

Recreational Use-Attainability Analyses (RUAAs)
Procedures for a Comprehensive RUAA and a Basic RUAA Survey
March 2014

Purpose

The purpose of this document is to provide the procedures for conducting Recreational Use-Attainability Analyses (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. The TCEQ Water Quality Standards Group is responsible for the overall coordination and assignment of RUAAs. 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, in coordination with the TCEQ Water Quality Standards Group. The TCEQ Water Quality Standards Group should be coordinated with prior to the RUAA planning process to determine whether or not a RUAA is appropriate for a certain water body.

2010 TSWQS

Texas currently has four subcategories of recreational uses in the 2010 TSWQS: primary contact, secondary contact 1 and 2, and noncontact recreation. Primary contact recreation is presumed for lakes, reservoirs, and tidal water bodies. Primary contact recreation is presumed to apply to intermittent streams, intermittent streams with perennial pools, nontidal wetlands, and perennial freshwater streams and rivers, except where site-specific information indicates that recreational activities that involve a significant risk of ingestion have little to no likelihood of occurring. These use categories are defined in the 2010 TSWQS and are also provided below.

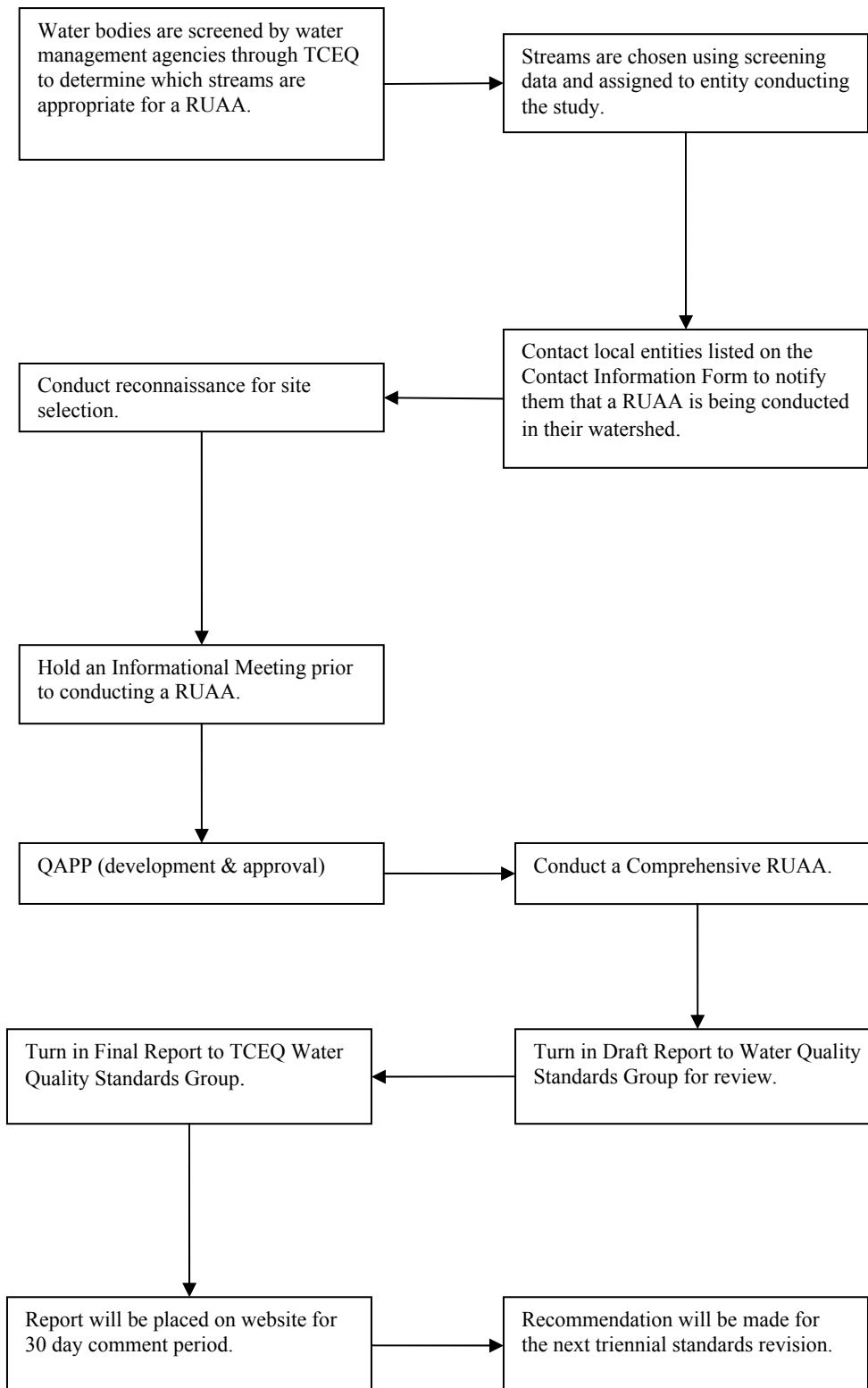
2010 TSWQS Definitions

- **Primary contact recreation**: Activities that are presumed to involve a significant risk of ingestion of water (e.g. wading by children, swimming, water skiing, diving, tubing, surfing, and the following whitewater activities: kayaking, canoeing, and rafting).
- **Secondary contact recreation 1**: Activities that commonly occur but have limited body contact incidental to shoreline activity (e.g. fishing, canoeing, non-whitewater kayaking and rafting, sailing, and motor boating). These activities are presumed to pose a less significant risk of water ingestion than primary contact recreation but more than secondary contact recreation 2.
- **Secondary contact recreation 2**: Activities with limited body contact incidental to shoreline activity (e.g. fishing, canoeing, non-whitewater kayaking and rafting, sailing, and motor boating) that are presumed to pose a less significant risk of water ingestion than secondary contact recreation 1. These activities occur less frequently than secondary contact recreation 1 due to physical characteristics of the water body or limited public access.
- **Noncontact recreation**: Activities that do not involve a significant risk of water ingestion, such as those with limited body contact incidental to shoreline activity, including birding, hiking, and biking. Noncontact recreation use may also be assigned where primary and secondary contact recreation activities should not occur because of unsafe conditions, such as ship and barge traffic.

Applicability

The procedures contained in this document may be used for unclassified and classified rivers and streams. A RUAA survey is conducted to collect information on a water body, such as the presence or absence of water recreation activities, stream flow type and stream depth to establish/verify a presumed use or provide detailed information to set a site specific recreational criterion. 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 RUAA survey determines that a water body meets its presumed or designated recreational use, then that use will continue to apply. 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 TCEQ Water Quality Standards Group

The TCEQ Water Quality Standards Group in the Office of Water is responsible for the overall coordination and assignment of RUAAs and must be notified first about each proposed RUAA project. Water Quality Standards will screen water bodies through other resource management agencies in order to determine which water bodies are appropriate for a RUAA.

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) and the Texas State Soil and Water Conservation Board about the proposed RUAA project as appropriate. The person or entity conducting the RUAA should consult with Water Quality Standards staff to determine (1) RUAA procedures that should be used, (2) RUAA forms to be used, (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.

RUAAs must meet certain requirements; therefore, it is very important to consult and coordinate with the TCEQ Water Quality Standards Group during the RUAA planning process prior to conducting the field survey.

Public Participation and Local Coordination

This section is intended to explain the public participation process while RUAAs are being conducted. The TCEQ has separate public participation processes in place for assigning recreational uses after the RUAA study is complete.

Contact Information Form:

An important part of the RUAA planning process is to coordinate with local and regional authorities, local stakeholders, and the public in the watershed. Prior to the beginning of a RUAA survey, any person or entity conducting a RUAA must notify entities listed on the **Contact Information Form** that a RUAA is being planned for an individual water body. Information obtained from the local organizations should be included in the completed Contact Information Form and included with the RUAA survey information submitted to the TCEQ.

Informational Meeting:

Another important part of the RUAA planning process is to hold an **Informational Meeting** prior to conducting a RUAA. The person or entity conducting the RUAA must hold an initial public meeting (known as an Informational Meeting) prior to starting fieldwork in order to inform local stakeholders and the public of the upcoming project and to get local input on sampling sites and recreation. Meeting notification will be announced by numerous mechanisms, such as mail, e-mail notices, posting information on the web, and posting notices in community meeting areas.

The person or entity conducting the RUAA must notify the TCEQ Water Quality Standards at least 3 weeks in advance of the Informational Meeting of the date, time, and location of the meeting. This information will be posted on the TCEQ's RUAA webpage.

If there is a general consensus from the local entities, local stakeholders, the public, and the TCEQ Water Quality Standards Group that a RUAA is appropriate and a QAPP is approved, then proceed with the RUAA.

Interview Forms:

Comprehensive RUAA surveys should include interviews from users present during the field survey, streamside landowners and local residents. Interview Forms will also be readily available to the public at public locations. Completed interview forms are made available to the public as an appendix to the report.

Summary of Findings Meetings:

If the field data in the draft RUAA report is determined by TCEQ to be inconclusive, a Summary of Findings Meeting will be held prior to the completion of the final report by the person or entity conducting the RUAA. The purpose of this meeting is to gather additional information from local stakeholders and the public for the RUAA in order for TCEQ to make a preliminary recommendation.

The person or entity conducting the RUAA must notify the TCEQ Water Quality Standards at least 3 weeks in advance of a Summary of Findings Meeting of the date, time, and location of the meeting. This information will be posted on the TCEQ's RUAA webpage.

Report Review and Public Comment:

The RUAA final report will be available on the TCEQ RUAA webpage for public review and comment. The RUAA final report will not contain TCEQ preliminary recommendations. There will be a 30 day public comment period and notification of the comment period will be announced by numerous mechanisms, such as posting information on the web, public notices in newspapers, etc. TCEQ will take these public comments into consideration when developing TCEQ preliminary recommendations but will not respond to these comments.

Please note that the public will have an opportunity to comment on TCEQ preliminary recommendations based on a RUAA report. The public will be provided a formal public comment period in which the TCEQ prepares a publicly available response to public comments received. The TCEQ has a separate public participation process for assigning recreational uses.

Quality Assurance/Quality Control

Quality Assurance Project Plans (QAPPs) are required for projects involving environmental data operations (as defined in *EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5*). Environmental data operations include, but are not limited to:

- Sampling and analysis
- Compilation or use of data collected from existing sources (secondary or acquired data)
- Development and/or use of models of environmental processes
- Collection or calculation of spatial data

All RUAA Surveys must be conducted in accordance with an EPA approved QAPP that is prepared by the entity managing the project. 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. Due to the significant amount of public input considered during the RUAA, QAPPs should contain language allowing relocation of survey sites without the need for an amendment. Relocation of survey sites may include but is not limited to instances when landowner access has changed, new public information regarding survey locations is made available, or suitability of a previously identified survey location has changed due to lack of access or un-safe conditions. After the TCEQ Water Quality Standards Group is notified and has approved changes, the site changes will be made to the QAPP without the need for an amendment. In addition, QAPPs must not contain language that deviates in any way from TCEQ RUAA Procedures. **Data collection cannot occur until a QAPP has been approved and distributed.**

Electronic Maps

The creation of any geospatial information, such as maps using Bing, ESRI, Google Earth or other available mapping applications, will need to be covered under the QAPP. The type of geospatial information to be used must be determined during project initiation and the development of the QAPP.

RUAA Survey

The elements below are included in all RUAA surveys (comprehensive and basic). Guidance is provided in the descriptions of each element to assist field staff when planning and performing the survey. Questions regarding the elements below should be discussed and addressed with the TCEQ Water Quality Standards Group prior to proceeding with field work, so that the most appropriate information can be captured and documented in the survey.

Sampling Conditions:

A RUAA survey should be conducted during a normal warm season (air temperature greater than or equal to 70°F) during dry weather flows. Dry weather flows 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, should be used as supporting documentation for the RUAA to account for conditions prior to the drought. However, additional sampling may be required once conditions have returned to dry weather flows. 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: Saturdays & Sundays, holidays, and summer). In Texas, this period is typically May to September. 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 prior to and during site reconnaissance:

- a) Locate and document areas in which the water body is accessible to the public (road crossings, schools, 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) If a portion or the entire water body is located in a rural area, contact and coordinate with local streamside landowners to see if they will give permission to access the water body from their property. It is important to find out how or if local streamside landowners use the water body for recreational purposes.
- c) Describe watershed characteristics.
- d) Describe hydrologic characteristics, such as stream type, stream flow, hydrologic alterations, etc.
- e) Select proposed sites for data collection.
- f) Provide other relevant information.

At the proposed sites, bank access and water depth may restrict sampling some of the physical features documented during a RUAA survey as described in the procedure manual. These restrictions should be identified by the investigator during the reconnaissance site visits. Immediately after the reconnaissance site visits and prior to beginning RUAA surveys, the investigator should notify the TCEQ Water Quality Standards Group of any physical conditions at a site that restricts a portion or all of the sampling. The Water Quality Standards Group will work with the investigator on a case by case basis to determine viable options for collecting data such as depth, flow, and width. Every effort should be made by the investigator to obtain data, including depth measurements, where possible.

Site Selection:

Site selection should be done in consultation with TCEQ Water Quality Standards Group prior to the field survey. The TCEQ Water Quality Standards Group must verify that the appropriate number of sites have been selected prior to the field surveys. Maps showing the location of the sites selected should be provided to the TCEQ Water Quality Standards Group for review and approval at least one month in advance of beginning field surveys.

Survey sites should primarily be located in areas where the water body is accessible to the public. Sites on private land should also be surveyed due to landowners using streams for recreation as well. Investigators must secure the landowner's permission to access the sites that are on private land (for each visit). Investigators must not enter private property without permission from the landowner.

The water body in question should have a minimum of three sites per every 5 miles of stream (water bodies with more stream miles should have more sites). If there are stretches of the water body that do not have publicly accessible road crossings, etc., obtain access from landowners. If landowner access is problematic and depths allow for boating, access sites via canoe or boat. Sites can be located upstream or downstream of a bridge crossing or access point. Ensure that the sites are as well spaced as possible and have a 300 meter reach that is accessible to the investigator. There should not be large gaps between sites. If the total number of required sites are not all accessible, then contact the TCEQ Water Quality Standards Group to obtain permission to proceed with beginning the RUAA study.

Field Survey:

The RUAA survey field data sheets must be completed for each site. All field data gathered must be recorded in the appropriate locations on the field data sheets. Field data sheets may be recorded in indelible ink (preferred) or pencil with no erasures, modifications, write-overs or multi-line crossouts. Correction of errors will be made with a single line followed by an initial and date. Close-out incomplete pages with an initialed and dated diagonal line.

Map:

At a minimum, a 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; 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 recreational uses or indications of human use, hydrologic modifications, etc. Be sure to take photographs that clearly depict the entire channel and depth measurements that were taken. Photos can show evidence of recreational use (e.g. rope swings) and actual recreation. No identifiable photographs

should be taken of minor children without the permission of an accompanying adult. Efforts should be made not to show the faces of any child (person considered a minor) photographed. 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.

Comprehensive RUAA

Typically, this type of survey is preferred since substantial information is needed to document the presence of recreational activities and describe physical stream characteristics. A Comprehensive RUAA is required on classified water bodies or where presumed uses for unclassified water bodies may be inappropriate. Two or more sampling trips performed on separate occasions are prescribed in a Comprehensive 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. A minimum of ten interviews must be conducted for each water body being surveyed.

Report Content for Comprehensive RUAAs:

A RUAA report is required for Comprehensive RUAAs and should be submitted in an electronic format on a CD to the TCEQ for review. In addition, one hard copy of the report should be submitted along with the electronic copy. The electronic format must conform to federal requirements of Section 508 of the Rehabilitation Act. A separate report should be prepared for each basin where an RUAA was conducted. Multiple streams in the same basin can be included in the same report. 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)
 - Summary of historical information
 - Site reconnaissance summary
 - Summary of Informational Meeting
 - Summary of Summary of Findings Meeting (if applicable)
- Methodologies
 - Site descriptions
 - Sampling methods
 - Survey descriptions

- Results and Discussions
- RUAA Summary Form
- References
- Appendices
 - Contact Information Forms
 - Field data sheets
 - Photographs
 - Maps
 - Rainfall Data
 - Interview Forms

The Comprehensive RUAA must not include recommendations regarding the appropriate recreational use for the water body. The TCEQ Water Quality Standards Group will review the Comprehensive RUAA and be responsible for making recreational use recommendations based on RUAA results.

Basic RUAA Survey

Basic RUAA Surveys are conducted to establish or verify the presumed primary or secondary 1 contact recreation use in unclassified streams and rivers. While this process will not be TCEQ's primary means for conducting RUAAs, it will be used under certain circumstances to establish or verify a presumed use. 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.

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. In addition, one hard copy of the report should be submitted along with the electronic copy. The electronic format must conform to federal requirements of Section 508 of the Rehabilitation Act. A separate report should be prepared for each basin where an RUAA was conducted. Multiple streams in the same basin can be included in the same report. The summary packet should contain the following information:

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

The Basic RUAA survey must not include recommendations regarding the appropriate recreational use for the water body. The TCEQ Water Quality Standards Group will review the Basic RUAA Surveys and be responsible for making recreational use recommendations based on RUAA results.

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 RUAA”).

RUAA Survey Submittal Procedures

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

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. If clarification or additional information is needed, the TCEQ Water Quality Standards Group will contact and request the information from the investigator.

If the RUAA is conducted as part of a contract requirement, the contractor should submit RUAAs to the contracting entity (e.g. Total Maximum Daily Load Team, Clean Rivers Program, etc.). The contracting entity will submit the RUAA to the TCEQ Water Quality Standards Group. The Water Quality Standards Group will coordinate with the contracting entity and contractor if additional information or clarification on the RUAA report is needed.

Contact Information Form

Contact Information Form

(This form must be completed prior to conducting a RUAA survey.)

River or stream name: _____

Notify the contacts that a recreational use-attainability analysis is being planned for the river or stream. Document whether or not the entity was notified, the name of the person contacted, and the date they were notified about the proposed RUAA project.

Required Local Contacts:

TCEQ region staff

Notified: Yes No Date: _____
Name: _____

Clean Rivers Partners (River Authority and
other local partners)

Notified: Yes No Date: _____
Name: _____

Texas Parks and Wildlife Department
Point of Contact: Cindy Hobson
512.389.8195
cindy.hobson@tpwd.texas.gov

Notified: Yes No Date: _____

Texas State Soil Water Conservation Board
Point of Contact: T.J. Helton
254.773.2250 ext. 234
thelton@tsswcb.texas.gov

Notified: Yes No Date: _____

Suggested Additional Local Contacts to Notify (*Notify the contacts that a recreational use-attainability analysis is being planned for the river or stream. If contacted, include whether or not the entity was notified, the name of the person contacted, and the date they were notified about the proposed RUAA project on a separate page and attach it to this form*):

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

Field Data Sheets

Field Data Sheets –RUAA Survey

(complete for each site)

Site:

Data Collectors & Contact Information:	
Date & Time:	County Name:
Stream Name:	
Segment No. or nearest downstream Segment No.:	
Description of Site:	

A. Stream Characteristics:

1. Check the following channel flow status that applies.

dry no flow low normal high flooded

2. Check the following stream type that applies on the day of the survey:

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 seven-day, two-year low-flow (7Q2) flow of less than 0.1 cubic feet per second is considered intermittent.

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.

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

Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the TCEQ Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

4. Ease of bank access to the water body: Easy Moderately easy Moderately difficult Difficult

5. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

6. Dominant Primary Substrate

Cobble Sand Silt Mud/Clay Gravel Bedrock Rip rap Concrete

Field Data Sheets –RUAA Survey

Stream Name _____ Site: _____

Date: _____ Time: _____

B. Primary Contact Water Recreation Evaluation:

- Primary contact recreation definition: Activities that are presumed to involve a significant risk of ingestion of water (e.g. wading by children, swimming, water skiing, diving, tubing, surfing, and the following whitewater activities: kayaking, canoeing, and rafting).

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).

Wading-Children Tubing

Wading-Adults Surfing

Swimming Whitewater-kayaking, canoeing, rafting

Water skiing Other : _____

Diving 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: Activities that commonly occur but have limited body contact incidental to shoreline activity (e.g. fishing, canoeing, kayaking, rafting and motor boating). These activities are presumed to pose a less significant risk of water ingestion than primary contact recreation but more than secondary contact recreation 2.

- Secondary contact recreation 2: Activities with limited body contact incidental to shoreline activity (e.g. fishing, canoeing, kayaking, rafting and motor boating) that are presumed to pose a less significant risk of water ingestion than secondary contact recreation 1. These activities occur less frequently than secondary contact recreation 1 due to physical characteristics of the water body or limited public access.

Field Data Sheets –RUAA Survey

Stream Name: _____

Site: _____

Date: _____

Time: _____

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: _____

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 (e.g. activities with limited body contact incidental to shoreline activity, including birding, hiking, and biking), 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 –RUAA Survey

Stream Name _____ Site: _____

Date: _____ Time: _____

E. Stream Channel and Substantial Pools Measurements

Please check the following which best describes the river or stream (A non-wadeable stream is one that is too deep to wade. Dry streams are considered wadeable.): 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 dry weather flows (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 0 meters, 150 meters, and 300 meters.

Photos #s (0 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 within the 300 meter reach (if > 10 pools only measure 10 pools). Also measure the width (at the widest point) and deepest depth of each pool. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a RUAA Survey. Report measurements to two significant figures. If depths are too deep to measure then report >1.5 meters.

	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 every 30 meters within the 300 meter reach to calculate an average depth at the thalweg (at least 11 measurements needed). Report measurements to two significant figures. If depths are too deep at a particular transect to measure then report >1.5 meters. Use 1.5 when calculating the mean.

Distance	Depth (meters)
0 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 –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. Report measurements to two significant figures.

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	

2. Non-wadeable Streams

If accessible, take 11 width measurements which represent typical widths of the 300 meter reach. If the water is too deep the entire 300 meter reach then record the estimated average width of the water body. Report measurements to two significant figures.

Also, take photos facing upstream, downstream, left bank, and right bank at 0 meters, 150 meters, and 300 meters.

Photos #s (0 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	
11	

Field Data Sheets –RUAA Survey

Stream Name _____

Site: _____

Date: _____

Time: _____

F. Additional RUAA Information. *Summarize your observations for the entire 300 meter reach.*

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"/> Trails/paths (hiking/biking) | |
| <input type="checkbox"/> Urban/suburban location | <input type="checkbox"/> Nearby school | <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"/> Remnants of kids' play | |
| <input type="checkbox"/> Other: _____ | | | |

Comments: _____

Field Data Sheets –RUAA Survey

Stream Name _____

Site: _____

Date: _____

Time: _____

7. Please list any additional items that may impede recreation, such as excessive aquatic vegetation or algae, excessive debris, garbage, snakes, alligators, abundant wildlife, etc.? (Attach photos).

8. Please list any evidence of sustained aquatic habitat such as clam shells, aquatic or marsh vegetation, turtle shells, etc. (Attach photos)

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

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

Severity Value

Description

1 No Flow

When a flow severity of 1 is recorded for a sampling visit, record a flow value of 0 ft³/s (using parameter code 00061) for that sampling visit. A flow severity of 1 describes situations where the stream has water visible in isolated pools. There should be no obvious shallow subsurface flow in sand or gravel beds between isolated pools. “No flow” not only applies to streams with pools but also to long reaches of streams that have water from bank to bank but no detectable flow.

2 Low Flow

When streamflow is considered low, record a flow-severity value of 2 for the visit, along with the corresponding flow measurement (parameter code 00061). In streams too shallow for a flow measurement where water movement is detected, record a value of < 0.10 ft³/s. **Note:** Use a stick or other light object to verify the direction of water movement. Make sure the movement is downstream and not the effect of wind. What is low for one stream could be high for another.

3 Normal Flow

When streamflow is considered normal, record a flow severity value of 3 for the visit, along with the corresponding flow measurement (parameter code 00061). “Normal” is highly dependent on the stream. Like low flow, what is normal for one could be high or low for another.

4 Flood Flow

Flow-severity values for high and flood flows have long been established by the EPA and are not sequential. Flood flow is reported as a flow severity of 4. Flood flows are those which leave the confines of the normal stream channel and move out onto the floodplain (either side of the stream).

5 High Flow

High flows are reported as a flow severity of 5. High flow would be characterized by flows that leave the normal stream channel but stay within the stream banks.

6 Dry

When the stream is dry, record a flow-severity value of 6 for the sampling visit. In this case the flow (parameter code 00061) is not reported. This will indicate that the stream is completely dry with no visible pools.

RUAA Interview Form

RUAA Interview Form

Stream Name: _____ Segment #: _____ Site: _____

Interviewer's Name: _____

Date & Time (include AM or PM): _____

Interviewed: In person By phone By mail By e-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

Interviewee selected because (e.g., resource manager, Gov. official, conservationist, property owner, local resident, 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. What location(s) along the stream are you 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

Intermittent: A stream which has a period of zero flow for at least one week during most years. (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.

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.

RUAA Interview Form

Stream Name: _____ Segment #: _____ Site: _____

- 6.) a) How do you use the stream? Swimming Wading-Children
 Water Skiing Wind surfing Tubing Wading-Adults
 Hunting Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Skin Diving

b) When did these uses occur (e.g. year(s); season) and how often (times/year)?

c) What location did these uses occur (get specific location and mark on a map)?

7. Have you observed others using this stream for recreation? Yes No
If yes, proceed to #8. If no, proceed to #9.

8. a) What kinds of uses have you witnessed? Swimming Wading-Children
 Water Skiing Wind surfing Tubing Wading-Adults
 Hunting Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Skin Diving

b) When did these uses occur (e.g. year(s); season) and how often (times/year)?

c) What location did these uses occur (get specific location and mark on a map)?

9. Have you heard about anyone using this stream for recreation? Yes No
If yes, proceed to #10. If no, conclude the interview.

10. a) What kind of uses have you heard about? Swimming Wading-Children
 Water Skiing Wind surfing Tubing Wading-Adults
 Hunting Kayaking Rafting Trapping SCUBA diving
 Snorkeling Fishing Boating Canoeing Skin Diving

b) When did these uses occur (e.g. year(s); season) and how often (times/year)?

c) What location did these uses occur (get specific location and mark on a map)?

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 of site visits (Based on Palmer Drought Severity Index)

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