Tom Wang, Senior Partner, Anchor QEA: *"Has improved understanding of environmental impacts outpaced the ability of technology to mitigate impacts?"*

Over the last 30 years in the dredging industry, there has been much effort devoted (by USACE, USEPA, NOAA, Universities) to better understand the science behind environmental impacts caused by dredging and ancillary activities. As our understanding of the science associated with potential environmental impacts has grown, there has not always been a commensurate advancement in either engineering design or construction technologies to address rapidly changing environmental policy.

Policy makers and regulatory authorities tend to rely on the science, at times not equally considering the engineering and constructability considerations, when setting new policy. Dredging contractors have been making technological improvements to dredging equipment, positioning methods, and operations, especially in the area of contaminated sediment management. However, expectations of regulators may be getting set higher due to the high profile nature and exchange of information from contaminated sediment projects, without a comprehensive recognition that contaminated sediment projects are unique and perhaps should not be applicable when considering how to regulate non-remedial dredging projects.

Based on experience, environmental policy that balances the sciences and engineering/construction capabilities results in the lowest overall environmental impacts. Policy that focuses too strongly on either side of the equation (e.g., heavily weighted toward engineering and construction, or heavily weighted toward sciences) may unintentionally result in overall greater impacts.

The presentation gave several examples of changes over the past 20-30 years in the dredging industry on various changes and their implications. Examples included increased types and numbers of chemicals of concern, monitoring method changes, dredging technologies and operational changes, positioning and surveying technology changes. The presentation concluded by asking several key questions:

- Do environmental regulations need to be revisited to account for newer measurement and monitoring technologies?
    - Many existing environmental criteria were developed based on older technologies
- Are recent changes in regulatory policy based only on newer science, without allowing for dredging technology to catch up?
- Are remedial dredging projects redefining the expectations for maintenance dredging performance, and is that a positive outcome?
- How can the dredging industry keep up with the ever growing science of how dredging can impact the environment?
- How can the dredging industry actively work with policy makers and regulators to help develop more balanced policy and regulations?