

SWPP Technical Paper #4 - Environmental, Social, and Economic Cost/Benefit

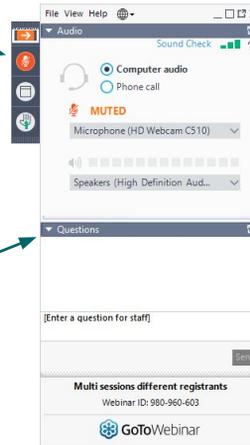
5/23/2022



Erin Jordan

Online Tools

- Muted
- Not Recording Today
- Use the Question Tool



David Lelsz

- Muted
- Not recording
- Question tool
- Sound Check
- We will have a brief Q and A session at the end of every section, try to restrict to the relevant section.
- Introductions
 - Theresa Gunn, Senior Lean Coach on ADEQ's Office of Continuous Improvement
 - Jonathan Quinsey who is the Legal Specialist mastermind on the effort to create the new Surface Water Protection Program
 - Dr Erin Jordan of the Surface Water Quality Improvement Team

Agenda



- Introductions
- Overview of ESE Requirements for Rulemaking
- Review of paper
- Notes on ADEQ's Process

Erin Jordan

- Go through Agenda
- Pass off to Jonathan



1. Adopt Procedures
2. Apply Procedures
 - a. Waters
 - b. Standards

Jonathan

1. The presentation this morning is going to cover the information that ADEQ has released in the Economic, Social, and Environmental cost/benefit analysis technical paper draft. It's extremely important to note that this paper is currently in draft form. We are coming to stakeholders today to inform you about the process ADEQ is using to develop our final analysis. As I mentioned in the significant nexus stakeholder meeting last week, ADEQ believes that a great process yields great results. Although our presentation today and the paper we released don't give you the final answer, they describe in detail what ADEQ is going to look at in order to make our final policy decisions. If you have the goal of being an active stakeholder in the SWPP rulemaking process as we wind down the informal phase and start the formal phase of rulemaking, please take the time to review the process we're presenting today.
2. So let's start out today by ground truthing the agency goals. For rulemaking purposes, HB2691 (the SWPP enabling legislation) requires that ADEQ adopt "procedures for determining economic, social, and environmental costs and benefits in rule. In this presentation I'm going to often refer to this as an "ESE analysis" or ESE cost/benefit analysis, or something similar. In terms of writing

1. rules, defining a procedure to perform that analysis is the main focus of what ADEQ must do.
2. In this first SWPP rulemaking, ADEQ must simultaneously adopt those procedures for determining the economic, social, and environmental costs and benefits and then apply them in two ways discrete ways:
 - a. If the water is not categorically excluded from the SWPP as defined in § 49-221 and the economic, social and environmental benefits of adding the water outweigh the economic, environmental and social costs of excluding the water from the list, the water *may* be added to the PSWL.
 - b. ADEQ must also apply the procedures for determining ESE cost benefit In adopting water quality standards at a particular level or for a particular water category for non-WOTUS protected surface waters.

ADEQ's Plan for SWPP ESE Analysis



- ADEQ's EIS experience informs the SWPP process, but we needed something more
- Contracted with McClure Consulting, LLC



Jonathan Quinsey

1. Our technical paper describes ADEQ's background with these analyses a bit. Specifically, § 41-1055 has required a formalized Economic Impact Statement for agency rulemakings since 1995. Internally, I led a project to revamp our EIS process in 2019 and the agency has been using new standard work since early 2020 to measure economic impacts of our regulations. The new process has been fairly successful and we've grown our internal expertise about how to do these types of analyses significantly since it went into effect.
2. However, ADEQ recognizes that the analyses required by the SWPP enabling legislation called for something deeper than the analysis that ADEQ has typically performed for our rulemakings. Subsequently, we contracted with McClure Consulting, LLC to perform a variety of economic analyses based tasks for the agency. I'm going to cover a lot of their work during the presentation today. The way that we envision this process is that ADEQ staff and our rulemaking communications will largely interpret McClures work for stakeholders but our consultants are going to be the ones doing the hard analysis. As the technical paper indicates, so far ADEQ has executed two task orders with McClure Consulting under an existing state contract.

- a. The first task order resulted in the report that we're calling "McClure Report 1" that was delivered on July 7, 2021. It's reproduced in its entirety as an appendices to the draft technical paper you received.
- b. The draft second report delivered on March 4 2022. Once again, that draft report has been reproduced in its entirety as a appendices on the paper that ADEQ has made available to the public..
- c. The McClure preliminary final report and working model delivered on 4/29. ADEQ is still working through the model and learning how to operate it ourselves before making it available to the general public. After receiving agency and stakeholder feedback on the process that ADEQ has deployed so far, that model will be the backbone of the ESE process ADEQ uses to complete the SWPP rulemaking. We will also have the contractors available for a stakeholder consultation at some point in the future so you can ask them questions directly.

50 State Survey



Jonathan Quinsey

1. Before I get too far into the McClure reports, I want to spend a bit of time talking about a research project the agency did to help inform our ultimate ESE analysis and help scope our task orders with McClure. One of the things we really wanted to address early on in the process to build our ESE procedure was to spend to the time researching if something like this analysis had been done by another state before. The research log for this initial project is also included in the appendices of draft technical paper.
2. Our initial research, along with the statutory requirement that ADEQ consider the unique value of Arizona waters ultimately made the agency decide that there wasn't another program out there that looked similar enough to ours to that the agency could use as "inspiration" for our final work.
3. The value in the 50 state survey is that we really did spend time considering the many forms of environmental valuation that exist in the United States. Programs in Ohio and Massachusetts helped propel early agency discussions about what ADEQ could really do during the SWPP adoption.

- methodology to derive hypothetical costs and then extracting the kind of information actually wanted from a survey process would require ADEQ to do an additional level of analysis beyond the scope of the SWPP rulemaking. If ADEQ had to ask every fisherman the hypothetical market value of a day of fishing, the amount of man-hours the agency would need to dedicate to generate a statistically significant answer to that question would be enormous. Given these real-world challenges of developing a valuation procedure, the concept of benefit transfer has substantial appeal to ADEQ as the agency must produce a sweeping amount of analyses to adopt the SWPP.

The benefit transfer method is used to estimate economic values for environmental benefits by transferring available information from studies already completed in another location and/or context. For example, values for recreational fishing in a particular state may be estimated by applying measures of recreational fishing values from a study conducted in another state. Thus, the basic goal of benefit transfer is to estimate benefits for one context by adapting an estimate of benefits from some other context. Benefit transfer is often used when it is too expensive and/or there is too little time available to conduct an original valuation study, yet some measure of benefits is needed. It is important to note that benefit transfers can only be as accurate as the initial study.

Applying the concept of benefit transfer only works then if you're doing really good research. One of the things that we've tried to provide in the draft technical paper is an extremely in-depth catalogue of what ADEQ has reviewed and how we're using it. We think this is an area that's extremely ripe for stakeholder comment and I'll talk a bit more about our bibliography later.

Limitations of First Paper

- Abstract modeling doesn't work
- ADEQ needs to develop rules that are prospective and forward looking but a process we can use now
- Valuations are inherently difficult, need to make sure ours aligns with existing literature



Jonathan Quinsey

- After finishing the first report process we really learned a lot. For the purposes of the presentation today I've distilled it into three main lessons that the agency learned.
 - Number 1 - Abstract modeling doesn't work. The saying for that our modelers often use is "crap in crap out." After the first paper we realized that we needed to spend more time building something tangible for this rulemaking.
 - Number 2. This point is really informed by point one and the general requirements of the statute. ADEQ needs to "split the baby" on this rulemaking. We need to adopt a procedure in rule that's forward looking, but then we also need to apply that procedure in the rulemaking itself. That means that our analysis has to be focused enough to use right now but prospective enough to be used in any future rulemakings as well.
 - Number 3. For the reason I mentioned on the last slide It's really hard to get a market value to use in these models. We realized that we needed to do more work on how to really construct valuation inputs

- for our eventual modeling solution.

Example Waters for Paper Two



Class 1- Sky Island Stream.
Representative Water - Stronghold Canyon



Class 2 - Isolated Lakes.
Representative Water - Pintail Lake.



Class 3 - Ecologically, Culturally, or
Historically Significant Water.
Representative Water - Quitobaquito Pond

- One of the methodologies we came up with to attack the weak points in the first report was to develop our systems of water classifications and determine a representative water for each class. These classes were derived from the waters that are protected under Initial PSWL every water on that initial list fits into one of these categories.
- Sky Island Streams are perennial or intermittent waters that are present in the Sky Islands of Southeastern Arizona. There is not an abundance of TNWs in that area so many of these streams start in the mountains and peter out in the desert before reaching another waterway. ADEQ has determined that some of these streams don't have a significant nexus to a TNW and many of those determinations have already been reviewed by the EPA. These streams provide valuable habitat and recreational opportunities for Arizonans and the Sky Islands are a prominent ecological feature in the Sonoran Desert. To represent this class of waters ADEQ has picked Stronghold Canyon. For more information on this water or any of the others, please refer to the technical paper.
- Class two is isolated lakes. A majority, but not all, of these lakes are located in terminal basins in the Northern and Eastern part of the state. These surface

- waters are used for fishing, swimming, and also provide habitat for a variety of Arizona fauna. The representative water for this class is Pintail Lake outside of Show Low.
- Class three is waters that have ecological, culture, or historical significance. ADEQ is using Quitobaquio Pond as an example for this type of water. Just this year, a Federal Court ruled that access to the spring and pond for certain tribes was protected under the Religious Freedom Act. Additionally, the spring and pond are habitat for endangered species.
- It's extremely important to note that these waters are just examples, and their inclusion in the this presentation, their listing on the initial PSWL, and any valuation statements are still subject to the general requirements of SWPP. There is no certainty yet on their inclusion in the final list.

Leveraging Existing Analyses

1. Lesson learned from 50 State Survey, there are a lot of methodologies out there to do this
2. The WOTUS rulemaking contains an economic valuation procedure
3. ADEQ's contractors reached out to the economists the EPA used to learn more about how they are valuing surface water protection

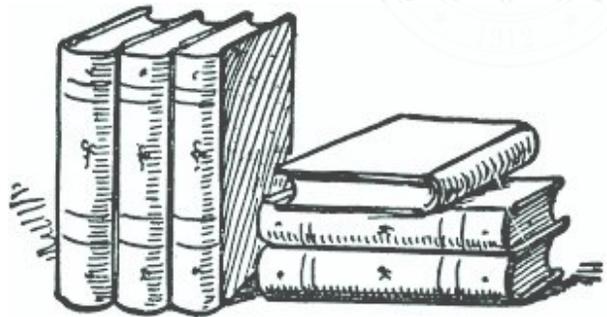


- Another goal of the second analysis was to make sure that our valuations of waters tacked alongside general valuations for clean water act programs that already exist. ADEQ is performing an Arizona specific analysis, but applying the concept of benefit transfer to value ESE costs and benefits means we actually need to go and use studies that exist around the country. One of the most productive sources that ADEQ found for this came from the new WOTUS rulemaking that is currently underway. McClure Consulting was able to get in contact with the independent economists that the EPA used to construct that rulemaking to dig into how they valued the protection the new WOTUS rule would bring. I want to be clear that ADEQ has not used the same exact valuation methodology for the SWPP as EPA is using for the WOTUS rulemaking. What the WOTUS rulemaking provided a blueprint of surface water valuation in general and a great starting point for ADEQ and our consultants for the science behind the EPA's valuation methodology.
- ADEQ was able to use a lot of this work to craft something specifically for Arizona. Additionally, we believe that our analysis actually goes a bit beyond what EPA did. We know is that we are somewhat in the spotlight considering the national conversation about WOTUS and we think that the work we're doing here will inform Arizona stakeholders and enable them to participate

- more deeply in the national conversation about the real value of these CWA programs more generally.

Benefit Transfer Studies

1. McClure used 12 additional studies to value Arizona Resources
2. Annotated bibliography should be a focus of stakeholder input

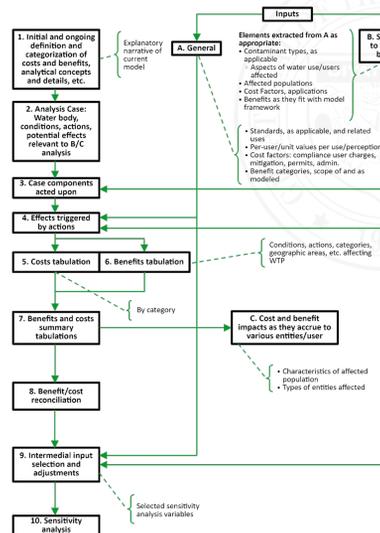


- One of the most important parts of the reports that we've released for public consumption are the annotated bibliographies. We want to make sure that our valuation methodology is accessible. This is an extremely important part of the benefit transfer methodology we'll be deploying to value surface water as part of this rulemaking. To re emphasize the point from the earlier slide, ADEQ has used these resources to construct something that is Arizona specific and meets the requirements of the SWPP enabling legislation. ADEQ is using the following studies for our model, and if you want more information, citations, or how we're using them specifically please visit the technical paper.
 - Agriculture in Arizona's Economy - 2014
 - Economic Benefits of Unique Water Designation Study of Buehman Canyon Creek - 1996
 - The Economic Benefits of Recreation in Rural Arizona - 1989
 - The economic contributions of Water-related Outdoor Recreation in Arizona - 2019
 - Socioeconomic consequences of mercury use and pollution - 2007
 - Nature-based Tourism and the Economy of Southeastern Arizona - 1992

- Notes on inclusion of source studies and data preparations for wetlands meta-data - 2021
- Using Meta-Analysis for Large-Scale Ecosystem Service Valuation: Progress, Prospects, and Challenges
- Economic Analysis for the Proposed “Revised definition of WOTUS Rule” - 2021
- Upgrading Wetland Valuation via Benefit Transfer - 2019

Updating the Model

- More accurately values waters in Arizona.
- Concept of Benefit Transfer solidified with research.
- Can work prospectively.



- Our conceptual model framework has been dramatically simplified and improved in the second draft McClure report. We believe the progress the contractors have made is evident after the first report. The new conceptual model should be more accessible for stakeholder input.
- As I've mentioned a couple of times, Our research library is annotated and expanded. Please take the time to review the studies that we're drawing on to build our valuations. These studies are the most important part of the work we've done.
- We believe that the model we're developing solves the issue I've talked about in that it allows us to develop a procedure we can put in rule while also being immediately applicable to the first SWPP rulemaking.

First Draft of Final Product Received

1. ADEQ received a draft of the final model and report on 4/29
2. The agency is pleased with the initial results, but still working through them before we share with stakeholders.
3. This is an opportunity for stakeholder to weigh in on the modeling concepts so feedback can be implemented into the final model.



- Lastly, I want to mention that ADEQ received the draft model last month. It's a massive excel workbook that we have been working through for the last month. We're really pleased with what we've seen so far and generally, we couldn't be happier with the rapport we've developed with our economic consultants.
- There's still more work to do in our review, so please take the time to get through the material we've provided. ADEQ will provide your comments to our consultants and we'll work any comments into the model to the best of our ability. ADEQ will likely have some tweaks before it's finalized as well.
- When the final model is prepared ADEQ will release it for public consumption. Additionally, there will be another stakeholder event where our economists will be available for a Q & A session. I'm about to pass off the presentation to David to do the Q & A, but I just want to make sure stakeholder understand that some questions may be better suited for the second stakeholder event on this topic. ADEQ will do our best to answer any questions but I just wanted to get that caveat in there.
- Pass off to David for Q & A



Q and A

David Lelsz

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