CASQA STORM CONFERENCE

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Keynote Address

"Mistakes of the Past, Promise of the Future"

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INTRODUCTION

For many years I was a member of a service club known as the Optimist Club. Its objective was to achieve worthy goals even when you had to overcome substantial difficulty.

We recited the organization's creed at each meeting, and it had a line in it that has stuck with me through the years. It says "forget the mistakes of the past and press on to the greater achievements of the future". The line resonates with today's stormwater challenge.

My goal today is to do a brief overview of CASQA, the status of the stormwater program, those things that have challenged our progress, and those things which challenge our future. In the end, our collective goal is to turn the negatives of a difficult stormwater program beginning into the positive of a promising future.

During the recent hearing conducted by the State Board's Blue Ribbon Panel on numeric effluent limits for stormwater permits, the environmental delegation made a declaration that the stormwater NPDES program was a categorical failure because stormwater discharges still violated water quality standards. They concluded that the application of numeric permit limits and the related numeric permit enforcement regime would produce water quality standards compliance by stormwater discharges.

The counter view is that the stormwater program is a remarkable success story, considering the breadth of permitting in place, the extent of BMP implementation, and the mass of pollutant removal from stormwater discharges, all achieved in a very short time.

The counter view concludes that because of the magnitude of variability in stormwater occurrence, flow, content and impact; and the inability to substantially control these discharge parameters, a numeric based discharge limit is neither technologically, nor practically feasible.

Who is right? How can you prove it?

These questions constitute the heart of my remarks today, and CASQA's future.

The immensity of today's stormwater program notwithstanding, the fundamentals of the stormwater program have changed little since the Clean Water Act legislation of 1972/1987 – stormwater events are still unpredictably episodic. The event and flow magnitude are immensely variable, and flow content is determined by both natural and man caused events unrelated to the stormwater conveyance and discharge system.

In spite of these factors, the stormwater program has had imposed on it the same "fishable, swimable" objective as the point source discharges. More recently, it has been proposed that the same permitting and treatment mentality imposed on point sources be imposed on stormwater systems.

Since the NURP program of the 1970-80s and the stormwater NPDES program of the 1990s, we have learned much about stormwater, filling libraries with data. We have had a more difficult time, however, converting data to "actionable information". The reason is that with all we know about stormwater, we've also learned there is little we can do to make stormwater behave like, and meet the results of, the point source program.

The stormwater program has in fact become a confusing array of data and expectations. What is the real goal of the stormwater program? Is it water quality standards and numeric effluent limits at the end of pipe, or just cleaned up non-damaging stormwater discharges? How do we measure the effort; how do we measure success; and who decides?

Is the problem with stormwater quality, simply non-complying permittees, or is the problem the function of uncontrollable, unpredictable parameters?

Where is the stormwater program going, or where should it be going? An old saying comes to mind, "When you don't know where you are going, any road will get you there." The thought is simple, but it well evidences the risk of ill-defined direction.

And who should supply the leadership?

Billy Graham's story about the Post Office is instructive. Just knowing what a Post Office does, knowing that your letter needs to go there; and even knowing there must be one in town isn't enough to achieve the goal. You still need to know where the Post Office is, how to get to it, and actually go there and mail the letter. Likewise, simply knowing about stormwater is far different from causing that information to make a predictable, measurable, difference in stormwater discharges.

Informed wise leadership is critical.

This conference is an exciting event for those of us close to CASQA. It explores the advancing technical knowledge of the four major arenas of today's stormwater universe: stormwater treatment, operations, research and management. The conference is both an acknowledgement of CASQA's past legacy and a commitment to its promising and essential future.

LEGACY OF CASQA

CASQA's legacy is admirable if not remarkable. It began as a small meeting of 12 local public works guys concerned about the need to implement the new stormwater NPDES permitting requirements of the 1987 Clean Water Act amendments. The goal was simple: to facilitate dialogue, education and compliance.

The dialogue was opened to all and by the end of 1989 a broadly mixed group of local officials, experts, regulatory folks and interested others were meeting regularly. The group grew into the hundreds and became formally recognized as the State Board's advisor on stormwater issues.

Because of CASQA's (Stormwater Quality Task Force) work, by the 1990 publication of the federal stormwater permit regulations, most major California metro areas were already building BMP programs under NPDES permits. Subsequently, CASQA became a nation-wide model for stormwater program coordination and development, it developed the widely acclaimed BMP manuals, created a national level dialogue with EPA and NRDC, initiated an aggressive source control focus particularly for copper, pesticides and herbicides, and saw member agencies recognized by EPA for stormwater program excellence.

CASQA also developed a close relationship with EPA headquarters that resulted in the Mike Cook memo voicing EPA's determination of a non-numeric strategy for stormwater. It also negotiated a draft Clean Water Act amendment with NRDC that incorporated an adaptive performance measure approach for stormwater permits.

Three individuals connected to CASQA were selected to serve on EPA's FACA's for urban wet weather and for the Phase II program. Most significantly, CASQA was uniquely responsible for advancing the stormwater program dialogue among regulatory, environmental, business and municipal interests, and today is similarly advancing the stormwater science dialogue.

STATE OF THE STORMWATER PROGRAM TODAY

Because of the work of CASQA and it members, the state's stormwater program has achieved remarkably.

All Phase I and II communities are in the process of conducting stormwater management programs. Because of the regional/county-wide approach to permitting supported by CASQA, the California program is much more inclusive than any other state, and municipal and industrial stormwater systems across the state are being designed and built, or modified, to accomplish water quality objectives.

Thousands of structural BMPs are in place, more are in planning and the focus is continually evolving from macro to micro and back; and from chemical to biological to physical. Non-structural BMPs are pervasive and include public education initiatives that reach from the beaches to the ski lodge.

Few stormwater agencies don't have NPDES compliance staff on the payroll, tens of millions are spent each year on stormwater monitoring, research, data analysis and permit compliance; and, thousands of tons of pollutants are prevented from reaching receiving water in every storm – quite an accomplishment in only 15 years.

In spite of these successes though, the stormwater regulatory program still has more than its share of problems.

Our municipal permits are massive documents and so prescriptive in detail, they consume whole staff positions just to do the paperwork. The permits focus too little

attention on source reduction, most often just directing the discharger to park the stormwater pollutants in new places.

We continue in a heated debate of end-of-pipe numeric permit limits, but still can't agree on what constitutes a good program, or how to measure compliance with the Clean Water Act stormwater objectives.

Litigation of permits is becoming all too routine, and the prohibition of all stormwater discharge is now viewed as an appropriate practice. In effect, stormwater has become the scapegoat for the sins of urbanization.

Too many still believe the stormwater program is without focus, direction, or measurable goals.

MISTAKES OF THE PAST

How did we get to a point where such positive progress has been made while such problems continue to exist within the fundamental elements of the program?

The record of the stormwater program can be summed as one of remarkable success and of remarkable problems. The success has come from our collective successes, and the problems have arisen from our collective mistakes. No one is due all the credit or blame.

Our future success depends on the degree to which we collectively recognize our mistakes and press on together to overcome them. The Optimist Creed says it this way, "Forget the mistakes of the past and press on to the greater achievements of the future." In the stormwater experience though I think the achievements of the future are grounded in recognizing our problems and working to overcome them.

All the players in the stormwater arena can claim credit for some of the mistakes.

The legislative folks have erred by underestimating the complexity of stormwater and the fundamental differences between point source systems and stormwater systems (1972, 1987). Relatedly, they failed to provide a consistent functional definition of the expected performance standard (MEP or something else).

The courts have erred by ignoring the science of stormwater and finding instead in favor of a confused law and inconsistent regulations. Current law and regulations can be used to argue either side of the stormwater compliance issue.

The environmental folks have erred by trying to force stormwater into an easy, end-of-pipe number model, based on an assumption that numeric permit limits will magically achieve water quality standards. They also under-estimate the size and complexity of the stormwater quality management challenge. A long-time NRDC staffer in commenting on the last beach closure report, gave evidence of this when she said, "All we need to do is capture and filter all stormwater".

The environmental community errors have included not considering treatment technology limitations and cost as legitimate issues, putting inadequate focus on stormwater science (science of reality), and playing the role of critic instead of encourager. Their public posture has been similar to a person criticizing the Wright brothers because their first plane was not a 747. They have typically focused on the problem and what is wrong rather than contributing to the efforts of those trying to implement solutions.

The municipal folks are also part of the mistake matrix. Too many local officials failed to take the Clean Water Act stormwater mandate seriously. They played the "You gotta be kidding" card far too long.

Relatedly, they hid behind the massive cost of compliance as a defense, looking for a hoped for reprieve. They held on to the longstanding legal posture of stormwater as "the common enemy" which is to be defended against and discharged at will, not treated like sewage. They also put inadequate focus on stormwater science (the science of the possible).

The regulatory folks, too, share in the matrix of mistakes.

In their effort to expedite stormwater program accomplishment, they too soon abandoned permits based on program progress and began issuing prescriptive tomes, which yield to the political correctness of water quality standards or numeric effluent limits. They began writing the SWPPPs themselves without consideration of the science of the practical for stormwater management, yet expecting permittees to prove the SWPPPs would achieve water quality standards.

They tended to ignore the fact that the complexity of the stormwater quality issue may be the problem, instead of the permit or permittee. In a sense, the permits became

very specific, and as a result very inflexible. But because of the excessive detail, the permits are not clearly focused on a desirable achievable goal.

In their expedient approach to stormwater quality management, the permit authorities have tended to just mandate new parking places for stormwater pollutants instead of marshalling resources to true pollutant source reduction, or developing methods of accurately measuring program effectiveness.

The regulatory folks have also tended to use stormwater monitoring as a substitute for stormwater management, or as a penalty for less than expected program results. At the same time, they have been willing to accept as valid water quality standards adopted at a time of good intentions, but limited data with no consideration of wet weather conditions. As a result, numeric permit limits and TMDL load reduction requirements being imposed on stormwater programs also have questionable validity themselves.

Lastly, the science community itself has shared in the matrix of mistakes. Too often the scientific endeavors concerning stormwater have been focused more on proving a point rather than on proving a truth. A recent study concluded that half of all reported scientific results are wrong. Due to bias on the part of the reporter, the researcher, the financier or just method errors, the conclusions are unreliable half the time. I don't know if this is true, but we have all seen stormwater data abused and misused.

In my view, the stormwater science community has also erred by being too reluctant to speak up about the stormwater science we have established, and to speak up about the gaps in knowledge which must be filled before new conclusions, which can carry the force of law, can be established.

THE CASQA CHALLENGE, THE PROMISE OF THE FUTURE

In the simplest of terms, the CASQA challenge for the future is to enable effective stormwater programs which are also recognized as legal stormwater programs. CASQA will do this by providing the arena in which our mistakes can be overcome, our continuing questions answered and our new challenges met.

CASQA must first provide to the legislative folks, the facts which will influence legislative mandates. There is little recourse from bad law. That means CASQA's relationship with the science and legislative communities must be close, and built on the

integrity of good data, sincere effort, and transparent objectives. CASQA must endeavor to unite good science and good law.

Secondly, when stormwater issues go before the courts, CASQA must endeavor to ensure that all parties are working from scientifically valid data, and that the court has access to the data, and access to those who can accurately interpret it. Most desirably, CASQA's effort will help minimize the need for litigation.

To achieve these first challenges requires that CASQA continue to maintain a forum in which environmental, municipal, regulatory and science interests can work together to develop, discuss, analyze, evaluate and implement data, policy and practices. It is far more productive for these actions to be pursued in a professional, open dialogue than in a courtroom.

This CASQA led dialogue must try to help the municipalities and the environmental interests overcome their deeply felt frustration over the difficulty of finding measurable performance parameters that can demonstrate program progress. There is perhaps no greater frustration on all sides of the stormwater issue.

A singularly significant challenge for CASQA is the need to assist all the parties in creating a definition for stormwater program success. The 2000 report of the National Research Council of the National Academy of Science discussed such a need relative to the TMDL program. It cited the reality "of uncertainty in water quality management" and the need to incorporate the elements of "adaptive implementation into TMDL guideline and regulations." Without doubt, however, stormwater science represents the biggest challenge of CASQA's future. Fundamental questions must be answered and few organizations have the capability and positioning of CASQA to assume such a task. These questions include the following:

1. How can we ensure our research and science is focused on proving truth and not just proving a point; that it is based on an objective, not just on an agenda; that it is based on new learning, not just more spending?
2. How do we ensure that valid scientific effort and results are applied in the law, in the courts, in the permits, and in our programs; putting what we know as true to work?

3. How do we determine performance measures that demonstrate the relationship between stormwater program effort and program results? Can we demonstrate a cause and effect relationship between sources of pollution, stormwater impacts, applied BMPs and observed results? Can we develop a fair measure of program performance and a fair basis for compliance enforcement?
4. Related to these questions are others:
    - What do end-of-pipe numbers really tell us?
    - Are numeric permit receiving water limits right for stormwater, or irrelevant?
    - How do we correctly use chemistry and biology and physical parameters in stormwater permits and programs?
    - Is stormwater treatment technology capable of sustaining numeric permit limits, or only MEP?
5. How can we ensure that the stormwater program doesn't fall victim to the law of unintended consequences:
    - gasoline clean-up took us from lead to MTBE,
    - brake lining clean-up took us from asbestos to copper,
    - energy clean-up took us from coal, to hydro, to nuclear, to wind machines that kill birds.

Does the stormwater program take us from MEP to stream side treatment plants or dewatered streams, sandless beaches, groundwater problems and toxic pits?

CONCLUSION

Clearly CASQA is at a point of great opportunity to extend its legacy of leadership toward responsible stormwater program accomplishment. It will require CASQA to continue to pursue a professionally focused, objective, open and inclusive agenda. It cannot succumb to political correctness and must speak loudly and effectively when administrative mandates don't make science sense.

CASQA must advocate for basic science, provable results, practical solutions, and reachable goals. It must facilitate a stormwater program that achieves effective results, not just pursues wishful expectations.

It must continue to not only face the hard questions, it must also lead in finding the answers.

In the parlance of the day, CASQA is much like the eye of the hurricane. It must remain calm when all around it is in turmoil, and remain clear and focused even when everything around it is clouded.

After all this, at some point we come back to the question raised by our environmental friends. Is the stormwater program a categorical failure, a remarkable success, or a story still in the writing? The answer to the question represents the road map to CASQA's future.

This Keynote address to attendees at CASQA's inaugural STORM Conference in Ontario, California was delivered by Doug Harrison, founding Chair of SWQTF / CASQA; former General Manager, Fresno Metropolitan Flood Control District, former Chair of NAFSMA, and in 2004, first recipient of CASQA's Leadership Award.