Central and Southeast Texas Recreational Use-Attainability Analyses Project
Country Club Branch (Segment 1209D) Basic RUAA

Results Report

Contract No. 582-9-90440

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October 5, 2010

PREPARED IN COOPERATION WITH THE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

The preparation of the report was financed through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality

Federal Grant #07-09 106 Categorical Water Pollution Control 98665304 (State USAS Grant #998807)

Federal Grant #09-11 106 Categorical Water Pollution Control 98665305 (State USAS Grant #998810)

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Introduction

Problem Statement

Recreational Use-Attainability Analyses (RUAAs) are scientific assessments that are used to determine existing and attainable recreational use for a water body and determine if that use might be different than the presumed recreational use, as specified in the Clean Water Act. In September, 2009 a Basic RUAA was initiated on Country Club Branch, Segment 1209D. This Basic RUAA Report will provide the Texas Commission on Environmental Quality (TCEQ) Standards Group with relevant information to help determine the appropriate attainable recreation use for Country Club Branch. The completion of this Basic RUAA consisted of several important interrelated components including 1) reconnaissance and site selection, 2) Basic RUAA and 3) public outreach. The objectives of each component are listed below.

Objectives

1. Reconnaissance and Site Selection

The primary objective of this phase is to select survey sites that would be accessible to users and most likely characterize recreational uses in the watershed. This was accomplished primarily with the input of local, state and regional agency staff familiar with the watershed, as well examination of aerial imagery. An initial stakeholder meeting occurred on March 9, 2010 at the Navasota Center, Navasota TX. Reconnaissance surveys were conducted on January 13, 2010 and provided the basis for site selection for discussion in this meeting.

2. Basic Recreational Use Attainability Analysis

The primary objective of the Country Club Branch RUAA was to characterize the recreational use and potential impediments to use for this stream. The RUAA field surveys were conducted on the Sunday, May 30, 2010, to collect information on the water body and associated

uses. These field surveys were conducted at selected sites with the highest probability of detecting recreation use. The objective was to document and characterize observed use, site conditions (hydrology, physical attributes), and weather during the RUAA field surveys.

3. Public Participation

The objective of the public participation phase of the Basic RUAA was to solicit as much information from various watershed stakeholders including agency staff, citizens, recreational user groups and other interested parties on the historical and current recreational uses in Country Club Branch. This included soliciting information on recreational uses by sending out emails to key organizations and staff familiar with the watershed. In addition, on March 9, 2010 a stakeholder meeting was held to gather information on the watershed including likely recreational access points. The stakeholder contact list is provided in Appendix 1.

Study Area

Description of Water Body

Country Club Branch is a tributary in the Navasota River watershed, which is located within the Brazos River Basin. Segment 1209D is unclassified by the TCEQ and is approximately 0.9 miles in length. Segment 1209D begins at the confluence with Country Club Lake in Bryan in Brazos County and continues to the dam at Fin Feather Lake (TCEQ, 2008). Country Club Branch is a shallow, narrow, urban stream. Country Club Branch is on the state's 303(d) list for geometric mean values that exceed the bacteria criteria associated with primary contact recreation uses (TCEQ, 2008).

Environmental Features and Population Characteristics

The climate in the Navasota River Watershed is classified as having hot, humid summers and mild winters. Country Club Branch has been highly disturbed by human activities that have

altered both the land use and vegetation cover of the watershed. These activities include the construction of roads and instream sewer lines, and the building of commercial businesses and residential neighborhoods. The area can be described as urban with a high population density.

Watershed Characterization

The Navasota River watershed traverses flat to rolling terrain with local shallow depressions, surfaced by clay and sandy loams that support water-tolerant hardwoods, conifers, and grasses. The surrounding sub-watershed of Country Club Branch is predominantly urban with commercial and residential activities being the primary land use.

Permitted Discharges (Municipal, Industrial, Stormwater)

Country Club Branch is affected by permitted outfalls as well as storm water runoff from agricultural, industrial, and urban areas. Under TPDES, the TCEQ has two issued permits to the City of Bryan (1) and Atofina Chemical Inc (1) to discharge treated wastewater to the Segment 1209D watershed (Figure 1).

Potential Nonpoint Sources

Potential sources of nonpoint source pollution in the Country Club Branch watershed include on-site sewage facilities (OSSFs) and runoff from agricultural lands. For any urban collection and treatment system, sanitary sewer overflows are possible sources of bacteria loadings to receiving waters. Country Club Branch (Segment 1209D) watershed can be described as urban with two permitted waste water treatment facilities (WWTF). While OSSFs are unlikely within the watershed, it is important to note that they require routine repairs and maintenance to avoid failures causing potential leaks or overflows, and therefore, could be potential sources of bacteria loadings into the Country Club Branch watershed.

Also notable, there is a public park (Williamson Park) directly adjacent to Country Club Branch, where local residents can bring their pets. There are fenced residential yards that are also located directly adjacent to the creek which house domestic pets. In rain events, these domestic pets can be a potential source of bacteria in Country Club Branch.

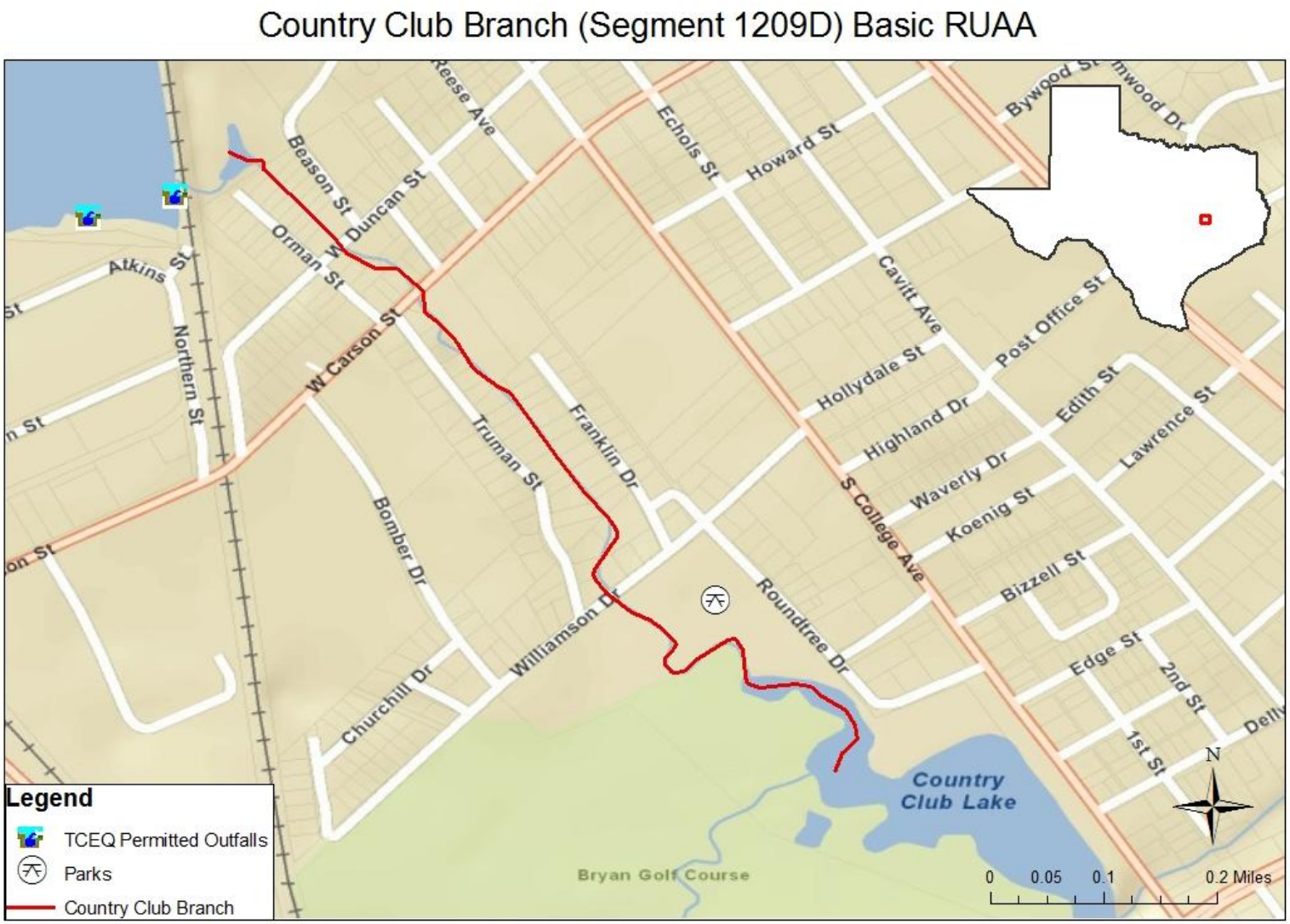
Site Reconnaissance Summary

Perspective sites were chosen based on public access and documented uses from the stakeholder response to the request for information e-mail which is included in Appendix 1. Initial reconnaissance surveys were conducted on January 13, 2010. A total of four prospective sites were visited (Table 1). Of these, three were chosen for field survey sites (Table 2). Site suggestions were submitted to the TCEQ as part of the Quality Assurance Project Plan's (QAPP) Monitoring Plan, which was approved by TCEQ on May 27, 2010.

Methodologies

RUAA Survey Site Selection and Descriptions

Country Club Branch flows through urban Bryan, TX. The target density of survey sites should be approximately three (3) sites per every five (5) miles of stream (TCEQ, 2009). During our study, survey sites were established in areas where the water body is accessible to the public and has the highest potential for recreational use (road crossings, public lands/parks located near the water body, and populated areas). A total of three (3) survey sites were established (Table 2 & Figure 2). These sites were chosen based on public access potential and also providing sufficient spatial coverage throughout the segment. The selected field survey site density was greater than the recommended 3 for every 5 miles of stream. Figure 3 was taken at field survey site 1, and is a good representation of the general site conditions found along Country Club Branch.



* Map located in the city of Bryan, Texas

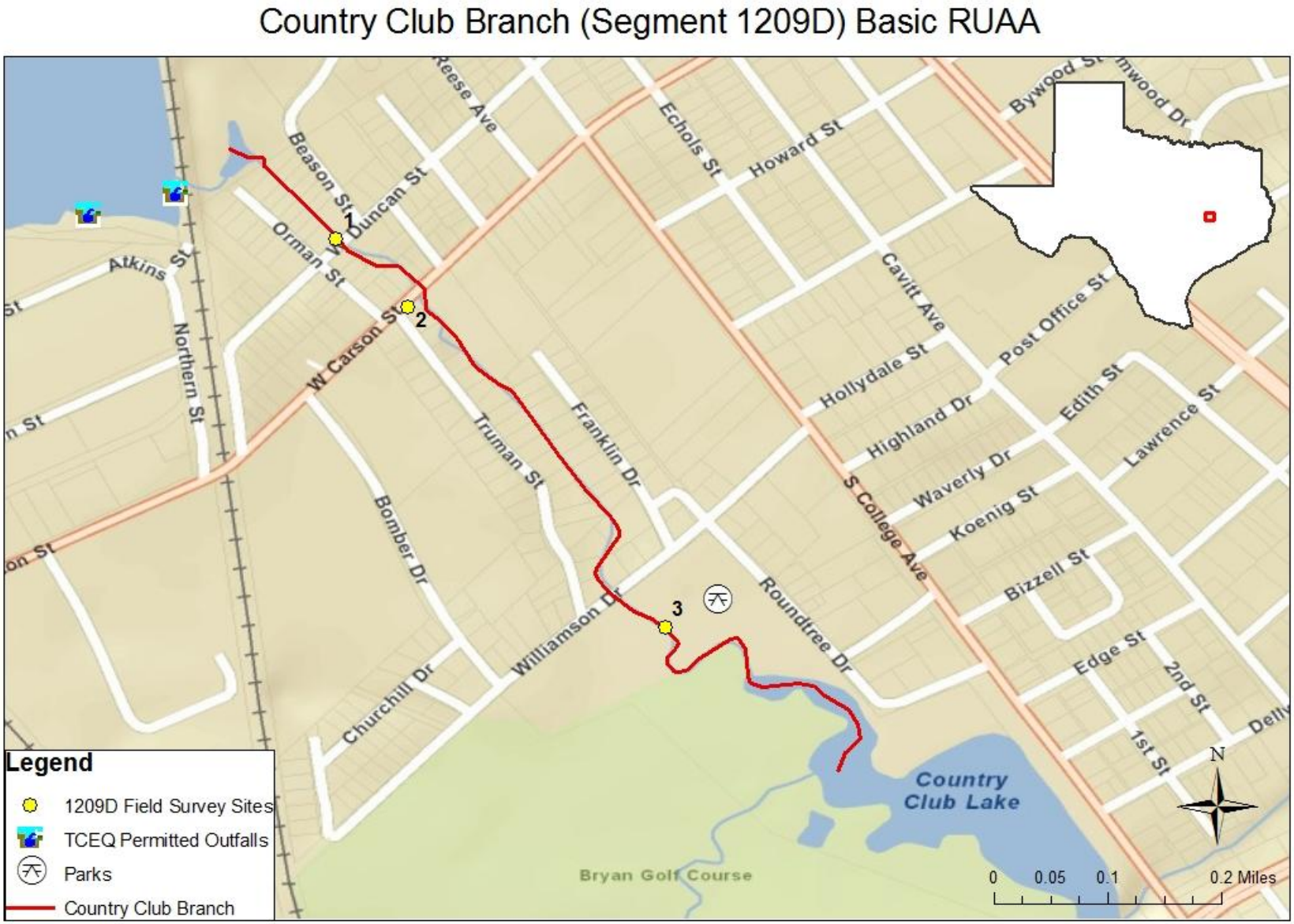
Figure 1. TCEQ permitted outfalls, and public parks adjacent to Country Club Branch, Segment 1209D

Table 1. Site reconnaissance for Basic RUAA on Country Club Branch, Segment 1209D.

Recon Site #	Description	Latitude	Longitude	Public Access	Water Access	Recommended Site?
1	Fin Feather Lake near dam (TCEQ Site: 11798)	30.64851	-96.37103	Not in segment	N/A	No
2	W Duncan @ Country Club Branch (TCEQ Site: 11795)	30.64850	-96.36903	Can pull off on the side of the road downstream, right bank	Easy slopes all sides	Yes
3	Carson St @ Country Club Branch	30.64764	-96.36812	Can park on Truman St.	Easy slopes downstream	Yes
4	Williamson Park @ Country Club Branch	30.64354	-96.36484	Public parking	Easy slopes throughout park	Yes

Table 2. Survey sites for the Basic RUAA Survey on Country Club Branch, Segment 1209D (corresponding to Figure 2 and Table 1)

Recon Site	Field Survey Site	Description	Latitude	Longitude	Approx. River Mile
2	1	W Duncan @ Country Club Branch (TCEQ Site: 11795)	30.64850	-96.36903	0.75
3	2	Carson St @ Country Club Branch	30.64764	-96.36812	0.65
4	3	Williamson Park @ Country Club Branch	30.64354	-96.36484	0.29



* Map located in the city of Bryan, Texas

Figure 2. Basic RUAA survey sites on Country Club Branch, Segment 1209D, selections based on river mile/assessment units, accessibility and recreational features.

Figure 3. Photo of field survey site 3 illustrating the waterbody characteristics typical of Country Club Branch, Segment 1209D

Sampling Methods

RUAAs 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). Until recently, Texas had two recreation use categories in the 2000

TSWQS: contact and noncontact recreation. These recreation use categories were expanded to include more categories: primary contact, and secondary contact recreation (1 & 2). Primary contact recreation consists of recreational activities involving a significant risk of ingestion of water including: wading by children, swimming, water skiing, diving, and surfing. Secondary contact recreation 1 is considered water recreation activities not involving a significant risk of water ingestion: including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity. Secondary contact recreation 2 follows the same definition as secondary contact recreation 1, except that it occurs less frequently due to (1) physical characteristics of the water body and/or (2) limited public access.

According to TCEQ agency guidance, a Basic RUAA must be conducted on Country Club Branch since it is an unclassified water body (Segment 1209D). RUAA surveys were conducted during the normal warm season and periods when people would be most likely to use the water body for contact recreational purposes. RUAA surveys were also conducted during optimal sampling conditions that are representative of the normal flow conditions of the stream (not storm-influenced). RUAA field surveys for Country Club Branch (Segment 1209D) were conducted Sunday, May 30, 2010. Weather conditions for this day and the prior 30 days can be found in Appendix 4. More specific procedures can be found in *TCEQ's RUAA Procedures Document, May 2009.*

Field Survey Descriptions

A Basic RUAA field survey begins with marking off a 300 meter (m) reach of the waterway, flagging every 30m. Sites with public accessibility limitations may not be fully assessed in this way. In instances such as these, a laser range finder was used to document the length of the stream reach that could be observed. A flow measurement (where possible) was

then taken within the 300m stream reach. If the waterbody is wadeable, a depth measurement was taken every 30m and width measurements were taken at the widest, narrowest, and average width points within the 300m reach. Pictures are taken to document the survey at 30, 150, and 300m facing upstream, right bank, downstream, and left bank (Appendix 3). Air temperature, water temperature, and secchi depth were also recorded at an easily accessible location. Finally the Basic RUAA datasheets were completed to document any recreational uses, signs of recreational use, impeding conditions, or other field notes taken during the field survey. Specific impediments for each site can be found in Appendices 2 and 5.

Results

The field survey site visit was completed on each of the three sample sites on Sunday, May 30, 2010. All field data sheets are attached (Appendix 2).

Physical Evaluation and Flow

During the field surveys the air and water temperatures fell within the range of acceptable temperatures for sampling described in the TCEQ procedures manual (Table 3). The average depth of Country Club Branch was 0.3m and the average width is 0.8m. The average secchi tube reading taken at the field survey sites was 0.5m (Table 3). Flow was not recorded for Country Club Branch due to insufficient depths and abundance of algae and vegetation in the waterway. Flow could be characterized as low, with the water only trickling or stagnant throughout the segment.

Country Club Branch riparian zone can be generalized as urban and mowed/maintained corridor (Table 4). The dominant substrate along Country Club Branch (Segment 1209D) was generally composed of mud/clay.

Recreational Uses

Uses observed from all combined site visits include: Children wading, fishing (dip net), standing, sitting, and bicycling (Table 5, Figure 4, & Appendix 5). The instance of children wading and fishing (using dip nets) occurs frequently (the children mentioned that they go to the creek to catch fish almost every day). The wading children were using small dip nets to capture fish in Country Club Branch, and placing them into Tupperware containers. They continued to play with them and handle the water and fish on the bank. These observed uses occurred at field survey site 3. Other non-contact recreational uses were documented at field survey site 3 and included bicycling, sitting/standing, and playing basketball. Evidence of recreational use in the form of children's toys was documented at field survey site 1. Evidence of foot paths/prints that lead into and out of the water were documented at field survey site 3. Impediments (culverts) to recreational uses were also noted during the field surveys at all three of the field survey sites (Table 5, Figure 4, & Appendix 5).

Table 3. Physical parameters from the basic recreational use attainability analysis field surveys conducted on Country Club Branch, Segment 1209D. *Secchi tube reading unable to be taken due to algae in the water

Field Survey Site	Site Description	Air Temperature (°C)	Water Temperature (°C)	Average Depth (m)	Average Width (m)	Secchi Tube (m)
1	W Duncan @ Country Club Branch	29.0	26.0	0.06	0.61	0.30
2	Carson St @ Country Club Branch	32.0	26.0	0.39	0.91	0.61
3	Williamson Park @ Country Club Branch	30.0	27.0	0.39	0.91	*
	Total Average	**30.3**	**26.3**	**0.3**	**0.8**	**0.5**

Table 4. Physical characteristics of Riparian Zone and Dominant Substrate of the field survey sites sampled during the Basic Recreational Use Attainability Analysis on Country Club Branch, Segment 1209D.

Field Survey Site	Site Description	Left Bank Riparian Zone	Right Bank Riparian Zone	Dominant Primary Substrate
1	W Duncan @ Country Club Branch	Urban	Urban	Mud/Clay
2	Carson St @ Country Club Branch	Urban	Urban	Mud/Clay
3	Williamson Park @ Country Club Branch	Mowed/maintained corridor	Mowed/maintained corridor	Mud/Clay

Table 5. Recreational uses observed and documented on Country Club Branch, Segment 1209D, for the Basic Recreational Use Attainability Analysis.

Field Survey Site	Site Description	Impediments	Evidence	Observed
1	West Duncan at Country Club Branch	Culverts	Children's toys	
2	Carson St. at Country Club Branch	Culverts		
3	Williamson Park at Country Club Branch	Culverts	Foot paths/prints, Skate park, Basketball court	Children-wading, Fishing (dip net), Standing, Sitting, bicycling

Figure 4. Basic RUAA survey sites on Country Club Branch, Segment 1209D, with depictions of observed recreational uses, evidence of recreational uses, and impediments. Locations are approximate. See Appendix 5: Google Earth Interactive Map for exact locations of uses, evidence, and impediments.

Summary

Three (3) field surveys were completed on Country Club Branch (Segment 1209D) during this basic RUAA to evaluate whether the existing and/or attainable recreational uses of the creek might be different than the current presumed recreational use designation. Important data collected in this RUAA included general stream characteristics, observations and evidence of recreational use, surrounding conditions that promote recreation, and surrounding conditions that impede recreation.

While Country Club Branch had several impediments to recreational use, such as culverts, the RUAA documented various recreation activities. Based on the field surveys, staff observed one instance of primary contact recreation in the form of children wading at field survey site 3. Numerous instances of noncontact recreation were observed, as well as, the documentation of evidence of recreation throughout the segment. The average thalweg depth was 0.3m and the average width was 0.8m. We were unable to obtain flow measurements over the span of Country Club Branch due to the lack of water and amount of vegetation in the channel. One public recreation area in the form of a maintained park was documented as part of this RUAA (field survey site 3). Basic RUAA summary analysis indicates that primary contact, secondary contact (1 & 2), and non-contact recreation activities occur on Country Club Branch (Segment 1209D).

Literature Cited

Texas Commission on Environmental Quality (TCEQ). 2008. Texas 303(d) list (March 19, 2008). TCEQ, Austin, Texas.

Texas Commission on Environmental Quality (TCEQ). 2009. Recreational Use-Attainability Analyses (RUAAs) Procedures for a Comprehensive RUAA and a Basic RUAA Survey. TCEQ, Austin, Texas.

RUAA Summary Form

RUAA Summary

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: __*Country Club Branch*_____
Segment No. or Nearest Downstream Segment No.: ____*1209D*_____
Classified?: __*No*_____
County: _____*Brazos*_____

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? __*0.3*__meters

   b. Are there substantial pools deeper than 1 meter? ☐ yes ☐ no N/A

   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