducted outreach for the 1W1P program. She sat in on BWSR program planning meetings and listened to the considerations of state agency staff about what worked well and what was a struggle with the pilot 1W1P watersheds. These discussions and interviews with those involved in 1W1P pilots around the state prompted the question: *what would this statewide program, and others like it designed to holistically manage water resources, benefit from most?*

Recognizing that many factors affect the success of water management programs, key approaches emerged as central to integrated, comprehensive, and successful water resources management at local, statewide, and national scales⁵. These best practices can be roughly summarized as involving the local level

community and employing a comprehensive management approach. They include partnering with the public sector, sometimes overlooked in a resources management framework accustomed to an agency-public relationship that fails to bring private parties to the table.

Private partners are not the only ones frequently missing in water resources discussions. Successful collaborations foster cross-level and cross-scale interactions. “[O]rganizations of different sizes need to be embedded in and linked more with local and national institutions—such as educational and research institutions—for more lasting and mutual engagement with a wider range of riparian societies”.^{7,8} Small planning groups sometimes section themselves off from the collective group, creating an imbalance in knowledge and responsibility that negatively impacts comprehensive water resource management planning.^{9,10} Both policy makers and private sector funders must be willing and prepared to get behind new methods.¹¹

The role for public-private partnerships in water resources management

The scope of issues [in watershed-wide management] demands unparalleled cooperation between industry, governmental agencies, private institutions, and academic organizations.^{12,13}

The fox in the hen house

Effective water resources management requires public-private partnerships—partnerships between the government, the private sector, and the public sector. Broad stakeholder participation is key^{14,15} and *See generally* USAID Forest Program.¹⁶ In many areas of Minnesota, farming partners need to be involved and invested in water resources planning for any real progress to be made in the quality of local and downstream water. Planning conducted without these groups, whose work directly ties to local level issues and management, fails to establish the comprehensive resource governance needed.¹⁷ Public-private partnerships are the link needed to connect necessary, often under- or un-represented, partners to water management efforts such as IWIP.

The public-private partnership structure has often been employed in developing countries but is transferrable to any area trying to “improve management and service provisions of natural resources”.¹⁴ These partnerships require more work and time than a contract or agreement, sometimes the only context in which water resources planners are accustomed to working with the private sector. Successful public-private partnerships often employ someone just to manage the partnership for example, The Sustainable Forest Products Global Alliance.¹⁸

Public-private partnerships create a new cost-risk benefit analysis for private partners that see their role in water resources management shift once they sit at the resource planning table, as described in the following example:

“One might say that creating [public-private partnerships] in sustainable natural resources is like putting the fox in charge of the hen house. But if done well, this sort of [public-private partnership] should be like turning the fox into a tenant farmer responsible for managing the hen house sustainably. If he manages it well, he gets his share of eggs and chickens. If he does not, he gets kicked out, loses his investment, and some other fox takes his place. Equally, the government turns from an angry, gun-wielding farmer to a landlord interested in the success of the fox/tenant farmer: in other words, a partner”.¹⁹

Motivated to manage a resource sustainably, the private sector becomes a cooperative ally, working to minimize loss in resource value over time. In some cases, a public-private partnership may include contractual legal rights for the private partner to use the resource.¹⁹ Such use is governed by a contract that acts as a barrier against “regulatory creep;” the government must decide in advance the detailed performance requirements of the private partner.¹⁹

Example: partnering for forest management

Various sectors have forged successful partnerships with private actors to arrive at shared goals and cooperatively manage resources. In one international example that illustrates both the benefits and challenges of public-private cooperation, three international entities—USAID, World Wildlife Fund (WWF), and Metafore—worked with industry and government partners to improve responsible forestry, reduce illegal logging, encourage effective forest management, and prevent land use transitions.¹⁸ The partnership worked with large corporations and industry associations to arrive at an understanding of the partnership’s goals. This agreement was memorialized by a joint letter of understanding. A benefit of the public-private teamwork was collaboration that spanned “leaders in business, the environmental arena and society to conserve, protect and restore the world’s forests”.¹⁸

The USAID-WWF-Metafore partnership faced challenges along with its successes. One thing that induced skepticism among partners was the lack of sufficient government funding. Another was the difference in public and private sector work styles. Private sector partners expected that demands would be responded to immediately, while the public sector worked on a longer timeframe. The partnership suggested that, to avoid work pace conflict, public sector partners should better understand potential private sector partners before initiating public-private partnerships.¹⁸

Example: private partners engaged in voluntary markets

A voluntary market approach is one way to take advantage of existing networks and more effectively manage water resources. In the San Francisco Bay area of California, an Integrated Water Resource Management (IWRM) - inspired water planning project tried such a voluntary market approach. This voluntary market approach involved fisheries—dependent on water resources for their business—managing and owning the water. The approach was more effective at managing the resource than was mandated regulatory compliance.²⁰

Key to the program’s success was that it was voluntary and used existing market structures. The fisheries-managed market approach to water management offered sufficient incentives and benefits to each important, invested stakeholder group that these groups in turn supported. Others benefitted, too; cities liked that their municipal water utilities had more funds to provide cleaner water; environmentalists appreciated that more money was being dedicated to fish species conservation; and farmers were glad that their water access did not run dry—which occurs under the Endangered Species Act when low numbers of certain fish species result in limited water allocations. For a program like the one in the San Francisco Bay area to work, “a number of organizational boundaries must be spanned, different perspectives consulted, and cooperation gained”.²⁰

What makes private partners valuable?

Private partners invest financially

Public-private partnerships can help finance conservation programs. The U.S. Agency for International Development (USAID) began focusing on public-private partnerships in 2002 to promote

financing for conservation efforts—a major component of USAID’s poverty alleviation work in forested focus regions around the world. USAID’s method was to link forest industries to local, sustainably practicing producers. This provided producers with a reliable supply of sustainable forest products for their markets, and broadened and entrenched the practice of sustainable forest resources management.¹⁶ Partnerships like USAID’s are empowered by private sector funds that provide implementation opportunities for projects.¹⁸

Private partners are socially, culturally, and economically embedded

Often large, respected entities that shape the interests and issues which the industry—all the way down to individual businesses, workers, and community members—prioritizes, private partners have the potential to substantially influence social and economic decisions regarding water resources management. One of the key approaches to successful water resources management is local level engagement. Spurring engagement at the local level requires accepting the affirmation that the water resources management plan in which they are asked to participate will establish the method of resource management that will be in place going forward, feel certain that their interests will be better served by investing in the planning, implementation, and management of the water management plan, and think that they will be able to advance their priorities in water resources management through involvement.¹⁵

An industry-leading private partner sitting at the planning table provides this affirmation and has the potential to impact environmental behaviors far down the production chain.

Why are private partners driven to partner?

Why would any large company concerned about its bottom line opt to sit at the resources management table and help fund implementation of water resources management plans? Brian Richter, Chief Scientist (Water) at The Nature Conservancy, is a global leader in water science. He identifies corporate investment in water as one of the top three trends in the future of water management—locally, nationally, and around the world. Corporations are increasingly driven to involvement in water management due to several factors:

“The pace of change has been impressive, due to the impact that investors are having on companies. Organizations outside of the companies have been effective at making investors aware of water issues. As a result, investors are now putting investment from the company into those issues. The corporations involved are mostly big multinational companies, leaving a lot of opportunity for work with more local companies—big and small—to be done. *If corporations do not manage their behaviors regarding water, the water situation could hurt them*” (emphasis added).²¹

Richter’s final point is key: companies that disregard the water resources located where they do business—farms, factories, land near farmed areas, land surrounding mines, and other production or extraction sites—will be left without economical options to achieve business prosperity. The result will be unhappy investors and executives.

Opportunities created by public-private partnerships

Effectively partnering with the private sector can generate more extensive and impactful results for water resources management projects than if the private sector was not invited to the table. 1WIP

offers a helpful window through which to consider the opportunities created by public-private partnerships.

Private partners are trusted

In Minnesota, agriculture and livestock significantly influence many watersheds. 1WIP pilot watersheds reported little, if any, involvement in water resource management planning by the agricultural and livestock farming community—but recognized that this involvement was crucial. “Don’t leave out sectors of the community—county, township, city government. Get representatives from every aspect, including livestock, soybean, and corn producers,” cautioned one 1WIP pilot watershed planner. Another noted, “We tried to contact individual organizations on our own to find people to serve on an advisory committee. We had trouble getting a response from them. It is a detriment, and a hole in the process, if we do not get feedback from the agricultural community.” Farmers are often too busy during certain times of the year to attend planning meetings and may perceive little reason to become involved in local water resources planning efforts.

Studies show that targeting critical runoff areas while maintaining economic viability on farms requires mutual understanding and planning from the farmers and planners.²² Bringing farm groups to the table requires a new way of thinking about the relationship between water resources management and farming operations.³ Partnerships with farming corporations and trade and industry groups can help achieve water resources goals in farming areas. Farming companies, trade industry associations, and related entities can utilize their existing communications channels with the farming production chain based to circulate corporate-level priorities for resources management of which farmers will take note.

Little has been published from the agricultural side on specific farm practices, due in part to general distrust among farmers of local and state programs that collect farming data, including nutrient application amount, timing, and location. Programs are increasingly successful in teaching farmers about application rates, timing, and location by working through trusted intermediaries. For example, The Nature Conservancy partners with local SWCDs who have relationships with pesticide vendors.²¹ Using information and resources provided by the SWCDs via The Nature Conservancy, pesticide vendors—the trusted advisors to many farmers—distribute nutrient test color strips and ask farmers to test different waterways throughout their farms. Farmers compare strip color to a chart on their phones that also serves as an app that transmits the information—location and water quality—to The Nature Conservancy. The Conservancy then works with SCWDs and vendors to identify opportunities for farm clients to reduce or modify pesticide applications, which coincidentally saves farmers money. The program makes the large pesticide vendors look good in the public sphere and makes their farm customers happy about improved cost savings.

Public-private partnerships with farming sector partners should strategize ways to reach different types of landowners. For example, in many parts of Minnesota, more producers rent, rather than own, the land that they farm. Landowners may have little or no knowledge of the farm practices that their renting farm tenants employ. New strategies must be developed—perhaps focusing on cost savings in production—for a farming audience that does not have a legacy investment (i.e., “family farm”) mentality.

Regardless of land ownership status, farmers are drawn to conservation and preservation opportunities for many different reasons. Incentives can provide a launch pad for some producers to

implement conservation practices. Common social practice is another strong motivator, such as when all members of a co-op adopt the same practices, or all clients of a crop consultant are encouraged to pursue a specific management technique. Public-private partnerships should also consider the many ethical and non-financial reasons that farmers opt to become involved in such programs. Some farmers truly value seeing wildlife on their land.

Private partners spark involvement and interest

As Brian Richter of The Nature Conservancy explained, many large corporations are realizing that they need to get involved in water resources management solutions. If they do not, they will be left without a choice or voice in how the community decides to achieve water management goals.²¹ The farming industry (Cargill, Mosaic, CHS, Land O' Lakes, etc.) in Minnesota is no exception. Some corporations already take advantage of opportunities to become involved in public relations and internal business strategy win-win public-private partnerships. For example, the sustainability director of Gold'n Plump regularly meets with the Minnesota Department of Agriculture to brainstorm how to provide incentives to producers. The company has begun a practice of paying more money to producers who use sustainable practices in poultry production.

Other public-private partnerships have demonstrated how the presence of a business or corporate entity at the planning table often sparks the interest of local government entities and counties, as well as private landowners, in the project. As a result, these entities become more cooperative partners. BWSR has the opportunity to address the 1WIP concern of insufficient involvement from private landholders and local government through public-private partnerships. Private partners' ability to bring local government partners to the table presents a boon for programs like 1WIP. "Some commissioners are fairly suspicious of the whole process, in terms of seeing it as state takeover of local control," said one planner engaged in a 1WIP pilot watershed. Local governments are concerned that 1WIP will replace local jurisdiction with more regional jurisdiction. A 1WIP participant explained that in one pilot:

[A] commissioner asked, 'where did this idea come from anyway?' at the meeting of SWCD supervisors. We implement projects more along county than watershed boundaries. I see the sense of 1WIP, but there are still a lot of people out there who think it doesn't make sense. It takes time. More local government units are involved, and it would be nice to have a longer period of time to transition into 1WIP. I hope that once we make the transition, people say that this makes more sense.

Loss of jurisdictional control, and increase in mandated regulations, could infringe on local control over resource management. 1WIP pilot participants said that some groups opted not to participate in the planning process as a result. "It is amazing how different two adjoining districts or jurisdictions are politically," remarked one 1WIP planner. "Even in our meetings, people would say 'that's not how we do that'—a real 'us' and 'them' mentality. That is probably the biggest problem during these conversations." The presence of private partners at the table can help shift the focus from local politics to achieving results.

Private partners make investments

A major concern, barrier, and obstacle in many efforts to expand and alter the way water resources are managed is cost—and lack of funds. For example, comprehensive water resources management planning like 1WIP consumes a lot of staff time, without providing

new funding for additional staff time or roles. One 1WIP pilot watershed planner commented "I'm reserved about funding. I don't know how BWSR is going to fund implementation based on the strategies and priorities in our plan. Is every watershed going to be competing for the same dollars, grants and loans?"

Private partners can be beneficial to 1WIP in terms of funding. Throughout Minnesota, 1WIP pilot watershed participants voiced concerns about ongoing funding for 1WIP plan implementation. The plan writing phase was funded by state grant money, and many wondered what new funds, if any, would become available when the initial funding ran out. The initial funding does not cover plan implementation costs. While the longer-range goals that emerge from 1WIP plans may incorporate more secure funding plans, partnerships with private entities can offer another source of stable project funds and cost-share opportunities. When asked to contribute their own funds to implement the conservation and preservation projects they help plan, private partners have a stake in water resource plan implementation.

Private partners create impact

Without agricultural industry involvement in and collaboration on critical load mitigation efforts, big scale changes in water resources quality will not be achieved, no matter the level of detailed data behind water resources management plans. Farm boundaries and hydrologic boundaries do not always overlap.

Efforts to tackle critical sources of loading and pollutants requires an understanding of both watershed-wide issues and farm-scale economic realities, including the ability to implement best management practices.²⁰ Not all watersheds may be in a position to present data on best management practices for watershed-wide source reduction while also identifying the ability of individual farms to implement these practices. Linking watershed planning to individual farm land capabilities requires shared planning which private partners can foster.²⁰

One 1WIP planner noted the significant challenge of achieving resource improvements absent collaboration from the farming industry. "At this point we have some lofty goals, but our first goal needs to be to stop the current trend. In this 1WIP process it feels like we're going to ignore the bleeding and start treating the headache. We've got to stop the trend going in the wrong direction and stabilize it. That's a weakness I feel needs to get worked out. This is a situation where, so far to date, I've been scratching my head trying to figure out a solution involving the [Minnesota Statutes] 103E drainage community."

The attitude of private partner industry members toward environmental planning could be a significant counter to skepticism by farmers about additional water resources planning. As a 1WIP pilot watershed planner commented, "I get some farmers concerned that this is just another way of putting more rules out. I'm explaining that it's a way to do something to upland treatment to help the county. Every part of the upper watershed affects the lower watershed."

Private entities are also landowners. When they get involved in water resources planning, there is an increase opportunities for positive and comprehensive resource management on that land. "So much land in our pilot area is privately held," noted a 1WIP pilot watershed planner. It would be great to have help getting more of our partners to buy in. There are so many actions that could happen as part of the 1WIP process, but we don't always have the resources." Resources is more than just throwing more money at the local level but building human capacity to keep landowners engaged. That means paying the SWCD staff a fair wage with benefits to support a family living in a rural geographic setting.

Water resources planning with the private sector

The future of watershed planning is likely to touch on, and perhaps center around, the following:

- I. Water quantity and governance concerns--particularly agricultural drainage, expanding the emphasis on local scale work and capacity for integrated planning and management at the proper watershed scale.
- II. Increased efforts to influence corporate behavior regarding water, and the ownership of, and investment in, management of the resource; and
- III. The continued, intensified pursuit of global human access to safe drinking water.²¹

Public-private partnerships in the water resources management sector are uniquely positioned to address all of these concerns. There is a clear opportunity for private sector involvement in water resources management planning. Private sector involvement from companies and corporations located in, or benefiting from, Minnesota's watersheds is key to expanding the impact of water management plan implementation, like 1W1P, throughout the state. Private sector participation has the potential to address some of the core funding, organization, and stakeholder concerns present in water resources management planning. Because public-private partnerships require extensive cooperation and collaboration, the various groups involved—private institutions, academic organizations, businesses, environmentalists, farmers, and agriculture—must be motivated toward a common goal, even if they are compelled to involvement by very different interests. We intend to follow up this paper in the future with 10-year post evaluation of how successful the 1W1P process worked to engage the private sector and if real measurable water management results were captured and documented.

Acknowledgements

Thank you to the Minnesota Board of Water and Soil Resources, specifically, Melissa Lewis, for her guidance in my internship working with Minnesota's One Watershed, One Plan program, and for allowing me to include the interview overview in my MS Thesis. Thank you to Jane Dosemagen for her review of drafts of this article. Thank you to those in the Water Resources Science program community who provided many helpful ideas.

Funding

Minnesota Board of Water and Soil Resources.

Conflict of interest

None.

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