WATER QUALITY AND AGRICULTURE: HOW CAN TMDLS HELP?

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I. INTRODUCTION

In "Water Quality and Agriculture: Assessing Alternative Futures" prepared for this conference, Professor Robert Adler poses four "alternative futures" that describe radically different regulatory approaches to addressing agricultural water pollution, and challenges the other participants to indicate their preferences among them. As one of the people charged with making the TMDL (total maximum daily load) process work to address many kinds of water pollution, it should come as no surprise that I favor the scenario of making TMDLs work more effectively. I will argue that we now have the basic tools to do this but that the process needs some fine-tuning to increase implementation accountability. If we can do some fine-tuning on the TMDL process and then make sure it is implemented promptly, water quality improvements will result. I also believe that, eventually, farmers and ranchers will come to embrace the TMDL approach as the lesser of several perceived bureaucratic evils.

I hope there is no question that agricultural sources are responsible for water quality problems in many places, or that we can at least assume this for discussion's sake. I acknowledge that EPA and state water quality protection efforts to date have not been fully effective and that problems remain in the use of available programs including TMDLs and nonpoint source management programs.

II. WHY THE OTHER SCENARIOS WON'T WORK

I advocate Professor Adler's third scenario based on more effective use of the TMDL process not only because it is the best idea, but because the other scenarios probably will not work well, if at all.

The first scenario is based on status quo promises of good works on a voluntary basis and a TMDL process that "putters along", in Professor Adler's words. This approach has not worked. Although there have been some improvements in water quality in some areas where agriculture is king, too many serious water quality problems remain, and new problems are emerging, particularly in response to the new pesticides.

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State and local efforts to improve land stewardship intended to end water quality impairments have worked pretty well in some areas, but enormous amounts of public and private funds have been expended with little proven success in many parts of the country. States have generally been unwilling to require land owners who are causing water quality problems to change their practices or change how they use the land. This is particularly frustrating because in my experience, most water quality problems are coming from a few places, and most land owners are trying to be good land stewards. In our view it would be unacceptable (and illegal) to declare defeat and abandon the core goals of the Clean Water Act.

I also want to mention a recent variant on the status quo model, which is the push to review and downgrade water quality standards for many of our nation's waters. The idea here is to show that we can relax water quality limits for many pollutants and still protect the attainable uses of our waters. This idea makes sense in some places where standards really are unsuited to local conditions and will result in more realistic but protective standards for some waters. The problem with this standards modification approach is that too many interest groups want to do away with existing protected uses of our water for aquatic life, fishing, and recreation simply because it is expensive to protect or restore them. The Clean Water Act requires us to protect these existing uses, and we don't think it solves a water quality problem to redefine success and make the problem disappear. Standards modification is being oversold as a fix for various perceived problems with status quo water quality protection efforts.

Professor Adler's second scenario would provide for across the board, technology-based requirements for land uses and discharges, analogous to the approaches used to address point sources. This approach has two potential advantages. It could lead to faster implementation of BMPs (best management practices) on more of the landscape, thereby triggering more rapid improvements in water quality. In addition, it may be perceived as more fair (or perhaps equally unfair) because it would not single out individual landowners for regulation while letting other landowners off the hook. This consideration might be attractive to agricultural producers who are concerned that targeted implementation approaches may create a competitive disadvantage for some producers.

However, I don't think this option is the best option for two key reasons. First, I doubt if it will fly politically any time soon, if ever. Congress appears to have little if any interest in federally mandated regulation of nonpoint sources. The exemption of most agricultural sources from regulation through the NPDES program is no accident, and it is now a treasured icon. Technology-based regulation at the state level is also a long shot, at least in most western states. California has long had

authority under the Porter-Cologne Act to regulate nonpoint sources discharges of pollutants. This power has rarely been used. However, a recent preliminary proposal from a high ranking water quality official in California to apply, more or less, a general permitting approach for agriculture that would mandate minimum BMPs met with immediate and harsh criticism from agricultural interests, and lukewarm support from the environmental community. It will be interesting to see how the Governor's office deals with this proposal and the controversy it triggered in this election year.

Most importantly, I question whether this approach will be cost-effective. First, the BMP-based urban stormwater permitting program has delivered, at best, mixed results. The scope of agricultural production in this state is so broad that it would be very costly to implement minimum technology-based controls even if we want to do it. The arduous process of grouping and dividing different land uses and modes of agricultural production, debating the right set of minimum BMPs for each situation, teaching producers about the new requirements, and ensuring that they are implemented will be tough enough. And let's not forget the potentially enormous capital and operation and management costs associated with actually implementing the BMPs. Unless we are pretty certain that most producers are significantly contributing to existing water quality impairments, across-the-board requirements may not provide for a cost-effective expenditure of public and private funds.

I think the disadvantages of this approach outweigh the advantages, but not by much. The fact that California is even considering a general permit approach for agricultural runoff is significant, and may indicate a willingness to pursue tougher approaches to this difficult problem. It may prove feasible to target technology-based controls in a way that focuses attention on the worst pollutant sources and most vulnerable areas, and does not waste money implementing controls where they yield minimal benefit. For example, California Forest Practice Rules are more stringent in areas near water courses than they are in other places because the impacts of improper timber operations in these areas may be greater than in areas more distant from water bodies.

If the "water quality based" approach to dealing with agricultural water pollution, as embodied in the TMDL process, does not work or is stopped before it really gets started, I would gladly support the technology-based scenario. I would also suggest that it is not an either-or proposition- there may be some room for more stringent controls as needed on a site specific basis. This is, in essence, the approach we take now for point sources.

Professor Adler's fourth scenario would provide for comprehensive re-evaluation of national agricultural and environmental protection poli-

cies. While I like many of the "blue sky" ideas expressed in this scenario, I don't think it's obvious that they would lead to water quality improvements needed to restore and protect the nation's waters. Even with the economic reforms contemplated under this scenario, agricultural production, with its mix of good and bad stewardship practices and mixed bag of water quality consequences, will continue in much of the country. Moreover, it seems unlikely that the political critical mass necessary to carry out this type of paradigm shift in agricultural policy will be assembled anytime soon. However, removal or reduction of the incentives to produce commodities with little regard to their environmental costs would help increase the value of good land stewardship. I hope these ideas are kept in mind even if this scenario doesn't fully take care of the challenge before us.

III. Why the TMDL Process Can Work

Professor Adler makes a good case for the improved TMDL scenario, so I won't repeat his arguments. Instead, I will mention a couple of additional advantages of this process and outline some relatively modest improvements in the TMDL process that would make it more effective and predictable as a key tool for addressing agricultural water pollution.

TMDLs involve allocation of responsibility among different pollutant sources, including point and nonpoint sources, to reduce their pollutant production. This allocation process, combined with the technical analysis underlying the TMDL, provides a needed and potentially effective means of finding cost-effective solutions to agricultural discharge issues. I'd like to highlight four reasons why this is so.

First, the TMDL process can distinguish between places that need more pollutant control from places that need less pollutant control. TMDLs can do this by identifying more or less vulnerable areas of watersheds, in terms of both sensitivity to pollutant inputs (e.g., fish spawning areas at different times of the year) and risk of pollutant discharges (e.g., soils that are high in selenium or very erosive). The allocations can reflect this information by allocating pollutant reduction responsibilities to the places where it will do the most good.

Second, the TMDL process provides an analytical forum for considering and weighing stakeholder values, interests, and capabilities. If local stakeholders are able to negotiate local allocation packages that meet TMDLs, it increases the likelihood that solutions will be implemented.

As an aside, why should we carry out this stakeholder debate in a TMDL context instead of, say, a completely voluntary watershed planning context? TMDLs carry a mandate to make decisions, which makes it tougher for stakeholders to just walk away if they don't like the way the negotiation is going. It can be made clear that if the local stakehold-

ers cannot find workable solutions, the state will try to do it for them, and then enforce the decision. TMDLs also provide an accounting mechanism for tracking whether a set of pollutant control or restoration efforts will, together, get the job done to meet water quality standards, and a basis for measuring progress towards that goal. Without the TMDL yardstick, few watershed groups will know how far they have to go.

Third, the TMDL framework can provide for tradeoffs (and pollutant trading) between different pollutant sources to help support more cost-effective solutions. If we are successful in brokering tradeoffs between point sources and nonpoint sources, this could result in a meaningful infusion of needed cash to support implementation of BMPs to address polluted runoff from agricultural lands, and more cost-effective overall approaches to water quality protection.

Finally, (dare I say it), the TMDL process can provide a framework for considering how water quantity decisions affect water quality outcomes, and whether it is more effective to deal with water quality issues solely through water quality controls or also through changes in how water quantity is managed. We need to acknowledge the complex interplay between water quantity and water quality, particularly in the West. The TMDL process is the closest vehicle we have through the Clean Water Act for having this discussion. I would cite as a potential model for this inquiry the recent experience in the Truckee River basin in Nevada. In order to obtain increased assimilative capacity for nutrient discharges, municipalities in Nevada agreed to pay for acquisition of water rights from willing agricultural sellers because the cities concluded it was more cost-effective to secure more water for the River than to implement ever more stringent wastewater controls. This agreement is being implemented based on TMDL revisions for the Truckee River. Since water quantity is a key part of the equation for agricultural producers, there is no reason that it should not be considered in the TMDL equation. In fact, current federal regulations require consideration of stream flow critical conditions when developing TMDLs.

What of the naysayers (including some in this room) who argue that TMDLs should not address nonpoint sources because the Clean Water Act does not require it, or because we lack the technical capacity to do them? Sufice it to say EPA does not agree (and neither did the first federal court to decide the issue). The crux of the District Court's opinion in the landmark Pronsolino case (*Proslino v. Marcus*, 91 F. Supp. 2d 1337 (N.D. Cal. 2000)) was that the TMDL mandate makes no sense unless it applies to all sources of pollutants, including nonopoint sources. I would build on that logic by emphasizing that TMDLs are just a tool to implement water quality standards- our goals for the nation's waters. It makes no sense to argue that somehow water quality standards only apply to waters to which point sources discharge. All of our waters need

and should receive the protection that the standards setting and implementation affords.

To those who say we lack the technical capacity to do nonpoint source TMDLs, I would note that several hundred nonpoint source TMDLs have been completed across the country at levels of complexity ranging from back of the envelope to rocket science. I agree that it may be more difficult to assess and plan for controls on sporadic discharges than on continuous discharges. But our capacity to do so grows each year, and I think it is an outdated argument to claim that we don't know how to assess nonpoint sources. If that were true, I would question the conclusion we generally hear from these same critics that agriculture is already doing enough to control nonpoint source runoff and therefore TMDLs aren't needed for waters in agricultural areas. If we don't know how to assess nonpoint sources, we don't know that what we are doing now to address them works.

So how can we make TMDLs work better without rewriting the Clean Water Act? I'd like to offer six suggestions for fine tuning the TMDL process and the mechanisms for implementing TMDLs.

First, state and local monitoring programs must be improved to better characterize water quality conditions and, just as important, demonstrate how effective BMPs actually are in reducing pollutant loading. We need better data to more accurately determine where pollutants come from and where additional controls are needed. I would emphasize the need to abandon the long-standing practice of prohibiting expenditure of BMP implementation funds (either from EPA or USDA) for monitoring BMP effectiveness. We still have a lot to learn about how well BMPs work.

Second, we need to provide clearer guidance on how and when to consider site-specific revisions to water quality standards. Because the opportunities for and limitations to standards modifications are so poorly understood, there is a great deal of misunderstanding about how standards revision can work. Moreover, the technical steps for doing reviews of designated waterbody uses and changing uses and standards are unclear, even to the agencies charged with running the standards programs.

Third, we must stop "puttering along" in developing TMDLs. Urgency is needed in dealing with our remaining water quality problems, and a process that develops solutions at a watershed level must move more quickly than it does now, or risk being replaced by a more blunt instrument, like the across-the-board technology-based controls, which appear faster to implement. In the 2000 revisions to the TMDL regulations, (which did not go into effect) EPA established a national requirement that all TMDLs must be completed within 5 years of the date a water body is identified as impaired. If TMDLs are to work as the

method of choice, we must show the public that the job will get done relatively quickly. I hope EPA includes a similar timeline in the final TMDL regulations scheduled for completion in 2003.

Fourth, we need to be willing to point fingers in the allocation process. I understand that there is concern about setting allocations at too fine a scale because they might alienate landowners who are singled out as key pollutant producers or who just have the good luck to be adjacent to the most sensitive water body locations. However, our technical tools are improving to the point that we will be able to draw these distinctions at a fairly fine scale. The benefit of doing so is that we can increase the likelihood that we target pollutant reduction responsibilities more narrowly and avoid imposing control burdens on landowners who are contributing little to the problem.

Fifth, we have to set up a firm implementation framework for TMDLs because TMDLs are not self-implementing. Existing implementation mechanisms do not work well enough. In most states, the nonpoint source programs under the Clean Water Act and conservation programs supported by USDA do not effectively target the worst areas nor ensure that the right things get done to reduce polluted runoff to the point that our waters are restored. To supplement these types of programs we should create a federal requirement that TMDLs be implemented through state- and locally-developed watershed plans. I am not advocating that these plans have to be part of TMDLs, nor that EPA needs to have a direct oversight role in supervising their content. It could work to have a more flexible, state-led process that results in plans that are reasonably assured to meet water quality standards. The key is requiring the preparation and implementation of these watershed plans, then giving a reasonable time following TMDL completion to write and implement these plans.

Finally, to make these more flexible implementation plans work well, the federal (and hopefully state) governments should create real financial incentives to participate. At the federal level, EPA has already begun linking the availability of Section 319 nonpoint source control grant assistance to TMDL implementation, a trend I expect to continue. But EPA funding alone won't be enough to create real incentives-let's not forget funding from USDA. I know we may now be drifting into the "blue sky" territory of Professor Adler's Scenario Four, but we should also consider some rethinking of how USDA assistance is delivered. We could earmark much if not all of the USDA Conservation Reserve Program and Environmental Quality Incentives Program funds to implement approved TMDLs, and devote a much larger number of NRCS's talented field staff to assist operators in designing farm and ranch plans that reduce polluted runoff to meet applicable TMDL load allocations. We could even make receipt of farm subsidy payments contingent on

preparing and operating consistent with these water quality-sensitive farm plans. Creating a state and locally-led implementation mandate based on watershed planning, backed with a healthy dose of federal funding leverage, would go a long way toward getting TMDLs done and implemented accurately.

IV. Conclusion

Can we reconcile the interests of the agricultural economy and environmental protection? We certainly need to do better than we are doing now. Are TMDLs the best framework for designing and implementing the solutions? I think they are the best option we have under the Clean Water Act; however, we need to make some changes in TMDLs and TMDL implementation to show the world that we are determined to make the process work.

Given time and resources to make the TMDL process work, we may find that agricultural operators being to embrace the TMDLs a a useful way to demonstrate the effectiveness of good land stewardship. If we don't try, we will probably be left with some less satisfactory alternatives:

- a status quo of continuing environmental decline and harsh public scrutiny of agriculture's impact on the environment,
- an onerous, inflexible, and possibly ineffective technology mandate, or
- a long-shot wager that the Congress will make more fundamental paradigm shifts in its expectations for agriculture, our environment, or both.

When compared to these alternatives, I think TMDLs look pretty good.