

Recreational Use-Attainability Analyses (RUAAs)
Procedures for a Comprehensive RUAA and a Basic RUAA Survey
May 2009

Purpose

The purpose of this document is to provide the procedures for conducting a Comprehensive Recreational Use-Attainability Analysis (RUAA) and a Basic RUAA Survey (which is part of a Comprehensive RUAA) on unclassified and classified rivers and streams. UAAs are assessments of the physical, chemical, biological, and economic factors affecting attainment of a water body use (40 Code of Federal Regulations § 131.10(g)). UAAs are used to identify and assign attainable uses and criteria to individual water bodies. Applicable uses and associated criteria are defined in the Texas Surface Water Quality Standards (TSWQS) 30 Texas Administrative Code 307.1-307.10. Presumed recreational uses of unclassified water bodies are described in 307.4(j). Designated uses for classified water bodies are listed in Appendix A of the TSWQS. Data collection for a RUAA may be conducted by the Texas Commission on Environmental Quality (TCEQ), river authorities, local governments, or other interested water quality-related organizations.

2000 TSWQS and 2010 TSWQS Revision

Texas currently has two recreation use categories in the 2000 TSWQS: contact and noncontact recreation. The TCEQ is considering major TSWQS revisions, which include additional subcategories of recreational uses. The following potential recreational use categories are under consideration: primary contact, secondary contact 1 and 2, and noncontact recreation. These proposed use categories are detailed in the draft rule language for the proposed 2010 TSWQS revisions and are also included below. The potential options under consideration for the 2010 TSWQS Revision have been discussed in Water Quality Standards Advisory Workgroup Meetings.

2000 TSWQS Definitions

- Contact recreation: Recreational activities involving a significant risk of ingestion of water, including wading by children, swimming, water skiing, diving, and surfing.
- Noncontact recreation: Aquatic recreational pursuits not involving a significant risk of water ingestion; including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity.

Draft Definitions (2010 TSWQS Revision)

- Primary contact recreation: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.
- Noncontact recreation: Activities, such as ship and barge traffic, birding, and using hike and bike trails near a water body, not involving a significant risk of water ingestion, and where primary and secondary contact recreation should not occur because of unsafe conditions.

Unclassified Rivers and Streams

2000 TSWQS: Contact recreation is presumed as a use for all unclassified waters.

Draft 2010 TSWQS Revisions: The draft language provided to the Water Quality Standards Advisory Workgroup considers primary contact recreation as a presumed use. One option under consideration for rivers and streams is that secondary contact recreation 1 could be presumed to apply to rivers and streams where (1) water recreation can occur, but the nature of the recreation does not involve a significant risk of ingestion, and (2) where a Basic RUAA Survey demonstrates that primary contact recreation is unlikely to occur. In addition, the draft language includes the minimum following characteristics that would have to be demonstrated for a presumed use of secondary contact recreation 1 to apply to rivers and streams where: (1) during base flow conditions, the average depth at the thalweg (mid-channel) is less than 0.5 meters, and there are not substantial pools with a depth of 1 meter or greater, and (2) there are not existing recreational activities that create a significant risk of ingestion or a use for primary contact recreation. For the purposes of the RUAA, base flow conditions are considered as sustained or typical dry, warm weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather.

Assigning a presumed secondary contact recreation 1, which is less stringent than primary contact recreation 1, may require TCEQ to provide public notice, public comment, and EPA review and approval.

A recreational use that is less stringent than applicable presumed uses can only be assigned to a water body for regulatory purposes after that use is designated for an individual water body in the TSWQS and approved by EPA. Support for changing a use less stringent than a presumed use requires a Comprehensive RUAA that supports the designation and that meets at least one of the six reasons for changing a use in 40 Code of Federal Regulations 131.10(g).

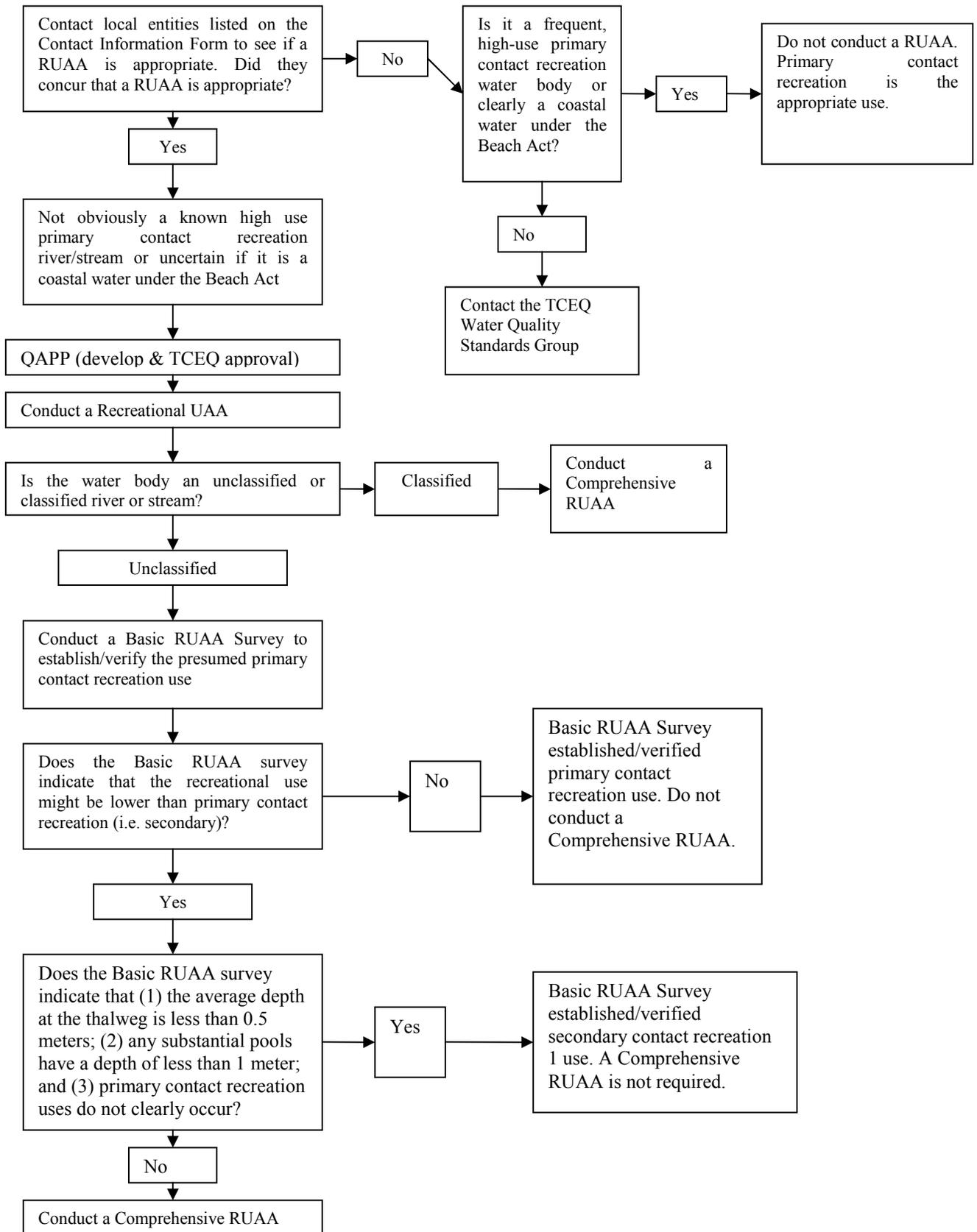
Classified Rivers and Streams

Designated recreational uses for classified water bodies are located in Appendix A of the TSWQS. A change to a designated use requires a revision in the TSWQS that is adopted by TCEQ and approved by EPA. Support for changing a use less stringent than the applicable designated use requires a Comprehensive RUAA that supports the designation and that meets at least one of the six reasons for changing a use in 40 Code of Federal Regulations 131.10(g).

Applicability

The procedures for a Comprehensive RUAA and a Basic RUAA Survey contained in this document may be used for unclassified and classified rivers and streams. A Basic RUAA Survey is conducted to (1) collect information on a water body, such as the presence or absence of water recreation activities, stream flow type, stream depth, (2) establish/verify a presumed use, or (3) provide core information to be included in a Comprehensive RUAA. Basic RUAA surveys can be conducted on a relatively small unclassified water body that is evaluated during conditions amenable for contact recreation and can often be accomplished on a single sampling date. A Comprehensive RUAA, which includes information from a Basic RUAA Survey, is required for classified water bodies or where presumed uses for unclassified water bodies may be inappropriate. It is an expanded effort requiring two or more field observation trips and a historical data review. A flow chart of the RUAA process for rivers and streams is provided in Figure 1.

Figure 1: Flow Chart of RUAA Process for Rivers and Streams



If the Basic RUAA Survey and/or Comprehensive RUAA determine that a water body meets its presumed or designated recreational use, then that use will continue to apply. In cases where a Basic RUAA Survey indicates that the existing use for recreation might be lower than the presumed primary contact, secondary contact recreation 1, or designated recreational use, then a Comprehensive RUAA is required to fully evaluate the appropriate use. In order for a recreational use that is less stringent than a designated or presumed use to apply to a water body, the applicable use must be explicitly assigned to an individual water body in the TSWQS and approved by the Environmental Protection Agency (EPA).

Coordination with Local Entities and TCEQ

Prior to the beginning of a Comprehensive RUAA or a Basic RUAA Survey, any person or entity wanting to conduct a RUAA should notify the TCEQ Water Quality Standards staff about the proposed RUAA project to determine if a RUAA would be appropriate on the water body in question. There may be some instances where a Comprehensive RUAA or Basic RUAA Survey would not be needed for certain water bodies (e.g. where frequent, primary contact recreation activities clearly occur, or if primary contact recreation applies to a coastal water under the Beaches Environmental Assessment and Coastal Health Act of 2000 (the Beach Act)).

The Water Quality Standards Group will coordinate with other TCEQ water programs (Clean Rivers, Surface Water Quality Monitoring, Total Maximum Daily Load, Non-Point Source and the Standards Implementation) about the proposed RUAA project. The investigator should also consult with Water Quality Standards staff to determine (1) RUAA procedures that should be used, (2) RUAA forms, (3) the appropriate number of sampling sites and events, and (4) when it is uncertain whether or not a tidal stream or river is directly governed by the Beach Act.

An important part of the RUAA planning process is to coordinate with local authorities in the watershed. Prior to the beginning of a Comprehensive RUAA or a Basic RUAA Survey, any person or entity wanting to conduct a RUAA should coordinate with local authorities in the watershed, such as the Clean Rivers Partner (river authority and other local partners), regional staff of TCEQ and Texas Parks and Wildlife Department, and the Texas State Soil and Water Conservation Board to determine if a RUAA would be appropriate on the water body in question. Local authorities will be able to provide relevant information regarding the presence or absence of water recreation activities and a location where water recreation activities occur.

If there is a general consensus from the local entities and the TCEQ Water Quality Standards Group that a RUAA is appropriate, then proceed with the RUAA. The information obtained from local entities should be included in the Contact Information Form.

Quality Assurance/Quality Control

All Basic RUAA Surveys and Comprehensive RUAAs should be conducted in accordance with a TCEQ approved Quality Assurance Project Plan. QAPPs should be planned and developed so that the investigator can proceed from a Basic RUAA Survey to a Comprehensive RUAA, if necessary, without requiring an amendment to the QAPP.

Basic RUAA Survey

Basic RUAA Surveys are conducted to collect information on a water body. Activities include documenting the presence or absence of water recreation activities, stream flow type, and stream depth. In some cases, a Basic RUAA Survey may be accomplished on a single sampling date. However, the search for evidence on recreation use attainability in waters must be thorough, and

in many instances, will require a Comprehensive RUAA, which is an expanded effort including, but not limited to, multiple field observations trips.

In cases where a Basic RUAA Survey indicates the appropriate use for recreation might be lower than primary contact or secondary contact recreation 1, then a Comprehensive RUAA is required to fully evaluate the appropriate use.

If at any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the appropriate use for the water body the investigator can stop conducting the RUAA.

Sampling Conditions:

A Basic RUAA Survey and Comprehensive RUAA should be conducted during a normal warm season (air temperature greater than or equal to 70°F) during baseflow conditions. Baseflow conditions are defined as sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather. In circumstances where a RUAA is conducted in drought or wet weather conditions, additional information, provided by local entities, may be used as supporting documentation for the RUAA. Comprehensive RUAs and Basic RUAA Surveys aimed at determining recreational use should be performed during the period when people would be most likely to use the water body for contact recreational purposes (examples: Spring Break, weekends, holidays, and summer). In Texas, this period is typically March to October. Comprehensive RUAs and Basic RUAA Surveys should be conducted during optimal sampling conditions that are representative of the normal flow conditions of the stream and are not storm-influenced.

Site Reconnaissance:

A site reconnaissance should be conducted as the first step in a RUAA to select survey sites. The following information should be compiled using Geographic Information System (GIS) tools prior to and during site reconnaissance:

- a) Locate areas in which the water body is accessible to the public and have the highest potential for recreational use (road crossings, public lands/parks located near the water body, populated areas, federal and state parks, parks operated by the U.S. Army Corps of Engineers, river authorities, counties, cities, and private organizations).
- b) Compile useful supplemental information including the TCEQ GIS layer that shows the locations of Texas Pollution Discharge Elimination System (TPDES) wastewater treatment plants.
- c) Describe watershed characteristics.
- d) Describe hydrologic characteristics, such as stream type, stream flow, hydrologic alterations, etc.
- e) Locate proposed sites for data collection.
- f) Provide other relevant information.

Site Selection:

Survey sites should be located in areas where the water body is accessible to the public and has the highest potential for recreational use. The water body in question should have a minimum of three sites (water bodies with more stream miles should have more sites). Select more sites per geographic area for classified water bodies than for unclassified water bodies. These sites should be located at road crossings or other publicly accessible locations. They can be located upstream or downstream of a bridge crossing or access point. Ensure that the sites are as well spaced as possible. In general, choose three (3) sites per every five (5) miles of stream. If fewer than three (3) sites are accessible or if there are large gaps in accessibility along a longer stream, state the reason(s) why and fill in the gaps by coordinating with local authorities, conducting interviews, by gaining access permission from landowner's permission, and/or by devising some other

method of assessing the stream (topographic maps, aerial photos). If it is necessary to evaluate water bodies on private land, participants must secure the landowner's permission to access the sites (for each visit).

Contact List:

The TCEQ Water Quality Standards Group in the Chief Engineer's Office should be notified first about each proposed RUAA project. The Water Quality Standards Group will coordinate with other TCEQ water programs (i.e. Clean Rivers, Surface Water Quality Monitoring, Total Maximum Daily Load, Non-point Source and Standards Implementation) about the proposed RUAA project.

The Contact Information Form must be completed and included with the Basic RUAA Survey information submitted to the TCEQ. The organization proposing a Basic RUAA Survey must coordinate with regional authorities in the watershed, such as the Clean Rivers Partner (river authority and other local partners), regional staff of TCEQ and Texas Parks and Wildlife Department, and the Texas State Soil and Water Conservation Board. Information obtained from the local organizations should be included in the Contact Information Form. Confirm with the Water Quality Standards Group that all appropriate organizations have been contacted prior to the start of the RUAA.

Field Survey:

The Basic RUAA Survey field data sheets must be completed for each site.

Map:

At a minimum, a GIS map should include: a) stream name; b) the upstream and downstream limits of the stream reach assessed; c) all sites; d) wastewater treatment outfall locations obtained from the TCEQ GIS layer; e) cities/towns or other areas of population; f) major and minor roads and road crossings; g) public areas located near the water body (e.g. national, state, county, city, and local parks, parks operated by the U.S. Army Corps of Engineers, river authorities, and private entities, conservation or wildlife management areas campgrounds, national or state forests, public water recreation commercial operations); h) North Arrow; i) scale; j) access points in which the water body is accessible to the public and/or which areas have the highest potential for recreational use; k) on-channel impoundments; and l) locations referenced in interviews (if conducted).

Weather Conditions:

Provide a description of the current weather conditions and daily conditions for the past month. Attach rainfall data for approximately 30 days prior to fieldwork, and the source of the rainfall data to the Basic RUAA Survey Field Data Sheet.

Photographic Record:

A photographic record must be made of each site during the site survey and attached to the field data sheet. Photographs should include an upstream view, left and right bank views, downstream view (as described in the Field Data Sheets), any evidence of observed uses or indications of human use, hydrologic modifications, etc. Be sure to take photographs that clearly depict the entire channel and each location depth measurements were taken. Photos can show evidence of recreational use (e.g. rope swings) and actual recreation. Photos may also show a lack of use, such as dry creek beds. Photos need an obvious scale. Photographs must be cataloged in a manner that indicates the site location, date, view orientation and what is being shown. Provide a map showing where photos were taken and what direction photos were taken.

Report Content for Basic RUAA Surveys:

Results of a Basic RUAA Survey should be summarized and submitted in a TCEQ approved electronic format on a CD to the TCEQ for review. The summary packet should contain the following information:

- Short Summary of Basic RUAA Survey Results (include introduction, background information, and summary of uses observed or not observed)
- Contact Information Form
- Set of Field Data Sheets for Each Site
- Photographs with Map Legend
- Maps
- Weather Conditions Summary
- Interview Forms (if interviews were conducted)

If the Basic RUAA Survey results in a Comprehensive RUAA being conducted then submit the Basic RUAA Survey results as part of the Comprehensive RUAA report (refer to “Report Content for Comprehensive RUAAs” in the following section titled “Comprehensive RUAAs”).

Comprehensive RUAA

A Comprehensive RUAA is required on classified water bodies or where presumed uses for unclassified water bodies may be inappropriate. Two or more separate trips are usually appropriate for a Comprehensive RUAA. A Basic RUAA Survey is part of a Comprehensive RUAA.

In addition to the requirements previously discussed in the Basic RUAA Survey section, such as site selection, etc., a historical information review and interviews must be conducted for a Comprehensive RUAA.

If at any point during the Comprehensive RUAA it becomes apparent that primary contact recreation is clearly the use for the water body, then the investigator can stop conducting the RUAA.

Historical Information:

A thorough historical information review of the recreational uses of the water body back to November 28, 1975 should be conducted. This period of concern for establishing baseline conditions is in accordance with 40 CFR Part 131 (EPA standards regulation). Examine historical resources such as photographic evidence, museum collections, published reports, historical society records, and accounts of long term landowners. This review will provide a characterization of the historical uses of the given area.

Interviews:

Interviews from users present during the field survey, streamside landowners and local residents should be typically conducted in order to obtain information on existing and historical uses and stream type (e.g. ephemeral, intermittent, intermittent with perennial pools, perennial) of the water body in question. In cases where telephone interviews are conducted, the interviewee should have an adequate map during the interview for reference purposes. The Comprehensive RUAA Interview Form should be used when conducting interviews. If there are no individuals present to interview, please document the reasons why interviews were not conducted on the interview form. It is preferred that at least five interviews are conducted for each water body, but this may not always be feasible.

Report Content for Comprehensive RUAA's:

A RUAA report is required for Comprehensive RUAA's and should be submitted in an electronic format on a CD to the TCEQ for review. The report should contain the following information:

- Introduction
 - Problem statement
 - Objectives
- Study Area
 - Description of water body and designated uses and criteria
 - Environmental features and population characteristics
 - Watershed Characterization
 - Permitted discharges (Municipal, Industrial, Stormwater)
 - Potential nonpoint sources
 - Summary of historical information
 - Site reconnaissance summary
- Methodologies
 - Site descriptions
 - Sampling methods
 - Survey descriptions
 - Basic RUAA Survey
- Results and Discussions
- RUAA Summary Form
- References
- Appendices
 - Contact Information Forms
 - Field data sheets
 - Photographs
 - Maps
 - Rainfall Data
 - Interview Forms, if conducted

Comprehensive RUAA and Basic RUAA Survey Submittal Procedures

Basic RUAA Survey documentation and Comprehensive RUAA reports should be submitted to the TCEQ Water Quality Standards Group for review. A hard copy of these documents should be sent to:

(Project Lead Name)
Water Quality Standards Group
Texas Commission on Environmental Quality
P.O. Box 13087 MC-234
Austin, TX 78711-3087

Water Quality Standards staff will review the documents in order to ensure conformance with the TCEQ RUAA procedures and to determine if a change in the recreational use is justified. If the RUAA indicates that the recreational use is less stringent than the designated or presumed use, the TCEQ will submit the RUAA to EPA Region 6 for review and preliminary approval. In order to assign a recreational use that is less stringent than a designated or presumed use, the applicable use must be explicitly assigned to an individual water body in the TSWQS during the triennial revision process and be approved by EPA. These water bodies will be individually listed in §307.10 of the TSWQS whenever the water quality standards are revised.

If the RUAA is conducted as part of a contract requirement, the contractor should submit RUAA's to the contracting entity (e.g. Total Maximum Daily Load Team, Clean Rivers Program, etc.). The contracting entity will submit the RUAA to the Water Quality Standards Group.

Contact Information Form

Contact Information Form

(This form should be completed prior to conducting a Basic RUAA Survey and/or Comprehensive RUAA. The TCEQ Water Quality Standards Group will not consider or review a RUAA unless the appropriate entities listed below have been notified prior to the beginning of a RUAA. A RUAA should not be conducted until you have received a Notice to Proceed from the TCEQ Water Quality Standards Group.)

River or stream name: _____

Ask the contacts if a recreational use-attainability analysis is appropriate for the river or stream and check Yes or No below. Document the name of the person contacted and the date they were notified about the proposed RUAA project.

Required Local Contacts:

Clean Rivers Partners (River Authority and other local partners)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date Notified: _____
	Name: _____	
Texas Parks and Wildlife Department region staff	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date Notified: _____
	Name: _____	
TCEQ region staff	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date Notified: _____
	Name: _____	
Texas State Soil Water Conservation Board	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date Notified: _____
	Name: _____	

Suggested Additional Local Contacts (*Ask the contacts if a recreational use-attainability analysis is appropriate for the river or stream and check Yes or No below. If contacted, include information regarding notification date and person contacted on a separate page and attach it to this form*):

Local Parks and Recreation Departments	<input type="checkbox"/> Yes <input type="checkbox"/> No
Local Government/Jurisdiction	<input type="checkbox"/> Yes <input type="checkbox"/> No
Local Recreation Groups	<input type="checkbox"/> Yes <input type="checkbox"/> No
Conservation Groups	<input type="checkbox"/> Yes <input type="checkbox"/> No
Local County Extension Agent	<input type="checkbox"/> Yes <input type="checkbox"/> No
Watershed Groups	<input type="checkbox"/> Yes <input type="checkbox"/> No
Long-term Landowners/Adjacent Landowners	<input type="checkbox"/> Yes <input type="checkbox"/> No
Texas Stream Team	<input type="checkbox"/> Yes <input type="checkbox"/> No
Canoe Clubs	<input type="checkbox"/> Yes <input type="checkbox"/> No
City Commissioners Office	<input type="checkbox"/> Yes <input type="checkbox"/> No
Real estate agents	<input type="checkbox"/> Yes <input type="checkbox"/> No
Local non-profits	<input type="checkbox"/> Yes <input type="checkbox"/> No
City/county offices (Engineer, Health, Law Enforcement)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Flood control districts	<input type="checkbox"/> Yes <input type="checkbox"/> No
Councils of Government	<input type="checkbox"/> Yes <input type="checkbox"/> No
TPWD Game Warden	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No

Contact Information Form (continued)

(should be completed prior to conducting a Basic RUAA Survey and/or Comprehensive RUAA)

Draft Definitions (2010 TSWQS Revision)

- Primary contact recreation: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.
- Noncontact recreation: Activities, such as ship and barge traffic, birding, and using hike and bike trails near a water body, not involving a significant risk of water ingestion, and where primary and secondary contact recreation should not occur because of unsafe conditions.

Information from Local Contacts:

1. If any entity answered no, please have them list the reason(s) why:

2. Did the local entities confirm that primary contact recreation activities frequently occur? Yes No
Please describe how often the activities occur? Unknown Never Daily Monthly Yearly
If no, explain: _____

3. Did the local entities confirm that secondary contact recreation 1 activities frequently occur? Yes No
Please describe how often the activities occur? Unknown Never Daily Monthly Yearly
If no, explain: _____

4. Did the local entities confirm that secondary contact recreation 2 activities frequently occur? Yes No
Please describe how often the activities occur? Unknown Never Daily Monthly Yearly
If no, explain: _____

5. Did the local entities confirm that noncontact recreation activities frequently occur? Yes No
Please describe how often the activities occur? Unknown Never Daily Monthly Yearly
If no, explain: _____

6. Do the local entities know if this water body provides substantial flow to a water body with primary contact recreation activities (e.g. swimming in a state/local park) or a bathing beach that is located immediately downstream? Yes No Unknown
If yes, have the local entities provide the name of the water body and a description of the location of the primary contact recreation uses or bathing beach.

Notify TCEQ Water Quality Standards Group (required):

Send an e-mail notification to the TCEQ Water Quality Standards Group at standards@tceq.state.tx.us.

Notified: Yes No

Date Notified by e-mail: _____

Date TCEQ WQS E-mail Response Received: _____

WQS Group Contact Person Providing Response: _____

Did the WQS Group provide a Notice to Proceed with the RUAA? Yes No

Field Data Sheets

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____
Date: _____ Time: _____

B. Primary Contact Water Recreation Evaluation:

- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?

Yes No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

- | | | |
|--|---|--|
| <input type="checkbox"/> Wading-Children | <input type="checkbox"/> Tubing | <input type="checkbox"/> No primary contact activities that commonly occur were observed |
| <input type="checkbox"/> Wading-Adults | <input type="checkbox"/> Surfing | |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> Whitewater-kayaking, canoeing, rafting | |
| <input type="checkbox"/> Water skiing | <input type="checkbox"/> Other: _____ | |
| <input type="checkbox"/> Diving | <input type="checkbox"/> frequent public swimming-created by publicly owned land or commercial operations | |

b. Check the number of individuals observed at the site: None 1-10 11-20 20-50 greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.

- Water in mouth or nose of the individual Primary touch: Individual's body (or portion) immersed in water
 Secondary touch: fishing, pets and related contact with water Individual is in a boat touching water
 Individual is on shore near water within 8 meters (25ft) of water Individual is well away from water between 8 and 30 meters (100 ft) Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site?

C. Secondary Contact Water Recreation Evaluation:

- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.

- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? Yes No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

- Fishing
 Boating-commercial, recreational
 Non-whitewater-kayaking, rafting, canoeing
 No secondary contact recreation activities were observed
 Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____
Date: _____ Time: _____

b. Check the number of individuals observed at the site.

None 1-10 11-20 20-50 greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.

Secondary touch: fishing, pets and related contact with water In a boat touching water
 Body on shore near water within 8 meters (25ft) of water Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? frequently infrequently

Please describe how often the activities occur? Unknown Never Daily Monthly Yearly

4. If infrequently, what is the reason? physical characteristics of the water body limited public access
 other

If other, list reasons: _____

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____

Date: _____ FDS Page 3 of 8 _____

E. Stream Channel and Substantial Pool

Please check the following which best describes the river or stream: Wadeable Non-wadeable

1. Wadeable Streams

Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.

Photos #s (30 meters) Upstream _____ Downstream _____ Left Bank _____ Right Bank _____

Photos #s (150 meters) Upstream _____ Downstream _____ Left Bank _____ Right Bank _____

Photos #s (300 meters) Upstream _____ Downstream _____ Left Bank _____ Right Bank _____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b) Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____
 Date: _____ Time: _____

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? Yes No

COMMENTS:

2. Non-wadeable Streams

If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .

Photos #s (30 meters) Upstream ___ Downstream ___ Left Bank ___ Right Bank ___

Photos #s (150 meters) Upstream ___ Downstream ___ Left Bank ___ Right Bank ___

Photos #s (300 meters) Upstream ___ Downstream ___ Left Bank ___ Right Bank ___

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____
Date: _____ Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- | | |
|---|---|
| <input type="checkbox"/> Drinking or water in mouth | <input type="checkbox"/> Playing on shoreline |
| <input type="checkbox"/> Bathing | <input type="checkbox"/> Picnicking |
| <input type="checkbox"/> Walking | <input type="checkbox"/> Motorcycle/ATV |
| <input type="checkbox"/> Jogging/running | <input type="checkbox"/> Hunting/Trapping |
| <input type="checkbox"/> Bicycling | <input type="checkbox"/> Wildlife watching |
| <input type="checkbox"/> Standing | <input type="checkbox"/> None |
| <input type="checkbox"/> Sitting | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Lying down/sleeping | |

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? Yes No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- | | | | | |
|---------------------------------------|---|---|--------------------------------------|--|
| <input type="checkbox"/> Culverts | <input type="checkbox"/> Fences | <input type="checkbox"/> Log jams | <input type="checkbox"/> Rip rap | <input type="checkbox"/> Water control structure |
| <input type="checkbox"/> Barbed wire | <input type="checkbox"/> Dams | <input type="checkbox"/> Thick vegetation | <input type="checkbox"/> Low bridges | <input type="checkbox"/> None |
| <input type="checkbox"/> Utility pipe | <input type="checkbox"/> Other (specify): _____ | | | |

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Campgrounds | <input type="checkbox"/> Stairs/walkway | <input type="checkbox"/> Roads (paved/unpaved) | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Playgrounds | <input type="checkbox"/> Boating access (ramps) | <input type="checkbox"/> Populated area | <input type="checkbox"/> None of the Above |
| <input type="checkbox"/> Rural area | <input type="checkbox"/> Beach | <input type="checkbox"/> Docks or rafts | |
| <input type="checkbox"/> Residential | <input type="checkbox"/> Bridge crossing | <input type="checkbox"/> Commercial outfitter | |
| <input type="checkbox"/> National forests | <input type="checkbox"/> Commercial boating | <input type="checkbox"/> Nearby school | |
| <input type="checkbox"/> Urban/suburban location | <input type="checkbox"/> Trails/paths (hiking/biking) | <input type="checkbox"/> Power Line Corridor | |
| <input type="checkbox"/> Golf Course | <input type="checkbox"/> Paved parking lot | <input type="checkbox"/> Parks (national/city/county/state) | |
| <input type="checkbox"/> Sports Field | <input type="checkbox"/> Unimproved parking lot | <input type="checkbox"/> Public Property | |

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- | | |
|---|---|
| <input type="checkbox"/> Private Property | <input type="checkbox"/> Fence |
| <input type="checkbox"/> No trespass sign | <input type="checkbox"/> Barge/ship traffic |
| <input type="checkbox"/> Wildlife | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Steep slopes | <input type="checkbox"/> None of the Above |
| <input type="checkbox"/> No public access | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> No roads | |

Comments: _____

6. Check any indications of human use (Attach photos).

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Roads | <input type="checkbox"/> RV/ATV Tracks | <input type="checkbox"/> NPDES Discharge | <input type="checkbox"/> Organized event |
| <input type="checkbox"/> Rope swings | <input type="checkbox"/> Camping Sites | <input type="checkbox"/> Gates on corridor | <input type="checkbox"/> No Human Presence |
| <input type="checkbox"/> Dock/platform | <input type="checkbox"/> Fire pit/ring | <input type="checkbox"/> Children's toys | |
| <input type="checkbox"/> Foot paths/prints | <input type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Remnant's of Kid's play | |
| <input type="checkbox"/> Other: _____ | | | |

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name _____ Site: _____
Date: _____ Time: _____

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: absent rare common abundant
Algae Cover: absent rare common abundant
Odor: none rare common abundant
Color: clear green red brown black
Bottom Deposit: sludge solids fine sediments none other
Water Surface: clear scum foam debris oil
Other:

8. Vertebrates Observed within 300 meter reach

Snakes None slight presence moderate presence large presence
Water Dependent Birds None slight presence moderate presence large presence
Alligators None slight presence moderate presence large presence
Comments: _____

9. Mammals Observed within 300 meter reach

Wild None slight presence moderate presence large presence
Domesticated Pets None slight presence moderate presence large presence
Livestock None slight presence moderate presence large presence
Feral Hogs None slight presence moderate presence large presence
Comments: _____

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

Tracks Fecal droppings Bird nests

11. Garbage Observed

Large garbage in the channel None Rare Common Abundant
Small garbage in the channel None Rare Common Abundant
Bank Garbage None Rare Common Abundant
Briefly describe the kinds of garbage observed: _____

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? Yes No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Comprehensive RUAA Interview Form

Comprehensive RUAA Interview Form

Stream Name: _____ Segment #: _____ Site: _____

Interviewer's Name: _____

Date & Time (include AM or PM): _____

Interviewed: In person By phone By mail

No interviews were conducted

If no interviews were conducted, please provide an explanation:

*Are you willing to respond to a short survey about this stream? Yes No

If yes, complete contact information for the interviewee below. Do not collect name or contact information if interviewee is a minor. The contact information portion is not required if the interviewee does not want to provide this information.

Legal name: _____ Daytime phone number: _____

Mailing address: _____

Interviewee selected because (e.g., house adjacent to stream; standing by stream, etc.)

Questions:

1. Are you familiar with this stream? Yes No If yes, how many years? _____

If yes, proceed to #2. If no, stop here and do not conduct an interview.

2. Describe the location(s) of the stream reach the interviewee is familiar with:

3. Have the interviewer characterize the stream flow. Since the interviewer may not be familiar with TCEQ's definitions or distinction between the different water bodies, please refer to the definitions listed below when asking this question.

Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent. (Channel contains flowing water for only a portion of the year and surface water may be absent at times.)

Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second. (When not flowing, the water may remain in isolated pools.)

Perennial: A stream which flows continuously throughout the year. Perennial streams have 7Q2 equal to or greater than 0.1 cubic feet per second.

4. Have you or your family personally used the stream for recreation? Yes No

If yes, proceed to #6. If no, proceed to #5.

5(a). List reasons stream not used. _____

5(b). Proceed to #7.

Comprehensive RUAA Interview Form

Stream Name: _____ Segment #: _____ Site: _____

6.) How do you use the stream? When did these uses occur (e.g. year(s); season) and how often (times/year)? What location did these uses occur (get specific location and mark on a map)?

- Swimming Skin Diving Water Skiing Wind surfing Hunting Wading-Adults
 Tubing Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Wading-Children
-
-

7. Have you observed others using this stream for recreation? Yes No

If yes, proceed to #8. If no, proceed to #9.

8. What kinds of uses have you witnessed? When did you witness these uses occurring (e.g. year(s); season) and how often (times/year)? What location did these uses occur (get specific location and mark on a map)?

- Swimming Skin Diving Water Skiing Wind surfing Hunting Wading-Adults
 Tubing Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Wading-Children
-
-

9. Have you heard about anyone using this stream for recreation? Yes No

If yes, proceed to #10. If no, conclude the interview.

10. What kind of uses have you heard about? When did you hear that these uses occur (e.g. year(s); season) and how often (times/year)? What location did these uses occur (get specific location and mark on a map)?

- Swimming Skin Diving Water Skiing Wind surfing Hunting Wading-Adults
 Tubing Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Wading-Children
-
-

11. Can you recommend someone else we could contact that knows the stream? Yes No

If yes, list person's contact information: _____

12. Additional comments (from the interviewee or interviewer):

RUAA Summary Sheet

RUAA Summary
(Not part of the Field Data Sheet)

This form should be filled out after RUAA data collection is completed. Use the Contact Information Form, Field Data Sheets from all sites, Historical Information Review, and other relevant information to answer the following questions on the water body.

Name of water body: _____
Segment No. or Nearest Downstream Segment No.: _____
Classified?: _____
County: _____

1. Observations on Use

- a. Do primary contact recreation activities occur on the water body?
 frequently seldom not observed or reported unknown
- b. Do secondary contact recreation 1 activities occur on the water body?
 frequently seldom not observed or reported unknown
- c. Do secondary contact recreation 2 activities occur on the water body?
 frequently seldom not observed or reported unknown
- d. Do noncontact recreation activities occur on the water body?
 frequently seldom not observed or reported unknown

2. Physical Characteristics of Water Body

- a. What is the average thalweg depth? _____ meters
- b. Are there substantial pools deeper than 1 meter? yes no
- c. What is the general level of public access?
 easy moderate very limited

3. Hydrological Conditions (Based on Palmer Drought Severity Index)

- Mild-Extreme Drought Incipient dry spell Near Normal Incipient wet spell Mild-Extreme Wet