

Module 4

Use Attainability Analyses (UAAs)

- What is a UAA?
- When is a UAA required?
- How complex do they have to be?
- What is EPA doing to encourage development of defensible UAAs?

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INTRODUCTION

Introduce Module




Show Slide 1: Introduction

In a previous module (Module 3: Designated Uses), you learned that section 131.10 of the Water Quality Standards Regulation requires each State and authorized Indian Tribe to adopt designated uses to be achieved and protected. Section 131.10, paragraph j of the Regulation requires a Use Attainability Analysis be conducted when a State or Tribe adopts designated uses for a water body that do not include the “protection and propagation / recreation in and on the water” uses, or the State or Tribe adopts sub categories of those use which require less stringent criteria. In this module, we will define a Use Attainability Analysis (*or UAA*), *discuss when a UAA is required, walk through a UAA process, and discuss the factors that must be considered if a state determines through a UAA that attaining a use is “not feasible”*. We will conclude this module by discussing some available guidance on UAAs and discussing some example UAAs.

Also...

What is the purpose of a UAA...why are they done?

- What is A process for conducting a UAA?
- What information on UAAs can EPA and others provide?

- "Getting uses right" requires an effective process for conducting credible, defensible UAAs
- There is nothing wrong with changing designated uses after completing a credible UAA
 - Change may bring more, or less, protective criteria
- The UAA process should integrate with TMDL development
- Improved public communication leads to acceptance

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MEMORANDUM of March 15, 2006 from Ephraim King, Director of the Office of Science and Technology, to the Regional Water Division Directors

SUBJECT: Improving the Effectiveness of the Use Attainability Analysis (UAA) Process

I am writing you to reinforce the importance of working together with our state and tribal partners to make the UAA process operate more effectively. As you know, appropriate and defensible water quality standards (WQS) are essential for achieving the Clean Water Act (CWA) goals of maintaining and restoring water quality -- and getting WQS right starts with getting designated uses right.

With this memo, I am attaching a set of case studies which demonstrate a number of UAAs that are associated with a designated use change. These case studies illustrate the breadth and variety of successful UAAs in terms of the types of waterbodies and uses addressed, the factors involved (i.e., natural, human-caused, or economic conditions), and the complexity and depth of analysis. You can expect to receive additional UAA-related materials from the Office of Science and Technology (OST) this calendar year, such as sets of frequently asked questions and answers about UAAs, to help support implementation of the UAA process in your Region.

Our goal is to make the WQS program work better. Our priority is to improve clarity in the WQS process including better communication, understanding, efficiency, and increased public awareness. Making the UAA process operate effectively is an important step towards achieving these priorities. Once states and tribes designate the appropriate uses, the right water quality criteria, permits and targets for Total Maximum Daily Loads (TMDLs) will follow to move us towards improving water quality.

I appreciate your continued support in this area and ask that you share and reinforce with our co-regulators and stakeholders the following five key points:

Getting the uses right requires both a useful set of designated uses and an effective process for conducting credible and defensible UAAs. EPA realizes that deciding what uses are attainable is critical, and views the UAA process, properly applied and implemented, as a vital tool in making those decisions. Early coordination among states and EPA is critical to making the process more efficient. UAAs are meant to assess what is attainable, it is not simply about documenting the current water quality condition and use (although documenting current conditions is often part of the analysis).

A credible UAA can result in a change in designated use in either direction. A credible UAA can lead to refinements or changes in use that lead to either more or less protective criteria. The goal is that the new use is more accurate.

There is nothing wrong with changing designated uses after completion of a credible UAA. It is an expected part of the process. If a credible and defensible UAA indicates a need for a WQS change, then a change to WQS is appropriate to effectively implementing the WQS program. Sometimes these changes are on the critical path to making real environmental progress.

The UAA process should be better integrated with TMDL development. We need to work together with states and tribes to ensure that as we develop TMDLs, we also coordinate on issues related to use attainability as needed. In practice, the information gathered to develop a TMDL, and the allocations in a TMDL, may point to the need to pursue a UAA. While in some cases it may be more effective to ensure that the right uses are in place prior to completing the TMDL, it is also important not to let uncertainty about a specific water quality endpoint delay implementation of needed water quality improvements. Scarce resources should be directed where they will be most effective and avoid duplicative efforts. We should continue to share ideas/examples, develop and promote best practices.

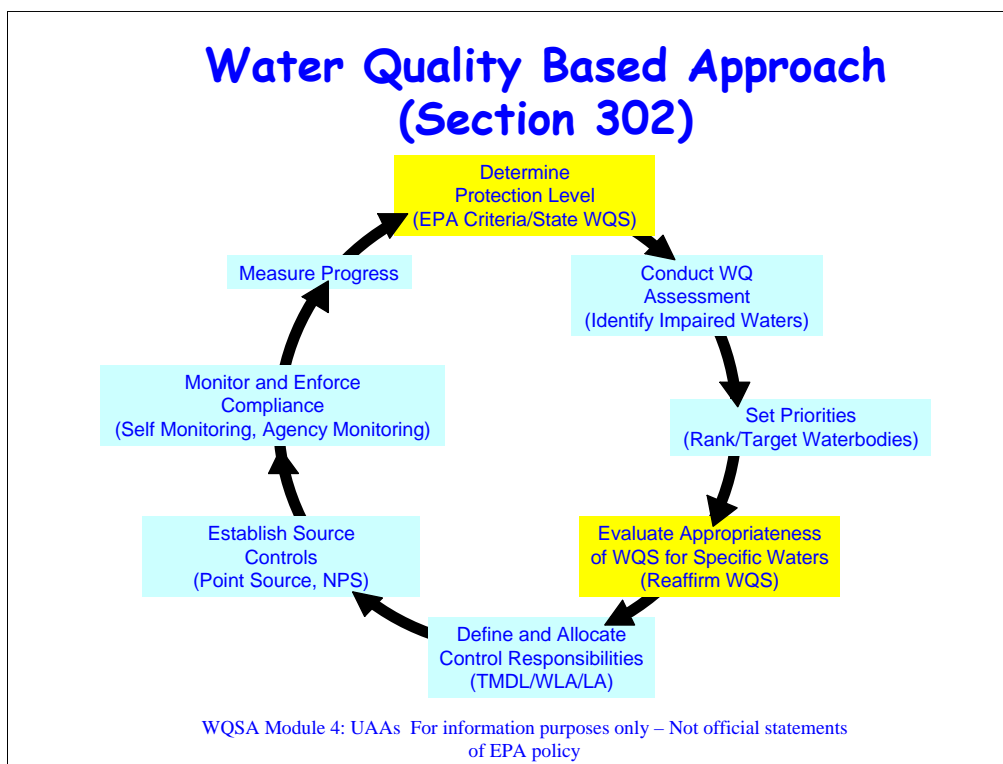
Improved public communication leads to improved public acceptance. It is critical for EPA, states and tribes to engage the public in meaningful discussions regarding the importance and value of getting uses right in maintaining and restoring water quality. WQS that reflect the best available data and information should be used to direct the process of managing water quality. They are essential to informed decision making. Just as important, public understanding and acceptance of WQS is central to broader community support for addressing potentially difficult pollution control management decisions.

In the long run, water quality programs will be most successful if the public understands their underlying goals, the process by which those goals are set, and is engaged and able to effectively contribute to that process. Getting the uses right is on the critical path to effective water quality standards implementation. Accomplishing this can be a significant challenge but it is also an essential need. I look forward to continuing to address these issues with you.

Attachment

cc:

Regional Water Quality Standards Branch Chiefs, Regions 1-10
Diane Regas, OWOW
Lee Schroer, OGC




How can the total maximum daily process (TMDL) and the use refinement process be coordinated?

As the stakeholder process and analyses used for a use attainability analysis (UAA) and a TMDL are often similar, they can play a large role in informing each other. To effectively make use of the resources dedicated to these processes, states and tribes should consider evaluating the attainability of their uses during the TMDL development process. Such an approach may have a number of benefits for a state or tribe. By designating a use known to be attainable for an impaired waterbody, a state or tribe can develop TMDLs using the most appropriate targets. TMDLs developed to meet appropriate water quality standards (WQS) should result in the development of reasonable waste load allocations for point sources and load allocations for non point sources. These allocations may in turn, ultimately affect proposed controls. In addition, the information gathered to develop a TMDL, and the allocations in a TMDL, may point to the need for a designated use change (and possibly a UAA).

In addition to ensuring appropriate targets, coordinating the use refinement and TMDL development processes may allow for a more collaborative approach where states/tribes and stakeholders can discuss issues that may influence both processes. This method provides a forum for affected parties, who may be the same for both processes, to discuss the ways in which to best achieve necessary WQS and meet local needs. A collaborative approach may also spur an information exchange where a UAA can assist in finding other unknown causes or sources of impairment.

States and tribes have discretion to determine whether to do the use refinement and TMDL development processes sequentially or simultaneously. If a state or tribe chooses to do them sequentially, there are a number of factors that a state or tribe may want to consider in determining the order. In particular, it is important for states and tribes to consider the time needed to adopt revised WQS should a use redesignation become appropriate. Many state/tribal regulation adoption processes can take two to three years to effect a change. Depending on TMDL-development schedule, a state or tribe may not have the flexibility to wait several years to finalize a TMDL. However, if a UAA is completed after a TMDL is finalized, the TMDL may need to be revised to reflect the newly refined use. States and tribes should consider ways to reduce the overall workload when determining the appropriate sequence.

Often, the timing of TMDLs and use changes are influenced by factors out of the control of the state/tribe, stakeholders or EPA (e.g., consent decrees, active court cases, legislative or statutory requirements). Therefore, time permitting, states and tribes could evaluate uses and develop TMDLs simultaneously to spur cross-program information exchange (e.g., water quality data, formulation of multi-stakeholder teams and workgroups). This approach may also yield a current and historical assessment of the effectiveness of modeling tools, best management practices, resources, and partnerships. A simultaneous process may also allow a state or tribes to combine public participation requirements for establishing a TMDL and revising a state/tribal WQS, if needed. States and tribes could also conduct use attainability analysis during the implementation of a TMDL and subsequently revise the TMDL if any use changes occur.



UAA MUST Be Conducted When: (40 CFR 131.10(j))

- Designating uses that do not include CWA 101(a)(2) goals
- Revising designated uses to remove 101(a)(2) goal uses
- Adopting sub-categories of 101(a)(2) uses for specific water bodies which require less stringent criteria
- A UAA is NOT necessary when establishing a sub-category structure

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When must a state or tribe conduct a use attainability analysis (UAA)?

Consistent with 40 C.F.R. § 131.10(j), a state or tribe must conduct a UAA when: designating uses that do not include those that protect CWA 101(a)(2) uses; or removing or adopting subcategories for uses that protect CWA 101(a)(2) uses if the new use or subcategory will require less stringent criteria than those associated with the previously designated use.^[1]

If a proposed use revision meets either of these conditions, a state or tribe must conduct a UAA to demonstrate why the uses specified in 101(a)(2) are not feasible to attain based on one of the six factors in 40 C.F.R. § 131.10(g). Where a state or tribe has adopted designated uses that do not protect the uses specified in CWA section 101(a)(2), it must re-examine those uses every three years to determine if new information has become available indicating that section 101(a)(2) uses for those waters are now attainable. If new information indicates that a section 101(a)(2) use is now attainable, the state or tribe must revise its standards accordingly.^[2]


^[1] A state or tribe may establish the subcategories before assigning them to specific waterbodies without conducting a UAA (please see question #19 for further discussion).

^[2] 40 C.F.R. § 131.20(a).

Related Question: What process should states and tribes use to establish subcategories of uses?



Review: Categories of Uses


- 
- Protection and Propagation of fish, shellfish and wildlife
 - Recreation in and on the water

 - Public Water Supply
 - Agricultural
 - Industrial
 - Navigation
 - Other Purposes

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Definition Of UAA 40 CFR 131.3(g)

“ A Structured Scientific Assessment of the Factors Affecting the Attainment of the Use, Which May Include the Physical, Chemical, Biological, and Economic Factors as Described in 40 CFR 131.10(g)”

- **Involves determining the feasibility of attaining the use in the future**
- **May be conducted by any individual or entity**

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Definition Define a Use Attainability Analysis [40 CFR 131.3(g)]

The WQS regulation defines *Use Attainability Analysis* as:

“ A Structured Scientific Assessment of the Factors Affecting the Attainment of the Use, Which May Include the Physical, Chemical, Biological, and Economic Factors as Described in 40 CFR 131.10(g)”

Who may conduct a UAA?


To the extent allowed by state or tribal law, any individual or entity may provide data or analysis to inform a state or tribe’s water quality standards (WQS) revision. The Federal WQS regulations require a state or tribe to submit the use change, along with a UAA or any other supporting documentation for EPA review.^[1] EPA will review and approve or disapprove the WQS revision based on the supporting record and whether the change is consistent with the CWA and implementing regulations.^[2] Changes to state or tribal water quality standards submitted or effective after May 30, 2000 are not effective for the purposes of the CWA until EPA approves them.^{[3],[4]}

^[1] 40 C.F.R. § 131.21(c).

^[2] 40 C.F.R. §§ 131.5, 131.6.

^[3] 40 C.F.R. § 131.20.

^[4] If a state or authorized tribe has adopted a water quality standard that is effective under state or tribal law before May 30, 2000 and has submitted it to EPA before May 30, 2000, the state or tribe’s WQS is effective for the purposes of the CWA unless or until EPA has promulgated more stringent water quality standards.



Purpose(s) of a UAA

- **Meet the “fishable/swimmable where attainable” goals of the Act**
 - Identify existing uses
 - Identify reasons attainment is “not feasible”
 - Identify “highest attainable” use
- **Establish a defensible rationale and record of decision when adopting a new or revised water quality standard for a waterbody**


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If a UAA indicates that the current designated use is unattainable, what happens next?

If a UAA indicates that the current use is unattainable, the next step is for the state or tribe to revise its water quality standards (WQS). In this process, the state or tribe will need to identify and assign the “highest attainable use,” which should reflect the factors and constraints on the attainability of a use that were evaluated as part of the UAA process. EPA’s WQS regulations at 40 C.F.R. § 131.10(g) describe the factors used to support removal of a designated use or sub-categorization of use. The regulatory factors and the data analysis used to evaluate removing a use should also be used to determine the highest attainable use. CWA sections 303(c) and 101(a)(2) and EPA’s implementing regulations require that, “wherever attainable,” waters must protect the section 101(a)(2) uses. States and tribes strive to attain the section 101(a)(2) uses by designating the attainable use(s) as close to a section 101(a)(2) use as possible (i.e., the “highest attainable use”).

For example, if a state or tribe finds that a full aquatic life use is not attainable, then the next step is to evaluate the relevant data and information to determine what type of an aquatic life use is attainable. If a state or tribe determines that no aquatic life use is attainable, the state or tribe must provide an analysis showing that this is the case. 40 C.F.R. § 131.10(j)(2). When designating uses, states and tribes should not only characterize current conditions, but also examine what could be the future condition after achievable gains in water quality are realized. This prospective analysis may involve identifying the expected condition for the waterbody, researching likely BMP effectiveness, examining the efficacy of treatment technology from engineering studies, using water quality models, and making inferences about future conditions given current constraints and planned improvements. Therefore, a UAA that effectively considers what is attainable in the future should guide the determination of the highest attainable use.

Once the state or tribe has determined the highest attainable use, it should propose adopting this designated use in place of the designated use deemed unattainable. The state or tribe should then proceed through its public review process before adopting the revised use and submitting the modified water quality standards to EPA for review and approval or disapproval (with all supporting rationale, including the UAA). EPA expects that a UAA will be sufficiently detailed both to fully inform public review of the revision and to lay out the data, analysis, and logic that support the specific WQS decision and the resulting use change.



Is The Use "Attainable"?

(40 CFR 131.10(d))

At a minimum, a use is attainable IF:

- It is an existing use, OR
- It can be attained with:
 - 1) technology-based controls (sec. 301 and 306 of CWA) and,
 - 2) cost effective and reasonable best management practices for nonpoint source control.

No, IF

- Use not feasible due to any factor at 131.10(g)

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Decision Criteria for a Use Attainability Analysis

Show Slide 5: Is the Use Attainable? Yes if: No if:

At a minimum, a use is deemed attainable if it is an:

- Existing uses (those uses actually attained on or after November 28, 1975)
- At a minimum, a use is also considered attainable if it can be attained with the imposition of all applicable technology-based controls on point sources, and cost-effective and reasonable Best Management Practices (BMPs) for nonpoint source control. (40 CFR 131.10(d))

A designated use may not be attainable if the state/tribe can demonstrate that attaining the use is "not feasible" because one of the six factors at 40 CFR 131.10(g).



Factors Preventing Attainment Of A 101(a)(2) Use That Is Not An Existing Use (40 CFR 131.10(g))


<p>1. Naturally occurring pollutant concentrations,</p> <p>2. Natural low flow conditions or water levels,</p> <p>3. Human caused conditions or pollutant sources,</p>	<p>4. Dams or other hydrologic modifications,</p> <p>5. Natural physical conditions for aquatic life,</p> <p>6. Substantial and widespread economic and social impact.</p>
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Show Slide 6: Factors Preventing

There are six Factors found at 40 CFR 131.10(g), any one of which States and Tribes may use to revise their uses. In designing any UAA, States and Tribes and the stakeholders should decide as early as possible which of these factors will be used to justify and document the rationale for revising the use.

It is important to be familiar with the exact language of the appropriate factors when designing a UAA, so we will discuss these in more detail....



40 CFR 131.10(g)

g) States may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is **not feasible** because:


- 1) **Naturally occurring pollutant concentrations** prevent the attainment of the use; **or**
- 2) **Natural, ephemeral, intermittent or low flow conditions or water levels** prevent the attainment of the use, **unless** these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; **or**
- 3) **Human caused conditions or sources of pollution** prevent the attainment of the use and **cannot be remedied or would cause more environmental damage to correct than to leave in place**; **or**

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Language from 40 CFR 131.10(g).

Exact language from 40 CFR 131.10(g).

Discuss factors 1-5



40 CFR 131.10(g) (cont.)

- 4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
- 5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
- 6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.


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Many UAA's have used factor six - the imposition of controls beyond the technology based minimums would result in "substantial and widespread economic and social impact".

Introduce Economic Evaluations [40 CFR 131.10(g)(6)]

Section 131.10, paragraph (g)(6) of the Water Quality Standards Regulation allows States and Tribes, under certain conditions, to change a designated use if attaining that use would result in substantial and widespread economic and social impact. The economic evaluation is a site-specific two part evaluation: The "substantial" part of the evaluation addresses whether the discharger can "afford" more stringent controls. The "widespread" evaluation examines the affect of higher costs on the community. Substantial and widespread economic impact is the rationale frequently used in revising recreational uses and in adopting a subcategory that reflects the maximum affordable level of control.

EPA's guidance on making and documenting these determinations will be discussed in detail in the Economics Module.



The Complexity of a UAA can depend on Site Specific Conditions:

- Amount of Data Available
- Degree of Accuracy and Precision Desired
- Size of the Resource
- Value of the Resource to the Community
- Degree of Change from current designation
- Degree of Change from 101 (a) goals


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When a UAA is required to refine designated uses, what level of analysis is expected?

Where a UAA is required, a UAA must provide an adequate scientific and technical rationale in the administrative record to support the resulting use change. The record for the state's or tribe's action should also include any data or information that discusses whether the current designated use is attainable. EPA has approved use changes supported by UAAs that range from simple to complex. Whether the UAA will be simple or complex will vary on a case-by-case basis on factors such as the complexity, the characteristics of the waterbody, the use being changed, the factual showing required to make a demonstration that attaining the use is not feasible using one or more of the 40 CFR § 131.10(g) factors, and the analysis to determine the highest attainable use.

Other factors that may influence the level of analysis needed include:

- the type of water bodies involved,
- the size of the segment or number of waterbodies (if doing a categorical UAA, as described below),
- the criterion (or criteria) that serves as the basis of the difference between the current designated use and the proposed refined designated use,
- the relative degrees of change proposed for the designated uses,
- the presence of unique ecological habitat or critical habitat for endangered or threatened species,
- the level of public interest/involvement in the designated use decision,
- the types of water quality models available that can be used to project the results of various water quality management scenarios,
- the acceptable level of uncertainty in establishing the needed pollutant controls and other measures, as well as the costs associated with those controls and measures, among other factors,
- evaluation of the use's attainability when imposing technology-based effluent limits and reasonable and cost-effective best management practices for nonpoint source pollution control, and
- the number of facilities affected and complexity of assessing costs if social and economic factors are part of the justification for the use change.



Aquatic Life UAA Case Study: Valley Creek AL

- In 2001, Alabama proposed an upgrade of the Upper Valley Creek from agricultural & industrial (A&I) to limited warmwater fishery (LWF)
- Used past monitoring of the physical, chemical, and biological conditions in the stream, and conducted new studies
 - Conclusion: urbanization leading to degraded water quality
 - Segment could not meet the fish & wildlife use
- 131.10(g) factors: 3, 5
- Remediation will allow for LWF uses

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-The Alabama Department of Environmental Management (ADEM) provided evidence to support the proposed change for the upper segment of Valley Creek, a highly urbanized area, from Agricultural and Industrial Water Supply (A&I) to Limited Warmwater Fishery (LWF).


-The LWF classification establishes seasonal uses and water quality criteria for waters that otherwise cannot maintain the more protective Fish & Wildlife (F&W) classification year-round. The LWF classification does not fully meet the water quality uses and criteria associated with the “fishable/swimmable” goal, and therefore a UAA was necessary.

-The UAA was based on 131.10(g) factors 3 and 5 (Human caused conditions, and physical conditions related to the natural features of the waterbody)

-In the UAA, ADEM provided information on the physical, biological, and chemical characteristics of Valley Creek; water quality data from sampling stations; discharge monitoring reports from the point source dischargers; and water quality modeling results. Data from EPA and USGS were also used.

-EPA approved the revision to Alabama’s water quality standards to reclassify Upper Valley Creek for LWF and Lower Valley Creek for F&W.

-Future remediation will allow for LWF uses to be met, although it is not likely that F&W uses will ever be appropriate due to the heavily urbanized conditions in the watershed.



Recreation UAA Case Study: Los Angeles Channels

- Problem: high flows in urban engineered channels during & after rain events make swimming unsafe
- Action taken: temporary suspension of recreational uses during & after rain events
 - Swimming is inappropriate at those times
 - Waters do not have to meet bacteria criteria
 - Canals are locked so that access can be restricted
 - Downstream uses are still protected
- 131.10(g) factors: 2, 4

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BACKGROUND

-In the LA area, engineered channels have been constructed to move floodwaters from urban areas to the ocean.


-These channels transport large volumes of water that might not be of adequate quality to support the “fishable/swimmable” goal of Clean Water Act (CWA) section 101(a).


-Under certain conditions recreational uses are inappropriate for these channels. During high-flow flood conditions, it is not safe to swim in the waters; during summer dry periods, the flow is insufficient for swimming.

-The Los Angeles Region has opted to issue a suspension of recreational use during periods of high flow. The canals are locked so access can be restricted. Through a revision to its water quality control plan, the Los Angeles Region has indicated that during high-flow events, when it is not safe to be in the modified channels, these waterbodies do not have to meet bacteria criteria.

-The suspension of recreational uses applies under the rainfall conditions that trigger the Region’s swift-water protocols. (Note: The Los Angeles Region has aquatic life standards for these channels that have not been revised, and subcategories of the aquatic life uses might be developed in the future.)


-Following this use attainability analysis (UAA), EPA approved the revision to the *Water Quality Control Plan for the Los Angeles Region*.

 **Recreation UAA Case Study:
Los Angles Channels**



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This photo shows high-flow conditions in Ballona Creek. These swift water conditions and the shape of the channel make recreational activities dangerous during and after rain events.



Steps In A UAA Process

6. Collect any new data and conduct analyses.
7. Evaluate/summarize results.
8. Identify uncertainties/evaluate adequacy of information.
9. Make recommendations - propose new/revised uses.
10. Provide opportunity for public comment.
11. Submit the revised standards and supporting analysis to EPA after State/Tribal adoption.

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Agreeing on the objectives assists in determining the data and analyses needed and the appropriate level of sophistication and resolution - Is a one-day survey sufficient, or is a multi-season/multi-year survey necessary? This step can also help to define and characterize the data collection effort. For example, if habitat appears to be the limiting factor for the aquatic life use, physical and biological information, rather than chemical data, is likely to be the focus of the UAA.


BEFORE initiating data collection, there should be agreement by the stakeholders on the data to be collected, the analyses to be conducted, and the bases on which the information will be evaluated. Throughout the process keep everyone informed.

Steps 3,4 and 5 are related although individually very important.

In Step 3 available data are evaluated. If all agree that credible data is available to determine if attaining the designated use is not feasible, and determine what uses are attainable, additional data may only be needed to confirm the available data. Once again, it is site specific.

In Step 4 appropriate quality assurance and quality control procedures need to be identified and followed. Some States and Tribes have their own quality assurance and quality control procedures for data collection and analyses; others follow EPA's procedures. The design and development of a sampling plan, identification of sampling locations, protocols to be followed, storage, and chain of custody are all part of the QA/QC procedures. Following the appropriate QA/QC procedures along with the statistical requirements for the particular type of data evaluations will also refine the data requirements, analyses to be conducted and the bases on which the data are evaluated - ensuring the UAA is credible and defensible.

The evaluation approach selected in Step 5 also helps to refine the data needed. Some States and EPA regions have developed UAA protocols and include in those protocols guidance on how data will be interpreted.



Guiding Principle Of A UAA (1) 40 CFR 131.20(b)

**INVOLVE local, State and Federal entities
and the public.**

- **States and authorized Tribes must hold a public hearing**
- **Supporting analyses must be made available prior to the hearing.**

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Guiding Principle of a UAA

Successful UAAs are conducted through an inclusive process whether the UAA is conducted by the State or authorized Tribe or consultant for a municipal or industrial discharger. There should be agreement among those conducting and reviewing a UAA, the State, Tribe, EPA and the interested stakeholders on the data to be collected, the analyses to be conducted, and the bases on which the information is to be evaluated BEFORE analyses are initiated. The WQS regulations allow a significant degree of latitude in a UAA, but the coordination and consultation provides greater assurance that the analyses will be scientifically defensible.

What is the best way to involve EPA in the use refinement process?

EPA encourages states and tribes to contact their appropriate Regional office if they have questions regarding uses and use attainability analyses (UAAs) before conducting the UAA. EPA can provide early assistance in determining existing uses and address any policy and technical questions that may arise. Such questions may involve the key elements needed in a UAA such as: definitions; regulatory requirements; policy positions; key questions to be answered; data and other supporting information relevant to a particular factor (with suggestions on how to scale the level of effort to match the complexity of the questions posed by the matter at hand); and factors to be considered in constructing the rationale supporting the analysis' final determination. EPA may also assist states and tribes by identifying other entities that have developed UAA protocols or undergone similar efforts. Finally, EPA can assist states/tribes design their monitoring and assessment systems to help evaluate designated use refinements on a statewide/tribe-wide basis.

Early collaboration between the states/tribes and EPA Regional representatives will significantly facilitate the UAA and water quality standards (WQS) review processes. Therefore, it is important for the state or tribe to send EPA the draft UAA before any WQS revisions are proposed. An even more effective approach would be to engage EPA during the development of a UAA protocol and to exchange information at the beginning, rather than the end, of the UAA process. This early EPA participation can help ensure that all parties involved in the proposed analysis are clear about the questions to be addressed and that the study design will provide the information needed to answer those questions. The EPA Regional Office can then review the draft and provide any suggestions before the water quality standards revisions are proposed.



Guiding Principle (2)

REACH AGREEMENT with all involved parties on the data to be collected, analyses to be conducted and the bases on which to interpret the information **BEFORE** initiating the analyses and keep everyone informed throughout the process.



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Who are the stakeholders in the use refinement process? What role do they play and what is the best way to involve them?


Early involvement of key stakeholders who may be affected by any changes to a waterbody's designated use is an important element in the use change process. Stakeholders may include local residents; users of the waterbody (such as fisherman, boaters/ kayakers/canoers, etc.); local, state, and Federal agencies; environmental organizations, and, point and nonpoint source dischargers. The public process should be open, thorough and transparent. Stakeholders play a key role in providing information to determine the existing and highest attainable uses of the applicable waterbody. They can also be instrumental in highlighting any potential unintended consequences associated with a use change (i.e., economic impacts, safety concerns, etc.). Without public involvement, it is difficult to obtain public support for use changes.

Having an opportunity to review proposed use changes and to provide essential input into the process is critical for the public to understand the state's/tribe's goal and rationale for a use change. It is important for the affected stakeholders to be able to express their own goals and visions for the future use of the resource. With increased coordination and dialogue between states/tribes and stakeholders, states/tribes will have a chance to work with the public to overcome some of the public perception barriers that may have hindered legitimate use changes in the past. Stakeholders can also provide valuable information for the use change process. In many cases, stakeholders can provide a historical perspective on past uses of the water, observed causes and sources of impairment, and/or observed improvements in water quality/aquatic communities. In addition, water quality or biological data may be available through citizen monitoring efforts and academic institutions. States and tribes should consider all input received and document both the input and their decisions. This will also help in developing the rule revisions if the UAA shows a use change is warranted and will assist EPA review of the revised WQS.

There are numerous stakeholder groups which may help involve the key stakeholders in the use change process. Some examples include local government boards, local recreational user groups (boat/kayak/canoe clubs), and local waterbody protection/restoration groups. Such entities may be used as the focal point for establishing stakeholder involvement. Obtaining stakeholder views on a UAA protocol (or general procedure) as a first step may help states and tribes obtain stakeholder input on subsequent application of the protocol to specific waters.




UAAs: Don't forget...

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- **Any (revised) water quality standards shall provide for the attainment and maintenance of water quality standards in downstream waters (40 CFR 131.10(b))**
 - **If seasonal criteria are adopted, such criteria shall not preclude the attainment and maintenance of a more protective use in another season (40 CFR 131.10(f))**

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What's Next?

- The STATE or TRIBE evaluates the information, makes a determination on an appropriate use.
- The PUBLIC evaluates the analyses, the State's determination of attainability, and the proposed use.
- The STATE or TRIBE adopts the use
- EPA reviews, approves or disapproves.
- The STATE or TRIBE gives an opportunity for review of non-101(a) designations every 3 year (40CFR131.20)

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NEXT STEPS

Whether the State conducts, collects and analyzes the information for the UAA or a consultant submits the analyses to the State, the State must make the determination on whether to revise the use and/or revise what the highest attainable use to adopt. This works best if the State or Tribe consults with EPA. The UAA along with the proposed new or revised standard must be presented and reviewed by the public.

Review of Uses that are not 101(a) Goal Uses

If a UAA indicates that the current designated use is unattainable, what happens next?

If a UAA indicates that the current use is unattainable, the next step is for the state or tribe to revise its water quality standards (WQS). In this process, the state or tribe will need to identify and assign the "highest attainable use," which should reflect the factors and constraints on the attainability of a use that were evaluated as part of the UAA process. EPA's WQS regulations at 40 C.F.R. § 131.10(g) describe the factors used to support removal of a designated use or sub-categorization of use. The regulatory factors and the data analysis used to evaluate removing a use should also be used to determine the highest attainable use. CWA sections 303(c) and 101(a)(2) and EPA's implementing regulations require that, "wherever attainable," waters must protect the section 101(a)(2) uses. States and tribes strive to attain the section 101(a)(2) uses by designating the attainable use(s) as close to a section 101(a)(2) use as possible (i.e., the "highest attainable use").


For example, if a state or tribe finds that a full aquatic life use is not attainable, then the next step is to evaluate the relevant data and information to determine what type of an aquatic life use is attainable. If a state or tribe determines that no aquatic life use is attainable, the state or tribe must provide an analysis showing that this is the case. 40 C.F.R. § 131.10(j)(2). When designating uses, states and tribes should not only characterize current conditions, but also examine what could be the future condition after achievable gains in water quality are realized. This prospective analysis may involve identifying the expected condition for the waterbody, researching likely BMP effectiveness, examining the efficacy of treatment technology from engineering studies, using water quality models, and making inferences about future conditions given current constraints and planned improvements. Therefore, a UAA that effectively considers what is attainable in the future should guide the determination of the highest attainable use.

Once the state or tribe has determined the highest attainable use, it should propose adopting this designated use in place of the designated use deemed unattainable. The state or tribe should then proceed through its public review process before adopting the revised use and submitting the modified water quality standards to EPA for review and approval or disapproval (with all supporting rationale, including the UAA). EPA expects that a UAA will be sufficiently detailed both to fully inform public review of the revision and to lay out the data, analysis, and logic that support the specific WQS decision and the resulting use change.

Discuss Triennial Review

[40 CFR 131.20]

During triennial reviews, States and authorized Indian Tribes are required to review the WQS for those water bodies that do not include uses for the waterbody that are specified in section 101(a)(2) of the Act. Specifically, States and Indian Tribes must show that circumstances have not changed and that attaining the protection and propagation of fish, shellfish, and wildlife and/or recreation in and on the water goals remain not feasible. If such uses have become attainable (for example, because of technological improvements or lower pollution control costs), the standard must be revised in accordance with section 131.20 regarding State or Indian Tribal review and revisions of water quality standards. This will be described more fully in Module 19.



UAAs: Take Home Messages

- A designated use can be removed if:
 - it is not an existing use, *and*
 - implementation of tech. based limits and cost effective and reasonable BMPs would not result in attainment, *and*
 - attaining the use is "not feasible" because of at least 1 of the factors at 40 CFR 131.10(g)
- A UAA is required when designating uses or sub-categories that do not protect 101(a)(2) uses
- Agreement between all involved parties on what and how much information is needed and how it will be interpreted is a key factor in successful UAAs

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QUESTIONS

Are there any questions on conducting a Use Attainability Analysis?

Wait 1 minute to see if there are any questions. If so, answer accordingly; if not, proceed.



UAAs: EPA Guidance (More Recent)

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- UAAs and Other Tools for Managing Designated Uses, March 2006
<http://www.epa.gov/waterscience/standards/uaa/index.htm>
(Click on "UAAs & Other Tools for Managing Designated Uses")
 - Guidance: Coordinating CSO Long Term Planning with WQS Reviews (EPA-833-R-01-002):
http://www.epa.gov/npdes/pubs/wqs_guide_final.pdf/

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UAAs: More EPA Guidance (Less Recent)

- **Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses (EPA 440/4-86-037, 038, 039):**
<http://www.epa.gov/waterscience/library/wqstandards/>
- **Interim Economic Guidance for Water Quality Standards: Workbook (1995): EPA 823/B-95-002**
[//www.epa.gov/waterscience/library/wqstandards](http://www.epa.gov/waterscience/library/wqstandards)
- **Advanced Notice of Proposed Rule Making: Water Quality Standards Regulation: 63 FR 36742, July 7, 1998. EPA 823Z-98-002**
<http://www.epa.gov/fedrgstr/EPA-WATER/1998/July/Day-07/w17513.htm>

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UAAs: Still More EPA Guidance

- *Establishing Site Specific Aquatic Life Criteria Equal to Natural Background* Memo to Water Management Division Directors Regions 1-10 et al., Tudor T. Davies, Director, Office of Science and Technology, November 5, 1997
<http://www.epa.gov/waterscience/standards/policy.htm>



UAAs: The Regions weigh in...

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- EPA Region 10 Natural Conditions Workgroup Report on Principles to Consider When Reviewing and Using Natural Conditions Provisions. Version 1 April 2005

<http://www.epa.gov/r10earth/naturalcondition.htm>



UAAs: Guidance from States

- **Recreational Use Classification Guidance (Version 1.1).** January 2003. Colorado Department of Public Health and Environment, Water Quality Control Division. Available at:
http://www.cdphe.state.co.us/wq/Assessment/assessment_practices_and_methods.htm
- **State of Kansas: Aquatic Life Use UAA Protocol**
Available at:
<http://www.kdhe.state.ks.us/befs/uas/UAAGuidance.pdf>

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UAAs: Other Information

- **Water Environment Research Federation:**

Exploring Use Attainability Analyses (2005)

Factors for Success in Developing Use Attainability Analyses: Final Report (2007)

- **<http://www.werf.org>**

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