

## REQUEST FOR BIDS

### WATER USE AUDIT PILOT PROJECT: ANALYSIS OF WATER USE AND PRIORITIES FOR WATER EFFICIENCY IMPROVEMENTS AT PENINSULA STATE PARK

#### 1. ABSTRACT

**Water Use Audit for Peninsula State Park (SP):** The recipient of this contract shall conduct a water use audit for Peninsula SP including a summary of water supply, water delivery, and water use infrastructure; an audit of the volumes and locations of water use at the park; recommendations for reducing water use or improving the water use efficiency at the park; and a post-implementation water audit to verify actual savings. This audit will be used to implement cost-effective water conservation and efficiency measures at Peninsula SP, and to develop a template for conducting an audit at other state parks in the Wisconsin State Park System.

Bids are due by **November 6, 2012, at 5 pm** to Steve Elmore, DG/5, PO Box 7921, Madison, WI 53707-7921 or [steve.elmore@wisconsin.gov](mailto:steve.elmore@wisconsin.gov).

#### 2. INTRODUCTION

##### Project Description

The Department of Natural Resources (department) received a grant to conduct a pilot water use audit and retrofit to reduce the water use at Peninsula SP in Door County. The proposed pilot will include the following tasks: 1) conduct an initial water use audit, 2) develop a water use audit template to use at other state parks, 3) implement cost-effective and environmentally sound water conservation and efficiency measures as identified through the audit process, and 4) conduct a post implementation audit to establish water savings.

##### Project Outcomes

The results of the project will include:

- reduced water use at Peninsula SP,
- a plan for long-term maintenance of the facility to further reduce water use,
- experience selecting appropriate high efficiency fixtures for use at a state park
- verification of projected water savings.
- a concrete example of water savings potential at a state park.

Project deliverables will include

- a water use report for Peninsula SP
- a prioritized list of water efficiency improvements for Peninsula SP
- a template for conducting a water audit at all state parks,
- model bid documents for state parks to assist in contracting for audits.

This project will support the department's efforts to implement the Great Lakes –St. Lawrence River Basin Water Resources Compact (Compact). The Compact required Wisconsin to develop Water Conservation and Water Use Efficiency Goals and Objectives (completed in 2008) and implement a conservation and efficiency program. Wisconsin plans to implement the

objective to “Guide programs toward long-term sustainable water use,” in part, by systematically evaluating water use, implementing water conservation measures, and developing appropriate educational messages for employees/visitors at all state facilities. This project is a critical first step in this effort.

The proposed project is Phase 1 of a two-phase project. The pilot will lay the groundwork for developing a water conservation and water use efficiency education program for Peninsula SP that is replicable at other state parks.

The department is initiating a Bid Contract. This Bid Contract seeks to identify and establish a contract with a firm interested in conducting a water use audit for Peninsula SP. The audit should include a summary of the sources, delivery, and water use infrastructure; an assessment of the actual water used, an evaluation of the water use to determine cost-effective conservation and efficiency measures to implement; and a post-implementation water audit to establish the water, energy, and money savings realized.

Peninsula SP is located in Door County, Wisconsin and has approximate 1.1 million visitors annually, the second highest state park visitation rate in Wisconsin. Water use activities at Peninsula SP are primarily associated with campground shower house facilities and a golf course.

This water use audit will allow the department to understand the water infrastructure at Peninsula SP and implement the most cost-effective measures to reduce water and energy usage. The audit will also serve as a model to develop a template for conducting audits at other state parks and provide information to update the long term facilities plan at Peninsula SP.

The department would like the audit to:

- summarize the current sources, distribution, and water related infrastructure at Peninsula SP,
- evaluate the current water usage at Peninsula SP,
- develop recommendations to reduce water use or improve water efficiency, prioritized by cost-effectiveness,
- recommend retrofits considering factors such as cost of installation, energy costs, and maintenance requirements for water related infrastructure
- evaluate the water usage at Peninsula SP after implementation of cost-effective recommendations

### Objective

The objective of this contract is to conduct a water audit at Peninsula SP to identify cost-effective water conservation and efficiency measures. The department will select measures to implement to reduce water use at Peninsula SP. Additionally, this audit will be used to develop a template for conducting audits at other state parks and the findings will be incorporated into the long term facilities maintenance plan.

### **3. BID SCHEDULE**

Bid Due Date

November 6, 2012

Projected Contract Award Date

November 20, 2012

Contract Administrative Start-up Meeting	December 4, 2012
Pre-Water Audit meeting	April 1, 2013
Water Audit (subject to scheduling)	May 2013
Water Audit Report due and Administrative meeting	June 30, 2013
Administrative meeting	April 2014
Post-implementation Audit (subject to scheduling)	May 2014
Final Report and Administrative meeting	June 20, 2014
Projected Contract End Date	June 30, 2014

#### **4. PAYMENT PROCEDURES**

Payments will be made as invoiced after deliverables are provided. No advance payments will be made. The responsible firm submitting the lowest bid will be selected.

#### **5. TECHNICAL PROPOSAL**

##### 5.1 Project Approach / Methodology

The consultant must be able to conduct a water use audit for Peninsula SP and evaluate current water use and water related infrastructure to determine cost-effective water conservation and efficiency measures to implement.

##### 5.2 Work Plan

The following is a list of tasks, services and activities the department expects the contractor to adequately provide, and those elements that are necessary to accomplish the objectives of the project.

5.2.1 Full level of planning, coordination & execution of a water audit.

5.2.2 The contractor is responsible for completing the following 5 functions:

- Identify, collect, and summarize water sources, delivery and infrastructure
- Summarize historic water use and describe water use in metrics such as per capita, per visitor per day, annual, seasonal, and/or monthly.
- Evaluate water use and determine cost-effective water conservation and efficiency measures for Peninsula SP, including calculations for water savings, energy savings, and installation costs to calculate payback periods
- Evaluate maintenance requirements for recommended measures as maintenance issues are a significant consideration for fixtures in a campground setting
- Conduct a post-implementation audit to document water savings, energy savings (as related to reduced water use), and other benefits to Peninsula SP.

5.2.3 Conduct a water audit. The contractor is required to supply all equipment needed to conduct the audit on site. The audit should include:

- Leak detection of supply lines
- Evaluation of water infrastructure (toilets, showerheads, faucets, etc.) for leaks and flow rates. Each shower house and bathroom should be inspected; at least one of each type of fixture in each facility should be tested. There are 61 individual showers, 105 toilets, and 92 faucets in the park.
- Document all 14 wells in the park and the ability to meter consumption from currently installed equipment.
- Golf course water use and equipment used to irrigate the golf course.
- Estimation of water usage rates for each type of fixture validated against monthly water use reported for Peninsula SP. Monthly water use data are available for 2007 – 2012.

5.2.4 Analyze water audit results to determine cost-effective water conservation and efficiency measures to implement at Peninsula SP. See Appendix A and the attached spreadsheet for a tool to determine cost-effectiveness. The analysis should:

- Determine potential water savings
- Determine potential energy savings
- Document installation costs
- Evaluate maintenance issues associated with recommended fixtures
- Identify payback periods
- Provide a prioritized list of recommended conservation and efficiency measures to implement on a short-term and long term basis.

5.2.5 Provide a Water Audit Report that includes:

- A summary of the water sources, distribution, and infrastructure.
- Summary and analysis of available water use data for Peninsula SP.
- Detail methodology for how the audit was conducted, how water usage rates were calculated and validated, and results of the audit.
- Summary of results of the water use audit and findings of per capita water use and other calculated metrics.
- Detailed methodology for determining cost-effective water conservation measures.
- Prioritized list of recommendations on measures to implement on a short and long-term basis. List should be based on 5.2.4.

5.2.6 Conduct a post-implementation audit. The department will select and implement water conservation and efficiency measures at Peninsula SP. The contractor will be expected to conduct a post-implementation audit to document the savings realized from the project.

5.2.7 Provide a Final Report that includes:

- A summary of the information in the water audit report.
- A summary of the recommendations for water conservation measures to implement and the measures that were implemented at Peninsula SP.
- Detailed methodology for the post-implementation water audit.
- Results of the post-implementation water audit.
- Final summary of the project and results of the implementation of conservation and efficiency measures.

### 5.3 Data from Peninsula SP

The department will supply available data related to water sources, water infrastructure, total reported water use, campground usage rates, and other data as requested and available. Onsite visits for the audit are expected and must be coordinated in advance with department staff. All facilities with a water use are only open from mid-May to October. A map of the park is included as Appendix B.

### 5.4 Schedule

Tasks, services and activities of the project must be completed within the period of the entire project. Due dates of deliverables may be negotiated and shall be provided to the Water Use Section by the agreed upon date(s). There are time constraints, however, for when the shower houses are operational and shut down for maintenance at the end of the season. The initial and post-installation audits must occur during the last two weeks of May.

### 5.5 Deliverables

Deliverables for this project shall include the following listed items. The due dates of the deliverables may be negotiated and shall be provided to the Department by the agreed upon date(s).

- 5.5.1 Provide a detailed work plan, and timeline for completion of each task.
- 5.5.2 Provide a summary of the data needed from the department and the planned approach for the water audit.
- 5.5.3 An initial water audit report, detailed in 5.2.5.
- 5.5.4 A final report detailed in 5.2.7.

### 5.6 Outcomes and Performance Measurement

The department will monitor the performance of the contractor through meetings and reports as outlined in the schedule. Deliverables will be compared with the purpose and objective of the contract. Payment may be withheld if deliverables do not meet the specifications outlined in this contract.

## **6. MANAGEMENT SPECIFICATIONS**

### 6.1 Administrative Meetings

Administrative meetings will be held as outlined in the schedule. These meetings will be used to review plans for the audits and will be held by phone or a location convenient to all parties.

### 6.2 Subcontractors

While subcontractors are permitted, the applicant organization or agency must carry out the majority of the project. The contractor must notify the department of any subcontractors employed in the duration of the project. Neither this contract nor any right or duty in whole or in part by the Contractor under this contract may be assigned, delegated or subcontracted without the written consent of the Department.

### 6.3 Qualifications and Experience

At a minimum, the responding bidder must:

- Have a minimum of one year experience in conducting water use audits ; AND
- Have experience in conducting at least one water use audit at a facility with a golf course and a bath/shower house or related facilities. AND
- Demonstrated ability to synthesize results of water audit in a report, analyze payback periods for retrofits, develop a list of recommendations based on results of audit and analysis, and present information in a clear and concise manner.

## **7. COST SPECIFICATIONS**

Bids on this contract should cover all aspects of the proposal and include an itemized budget for the initial audit, post-implementation audit and reports.

## Mandatory Conditions and Qualification Sheet

Provide statements answering the following questions.

1. **Contact Information:** Provide your business name, address, contact name, phone number, fax number, and email.
2. **Mandatory Requirement:** Have a minimum of one year experience in conducting water use audits. Provide a list and brief description of all water use audits performed by your firm in the last five years and contact information for those organizations or individuals, which will act as references for the Department.
3. **Mandatory Requirement:** Have experience in conducting at least one water use audit at a facility with a golf course and a bath/shower house or similar facilities. Provide a resume or brief description for all staff which will be working with the department on this project.
4. **Mandatory Requirement:** Have experience developing brief reports synthesizing the results of a water audit and analysis for payback periods for retrofits, and clearly articulating recommendations to improve water conservation and water efficiency. Provide an example of a previous report or links to previous project reports.

## **Appendix A**

### Payback Period Calculation Worksheet

An Excel Spreadsheet is attached to this document. This spreadsheet provides the tools needed to complete section 5.2.4 to analyze potential water conservation and efficiency measures for cost-effectiveness.

Credits: This spreadsheet was created by Troy Aichele of Aichele and Associates, LLC.

## **Appendix B**

### Map of Peninsula State Park

A .pdf map of Peninsula SP is attached to this document. More detailed information will be provided to the obtained contractor.

Credits: WDNR map.