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Process for Reclassifying the Designated Uses of Florida Surface Waters

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Glossary

Altered Waterbodies: Those portions of natural surface waters that were dredged or filled prior to November 28, 1975, to such an extent that the portions exhibit separate and distinct hydrologic and environmental conditions from any waters to which they are connected.

Attainable use: The present and future most beneficial use that can reasonably be attained in a waterbody. In this document, the attainable use is determined by conducting the reclassification process described in this document, which evaluates whether the use is established and whether protective criteria can practicably be met.

Designated Uses: Those uses specified in the Water Quality Standards [Chapter 62-302.400, Florida Administrative Code (FAC)] for each waterbody or segment, regardless of whether or not the uses are currently attained.

Existing Uses: Those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards. Waterbody surveys and historic records and accounts may be relied on to determine existing uses.

Highest attainable use: Used synonymously with the term "attainable use." From the EPA "Vision for the Water Quality Standards Programs", *"Each waterbody in the United States will have a clear, appropriately comprehensive suite of standards that defines its highest attainable uses and the water quality required to support the uses…"*

Lake Vegetation Index: The Lake Vegetation Index (LVI) is a biological health assessment that measures lake health in predominantly fresh waters using aquatic plants identified to the lowest practical taxonomic level, performed and calculated using the methodologies, dated 03-31-08, in DEP-SOP-002/01 LT 7500, DEP-SOP-002/01 LQ 7300 and DEP-SOP-001/01 FS 7220.

Narrative Criteria: Are non-numeric water quality criteria that establish qualitative performance goals to protect beneficial uses from detrimental conditions (*e.g*., free from toxicity, free from dominance of nuisance species, etc.).

Natural Surface Waters: Waterbodies that, in their undisturbed state, originally were all or part of the Atlantic Ocean, Gulf of Mexico; a bay, bayou, sound, estuary, or lagoon, including natural channels and natural tributary thereto; a river, stream, or natural tributary thereto; a natural lake; and any natural wetland connected to any of the above waters.

Numeric Criteria: Numeric water quality criteria assigned to protect designated uses in the water quality standards (Chapter 62-302, F.A.C.) from the detrimental effects of specific water quality constituents.

Rapid Periphyton Survey (RPS): The Rapid Periphyton Survey is a field procedure which results in 99 measurements of algal abundance and thickness in a 100 meter stream segment, following DEP-SOP-002/01 FS 7130, dated 03-31-08. Each point is assigned a thickness rank from zero to five, with five being the thickest (>2cm).

Site-Specific Alternative Criterion (SSAC): A water quality criterion that is different from the default criterion for the waterbody classification. A Type I SSAC requires a demonstration that the water quality conditions exist because of natural background conditions. A Type II SSAC must be derived based on a demonstration that the alternative criterion will fully support and protect the designated use, including downstream waters. Site specific criteria must be formally adopted into the water quality standards and approved by the USEPA under the federal Clean Water Act. See Rule 62-302.800, F.A.C.

Stream Condition Index (SCI): The Stream Condition Index (SCI) is a biological health assessment that measures stream health in predominantly fresh waters using benthic macroinvertebrates sampled via 20 sweeps of a D-frame dipnet and identification of the collected organisms to the lowest practical taxonomic level, performed and calculated using the methodologies, dated 03-31-08, in DEP-SOP-002/01 LT 7200, DEP-SOP-002/01 LQ 7400 and DEP-SOP-001/01 FS 7420.

Total Maximum Daily Load: "Total maximum daily load" (TMDL) for an impaired waterbody or waterbody segment shall mean the sum of the individual wasteload allocations for point sources and the load allocations for nonpoint sources and natural background. Prior to determining individual wasteload allocations and load allocations, the maximum amount of a pollutant that a waterbody or water segment can assimilate from all sources without exceeding water quality standards must first be calculated. A TMDL shall include either an implicit or explicit margin of safety and a consideration of seasonal variations.

Use Attainability Analyses (UAA): A structured scientific assessment of the factors affecting the attainment of the waterbody's designated uses, including appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses, as well as environmental, social, and economic information, to justify reclassification to a lower class.

Variance: A temporary waiver from meeting water quality standards that must be re-evaluated periodically, especially when associated with a permit needing renewal. Variances are applicable to discharges based on an evaluation specific to a particular discharger, or to a waterbody based on a waterbody-specific evaluation.

Waterbody: In this document, waterbody refers to the area of water being evaluated for reclassification. The size of the waterbody will vary based on the specific focus of the reclassification petition and the characteristics of the waterbody, and could be a segment (portion) of waterbody.

Wholly Artificial Waterbody: In this document, wholly artificial waterbodies are excavated waterbodies, but do not include those portions of a natural surface water that have been dredged or filled.

Chapter 1: Introduction

1.1 Purpose of Report

This document describes the process and requirements for entities to petition the Florida Department of Environmental Protection (DEP) to change the designated use of a waterbody. Designated uses contained within waterbody Classes are the cornerstone of the water quality protection established by the federal Clean Water Act (CWA) as they establish the human and ecological expectations of a waterbody that are then protected by applicable water quality criteria. They represent the goals that should be attained in a waterbody, and can include drinking water supply, swimming and recreation, maintenance of fish and wildlife, and agricultural and industrial water supply.

This document addresses both reclassifications to a higher use (to a class with protection higher than the current class) and reclassifications to a lower use (to a class with protection lower than the current class). Both types of changes require a structured scientific assessment of the factors affecting the attainment of the waterbody's designated uses, including appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses. Reclassification may be initiated by DEP or by a petition by another entity. Regardless of who initiates the reclassification, it must go through the full public process and require approval by the Environmental Regulation Commission (ERC) as described in subsection 62-302.400(9), Florida Administrative Code (F.A.C.). A petition to reclassify a waterbody to a lower class must include a Use Attainability Analysis (UAA) and proposed Site Specific Alternative Criteria (SSACs), as described in section 62-302.400(12) and Rule 62-302.800, F.A.C. If a use has been changed through the approval of a UAA, the DEP must review that use change every three years during the Triennial Review of State water quality standards (Triennial Review) to ensure that the waterbody cannot attain a default use. Although a UAA is not required for the increasing or adding of a designated use, a detailed scientific assessment is still required to demonstrate that the new use is attainable.

This document provides details about the reclassification process, including:

- The process for reclassification to a higher use;
- The specific information needed for a petition to reclassify a waterbody to a lower use (UAA);
- General information about use changes, including when and where it might be useful to invest resources in conducting a UAA, and when and where a UAA would be unlikely to result in regulatory action that would change a designated use;
- A project planning checklist of the types of data, discussion of indicators, and discussion of data sources and data quality goals that should be considered by anyone designing a UAA**;** and
- An introduction to the economic assessment portion of the UAA;
- The process that DEP follows when reviewing final UAA studies, including required public participation.

All of the data types discussed in this document may not be necessary for a specific waterbody, but consideration of the checklist and other indicator information during planning will ensure that the study focuses on data that are relevant and necessary for the evaluation, and that important types of information are not overlooked. Following the steps described below, particularly steps

involving consultation with the public, agencies, and tribes, will result in a list of data needs that is tailored to the specific waterbody under consideration.

Conversely, not every data type or source that might need evaluation is necessarily contained in this guidance document. DEP recommends that any person or group interested in petitioning for reclassification discuss the proposed study with DEP prior to development of the study design.

1.2 Classification System

Subsection 62-302.400(1), F.A.C., defines the following classes and corresponding designated uses:

CLASS	DESIGNATED USE
I	Potable Water Supplies; Recreation; Fish Consumption; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
II	Shellfish Propagation or Harvesting; Fish Consumption; Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
III	Fish Consumption; Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
III-Limited	Fish Consumption; Recreation or Limited Recreation; Propagation and Maintenance of a Limited Population of Fish and Wildlife
IV	Agricultural Water Supplies
V	Navigation, Utility and Industrial Use

Subsection 62-302.400(5), F.A.C., restricts Class III-Limited waters to waters with human-induced physical or habitat conditions that prevent attainment of Class III uses. Class III-Limited waters must be either**:**

1. Wholly artificial waterbodies that were created entirely by excavation, or
2. Altered waterbodies that were dredged or filled prior to November 28, 1975,

It should be noted that the term “artificial waterbody” as used in this document is different from the definition in Rule 62-302.700, F.A.C., that is used in Outstanding Florida Waters determinations. In this document, wholly artificial waterbodies are excavated waterbodies, but do not include those portions of a natural surface water that have been dredged or filled. Natural surface waters are those waterbodies that, in their undisturbed state, originally were all or part of the Atlantic Ocean, Gulf of Mexico; a bay, bayou, sound, estuary, or lagoon, including natural channels and natural tributary thereto; a river, stream, or natural tributary thereto; a natural lake; and any natural wetland connected to any of the above waters.

In contrast, altered waterbodies are those portions of natural surface waters that were dredged or filled prior to November 28, 1975, to such an extent that they exhibit separate and distinct hydrologic and environmental conditions from any waters to which they are connected. Altered

waterbodies are only candidates for the Class III-Limited classification if the alteration occurred prior to November 28, 1975 because, consistent with the definition of "existing uses" in the federal Clean Water Act, waters that were altered after this date are presumed to have met Class III uses prior to modification.

1.3 Uses

Designated Uses are those uses specified in the Water Quality Standards [Rule 62-302.400, F.A.C.] for each waterbody or segment, regardless of whether or not the uses are currently attained. EPA often uses the term, highest attainable use, synonymously with attainable use. If a use is a designated use but not attainable, then reclassification to a lower class may be appropriate. Existing Uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards. Waterbody surveys and historic records and accounts may be relied on to determine existing uses. If there is an existing use that is not protected by the current class of a waterbody, then reclassification to a higher class may be appropriate. Water quality standards are intended to protect uses that are established in and appropriate for the waterbody. For example, drinking water consumption would be considered a use if proper permits (both consumptive use permits and permits for public drinking water systems) have been issued for community consumption and water quality is sufficient for the use, but would not be considered a use in the case of individuals consuming the water of their own accord without treatment.

In designating uses, EPA directed states to include any uses that, at a minimum, could be achieved by implementing the effluent requirements of Sections 301(b) and 306 of the Clean Water Act (*i.e*., technology-based limits) and cost-effective and reasonable best management practices for nonpoint source control. If the water quality criteria for a designated use would be met based on these control technologies, the use is considered attainable, regardless of whether that use is currently attained in the waterbody. Once uses have been designated in state standards, however, they are considered attainable even if doing so requires the application of pollution controls more stringent than the minimums required in Sections 301(b) and 306 of the Clean Water Act, unless one of the six factors listed in Subsection 62-302.400(11), F.A.C., can be demonstrated (discussed in Chapter 3).

The six factors listed in Subsection 62-302.400(11), F.A.C., should be examined to demonstrate both the unattainable designated uses and the attainable uses in a waterbody**.** Where human activities (pollutant discharges, water control structures, mining, etc.) contribute to the limitation of what uses are attainable, economic and social factors associated with repairing the system must be examined to demonstrate what is attainable. If remediable physical barriers (*i.e*., an improperly positioned culvert) are the cause of the non attainment of use in the waterbody, the use should generally be considered attainable.

1.4 Applicable Criteria and Site-Specific Alternative Criteria

Each use has criteria that protect the use, and those criteria are listed in Rule 62-302.530, F.A.C. Subsection 62-302.400(12), F.A.C., specifies that a petition for reclassification from Class III to Class III-Limited shall include appropriate site specific alternative criteria proposals that are protective of the most beneficial uses as determined by the use assessment process. SSACs established to support the Class III-Limited use are restricted to numeric criteria for any or all of the following parameters: nutrients (including nutrient response variables), bacteria, dissolved oxygen, alkalinity, specific conductance, transparency, turbidity, pH, or biological integrity. SSACs for these parameters shall not be set at levels less stringent than water quality

conditions at the time of reclassification. Existing water quality conditions at the time of reclassification shall be based on data of sufficient scientific quality and quantity to be spatially and temporally representative of the aquatic resource. Proposed SSACs for other parameters must fully protect Class III uses.

1.5 Overview of the Reclassification Process

The Department recommends that petitioners follow the process described in Chapter 2 to reclassify a waterbody to a more protective use and follow the process described in Chapter 3 to reclassify a waterbody to a less protective use. The process for conducting a UAA for a reclassification to a less protective use is summarized below.

Following these steps will help the applicant determine whether a UAA is appropriate for a specific waterbody, assist in the development of a UAA that contains relevant information that can be clearly evaluated by DEP, EPA, and other interested parties, and ensure that the UAA contains the types and quality of information necessary to support DEP rulemaking and Federal EPA approval. The steps are intended to be followed sequentially and the process is designed to be resource efficient by establishing a predictable series of decision points and planning steps. Although some redundancy exists, each step is intended to reinforce and provide more information than the prior step. Thus, information supporting Step 1 is more basic than information supporting subsequent steps.

1. Determine if a UAA is appropriate for your site and situation (see Chapter 3). If a UAA is appropriate for a waterbody, proceed to Step 2.

2. Research the information needed for DEP and EPA to properly evaluate a use change and to support a possible DEP rulemaking and EPA Clean Water Act review (Chapter 3). If a UAA still appears appropriate for a waterbody, go to Step 3.

3. Contact the DEP Standards and Assessment Section to discuss the UAA approach as it applies to a specific waterbody. If the discussion with DEP staff suggests a UAA is appropriate, proceed to Step 4.

4. Present appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses, as well as environmental, social, and economic studies to demonstrate that:

    - None of the uses being removed are existing uses;
    - The uses to be removed would not be attained by implementing effluent limits required by Sections 301(b) and 306 of the Federal Clean Water Act in conjunction with implementation of cost-effective and reasonable best management requirements for nonpoint source pollution control; and
    - Such a reclassification is clearly in the public interest;
    - Water quality standards in downstream waters will be fully protected and the reclassification will not lower existing water quality; and
    - One or more of the criteria from Paragraph 62-302.400(11)(c), F.A.C., apply. This portion of the rule, based on 40 CFR 131.10(g), allows removal of a designated use that 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. Concentrations of naturally occurring substances prevent the attainment of the use;

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;

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;

4. Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the use;

5. Physical conditions related to the natural features of the waterbody, 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 Federal Clean Water Act would result in substantial and widespread economic and social impact.

The applicant should consult with DEP to develop the proper approach for the UAA. This includes developing a list of information that the applicant will need to supply to DEP and EPA to support the UAA review and potential rulemaking. Local government agencies must be involved in meetings to inform and involve the local public, interest groups, agencies, and interested tribes. Proceed to Step 5.

5. Perform necessary studies to complete the UAA. See Chapter 4 on *Waterbody Assessments Relevant to Reclassification to Class III-Limited* and Chapter 5 on *Economic Analysis for UAAs*. Continue public involvement and review of recommendations with interested parties. Proceed to Step 6.

6. Assemble and submit the UAA to DEP.

7. DEP reviews the UAA. In this step, DEP determines whether the UAA supports a rule change, and what type of rule change is appropriate. If appropriate, DEP will proceed with the formal rulemaking process, which is subject to Environmental Regulation Commission (ERC) and EPA approval.

1.6 Common Reclassification Questions

Can a use be downgraded or removed just because a criterion is not being met?

Whether a waterbody meets applicable criteria provides important information about existing uses. However, failure to meet a water quality criterion that is established to protect a use is not sufficient evidence that a use is not attainable, except in specific situations authorized in Subsection 62-302.400(11), F.A.C.

Do UAAs only address whether the current designated uses are attained?

No. A UAA answers the question of whether any uses are attainable, including those that may occur at the site that are not being protected by the current designated uses. The information in the UAA should be complete enough to allow a determination of the related attainable uses in the waterbody. For instance, an economic analysis might show that a specific designated use **cannot** be attained. However, the UAA should also be detailed enough to demonstrate which uses **can be** attained, even those more protective than the current designated uses.

Can an existing use be removed?

No. Existing uses cannot be removed (downgraded). Existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in water quality standards. In some cases, the existing use might not currently be present in the waterbody, but credible information documents that the water quality necessary to support the use was attained on or after November 28, 1975. In these cases, the historical "existing uses" must be maintained.

How is the cost of additional treatment to meet water quality criteria factored into the decision to modify a use?

Federal regulations allow cost to be considered in two situations:

- Where attaining the use would cause substantial and widespread economic and social impact. If this is the case, the designated use can be modified or removed so long as all existing uses are maintained.
- Specifically for hydrologic modifications, where restoring to natural conditions is infeasible.

Can waters with endangered or threatened species be reclassified?

Yes, however UAAs for waterbodies used by listed endangered and threatened species will need an extra degree of planning and coordination with DEP, EPA, US Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), and the Florida Fish and Wildlife Conservation Commission (FWCC) to determine information needs. Although the water quality standards are not specifically designed to enforce compliance with the ESA, any change in the standards will be examined by EPA and the federal resource agencies (USFWS for fresh waters and NOAA for marine waters) to determine whether a formal ESA consultation is needed. DEP recommends that an applicant should carefully consider any possible effects to ESA-listed species in the waterbody prior to committing resources to the UAA project.

Chapter 2: Reclassification to More Protective Class

2.1 General Information Requirements

In order to upgrade a use, credible information showing the existence or attainability of the use is required. For instance, if a waterbody is designated as Class III, but there is evidence that shellfish harvesting (and consumption) is routinely being conducted in the waterbody, and that water quality criteria appropriate for Class II are attainable in the waterbody, an upgrade to Class II may be suitable. Information must be presented to determine whether the use is an established, characteristic use of the area, and whether other uses may interfere with upgrading the designated use. While petitioners are not required to provide the information relevant to the factors in Subsection 62-302.400(11). F.A.C., DEP will consider any information relevant to these factors during the attainability assessment. If the upgraded use is not feasible because of any of the listed factors, then the upgraded use is likely unattainable.

The petition should describe the geographical boundaries of the portion of waterbody to be reclassified, and take into account any permitting requirements for existing permitted entities upstream. For addition of a drinking water use, the boundaries should take into account the upstream extent necessary to protect the drinking water supply. For addition of shellfishing use, the boundaries are typically the area of shellfishing use.

The following are examples of the primary criteria changes associated with potential upgrades:

- Class III (default) to Class I (drinking water supply): All applicable criteria for drinking water uses.
- Class III to Class II (shellfish harvesting waters): All applicable criteria for shellfish harvesting use (fecal coliforms, fluorides, manganese, and odor).

2.2 Drinking Water Source

For a waterbody to be considered for reclassification as a drinking water source (Class I), the petitioner must show that the water quality meets the Class I criteria in Rule 62-302.530, F.A.C., or can meet them after conventional treatment. The potential influences of reclassification on other users, including point source discharges, of that waterbody (including sources in the upstream watershed) must also be evaluated. Permitting requirements in Chapters 62-4, 62-555, 62-600, 62-620, and 62-660, F.A.C., must be considered. Example 1 in Appendix 1 provides an example of a reclassification from Class III to Class I.

Petitions to add or remove the designated use of drinking water source should determine if it is an existing use (now or since 1975) or an attainable use. Petitioners should seek the following information to determine the existing and attainable use of the waterbody.

To determine existing use:

- Presence of drinking water withdrawals; and
- Permits from any government entity allowing withdrawal of water for consumptive use.

To determine attainable use:

- Determine proximity to wastewater sources and their effect on water quality in the area (wasteload allocation model); and
- Determine if the waterbody can meet water quality criteria specific to protection of a drinking water source.

2.3 Shellfish Harvesting

Shellfish harvesting is protected in Class II by more stringent bacteriological criteria than in Class III. For a waterbody to be considered for shellfish harvesting use, the waterbody must be able to meet the specific water quality criteria designed to protect shellfish consumption. The potential influences of existing point sources or other potential sources of contaminants (*i.e*., marinas, shipping channels) in that waterbody must be evaluated. Shellfish harvesting must also be recognized by the Shellfish Evaluation and Assessment Section (SEAS) of the Florida Department of Agriculture and Consumer Services (DACS), and biological surveys must show that shellfish populations can sustain harvesting. Reclassifications of state waters to Class II should be consistent with SEAS guidelines outlined in the Comprehensive Shellfish Control Code, Chapter 5L-1, F.A.C**.** Example 2 in Appendix 1 provides an example of a reclassification from Class III to Class II.

Petitions to add or remove the designated use of shellfish harvesting should determine if it is an existing use (now or since 1975) or an attainable use. Petitioners should seek the following information to determine the existing and attainable use of the waterbody.

To determine existing use, include information on:

- The shellfish harvesting status of the waterbody according to SEAS (since 1975);
- Field surveys of the area to determine current use;
- Observations or photos of shellfish harvesting (since 1975); and
- Public surveys to determine use of waterbody for shellfish harvesting (since 1975).

To determine attainable use, include information on:

- The shellfish status of the waterbody according to SEAS (since 1975);
- Bacteriological water quality of the waterbody, and seasonal changes in that quality due to seasonal changes in freshwater flows from nearby rivers and streams; and
- The proximity to wastewater sources and its effect on water quality in the area (wasteload allocation model).

2.4 Effects of Reclassification on Upstream Uses

As described above, a petition for reclassification to a higher use should consider whether or not the waterbody can meet the more stringent criteria of the higher classification. If it does not currently meet those criteria due to permitted discharges upstream, then the upstream discharger must be considered in the economic analysis of the petition. If it does not meet the criteria due to natural conditions upstream, then a Type I SSAC may be appropriate.

2.5. Determining that the Reclassification is in the Public Interest

Paragraph 62-302.400(9)(b), F.A.C., requires that a reclassification must be in the public interest to be approvable. Public input and the economic analysis (described in Chapter 5) are the main sources of information used to determine if the reclassification is in the public interest. Special consideration will be given to the input provided by elected city or county governing bodies, as these bodies represent the public interest for the full range of potential uses of the waterbody and are well versed in local resource management issues. If a proposed use would preclude another use, then the public value of these uses must be considered.

For example, if a city or county wants to reclassify a portion of a river to Class I to provide an additional drinking water source, but there is an existing industry upstream with permitted effluent that currently meets Class III criteria, the reclassification petition would need to consider the economic impacts of requiring the existing users to meet Class I criteria. The public interest test would involve weighing the value of the existing industry (jobs, tax revenue, products delivered) with the value of this particular new drinking water source. Alternative locations for the new drinking water source could be sought, or other alternative solutions to the problem may be identified with the help of DEP.

Chapter 3: Reclassification to a Lower Class

3.1 Evaluating the Cause of Impairment and Alternative Administrative Options

There are several reasons why a waterbody might fail to meet water quality standards, and the appropriate response (pollutant reduction, physical restoration, or modification of the water quality standards) depends on the reason. In most cases where standards are not met due to pollutant discharges, pollutant reduction is the appropriate course of action. However, DEP rules contain a variety of administrative options, such as a Site Specific Alternative Criteria (SSAC), variances, mixing zones, exemptions, or surface water reclassifications, which may be necessary or preferable depending on the specific circumstances.

3.1.1 Site Specific Alternative Criteria

Site Specific Alternative Criteria (SSACs) are used to revise the numeric criteria for specific parameters. If a criterion is not met in a waterbody due to natural conditions, a Type I Site SSAC, which is based on natural background water quality conditions, may be appropriate. A Type I SSAC requires a demonstration that the water quality conditions exist because of natural background conditions or man-induced conditions that cannot be abated. Type I SSACs may also be established to protect sensitive aquatic communities when based on natural background water quality conditions (see Example 5 in Appendix 1).

If the criteria are not met in a waterbody but concentrations are not tied to background water quality, a Type II SSAC may be appropriate if the designated use is being met despite the exceedances. A Type II SSAC must demonstrate that the alternative criterion will protect human health and fully support and protect the assigned designated use.

Site specific alternative criteria must be formally adopted into the water quality standards and approved by the EPA under the federal Clean Water Act. Once adopted, they remain in effect indefinitely.

3.1.2 Variances

Variances are used to grant a temporary waiver from the requirement to meet specific water quality criteria. The same factors used to determine if a use can be removed under a UAA are used to grant a variance, but a variance is temporary and applies only to the applicant. Variances to water quality standards require formal EPA approval and must be re-evaluated every three to five years. Variances from the water quality standards may be granted for a limited time with the expectation that water quality standards can be attained by the time the variance expires. Dischargers to the waterbody who are capable of meeting the standards are still required to comply with the standards through their permits.

The variance procedure was designed by the USEPA to encourage compliance with the Clean Water Act within a reasonable timeframe. Variances are most often based on an analysis of "substantial and widespread economic and social impact." One of the issues surrounding designated use changes and variances has to do with the time frame used to evaluate whether funds or technologies will be available in the future to meet water quality standards. Any analysis needs to consider limitations in technology and economics in both the short and long term because circumstances in both areas will change over time.

3.1.3 Changing Designated Uses

If the applicable criteria are not appropriate because they protect a use that is not an existing use or because they are inadequate to protect a higher use of the waterbody, then a use change may be appropriate. It should be noted that variances and SSACs apply to specific criteria, whereas a use change could affect multiple criteria that apply to that use. **A classification change is undertaken only when the designated use for a waterbody is suspected to be inaccurate or unattainable.**

To downgrade a waterbody's classification, information must be provided to demonstrate that the use is not an existing use (not attained since November 28, 1975) and is not attainable. The process for changing a classification (removing or modifying designated uses) is through the application of a use attainability analysis (UAA). UAAs are guided by federal regulations, and use changes resulting from information in a UAA must be adopted into the water quality standards and be approved by EPA as meeting the federal CWA and the Endangered Species Act (ESA) prior to any federal action on the recommendation. This means that the applicant should work with the approval agencies to determine the up-front data needs for the UAA. Moving forward with a UAA that does not adequately address the federal requirements and state needs for rulemaking can result in large costs and little or no benefit to the applicant. Examples 3 and 4 in Appendix 1 provide examples of a reclassification from Class III to Class III-Limited.

3.2 Use Attainability Analysis

The process for removing a designated use is through the application of a UAA. The federal regulations [40 CFR 131.3(g)] describe a "Use Attainability Analysis" as being "a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors." The purpose of a UAA is to ensure the attainable uses are designated for a waterbody. To help accomplish this objective, the process does not allow for the removal of any existing uses or any attainable designated uses.

3.2.1 Focus of a UAA

A key concept for a UAA is the definition of "existing uses." Existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in water quality standards (40 CFR 131.3(e)). The federal regulations (40 CFR 131.10) prohibit states from removing designated uses that are also existing uses (unless a use requiring more stringent criteria is added in its place [40 CFR 131.10(h)]). However, if a designated use is not an existing use, then the use may be removed because that level of protection is not warranted. Conversely, if the waterbody has an existing use that is not recognized in the designated uses, then a use may be added (see previous chapter). All designated uses must be fully protected, even if they are not existing or attainable uses, unless they are *formally* removed from the water quality standards through a UAA process.

The focus of a UAA is:

- To use the methods described in Rule 62-302.400, F.A.C., to determine whether a specific designated use is being met and, if not, why not. This focus includes an assessment of the existing uses of the waterbody, which cannot be removed, even with a UAA.

- To use the relevant factors from the rule to determine the attainable uses (*i.e.*, identification of the "present and most beneficial use of the waters"). The attainable level of water quality and uses is determined by taking into account the capability of the natural (or artificial) system (See Chapter 4), as well as the technical and economic limitations of human sources throughout the basin that affect the site. (See Chapter 5).

The UAA process may reveal data indicating that more sensitive uses than were expected are present, thus more protective criteria may be warranted. The UAA process may also indicate that a use change for a waterbody is not merited, but that a short-term variance for a particular discharger might be appropriate.

3.2.2 Components of a UAA

In the preamble to the water quality standards regulations in the Federal Register [48 FR 51401], a UAA is defined as containing a waterbody survey and assessment and, if appropriate, a wasteload allocation and an economic analysis. These factors are described below:

1. A waterbody survey and assessment examines the physical, chemical, and biological characteristics of the waterbody to identify and define the existing and attainable uses of the waterbody. This would include examining historic records that illuminate how the waterbody has physically changed over time, historic water quality data, and historic surveys on uses (such as invertebrate or fish distributions or recreational use). This requirement is described in Chapter 4 of this document.

2. A wasteload allocation may be appropriate for waterbodies with significant point source loads. A wasteload allocation uses mathematical models and relationships to predict the amount of reduction in pollutant loading necessary to achieve protection for the designated use(s). This general method of analysis can also be used to estimate the natural water quality by modeling the effect of removing human sources of pollutants and physical changes to the stream system.

3. An economic analysis that is appropriate to determine whether the more stringent requirements associated with protecting a designated use that is not an existing use would cause substantial and widespread economic and social impacts. This requirement is described in Chapter 5 of this document.

3.3 Attainable Versus Unattainable Uses

There are two types of attainable uses:

1. Designated uses that are attainable, and
2. Uses that are not designated but which are attainable**.**

In conducting a UAA, it is important to examine not only the possibility that some designated uses can be removed, but also to examine the possibility that some new designated uses may need to be established.

In designating uses, EPA directed States to include any uses that, at a minimum, could be achieved by implementing the effluent requirements of Sections 301(b) and 306 of the Clean Water Act (*i.e*., technology-based limits) and cost-effective and reasonable best management practices for nonpoint source control. If the water quality criteria for a designated use would be

met based on these control technologies, the use is considered attainable, regardless of whether that use is currently attained in the waterbody. Once uses have been designated in state standards, however, they are considered attainable even if doing so requires the application of pollution controls more stringent than the minimums required in Sections 301(b) and 306 of the Clean Water Act, unless one of the six factors listed in Subsection 62-302.400(11), F.A.C., can be demonstrated (discussed below).

Chapter 62-302, F.A.C., establishes six conditions to determine what designated uses are not attainable. Only one of these conditions must be demonstrated in order to pass the test for non-attainability. Subsection 62-302.400(11), F.A.C., states that:

> If rulemaking is initiated for a less stringent classification, the petitioner or the Department shall include in the reclassification documentation appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses, as well as environmental, technological, social, and economic studies, including costs to small businesses and local governments, as necessary to establish the present and future most beneficial use by demonstrating that:
>
> (a) No existing uses are being removed and the less stringent criteria associated with the designation will not result in the nonattainment of water quality standards in downstream waters;
>
> (b) The designated uses being removed cannot be attained by implementing effluent limits required by Sections 301(b) and 306 of the Federal Clean Water Act in conjunction with implementation of cost-effective and reasonable best management requirements for nonpoint source pollution control; and
>
> (c) One or more of the following situations occur:
>
> 1. Concentrations of naturally occurring substances prevent the attainment of the use;
>
> 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;
>
> 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;
>
> 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;
>
> 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 Federal Clean Water Act would result in substantial and widespread economic and social impact.

The six factors above should be examined to demonstrate both the unattainable designated uses and the attainable uses in a waterbody**.** Where human activities (pollutant discharges, water control structures, mining, etc.) contribute to the limitation of what uses are attainable, economic and social factors associated with repairing the system must be examined to demonstrate what is attainable. If remediable physical barriers (*i.e*., an improperly positioned

culvert) are the cause of the nonattainment of use in the waterbody, the use should generally be considered attainable.

3.4 Use Support and Water Quality Criteria

In general, uses are assumed to be protected if criteria are being met. However, this assumption is not always appropriate, because in some cases, most criteria are met but non-water quality related factors preclude the use. For example, water quality criteria designed to protect healthy, well-balanced aquatic communities may be met in a canal, but the canal may have habitat and hydrological limitations that preclude the type of full aquatic life use support expected from a natural stream (for example, as evidenced by a failure of the biological integrity criterion). The EPA UAA regulations allow the use to be modified as long as all existing and attainable uses are protected, and DEP requires that at least one SSAC (for the nine listed parameters) accompany each petition to change to a Class III-Limited.

3.5 Protection of Downstream Waters

Whenever a waterbody is reclassified to a lower use, the removal of the use must not result in the nonattainment of the existing water quality standards of downstream waters. Paragraphs (9)(c) and (11)(a) of Rule 62-302.400, F.A.C., **stipulate that downstream uses and criteria will not be negatively impacted by reclassification of upstream waterbodies**. This requirement is based on 40 CFR 131.10(b), which states:

> *"In designating uses of a waterbody and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters."*

This statement uses the general term "water quality standards," which includes both uses and criteria (numeric and narrative). Thus, when evaluating the effects of an upstream use or criterion change on downstream waters, the effects to both uses and criteria should be evaluated to ensure that all standards downstream are met.

There are three main steps to this analysis:

(1) Identify the water quality parameters that will be affected by changing the use designation in the upper watershed,
(2) Examine the extent to which downstream uses may be put at risk or criteria exceeded by any changes in criteria as a result of the changed use in the upstream area, and
(3) Examine through modeling, or other procedures (such as empirical evidence), to ensure that by the time the water reaches the point where higher downstream uses exist or are attainable, those higher uses will be protected and criteria will be met.

The intent of these considerations is to determine which criteria will be altered by changing a designated use and whether or not that change will hinder the maintenance of other attainable uses and their criteria downstream of the site. Regardless of whether a use actually exists or is attainable at any given location, the criteria assigned to that location must fully protect all existing and attainable uses downstream of that point. Where downstream criteria can continue to be met even if the up-gradient use is changed, then uses will generally be considered fully protected.

Subsection 62-302.400(12), F.A.C, lists the specific parameters for which SSACs can be established for Class III-Limited, and prohibits these SSACs from being less protective than the water quality conditions existing at the time of reclassification. Therefore, if waters downstream from a waterbody to be reclassified currently attain water quality standards, then an upstream reclassification should not cause nonattainment.

If applicable downstream criteria will not be met via natural assimilation processes, then the water must be treated before it reaches the downstream waters, or the reclassification to a lower class will not be approved. No classification action or change in designated use shall result in degradation of water quality in Outstanding Florida Waters or Outstanding Natural Resource Waters. The petitioner must demonstrate, using peer-approved modeling techniques or empirical evidence, that the reclassification of an upstream waterbody (including any concurrently adopted SSACs) will not degrade the water quality within the OFW below the condition at the time of OFW establishment. This demonstration will use the best available information to estimate the water quality at OFW establishment, per data quality and sufficiency guidelines in Section 3.10.

3.6 Determining if the Reclassification is in the Public Interest

Paragraph 62-302.400(9)(b), F.A.C., requires that a reclassification must not be approved unless it is in the public interest. Public input and the economic analysis (described in Chapter 5) are the main sources of information used to determine if the reclassification is in the public interest. Special consideration will be given to the input provided by elected city or county governing bodies, as these bodies represent the public interest for the full range of potential uses of the waterbody and are well versed in local resource management issues. If a proposed use would preclude the fulfillment of another use, then the public value of these uses must be considered.

For example, if a portion of a natural stream was dredged and lined with concrete to prevent flooding of homes and streets, and that alteration resulted in a loss of a healthy, well-balanced community of fish and wildlife, then the public interest test compares the value of flood control and stormwater conveyance with the value of a restored in-stream community. If members of the public oppose the downgrade, then their concerns must be considered, and suggestions evaluated. Economic factors include costs to restore the stream and finding another means of flood prevention, or the cost of damage to homes and public welfare if property and thoroughfares become flooded due to inadequate water conveyance.

3.7 Grouping Multiple Waterbodies in One UAA

The Department does not support categorical reclassifications (reclassification of waters based solely on waterbody type) because site-specific information is needed to evaluate reclassification petitions. However, waterbodies having similar physical, chemical and biological characteristics and which drain to the same watershed may be grouped together when conducting UAAs. This approach allows several waterbodies or stream segments to be treated as a single unit or allows establishment of representative conditions that are applicable to other similar waterbodies or stream segments. In addition to being within a watershed, the waterbodies must have enough common characteristics to ensure the groupings are logical and defensible. An example of an acceptable category would include urban stormwater channels within a defined geographic region that share similar channel depths, flow regimes, substrate, and ecological characteristics. Care must be taken to ensure that the grouping is not over-generalized, but adequately covers the potential of individual systems to support uses, including

downstream uses. Applicants desiring to group waterbodies in a UAA should discuss the approach with DEP prior to proceeding.

3.8 Public Involvement

Public involvement is a cornerstone of UAA development. To gather local information, gauge public interest for the reclassification, and engage interested parties, the applicant should involve local stakeholders early in the planning stages of the UAA. UAA applicants should contact local governments, tribes, local groups who use the waterbody, environmental groups, users of downstream waters, and state and federal agencies. Public involvement should continue throughout the UAA process, and recommendations made in the UAA should be reviewed by all interested parties.

The public involvement process developed by the applicant will not replace DEP's formal public rulemaking process if the UAA results in a proposed rule change. DEP will conduct its own public involvement process, according to federal and state requirements, which include public notice in the Florida Administrative Weekly, a public workshop held in the area of the candidate waterbody, and a public hearing with the ERC. As part of the public notice process, DEP has specifically committed to provide notice to affected local governments.

3.9 Administrative Process for Changing a Use

Changes in designated use assignments require a formal revision of the state water quality standards. As such, these actions require thorough public and intergovernmental review and must be made in compliance with the state Administrative Procedures Act. In preparation for the required public hearings, the technical basis (the waterbody survey and assessment documentation) for the recommended changes to the state standards must be made available for review by interested parties.

The following formal steps must occur before a use can be modified or removed:

1. An acceptable UAA must be submitted to DEP (or generated by DEP);
2. The UAA must contain adequate information to demonstrate to DEP that the designated use is not existing or attainable;
3. The UAA must demonstrate the attainable replacement use for any use or uses being evaluated;
4. DEP must remove or modify the designated use in the water quality standards through a formal and public rule revision process, including approval by the Environmental Regulation Commission;
5. DEP must submit the revised rule to the EPA for approval; and
6. EPA must approve the rule, after appropriate ESA consultation with federal resource agencies.

3.10 Data Quality and Sufficiency

Data used to support UAA documentation must meet the applicable components of the Quality Assurance Rule (Chapter 62-160, FAC) for data collection and analysis to ensure that it is suitable for the purpose of changing the water quality standard. In general, these include:

- Laboratory certification (by the Florida Dept. of Health);

- Approved laboratory and field procedures (DEP Standard Operating Procedures);
- Quality control requirements;
- Sample preservation and holding times;
- Documentation, record keeping, and reporting requirements; and
- Auditing and data validation procedures.

All Quality Assurance requirements may be found at:
http://www.dep.state.fl.us/labs/qa/index.htm

When determining the minimum amount of data required for a UAA decision, the following should be taken under consideration:

- The inherent variability of the aquatic system in question. Homogenous systems inherently require fewer data to describe key processes than heterogeneous systems;
- The representativeness of the data. The data should be collected at suitable locations and during the appropriate time period to evaluate the parameter of concern; and
- The data requirements of any statistical treatment used to describe the data (include the rationale for its selection).

DEP should be consulted to help determine data sufficiency needs for the waterbody or waterbody portion under consideration.

Chapter 4: Waterbody Assessment Relevant to Reclassification to Class III-Limited

4.1 Information Needed

This section provides more detailed information on how to evaluate the specific uses of surface waterbodies in Florida as part of a reclassification of a waterbody to Class III-Limited. The section focuses on the scientific and technical assessment and is intended to be used for project planning and identifying the specific types of information that should be collected when a UAA is in the design phase. Each UAA area will need an investigation tailored to area-specific concerns, and this document provides a "checklist" of the types of data, discussion of indicators, and data sources and data quality objectives that should be considered by any party designing a UAA. All of the data types discussed in this section may not be necessary for a specific waterbody, but using the checklists and indicator information during planning will help ensure that the study focuses on data that are relevant and necessary for the evaluation, and that important types of information are not overlooked. Conversely, this document may not contain all data types or sources needed for UAAs in specific waters. DEP recommends that any person or group interested in conducting a UAA discuss the proposed study with DEP prior to development of the study design.

The information in a UAA report must be acceptable to both DEP and EPA before it can be used as the basis of adding or modifying a use. This means that the applicant should work with the approval agencies to determine the specific data needs. UAAs can range from simple to complex, and moving forward with a UAA that does not adequately address the state and federal requirements may result in large costs and little or no benefit to the applicant.

4.1.1 Basic Information to Be Addressed

The waterbody survey and assessment must address the following items:

1. Identify the current classification and designated uses;
2. Identify the existing use through various means appropriate for the waterbody and its uses;
3. Determine if the currently applicable water quality criteria are being met, and which of the parameters eligible for a SSAC are not attained;
4. Identify the highest attainable use, and demonstrate that one or more of the six factors in Paragraph 62-302.400(11)(c), F.A.C., applies;
5. Identify the geographic reach for the use change petition;
6. Solicit and consider public input; and
7. Demonstrate that existing water quality will not be lowered and attainment of water quality standards in downstream waters will be protected.

The UAA should contain an assessment of water quality issues affecting the system. Data needed for this step may be found in STORET, the Impaired Waters Rule (IWR) Database, published literature, and other historical documents. The UAA should also contain waterbody-specific water quality issues that have been identified through the 303(d) TMDL listing process. An entity should not seek to reclassify a waterbody to a lower use if all water quality standards are currently being met, pursuant to the IWR, Chapter 62-303, F.A.C.

The attainable level of water quality must be determined within the context of the physical, geographic, morphological, habitat, hydrological, and biological condition of the waterbody. Use attainability must also evaluate the capability of the natural (or modified) system to achieve the use and the technical and economic limitations of human sources throughout the basin that affect the site.

4.2 Class III-Limited for Recreation

4.2.1 Designated Recreational Uses

Class I, Class II, and Class III protect full body contact recreation, which includes potential ingestion of the water. In contrast, some Class III-Limited waterbodies may protect limited, incidental contact recreation, in which ingestion of water is highly unlikely, but some contact with skin may occur. Note, however, that a petition for reclassification to Class III-Limited can be solely for recognition of limited aquatic life use, and does not have to include limited recreation.

To downgrade a use to Class III-Limited for recreation, the petitioner must show that full body contact recreation is precluded due to sufficiently shallow water or some other condition. Naturally ephemeral or intermittent flows would generally not provide sufficient depths or persistence of water for primary contact use recreation. If a waterbody is less than 0.5 meter deep on average (during normal flows) and less than 1 meter deep in pools, it is not likely that full contact recreation (swimming) is possible. The general unavailability of water, coupled with the physical limitations to exposure of mucus membranes in such waters, is strong evidence that full body contact is neither existing nor attainable.

The petitioner must also propose defensible site specific bacteria criteria to protect incidental contact with the water. However, it should be noted that EPA does not currently support revisions of the fecal coliform criteria, and any SSAC for limited recreational use must be based on *E. coli* or *Enterococci*.

Recreation in or on the water is not protected in Class IV or Class V.

4.2.2 Determining Existing and Attainable Recreational Use

Petitions to remove the designated use of full body contact recreation should determine if it is an existing use (now or since 1975) or an attainable use. Petitioners should seek the following information to determine the existing and attainable use of the waterbody.

To determine existing use, include information on:

- Observations or photos of public swimming in waterbody (since 1975);
- Presence of beaches or docks; and
- Public surveys to determine use of waterbody for swimming (since 1975).

To determine attainable use, include information on:

- Waterbody depth measurements taken during several times during the year to represent the complete regime of water levels; and
- Physical constraints (*e.g.,* shallow, concrete lining that would preclude swimming in the waterbody),

- Potential human pathogens, via bacteriological or other indicators, sources of pathogens, and potential source control.

4.3 Class III-Limited for Aquatic Life Use

4.3.1 Designated Aquatic Life Uses

Class III waters have the aquatic life use of maintaining a "healthy, well balanced population of fish and wildlife". Class I and II waters share the same aquatic life use expectation but have higher human use expectations. A petition for a use change to Class III-Limited may be appropriate for waters with a limited population of fish and wildlife due to the artificial nature of the waterbody, or human-induced alterations as defined in Chapter 1. Class III-Limited still protects full body contact recreation if a SSAC for bacteria is not included. Aquatic life use is not fully protected in Class IV or Class V.

Criteria that protect aquatic life uses include criteria for toxics (*e.g*., copper, cadmium), physical parameters (*e.g.,* dissolved oxygen, specific conductance, pH), and biological expectations (*e.g.,* Shannon Weaver diversity; see table in Rule 62-302.530 F.A.C.). While water quality criteria are meant to be protective of aquatic life use, actual biological information, including the biological integrity criterion and other standardized assessment tools, are used to further describe biological communities and stressors that act upon them. Biological tools can measure the degree of similarity between the aquatic community in a given waterbody and the community expected in a healthy, well balanced aquatic system for a particular water body type (*i.e*., streams, lakes, canals). These tools, or other similar biological data, inform whether or not the aquatic life use is being attained or is limited by physical or habitat constraints.

The Stream Condition Index (SCI) of macroinvertebrate health and the Lake Vegetation Index (LVI) of plant community health are examples of two such biological tools for assessing how closely a community approximates an expected community in Florida's natural streams/rivers and lakes, respectively. However, other scientifically justified biological information may be used to determine whether the aquatic community is limited relative to reference conditions (sites without physical or habitat limitations). Ultimately, the determination must be made as to whether an aquatic community represents a healthy, well-balanced population of fish and wildlife. This requires comparisons between the waterbody of interest and similar waterbodies that are minimally affected by human activities.

4.3.2 Determining Attainable Aquatic Life Uses

Determining the attainable aquatic life uses for an UAA combines information on biological potential of the waterbody, various approaches to restoration, and in many cases, economic information. The determination can be more or less complex, depending on the waterbody being evaluated. The discussion below describes how different types of information can be used in the determination of attainable uses.

When determining which use is attainable, key issues include:

- Examining biological communities (such as algae, plants, invertebrates, and fish), and their degree of deviation from "natural background" conditions for that type of waterbody;
- Determining the physical or water quality cause for the deviation; and

- Determining if the physical or water quality factors can be controlled or abated.

Determining the attainable use can be complex. Habitat, hydrological, and water quality conditions that would promote the existence of healthy biological communities is strong evidence that a Class III designation is appropriate. In some hydrologically modified systems, such as canals and urban ditches, biological communities may be more likely to reflect these obvious physical disturbances, and Class III-Limited may be the highest attainable use. In cases where a canal or ditch was created from upland habitat for flood control, that intended use should be considered in the evaluation. If water quality of an aquatic system was never sufficient (since November 28, 1975) to support as diverse an aquatic community as associated with its designated use, it is likely that the water quality in the waterbody still supports or has supported some less diverse community of organisms, and this community should be protected by any new designated use.

4.3.2.1 Indicators Related to Aquatic Life Uses

Information on physical, chemical, habitat, and biological characteristics of the waterbody will be considered in DEP's review of any UAA. The types of information that may be needed to characterize the waterbody are discussed below, and are summarized in a checklist.

Some information about indicators can be found in existing databases or publications. Some can be derived from existing information (*e.g.*, maps). However, in most cases, not all of the information needed to assess use attainment will be available, and further monitoring of relevant indicators will be needed to provide adequate data to support a determination to change a use. The indicators measured will be different according to the type of waterbody (*e.g.*, marine systems, streams, lakes).

The following checklist summarizes the categories of indicators that should be used by the applicant during the planning phases of a UAA. This list does not include all possible types of information that might be needed to support a UAA.

- Physical Indicators
  - Ecoregional setting
  - Soils, Slopes, Physiography
  - Habitat (where applicable, use DEP habitat SOPs)
  - Climate/Meteorology
  - Hydrology (where applicable, use DEP hydrological modification form)
  - Geomorpholgy (*e.g.*, Rosgen methods)

- Chemical/Water Quality Indicators
  - Water quality data, including organic, inorganic, and physical/chemical parameters (*e.g.,* pH, DO, etc.), should be provided for the waterbody. For a UAA, water quality will be evaluated to detect both natural and man-induced limitations to attaining aquatic life uses. It is recommended that parameters selected from the water quality criteria in Rule 62-302.530, FAC, be sampled, as appropriate, to inform the classification change decision. For example, at least one priority pollutant scan (for all metals and organic contaminants) should be performed, but water quality analyses should focus on the criteria that are expected to be different from the existing criteria.

- Biological Indicators
    - Algae composition and biomass;
    - Macrophyte community structure and function (where possible, use DEP SOPs, *e.g*., LVI);
    - Invertebrate community structure and function (where possible, use DEP SOPs, *e.g.,* SCI or BioRecon);
    - Fish and Vertebrate wildlife community structure and function.

4.3.2.2 Physical Indicators

The mechanism for determining the biological potential attainable in a system should address the abiotic components that currently limit the biological resources in the system. These include:

- Geographic setting, physiography, and geologic influences;
- Land use in the affected area (the Landscape Development Intensity Index is particularly useful for determining human impacts);
- Morphologic features of the system (*e.g.,* Rosgen stream morphology), including factors such as stream order, etc.;
- Hydrologic modifications in the area (Hydrological Disturbance Scoring, described below, is a useful tool);
- Habitat Assessment (DEP SOPs or similar suitable approach for waterbody types not covered by the SOPs);
- Other physical information necessary for a particular waterbody or type of waterbody.

The system should be examined to determine the human sources of stress, as well as the potential natural conditions if human effects were removed. This should be followed by an assessment of the biota that would normally occur in the waterbody if (feasible) human sources of degradation or stress were removed. Due to infinite combinations of environmental factors that may possibly exist in a waterbody, no precise formula can be devised to accurately predict and describe the biological community that should exist there. However, comparison with other similar waterbodies/watersheds, with projected comparable habitat, water quality and biological factors, may be used to develop a reasonable assessment of the aquatic life uses that would occur in a given set of environmental conditions.

4.3.2.3 Habitat Indicators

For streams, rivers, ditches, and canals, habitat indicators include substrate availability and quality, habitat smothering, water velocity, bank stability, degree of artificial channelization, and riparian zone buffer width and vegetation quality. Channel morphology describes the physical and structural characteristics of the system. For lakes, habitat indicators include littoral zone width, plant quality and quantity, sediment quality and anchoring, and presence or absence of nuisance algae. Key watershed characteristics include stream length, watershed area, rainfall patterns and various land use descriptions (FLLUCS data). Stream order may be determined with 7½ minute (1:24,000) USGS maps including intermittent and ephemeral channels. Some physical habitat information can be obtained using satellite imagery, but on-the-ground field sampling methods would be needed to “ground truth” such data. Physical characteristic information should be supplemented by photographic documentation, including photos of the area surrounding the waterbody and any unusual characteristics or evidence of human effects. Effects that human activity has had on habitat conditions should be noted (*e.g.,* removal of woody debris, lack of pools due to channelization in streams). If it can be demonstrated that it is

not feasible to restore the habitat (*e.g.*, direct conflict with necessary water management for flood control, or would create economic hardship) and the habitat limits the aquatic life use, it may be appropriate to downgrade the use classification.

4.3.2.4 Hydrological Indicators

Where applicable, the petitioner should describe how habitat and hydrology limit the aquatic life uses attainable in the system. Water flow and hydrology affect the water quality and biological expectations of waters in Florida, particularly in lotic systems. Low flows may contribute to increases in temperature and decreases in dissolved oxygen, thus negatively impacting uses and contributing to exceedances of criteria. Low flows often result in decreased SCI scores due to natural reasons (limited inundated habitat, unfavorable velocities for stream organisms, etc.). High flows can also be detrimental to water quality by creating turbidity and potential scouring of aquatic habitat.

When a UAA is conducted, the applicant should evaluate the effect of flows on the system and determine the natural flows and conditions for the areas, as well as human-caused changes in hydrology and the resulting effects. The Guidelines for Hydrological Disturbance Scoring below should be followed for flowing waters.

Hydrological Disturbance Scoring

This gradient rating is for human disturbances, not natural events (*e.g.*, hurricanes, extreme droughts).

Best 1-2 points	Flow regime as naturally occurs (slow and fairly continual release of water after rains), few impervious surfaces in watershed; high connectivity with ground water and surface features delivering water (*e.g.*, sandhills, wetlands; no ditches, berms, etc.)
Slight disturbance 3-4 points	Flow regime minimally changed; some water withdrawals; some wetland drainage, some impervious surfaces in watershed, some ditching
Moderately altered 5-6 points	Flow regime moderately altered; hydrograph moderately flashy (scouring after rain events with subsequent reductions in flow), groundwater pumping evident; much wetland drainage, topographic alterations reduce natural water input; more impervious surfaces throughout watershed, dams/control structures change normal water delivery schedule
Poor 7-8 points	Flow regime highly altered; hydrograph very flashy (scouring after rain events with subsequent reductions in flow, leading to stagnant or dry conditions, related to large amounts of impervious surfaces and/or ditching throughout watershed); water withdrawals & impoundments/control structures severely alter flows, large amounts of impervious surfaces
Very poor 9-10 points	Flow regime entirely human controlled; hydrograph very flashy (scouring after rain events with subsequent reductions in flow, leading to stagnant or dry conditions, related to impervious surfaces and ditching throughout watershed); water withdrawals & impoundments fundamentally alter the nature of the ecosystem

For waterbodies that are in the vicinity of dams or subject to other hydrologic modifications that impact flows and thus uses, applicants must address whether restoring the hydrology could improve water quality and attainable uses in the waterbody. Because a UAA is for a waterbody or portion of the waterbody, and not an individual discharger, all sources of impairment to the waterbody must be considered when determining attainability. In many cases, the changes in flow regulation will not be under the control of the applicant, or hydrologic modifications might be widespread. If it can be demonstrated that it is not feasible to restore the hydrology (*e.g.*, flooding impacts would result) and the hydrology limits the aquatic life use, it may be appropriate to downgrade the use classification.

4.3.3 Assessing Biological Communities

Existing aquatic life uses are determined via scientific surveys. Federal, state, tribal, and local governmental planning and resource agencies, universities, libraries, private conservation groups, corporations, and discharger groups are all potential sources of information on aquatic life uses and aquatic habitat**.** The evaluation should identify and describe:

- The species and community types that currently exist in the waterbody. This should include information on primary producers such as algae and aquatic plants, as well as consumers such as invertebrates, fish and other aquatic vertebrates;
- The species and community types that have been attained in the waterbody on or after November 28, 1975, and any existing species that have been specifically targeted for protection (*e.g.,* ESA species); and
- The overall biotic and abiotic health of the waterbody. Standard assessment tools, such as the *DEP Stream Condition Index, DEP Habitat Assessment procedures, DEP Rapid Periphyton Survey, and DEP Lake Vegetation Index* or similar types of information should be used where possible. The DEP Quality Assurance Rule (Chapter 62-160, F.A.C.) applies to all data (water quality, biological, etc.) used for the evaluation.

In the event that information for the waterbody of interest is unavailable, information on similar waters located nearby can sometimes be used to make an evaluation of the existing uses for the waterbody. However, the petitioner must provide information supporting how the nearby waterbody is similar and representative of the waterbody under consideration for reclassification.

4.3.3.1 Input from Professional Biologists

If professional biologists working in the watershed agree that the key biological uses are not present and are not likely attainable, this information will be considered during the UAA process. If the biologists have substantial field experience and understand the requirements to protect existing and attainable uses, then their documentation and testimonial provide important supporting information for the UAA (but does not ensure the UAA will be approved).

4.3.3.2 Freshwater Streams, Rivers, and Ditches

For rivers, streams, and ditches, DEP's Stream Condition Index (SCI) is an appropriate tool to measure the biological integrity of the macroinvertebrate community. The SCI expectation is > 40 for Class III waters, while a lower SCI score would be expected in a Class III-Limited water. However, it is imperative that the SOP requirements for conducting SCIs are fully met (see SCI

Primer) because several factors may be responsible for low SCI scores. In man-made, concrete lined ditches or streams that were altered prior to November 28, 1975, it would be unlikely that aquatic life would be sufficiently healthy to pass the SCI, due to habitat and hydrologic limitations.

To evaluate whether hydrology or habitat are limiting the aquatic community, the hydrologic scoring described above and DEP's Stream Habitat Assessment (SOP FT 3000) should be conducted. For streams, rivers, ditches, and canals, habitat indicators include substrate availability and quality, habitat smothering, water velocity, bank stability, degree of artificial channelization, and riparian zone buffer width and vegetation quality. The degree to which humans have altered the channel morphology and the physical and structural characteristics of the system should be described.

4.3.3.3 Freshwater Lentic Systems

In lakes and ponds for which the LVI is an appropriate assessment tool, the LVI expectation is > 45 for Class III waters. Habitat indicators include littoral zone width, plant quality and quantity, sediment quality and anchoring, and presence or absence of nuisance algae. Other potential lines of evidence to describe the aquatic life use include fish data (diversity, spawning, and presence of sensitive taxa), macroinvertebrate data, zooplankton data, and phytoplankton data (diversity and presence of harmful algal bloom species).

4.3.3.4 Canals

Most canals are artificial waterbodies that are actively managed for flood control, and therefore it is difficult to establish a biological expectation for a "healthy" canal. Since vegetation in most canals is periodically removed via physical or chemical methods, and maintenance dredging occurs in many canals, an assessment of the biological potential of a canal should be conducted in a manner that accounts for ongoing management practices. Habitat assessment and hydrologic assessment are particularly important in canals, since these factors tend to be the most prominent in limiting biological potential. However, it should be noted that many canals provide for a healthy aquatic community (*e.g.,* fish and zooplankton), and the petitioner must still conduct a biological survey of the system.

4.3.3.5 Predominantly Marine Systems

Although DEP does not have a multi-metric statewide biological assessment tool for tidal, estuary, or coastal environments, Rule 62-302.530, F.A.C., contains a provision that Shannon-Weaver diversity in predominantly marine systems shall not be reduced more than 25% when compared to background conditions. It is important to develop site-specific information describing the expected biological communities of the area. The assessment must take into account factors such as salinity regime, temperature, sediment grain size, tidal and wind flushing, and natural diel and seasonal temporal fluctuations.

4.3.4 Identifying Causes of Impairment

The UAA should contain an assessment of any biological impairment to the system that currently occurs or any causes (past and present) of impairment that continue to affect the system. Examples of potential causes include natural or man-made physical structures, point and nonpoint sources of pollution, natural sources of contamination, and historic sites of pollution that are still emitting pollutants. All causes of impairment to the system, including

water quality issues, should be accounted for in the analysis. If the UAA investigations reveal that water quality degradation due to the point source is the primary cause for the impairment, then a reclassification is probably not the correct administrative option (see Chapter 3.1).

In many cases where there are point sources, a wasteload allocation model will be required to quantitatively determine how the varying causes of impairment affect the waterbody. A wasteload allocation uses mathematical models and relationships to predict the amount of reduction in pollutant loading necessary to achieve protection for the designated use(s). This general method of analysis can also be used to estimate the natural water quality by modeling the effect of removing human sources of pollutants and physical changes to the stream system.

4.3.5 Identify How the Area Could be Restored

Once limitations to the aquatic system have been determined based on an evaluation of physical and water quality parameters and the causes of impairment to the system have been clearly identified, the practical ability to mitigate or restore the waterbody should be determined. Careful consideration of the actions that must occur to reverse the impairment and re-establish the integrity of the waterbody must be made. If the impairment is due to pollutant loading, pollution control options should be developed and evaluated. If the impairment is due to habitat degradation, habitat restoration alternatives such as changes in land management activities, implementation of best management practices, and direct habitat restoration alternatives (*e.g.,* riparian zone buffer vegetation enhancements, addition of large woody debris to a stream) should be considered. If the impairment is due to hydrologic modifications, the capacity to reverse the hydrologic issues (*e.g.*, filling in ditches, alternate water management schedules, etc.) should be determined. In general, the assessment should look at all methods that would result in restoration. If the impairment reflects the natural condition, then that must also be demonstrated. Whether uses can be restored or attained using these methods will be examined as part of the attainability analysis. This assessment should also consider the initial/primary use of the waterbody, and be included in the balancing of uses to determine whether or not the change is in the public interest (see Chapter 3.6).

4.3.6 Threatened and Endangered Species

Threatened or endangered aquatic species might inhabit or use waters where a UAA is being considered. For some waterbodies, a final Recovery Plan developed under the Endangered Species Act (ESA) may be in place. Although the water quality standards are not specifically designed to comply with the ESA, any change in the standards will be examined by EPA and the federal resource agencies to determine whether a formal ESA consultation is needed. DEP urges any party wishing to modify uses in a waterbody that is either used by ESA-listed species, necessary to an ESA-listed species' recovery, or upstream from either of the two preceding situations to confer with both DEP and EPA prior to investing resources in a UAA.

4.3.7 Effluent Dominated Ecosystems: Net Ecological Benefit

Subparagraph 62-302.400(11)(c)4., F.A.C., establishes that one basis for removing a designated use, or to establish subcategories of uses or seasons of application, is when: *"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*". This provision provides the basis for performing a net ecological benefit (NEB) comparison in setting levels of use protection. This provision will most likely be used to address the case of contaminated sediments, the dredging of which may cause more damage than leaving in place.

However, it has also been used in other states in low-flow streams containing discharges from sources such as wastewater treatment plants. In limited cases, the effluent flows were demonstrated to help maintain aquatic, riparian, and wetland habitat, even though the discharger could not meet all of the water quality criteria necessary to **fully support** the fishable-swimmable goal of the CWA. In this situation, this UAA provision allows consideration of whether the removal of the effluent from the waterbody would result in a greater loss of important aquatic or riparian habitat than allowing the effluent to continue to be discharged, even though it might not meet all the established state water quality criteria.

4.4 Geographical Extent of Reclassification to Class III-Limited

The waterbody segment under consideration for reclassification to Class III-Limited is restricted to those areas that meet the criteria established in Subsection 62-302.400(5). The petitioner must demonstrate that the area proposed for reclassification is characterized by the physical alterations that would preclude a higher use.

Chapter 5: Economic Analyses for UAAs

Economic considerations are taken into account when a UAA is based on provisions in Subparagraphs 62-302.400(11)(c)4 and 6., F.A.C.:

> *4. Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the use.*
>
> *6. Controls more stringent than those required by § 301(b) and 306 of the Federal Clean Water Act would result in substantial and widespread economic and social impact.*

Simplistically, one could argue that any use could be attained with adequate funding. However, if requiring that funding to be spent on attaining the use would result in substantial and widespread economic and social hardship, the CWA allows for the use to not be attained in the waterbody (unless it is an existing use). Where human activities (pollutant discharges, dams, mining, etc.) contribute to the limitation of what uses are attainable, economic and social factors associated with repairing the system must be examined in determining what is attainable.

The sections below describe the economic analyses required within DEP and by EPA. Much of the following summary text in this section is taken from USEPA (1995) *Interim Economic Guidance for Water Quality Standards*. The EPA guidance document is extensive, and is not replicated here. Readers who are interested in more specific information about economic analysis in the context of UAAs are urged to read the EPA guidance.

5.1 Statement of Estimated Regulatory Costs (SERC)

Applicants should be aware that an economic analysis done as part of a UAA (as summarized in the following sections) is only one of the economic analyses that would be conducted in order to change a use based on economics. DEP is required to comply with the Administrative Procedure Act (APA), which requires that any rulemaking be accompanied by a Statement of Estimated Regulatory Costs (SERC) and petitioners are required to provide some of the supporting information necessary for the SERC.

A SERC shall include:

(a) A good faith estimate of the number of individuals and entities likely to be required to comply with the rule, together with a general description of the types of individuals likely to be affected by the rule.

(b) A good faith estimate of the cost to the agency, and to any other state and local government entities, of implementing and enforcing the proposed rule, and any anticipated effect on state or local revenues.

(c) A good faith estimate of the transactional costs likely to be incurred by individuals and entities, including local government entities, required to comply with the requirements of the rule. As used in this paragraph, "transactional costs" are direct costs that are readily ascertainable based upon standard business practices, and include filing fees, the cost of obtaining a license, the cost of equipment required to be installed or used or procedures

required to be employed in complying with the rule, additional operating costs incurred, and the cost of monitoring and reporting.

(d) An analysis of the impact on small businesses as defined by § 288.703, and an analysis of the impact on small counties and small cities as defined by § 120.52.

(e) Any additional information that the agency determines may be useful.

(f) In the statement or revised statement, whichever applies, a description of any good faith written proposal submitted under paragraph (1)(a) and either a statement adopting the alternative or a statement of the reasons for rejecting the alternative in favor of the proposed rule.

5.2 Ownership of the Pollution Source

The choice of methods used to evaluate the economic impacts associated with meeting water quality standards depends, in part, on whether pollution control is the responsibility of a privately or a publicly owned entity. Since the permittee may not be the one to pay for any required treatment or pollutant load reduction, the analyses must focus on the party that pays for pollution control. Some of the more common privately owned entities include, but are not limited to: manufacturing facilities, agricultural operations, shopping centers, and other commercial development, residential developments, and recreational developments. Publicly owned entities include: publicly owned sewage treatment works, publicly owned stormwater treatment facilities, roads, and other municipal infrastructure.

In an economic analysis, the distinction between private sector and public sector entities is important as it determines not only who will pay for the necessary pollution control, but also the types of funding mechanisms available. For example, in the case of a privately owned entity, the facility can raise the money through loans and equity funds but may try to pass some or all of the cost on to the consumer in the form of higher prices. In the case of a publicly owned entity, the community can float bonds to pay for the capitol costs, with the cost of the bonds and operating expenses covered by user fees and/or tax revenues.

Whether a waterbody is publicly or privately owned, responsible entities can be point or nonpoint sources. Attainment of water quality standards is not limited to controls placed on point sources. Water quality standards are applicable to nonpoint sources despite the fact that there may be no direct implementation mechanisms for some nonpoint sources (except for nonpoint sources addressed in Basin Management Plans associated with TMDLs). Although pollution control approaches used by nonpoint sources may differ substantially from approaches typically employed by point sources, analysis of the ensuing economic impacts still depends on whether the entity providing the pollution is privately or publicly owned.

5.3 Substantial Impacts

A financial analysis of the discharger should be conducted to determine if the capital and the operating and maintenance costs of pollution control will have a substantial impact. This analysis involves:

(1) Estimating the costs of complying with standards;

(2) Determining how the entity will finance the necessary reductions; and

(3) Determining if the economic impact is substantial.

The first step in determining if an economic impact is substantial is to estimate the capital and the operation and maintenance costs of the necessary pollution control. The second step is to determine how the entity will finance the necessary reductions. If the entity is publicly-owned (*e.g.*, a municipal sewage treatment plant), the households in the community will bear the cost either through an increase in user fees, an increase in taxes, or a combination of both. The burden to households resulting from total annual pollution control costs must be estimated. In addition, the financial impact analysis must consider the community's ability to obtain financing and the general economic health of the community.

Demonstration of substantial financial impacts is not sufficient to modify a use or grant a variance. Rather, the applicant must also demonstrate that compliance would create widespread socio-economic impacts on the affected community.

5.4 Widespread Impacts

Under the CWA, States and dischargers must consider the possibility that financial impacts could cause far reaching and serious impacts to the community. An important factor in determining the magnitude of these impacts is defining the geographical area affected. The affected area might be a town, city, region, county, or some combination of these geographical units.

Equally important are the types of impacts that might occur. There could be both positive and negative impacts of UAA approval and rejection. There are no prescribed economic ratios or mandatory tests to evaluate socio-economic impacts. Instead, the relative magnitude of a group of indicators should be taken into account. For public sector entities, the applicant will need to estimate the change in socio-economic conditions that would occur as a result of compliance. Of particular importance are changes in factors such as median household income, unemployment, and overall net debt as a percent of full market value of taxable property. For private sector entities, the assessment of widespread impacts should consider many of the same socio-economic conditions. The analysis should also consider the affect of decreased tax revenues if the private sector entity were to go out of business, income losses to the community if workers lose their jobs, and indirect effects on other businesses.

In some instances, several entities potentially could suffer substantial impacts. For example, this situation can arise where several facilities are discharging to a stream segment that is being considered for a change in designated use. While a separate financial analysis should be performed for each facility, the impacts on all the facilities should be considered jointly in the analysis of widespread impacts.

5.5 Calculating the Economic Impacts

DEP recommends that applicants who wish to propose a UAA under Subparagraph 62-302.400(11)(c)6., F.A.C., follow guidance from U.S. EPA (USEPA, 1995) to assist in determining what controls are considered affordable and whether the costs would result in widespread economic and social hardship. Using this guidance is likely to result in a UAA submittal that contains the information DEP will need to evaluate if rulemaking is appropriate and provides economic data that will support a rulemaking and eventual approval by USEPA.

5.6 Addressing Sources (including structures) that Contribute to Impairment of a Waterbody

All sources of impairment to a waterbody must be addressed in the UAA. However, the emphasis on each source of impairment might differ, depending on the amount of impairment contributed by each source. If a single cause of impairment completely overshadows the effects of smaller sources, and modeling indicates that remediating the smaller sources of impairment would not result in a measurable increase in water quality, then for purposes of the economic analysis, it might be reasonable to only consider the large source.

5.7 Appropriate Time Frame for Considering Economic Impacts

As stated earlier, the time period for determining economic impacts influences the outcome of the analysis. DEP recommends that, in general, a longer time frame of 10-15 years be used in the analysis to allow for technological advances and/or increasing economic growth in the local area to be considered when calculating future attainability, unless the petitioner can justify the use of a shorter time period.

Appendix 1. Examples of Changing Use Designations

Example 1: Upgrading from Class III to Class I

DEP received a request from a utility authority to upgrade a freshwater portion of a major river from Class III to Class I. The submittal included water quality data and analyses, as well as environmental, social, and economic information, intended to demonstrate that:

- The proposed reclassification establishes the present and future most beneficial use of the waters;
- The proposed reclassification is in the public interest; and
- The proposed use is attainable.

Class I provides for the protection of a potable water supply suitable for human consumption (following conventional drinking water treatment methods), fish consumption, and full body contact. Class I requires that the waterbody maintain a level of water quality suitable for potable water or intended to be suitable after receiving conventional drinking water treatment.

Eleven stations in the river and tributaries were sampled quarterly for five years for the majority of water chemistry parameters listed in Rule 62-302.530, F.A.C, with specific attention to those criteria that are different between Class I and Class III waters. With two exceptions, adverse substances were never detected, however, bacteria and fluoride exceeded their Class I criteria two and eight times, respectively. The bacteria exceedances were insufficient to deem the waterbody impaired via the criteria outlined in Chapter 62-303, F.A.C., however, the fluoride levels were an issue.

A study to determine the source of the fluoride indicated that it was leaching from the local soils, especially when they were disturbed by human activities. The utility authority stated that the fluoride would not interfere with their ability to deliver a safe product to the public, since they could blend the river water with other sources (a conventional practice) and ensure that the drinking water standard for fluoride was consistently met in the delivery system.

Three point sources discharge into tributaries of the river. Two of these point sources are domestic wastewater facilities that also reuse a portion of their reclaimed water to irrigate local golf courses and parks. Travel time studies (using dye tracers during a variety of flow conditions) indicated that the shortest travel time to the proposed intake of the water treatment plant complied with the requirements for point source discharges upstream of a drinking water intake (Chapter 62-600, F.A.C.). Additionally, it was determined that the reclaimed irrigation water was sprayed at a sufficient distance from the proposed Class I waters.

An economic study determined that alternate methods (*e.g.,* reverse osmosis of ground water) to obtain the drinking water for the local population would be considerably more expensive than the surface water source, and that the impact from the proposed reclassification on local business was negligible. At public meetings, people expressed the desire to find new drinking water sources without increasing costs to consumers.

The submittal answered the following questions:

1. Current designated use: Class III.
2. Desired use: Class I.
3. Existing use: Swimming and fishing are individual uses that are protected under both Class I and Class III, and they are existing uses on this waterbody. Drinking water source is an existing use because the utility was granted a permit from the Water Management District to withdraw water from the waterbody to provide the public with drinking water.
4. Highest attainable use: The waterbody would be considered impaired under Class I water quality criteria due to excessive fluoride in the water, but it meets all other criteria specific to Class I. The utility has demonstrated that the fluoride, using conventional treatment (blending), resulted in a useable drinking water product, therefore a Type II SSAC for fluoride was appropriate. This waterbody is downstream from several point source discharges, but all rule requirements regarding those sources are satisfied. Thus, the Class I use is attainable.
5. Economic analysis: Use of this waterbody for drinking water would not incur any costs to the local communities or end users because no treatment above conventional treatment methods is necessary. Indeed, other drinking water sources would be far more costly to the end users, so this reclassification is economically beneficial.
6. Public input: This potable water source is needed due to a growing population in the area and a desire to seek out new sources while keeping costs low. There are no objections from the public.
7. Consideration of upstream waters: The water within the proposed area will meet all Class I criteria except for fluoride. The utility authority showed that they can meet that criterion within their process, so the reclassification will have no impact on upstream users.

Based upon the data provided, DEP determined that the proposed reclassification to Class I was justified. Additionally, the new potable water use is clearly needed and in the public interest. The ERC and EPA approved the reclassification and associated SSACs.

Example 2: Upgrade from Class III to Class II

DEP received a request from the Department of Agriculture and Consumer Services to upgrade an estuarine bay from Class III to Class II. The submittal included water quality, biological data and analyses, as well as environmental, social, and economic information, intended to demonstrate that:

- The proposed reclassification establishes the present and future most beneficial use of the waters;
- The proposed reclassification is in the public interest; and
- The proposed use is attainable

Class II provides for the protection of shellfish harvesting for human consumption, fish consumption, and full body contact. Protection of shellfish consumption involves maintaining a level of water quality that will prevent unpalatable flavor or accumulation of substances harmful to human health in shellfish tissue. The main criteria of interest are fecal coliforms, fluoride, and manganese.

The bay in question was the subject of a watershed restoration effort, and homes in the basin had recently been transferred from using septic tanks for domestic wastewater disposal to an advanced wastewater treatment facility that has no surface water discharge. Seven stations in

the bay were sampled semi-monthly for two years for the majority of the water chemistry parameters listed in Rule 62-302.530, F.A.C. Adverse substances were never detected, and in particular, bacteria levels routinely complied with Class II criteria.

There was public support expressed in favor of harvesting oysters from the bay, and an economic analysis indicated that because of the recent restoration efforts, there would be no additional costs to upgrade the waterbody. The bay has three marinas, and their owners expressed concern that they would not be able to maintain safe marina conditions under current dredging permits. Areas around the marinas were excluded from the petition.

The submittal answered the following questions:

1. Current designated use: Class III.
2. Desired use: Class II.
3. Existing use: Swimming and fishing are individual uses that are protected under both Class III and Class II, and they are existing uses on this waterbody. Shellfish harvesting has been discouraged in this bay since 1975 because of concerns that it was unsafe due to wastewater from septic tanks.
4. Highest attainable use: Due to recent restoration efforts and removal of the septic tanks, the bay can meet the criteria that protect Class II waters. The petitioners identified three marinas in the bay where dredging is permitted and shellfish harvesting would be unsafe. Shellfish populations are healthy in the bay, so the Class II classification is attainable, except in excluded areas around the marinas.
5. Economic analysis: This reclassification would benefit the region economically through added shellfishing capability, and would not cost any money because the bay has already been restored.
6. Public input: Once the marinas were considered, there was no public opposition.
7. Consideration of upstream waters: There are no permitted uses of upstream waters that will be impacted by this use change.

DEP determined that the Class II designation was in the public interest and attainable, and granted the petition. The ERC and EPA approved the reclassification and associated SSACs.

Example 3: Downgrading from Class III to Class III-Limited

A stakeholder group petitioned DEP to downgrade a group of canals with similar characteristics within a limited geographic region. The submittal included appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses, as well as environmental, social, and economic studies, intended to demonstrate that:

- The proposed reclassification establishes the present and future most beneficial use of the waters;
- The proposed reclassification is in the public interest;
- The reclassification will not lower existing water quality and water quality standards of downstream waters will be protected.
- The proposed use is attainable;
- None of the uses being removed are existing uses;
- The uses to be removed will not be attained by implementing effluent limits required by Sections 301(b) and 306 of the Federal Clean Water Act in conjunction with

implementation of cost-effective and reasonable best management requirements for nonpoint source pollution control; and

- One or more of the criteria from Paragraph 62-302.400(11)(c) apply.

Class III-Limited provides for propagation and maintenance of a limited population of fish and wildlife, and potentially, for limited recreation. Class III-Limited recognizes that changes in biological structure and function have occurred, resulting in an altered aquatic community. Biological diversity may be restricted due to habitat limitations, hydrologic modifications, physical alterations, or other factors listed in Paragraph 62-302.400(11)(c), F.A.C**.** A Class III-Limited designation allows a petitioner to propose SSACs for nutrients (including nutrient response variables), bacteria, biological integrity, dissolved oxygen, alkalinity, specific conductance, transparency, turbidity, and/or pH.

Sampling for Stream Condition Index (SCI), Rapid Periphyton Survey (RPS), Habitat Assessment, and water quality was conducted at 12 locations that are representative of canals in the area. All sampling and analysis were done in accordance with the DEP Quality Assurance Rule (Chapter 62-160, FAC) and DEP Standard Operating Procedures. The sampling was conducted on four occasions, each six months apart, under a variety of flow conditions (while following the SCI SOP water level restrictions rigorously). The table below summarizes portions of the data:

Site	SCI Average	RPS Rank Average	Habitat Assessment Average	TP (mg/L)	TN (mg/L)	Minimum DO (mg/L)	Conductivity (µmhos/cm)
1	10	0.5	67	0.09	1.8	4.2	330
2	23	1.5	55	0.113	1.7	3.3	420
3	7	0.5	62	0.128	1.5	3.8	390
4	15	0.5	72	0.112	1.7	4.3	375
5	17	0.5	68	0.097	2.0	3.8	420
6	21	1.0	59	0.123	1.9	3.9	460
7	5	0.5	53	0.112	1.5	4.1	510
8	13	1.0	61	0.110	1.5	3.3	660
9	19	1.0	63	0.134	2.0	3.5	720
10	6	1.5	59	0.154	1.9	3.9	850
11	13	0.5	67	0.210	1.9	4.5	790
12	15	2.0	55	0.190	1.7	4.9	850

NOTE: Possible SCI scores = 0-100, RPS ranks = 0-5, Habitat Assessment = 8-160 points.

Note that the SCI routinely failed the “healthy” threshold of 40. Priority pollutant data were available at several sites and did not indicate any toxins that could cause the low SCI scores. The low SCI scores were associated with poor habitat quality (which was regularly in the “marginal” category (<80)). The canals are channelized, created from uplands, and are maintained for flood control purposes. Habitat (aquatic vegetation, trees) is purposely removed to maintain the canals ability to carry high flows during flood conditions. The riparian zone is devoid of trees and is mowed periodically, and the system is box-cut, with steep banks and little submersed habitat. While nutrients were moderately higher than expected for a Class III waterbody, excess algal growth was not an issue. The minimum DO was routinely below 5.0 mg/L due to the morphologic modification, and conductivity was moderately elevated due to the stormwater carried in the canals. The watershed was assessed for hydrologic modifications, and overall, scored 7 on the Hydrologic Modification Index, meaning ditching and control structures did occur in fairly high amounts. Some fish data were available from angler and

FFWCC surveys, and indicated that several age classes of largemouth bass and sunfish lived in the canals. However, no information indicated that the canals ever supported an aquatic community of higher quality than what currently occurs.

Swimming is a common activity in the canals, so Class III bacterial levels must be maintained.

Several public meetings were held in the project vicinity, and although individuals stressed they wanted to continue to fish from and swim in the canals (maintaining the current human use, Class III, which would also be protected by this Class III-Limited petition), the community was primarily interested in maintaining the flood control function of the waterway. An economic analysis indicated that it would require over $75 million to reshape the canals and that this action would compromise the flood control use, causing hundreds of acres and homes to flood.

The submittal answered the following questions:

1. Current designated use: Class III.
2. Desired use: Class III-Limited.
3. Existing use: Although the SCI scores were below the expectation for a Class III stream, the macroinvertebrate collections and thriving fishery indicates that Class III-Limited uses are currently attained. These waterways were created from uplands for flood control prior to 1975, and petitioners could find no evidence suggesting that a higher aquatic life use has ever been attained in these canals. The existing use provides for a limited aquatic community.
4. Highest attainable use: Maintenance of the canals for flood control and their box-cut morphology preclude the presence of the good habitat and hydrology necessary to support the current designated use of Class III. Water flow and habitat are not sufficient to support sensitive invertebrates, and habitat is not sufficient to support all age classes of fish. Class III-Limited is the highest attainable use, given the concurrent flood control use and the artificial nature of the canals. With the exception of nutrients and DO, water quality is sufficient to meet other criteria for Class III. Subparagraphs 62-302.400(11)(c)3.,4.,and 5., F.A.C., apply.
5. Economic analysis: The cost to alter these canals to support aquatic life of Class III is prohibitive, as is the potential cost to homeowners if the flood control function of the canals is not maintained.
6. Public input: Flood control from this waterway is critical to the public. Members of the public also are very interested in maintaining the current fishery, which would be protected by Class III-Limited criteria and no change to the human use.
7. Protection of downstream waters: Downstream water quality standards are currently met and would not be impacted under the proposed SSACs because the SSACs do not allow any degradation from existing water quality conditions.

Based upon the information, DEP determined that no existing uses would be removed, water quality was not limiting aquatic life in the canals, and that the criteria concerning hydrologic modification and physical alterations contained in 40 CFR 131.10(g) applied, and that the Class III-Limited classification was appropriate for the waterbody.

The petitioner proposed Site Specific Alternative Criteria (SSACs) for parameters that did not meet the Class III criteria (dissolved oxygen, total phosphorus, and total nitrogen), consistent with Subsection 62-302.400(12) and Rule 62-302.800, F.A.C. The existing levels of these parameters in the waterbodies were inherently protective of the existing aquatic life use, so the proposed SSACs were based on the distribution of all available data. The petitioner

demonstrated that the downstream waters were fully meeting their designated uses, and that if current water quality conditions in the canals continued, then those downstream waters would be protected. The ERC and EPA approved the reclassification and associated SSACs.

Example 4: Downgrading from Class III to Class III-Limited

A city petitioned DEP to downgrade a group of concrete lined, urban drainage ditches with similar characteristics, within a limited geographic region (city limits). The submittal included appropriate and scientifically defensible water quality, biological, hydrological, and habitat studies and analyses, as well as environmental, social, and economic studies, intended to demonstrate that:

- The proposed reclassification establishes the present and future most beneficial use of the waters;
- The proposed reclassification is in the public interest;
- The reclassification will not lower existing water quality and water quality standards of downstream waters will be protected.
- The proposed use is attainable;
- None of the uses being removed are existing uses;
- The uses to be removed will not be attained by implementing effluent limits required by Sections 301(b) and 306 of the Federal Clean Water Act in conjunction with implementation of cost-effective and reasonable best management requirements for nonpoint source pollution control; and
- One or more of the criteria from Paragraph 62-302.400(11)(c) apply.

Class III-Limited provides for the protection of a limited aquatic community and potentially, for limited recreation Biological diversity may be restricted due to habitat limitations, hydrologic modifications, physical alterations, or other factors listed in Paragraph 62-302.400(11)(c), FAC, and the system may be too shallow for full contact recreation.

Sampling for Stream Condition Index, Rapid Periphyton Survey, Habitat Assessment, and water quality was conducted at 12 locations that are representative of drainage ditches in the area. All sampling and analysis were done in accordance with the DEP Quality Assurance Rule (62-160 FAC) and DEP Standard Operating Procedures. The sampling was conducted on four occasions, each six months apart, under a variety of flow conditions (while following the SCI SOP water level restrictions rigorously). Most of the sites were commonly dry after several weeks without rain. The table below summarizes the data:

Site	SCI Average	RPS Rank Average	Habitat Assessment Average	TP (mg/L)	TN (mg/L)	Minimum DO (mg/L)	Conductivity (µmhos/cm)
1	10	0.5	33	0.09	1.8	5.2	430
2	13	1.5	39	0.113	1.7	6.3	420
3	7	0.5	37	0.128	1.5	5.8	390
4	5	0.5	33	0.112	1.7	5.3	475
5	7	0.5	27	0.097	2.0	4.8	420
6	0	1.0	25	0.123	1.9	4.9	460
7	5	0.5	23	0.112	1.5	5.1	510
8	13	1.0	29	0.110	1.5	5.3	660

9	9	1.0	22	0.134	2.0	4.5	720
10	6	1.5	34	0.154	1.9	4.9	850
11	11	0.5	19	0.210	1.9	5.5	790
12	8	2.0	25	0.190	1.7	5.9	850

NOTE: Possible SCI scores = 0-100, RPS ranks = 0-5, Habitat Assessment = 8-160 points.

Note that the SCI routinely failed the "healthy" threshold of 40. Priority pollutant data were available at several sites and did not indicate any toxins that could cause the low SCI scores. The low SCI scores were likely a direct result of the fact that habitat quality was regularly in the "marginal" category (<80). The concrete lined ditches are channelized, either created from uplands or drastic alterations of natural systems which occurred prior to 1975, and are maintained for flood control purposes. Habitat (aquatic vegetation, trees) is purposely removed to allow for optimal water flow during rain events. The hydrology of the system is flashy, with very high flows during rain events and stagnant, low flow during the majority of the time. Most riparian zones are devoid of trees and mowed periodically, and the systems are box-cut, with steep, concrete lined banks and little submersed habitat. While nutrients were moderate and algal growth and DO were not issues, the conductivity was moderately elevated. The watershed was assessed for hydrologic modifications, and scored 10 on the Hydrologic Modification Index, meaning ditching was extensive and the entire system was modified for flood control purposes. Although the area likely supported a healthier aquatic community historically, the ditching occurred during the 1940s and the current depauperate condition represents what was in existence in 1975. Therefore, the information indicated that no uses that existed during 1975 would be removed.

Because full body contact is precluded by the shallow depths, a risk assessment determined that the threat of illness was an order of magnitude lower than if full body contact were possible. The petitioners proposed a SSAC for bacteriological indicators consistent with EPA's recommendation given a higher risk allowance.

Several public meetings were held in the project vicinity, and few individuals expressed concern over the reclassification. None of the attendees had ever observed or heard accounts of anyone swimming in this ditches or engaging in any activities in which they might accidentally ingest the water, but there were recreational activities in downstream waters. An economic analysis determined that it would require over $250 million to create numerous stormwater treatment facilities to achieve the Class III bacteria criteria within the ditch system, but only $11.5 million to treat the stormwater to Class III-Limited levels before it entered downstream 'swimmable" waters.

The submittal answered the following questions:

1. Current designated use: Class III.
2. Desired use: Class III-Limited.
3. Existing use: These sites consistently failed the SCI due to poor habitat and flashy hydrology. From 1975 to present, the ditches have not supported a community that resembles a healthy condition. Full contact recreation is not possible due to the shallow depths.
4. Highest attainable use: Subparagraphs 3, 4, 5, and 6 from Paragraph 62-302.400(11)(c), F.A.C., apply. Maintenance of the ditches for flood control and their concrete nature preclude the presence of the good habitat and hydrology necessary to support the current designated use of Class III. Water flow and habitat are not sufficient to support sensitive invertebrates or all age classes of fish. There is often insufficient

water to support any aquatic life or any recreational uses, making Class III-Limited the highest attainable use. Water quality is sufficient to meet all Class III criteria except bacteria, and the waterbodies are expected to meet the proposed SSAC for bacteria.

5. Economic analysis: The potential cost to homeowners if the flood control function of the ditches were not maintained would be prohibitive.
6. Public input: Flood control from these waterways is critical to the public. Several members of the public were against the idea of downgrading in general, but agreed that they did not want to spend public money to protect healthy communities of aquatic life in ditches where those communities do not occur.
7. Protection of downstream water: These ditches empty to city-maintained holding ponds before the water leaves the city, and the ponds ensure that water quality will meet Class III criteria before leaving the city.

DEP determined that the Class III-Limited classification was appropriate for the waterbody because no existing uses would be removed and downstream waters would be protected. The ERC and EPA approved the reclassification and associated SSACs.

Example 5: Maintaining Class III, but adopting a Type I SSAC

An environmental group wants to provide enhanced protection for a river in the Florida panhandle, including several key tributaries. Following the Type I SSAC provisions, the group collects water quality, biological, hydrological, and habitat data, intended to demonstrate the natural background conditions associated with the waterbodies, and establish protective Type I SSACs for key parameters.

The environmental group researched historical bioassessment results and finds that DEP conducted bioassessments (Stream Condition Index [SCI], Rapid Periphyton Survey [RPS], and Habitat Assessment) and water quality sampling at eight locations, with four stations in the river and four in key tributaries. All sampling and analysis was done in accordance with the DEP Quality Assurance Rule (Chapter 62-160, FAC) and DEP Standard Operating Procedures. The sampling was conducted on four occasions, each six months apart and under a variety of flow conditions (while following the SCI SOP water level restrictions rigorously). The table below summarizes portions of the data:

Site	SCI Average	RPS Rank Average	Habitat Assessment Average	TP (mg/L)	TN (mg/L)	Minimum DO (mg/L)	Conductivity (µmhos/cm)
1	73	0.5	131	0.05	0.8	5.7	49
2	65	1.5	126	0.06	0.7	6.3	54
3	81	0.5	134	0.05	0.9	6.7	76
4	67	0.5	141	0.07	0.6	6.4	43
5	83	0.5	128	0.09	0.8	6.9	80
6	68	1.0	132	0.07	0.5	6.5	67
7	75	0.5	122	0.05	0.7	5.9	76
8	45	1.0	137	0.06	0.6	6.0	398

NOTE: Possible SCI scores = 0-100, RPS ranks = 0-5, Habitat Assessment = 8-160 points.

Note that all SCI data (except site 8) were above the threshold of 64 for “exceptional” biological communities, and that low levels of algae were present (RPS rankings indicated that benthic

algae were not visible). Also, the habitat quality was routinely in the “optimal” category (>120), nutrients were moderate, the DO was routinely higher than 5.0 mg/L, and conductivity was below 100 µmhos/cm (except at site 8, which was subjected to urban stormwater runoff).

The watershed was also assessed for hydrologic modifications, and overall, scored 2.5 on the Hydrologic Modification Index. Although there were some moderately intense land uses in the basin, a wide riparian zone (generally >100 m), as evidenced by the habitat assessment scores, consisted predominantly of native forest.

Literature information and existing water quality data suggest that maintaining the low conductivity in the waters would be especially conducive to supporting the exceptionally healthy community. Therefore, a SSAC for specific conductance was proposed and granted by DEP for river and tributary reaches upstream and including Site 7 to protect the existing exceptional aquatic community. As the SSAC did not include the portion of the stream where conductivity was elevated due to stormwater discharges, there were no expected costs associated with the upgrade.