

Advisory Board Meeting

May 16, 2019 Conference Call

Board Members Present (6 of 9)

Kelly Bennett, Martin Doyle, Greg Gearheart, Sara Larsen, Emily Read, Dwane Young

Updates from Chair and Executive Director

Website launch

The Internet of Water (IoW) officially launched its website and social media platforms on April 30th. The IoW newsletter went out to 949 individuals. Our mailing list grew from 6 to 324 and we now have 91 twitter followers. Thank you to the advisory board for participating and sharing the newsletter through your networks. We'd love to get input and feedback on the number of individuals that reached and went to the website from you're the advisory board listserves.

New hires

The IoW has hired a data architect, Kyle Onda, who will join the team on June 3rd. Kyle and Rhys Ryan (20% of his time is dedicated toward the IoW) will provide the technical capacity to start developing tools. The full IoW team should be assembled by July of 2019.

New Funding

The Pisces Foundation has awarded the IoW with an additional \$100,000 to do citizen science and partnership with the NGO community in a way that is consistent and cooperative with our general work to open public datasets.

Around the Board

There is an opportunity for the IoW to partner with federal and state agencies to identify cooperative funding and grant opportunities to support water budget data efforts. Agencies such as the U.S. Geological Survey would like to develop a strategy for awarding these funds to achieve synergies that further advance their efforts in developing a National Water Census. The IoW is pursuing an opportunity to provide a common approach and architectural framework to pull data together for different components of the water budget.

The California Water Data Symposium on July 1-2 will have a panel that includes several members of the Advisory board to talk about their efforts. Panelists include members from CUAHSI, Texas Water Development Board, Western States Water Council, and the Internet of Water. The symposium will be recorded and made accessible through a webcast. There will be a datathon on topics such as how to map public water supply systems to sources and consumer confidence reports.

There is a group working to develop an Upper Mississippi River Basin Information System to bring together nutrient information data into a single platform. Originally, the group was discussing pulling the data into a database to visualize, but after an advisory board member spoke about the Internet of Water, the conversation changed to building a platform that opens the data and uses web services. The IoW is proving to be a great resource to steer ongoing data efforts towards open and accessible data.

The IoW met with state agency leaders in New Mexico to discuss how the IoW could support their effort to meet their new water data legislation. The conversation with the IoW was led by the Department of Geology and the State Water Planning Board, but there is clearly a need to bring the Department of Environmental Management into these conversations as they hold a large volume of water data. An advisory board member will connect the IoW to the correct person in the agency for these conversations.

EPA and CUAHSI are very impressed with Rhys Ryan and his effort towards building a sensor data cataloging. As he makes progress it would be good to bring onboard other federal and state agencies collecting different types of sensor data.

There is a new white paper researching the value of open and transparent information created from weather data. An advisory board member has reached out to this company to see if they will share that white paper and gauge their interest in doing something similar for water data. Depending on the companies response, the IoW could share or promote their white paper in their data-stories section.

Pilots and Pilot Process

The IoW report recommends the IoW engage in pilot projects that demonstrate the value of open water data. The IoW team shared a document with the Advisory Board outlining the process for engaging in a pilot project and a specific interest in understanding where to draw the line between creating common tools that enable more data to be discoverable, accessible, and usable with demonstrating the value of data management.

The document outlines three types of pilots:

1. The IoW focuses on making new data discoverable and accessible.
2. The IoW creates common tools that can be applied across public agencies for different types of data.
3. The IoW develops custom tools that address a specific use case and can extend to develop quick decision-support tools. This last pilot raises the most questions as to how far the IoW should engage in the development of such decision-support tools.

The outlined process for engaging in pilots includes a design phase, a data phase, and a demonstration phase. The design phase entails building a coalition (in some instances these might already exist) with a point of contact with coalition members who will share responsibility for the success or failure of a pilot. A coalition might not be needed for small pilots or the development of general tools, but there will often be a group of stakeholders interested in to a specific outcome. The next step of the design phase is to

outline the requirements needed to go from data to decision-support tool and will include a data literacy step to ensure all coalition members and their technical staff are using common terms and not talking past one another. There was general excitement from the board about this step and that it will speed up the process to have a set of definitions and terms laid out at the beginning of the process.

The data phase involves working towards common data terms, definitions, standards, and metadata that provide the framework for create the data infrastructure. This phase is incredibly important to ensure long-term viability and transferability of the pilot and common tools to other regions of the United States. This phase will likely need to be done in concert with a technology working group that intimately understands the data and how it is currently structured. Ideally, this phase will lead to convergence of terms and standards. The demonstration phase involves creating a decision support tool and developing lessons learned from the pilot process.

The IoW team is soliciting input from the advisory board into this process, particularly regarding the types of pilots we engage in. On the one hand, developing visualizations are important to attract resources for the IoW by showing funders why making data more discoverable, accessible, and usable is incredibly important. The concern raised by an advisory board member who could not make this call is that the decision-support tool is too big a lift for the IoW and could lead to mission creep. The development of common tools could also attract resources, particularly from the public sector.

The advisory board raised the concern about the IoW building decision-support tools because it is difficult to succeed in creating custom support tools for multiple audiences. While it is important for the IoW to visibly demonstrate the value of open, structured data, the IoW will also be held accountable for the quality of what is built. One proposed solution was for the IoW to align with projects currently under way. The IoW could support and enrich those efforts by developing common tools that make their decision-support tools more efficient or accurate. The IoW could track the dollar value of those improvements to decision-making. There was wide agreement from the board that this was a better path for the IoW. The IoW would partner with an agency and iteratively work towards building the underlying data infrastructure to support the final tool a partner agency will build. This will ensure the IoW remains firmly embedded in its mission of improving water data infrastructure while doing so in a manner that creates tangible value to other organizations.

The IoW can still create basic visualizations of new data the IoW enables to be made discoverable and accessible, which meets the aspirations of some of the current funders. If the IoW wishes to avoid creating basic visualizations, we can partner with a private company or consortium to demonstrate to funders that all key players are present to take a pilot through the decision support tool development. This would make the partner responsible for the development of a tool that meets the coalition needs, while the underlying data infrastructure supporting tool development remains in the purview of the IoW.

There was widespread agreement by the advisory board that the IoW should not engage with creating decision-support tools because they are time intensive. However, the work the IoW has been doing by convening and meeting with folks in the Colorado River Basin, California, and New Mexico to understand what agencies are currently doing and what there needs are provides the starting point for this new approach to pilots. If the IoW is helping a pilot champion then we take on the enabling and empowering role. The IoW then has a partner who is co-responsible for the success or failure of a pilot. The common

tools are a huge value add from the IoW, but the resulting tool should be lightweight and the IoW should not be responsible for sustaining that tool into the future. The advisory board noted that decision support tool means something specific, and the IoW should use a broader term such as “data visualization” or perhaps something even lighter such as providing a dataset or number at a frequency relevant to the target audience.

This sentiment was echoed by the experience of other board members who have developed web services or tools that never get used and are incredibly expensive. Often, they find that creating a cheaper, lighter version sufficiently, and often better meets the needs of stakeholders. It is much easier to expose data through services than trying to communicate the meaning of those data. The IoW should take an agile approach because the data architecture and communication tools are often co-dependent and require iterative development. The IoW should commit to stay engaged with coalitions over time as they build their tools so that the underlying infrastructure can be adjusted to best meet their needs.

An additional thought is for the IoW to simply articulate the needs and data requirements expressed by different stakeholder groups. That type of document could be a deliverable that underlies the entire process and creates value to stakeholders beyond a specific pilot. The IoW could take that one step further and link how data requirements will produce efficiencies.

The point was also raised that some of the groups are resource poor and have big data needs. The IoW must develop a strategy and process to help those entities lacking resources to continue making progress with water data. There may be an opportunity for the IoW to inventory funders, vendors, open tools, etc. that could work with resource challenged entities through in-kind contributions or pro-bono. The IoW could provide guidance for that process by developing best-practices and the infrastructure for those types of exchanges and services, such as digitizing data, to occur. The IoW could also work to identify funders and match those funders with regions or topics of interest to their mission.