

# **Monitoring Utility Costs and Consumption**

## **Standard Operating Procedure**

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The Western Collective  
Sustainable Operation's Goal 1-B*

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## ABSTRACT

This standard operating procedure has been created by a multi-disciplinary team of Forest Service employees with varied backgrounds, including budget and finance, engineering, and sustainability. Many of the team members have completed a variety of utility bill clean-up efforts and have combined their working knowledge to help navigate the clean-up process. The goal of the utility bill clean-up is to provide the tools necessary to understand the cost and consumption associated with a unit's energy use, water use, and solid waste disposal and to identify places where efficiencies in billing and consumption can be made. At the completion of the utility bill clean-up, a unit will be able to make informed decisions about utility services and improve operational efficiency. Results are predominantly from a reduction in the number of improper payments. Reducing improper payments results in dollar savings and improves a unit's ability to reliably monitor energy and water usage.

## 1. INTRODUCTION

### 1.1 Background

Within a single forest, facilities can be found in urban settings, remote locations, and everything in between. This means a single Forest has numerous electricity, water, natural gas, propane, and solid waste providers. Since facility managers on these forests do not pay or receive the utility bills, awareness of their utility usage, the associated costs, and the ability to track usage can be a challenge.

Obtaining information about utility bills is not an easy task since the majority of bills are sent directly to the National Finance Center (NFC). This standard operating procedure (SOP) has been developed to bridge the difficulties with this data retrieval gap and build the knowledge needed to better track utility usage and expenditures.

In the last several years, there has been an increased emphasis on reducing energy and water consumption in federal facilities through Executive Orders (EO) 13423 and 13514, the Energy Policy Act of 2005, and the Energy Independence and Security Act (EISA) of 2007. To meet these goals, agencies are required to establish a baseline of use for electricity, water, etc. In addition to properly identifying all the utility accounts held on a unit, this SOP will help build a baseline of use that will assist decision making and provide a benchmark against which future progress can be measured. Furthermore, improper payments will be identified. Eliminating improper payments will simplify data tracking and save money and it is also required under EO 13520. Refer to **appendix A** for the different criteria designated in the different EOs, EISA, and EPAct.

### 1.2 Purpose

The purpose of this SOP is to document processes used to access and review Forest Service (FS) utility bills. This process will allow units to monitor the consumption and cost of energy,

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water, and waste removal services used at their individual buildings and facilities and to minimize the potential for erroneous payments. Incorrect payments may be caused by a number of factors, including inappropriate rate structures, paying monthly minimums at idle meters, and paying utility bills for properties no longer owned by the Forest Service or at locations where the concessionaire is responsible for payment.

The benefits beyond cost savings include:

1. Promoting energy use awareness for building managers and occupants.
2. Measuring, verifying, and optimizing performance including diagnosing equipment and systems operations.
3. Establishing benchmark utility use.
4. Monitoring, diagnosing, and communicating power quality problems.
5. Managing utility use including monitoring existing utility usage and utility budgeting support.
6. Improving energy billing and procurement including measuring energy use, verifying utility bills, identifying best utility rate tariffs, and participating in demand response programs.
7. Developing baseline energy information and measuring and verifying savings in energy savings performance contracts (ESPC) and utility energy service contracts (UESC). For more details on these type of contracts, please refer to the U.S. Department of Energy's Federal Energy Management Program website at <http://www1.eere.energy.gov/femp/financing/mechanisms.html>

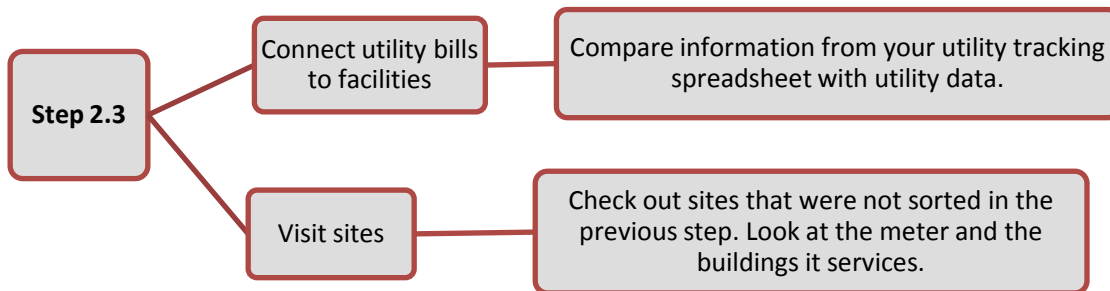
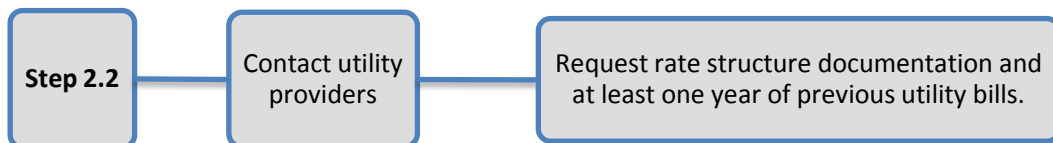
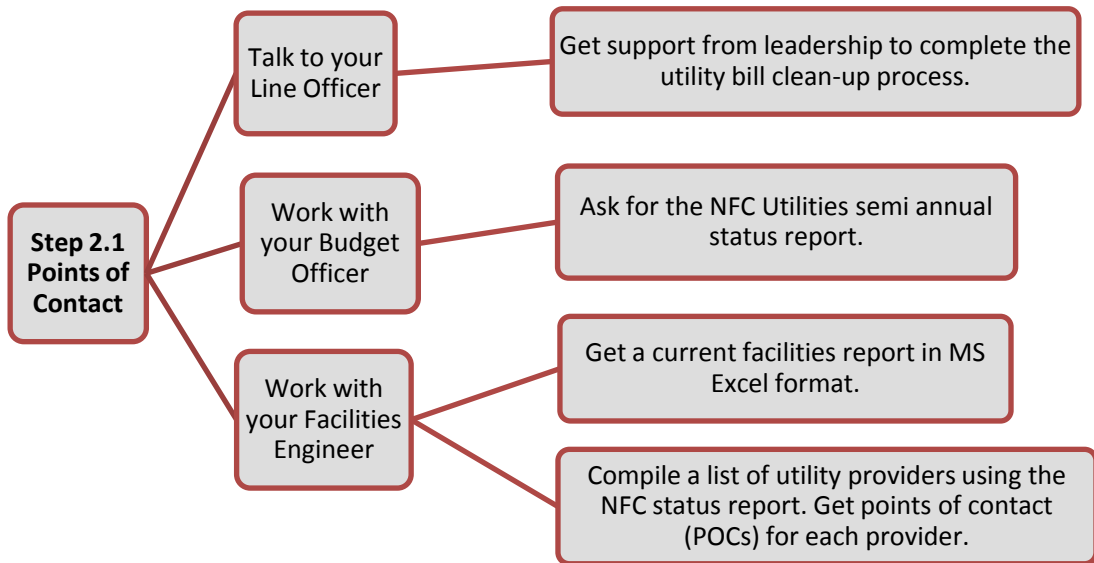
## **2. THE PROCESS**

The following process is a compilation of lessons learned by Forest Service employees who have already completed a review of their respective utility bills. It provides a general overview of the steps needed to collect basic information and report on your unit's utility use. It will also allow you to find opportunities to reduce your carbon footprint. Feel free to alter the process to meet the unique needs of your unit.

### **2.1 Getting Started: Establishing Local Points of Contact**

The first step is to determine the points of contact (POCs) at your unit. The first POC will be your local line officer. Line officer support will be needed to start and complete the utility bill clean-up effort. It is most effectively achieved by establishing a cooperative agreement with the two other parties who are necessary to make the utility bill clean-up a success – your unit budget officer and your facilities engineer. Ask your line officer for names or introductions to the budget officer(s) and/or facilities engineer(s) if you don't know them already. Plan on meeting to make sure all parties understand the goals of the utility bill clean-up process and to get started on the details. To help simplify this process, look at the flow chart on the next page. It visually shows the steps necessary for completing a utility bill clean-up.

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Local POCs will help you collect the data you need to get started. Once data from the engineering and budget staff have been gathered, you will have everything you need to move to step 2.2 – getting utility account information from your utility providers.

### ***Work with your Budget Officer***

Your unit's budget officer has access to utility account data processed at NFC. Ask for the NFC Utilities - Semiannual Status Report (UTVN06). See **appendix B** for a sample NFC report. This report will be the primary source of information you need to start the clean-up process and populate your utility tracking spreadsheet (see **appendix C** for the utility tracking spreadsheet template).

This report will include important information such as:

- Utility vendor information
- Type of utility service
- Account numbers
- Service location name
- Service location address
- Maximum bill amounts
- Amount and date paid

NOTE: This report will most likely have errors but will provide you with a good place to start.

### ***Work with your Facilities Engineer***

Your unit's facilities engineer can provide a list of facilities serviced by utilities. This list can be generated via an I-Web (INFRA) report and is considered a secondary source of information (see **appendix D** for help in obtaining the information from I-Web and **appendix E** for a sample report). The data from this report will help populate the blue cells of the utility tabs in the utility tracking spreadsheet template (**appendix C**). Since your facilities engineer is likely new to this process as well, the outline below documents the general information gathering process.

- Ask your engineering staff to pull a building report from I-Web (INFRA) that is in MS Excel spreadsheet format. See **appendix D** for guidance on what data to request and appendix E for a sample report.
  - Next, work with the engineers and building managers to eliminate the buildings that do not receive utilities; power, natural gas, or water services.
  - Once your list is pared down to facilities using utilities, move on to step 2.2.
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## 2.2 Contacting Your Utility Providers

**TIP:** A time saving process for accessing utility billing statements is now available which can greatly expedite the collection of this information. The Enterprise Content Management (ECM) Invoice Processing Module has been implemented to streamline invoice processing at NFC. A major benefit of this module is that electronic images of utility invoices are stored in ECM as soon as they are received. ECM allows view/print access of these utility billing statements. See **appendix J** for information on obtaining access to the ECM web site.

Now that you have all the initial data, you will need to contact the utility providers directly for billing statements (which contain costs, consumption, meter numbers, etc.), rate schedules/structures, service address, possible rebates, and utility POCs. The objective is to get as much information as you can from the utility providers. Keep a utility audit trail by documenting each utility's POC, phone/FAX/cell number, and email address in the Comments section of the Excel spreadsheet. Record your questions or concerns as you go. See appendix C for the utility tracking spreadsheet template and suggested data elements.

Some utility providers require the person making the data request to be an authorized POC. Usually the authorized POCs are district office managers or unit budget analysts. If you are not an authorized POC, have yourself added as one. Permission from the budget officer may be required depending on the utility company. In order to maintain the billing procedure already in place, make sure to have yourself listed only as a contact and not a responsible party.

Many utility companies provide access to account information online. Check with your utility providers to see if they offer this service. Again, you may need to be an authorized POC to access this information, but it can greatly expedite the review process.

Request at least one year's worth of paper or electronic billing statements for each utility account. If you cannot access billing statements online, contact the utility provider for copies. Most utility providers can provide a summary document of annual utility use for each account which will work if all the necessary information listed below is included

- ✓ **Account number**
- ✓ **Monthly usage**
- ✓ **Monthly cost**
- ✓ **Meter number**
- ✓ **Rate structure code**
- ✓ **Service address**

**TIP:** The data most frequently missing from a summary document is the rate structure and the meter number. To save time and frustration, confirm that all the information listed in the bullets are included in the documents being sent from the utility provider. If they aren't included, ask for the missing information to be sent separately.

## 2.3 Bringing It All Together: Connecting Utility Bills to Buildings and Facilities

You have your utility tracking spreadsheet populated from your unit POCs reports and you have collected all the data from the utility companies. Now it is time to match them up. This is the heart of the utility bill clean-up and may be the most difficult and time-consuming step. But once it is complete, the information gathered will be invaluable well into the future.

Completing this step is difficult because it is more an art than a science. When first getting started, the best advice we can offer is to match up accounts and utility data in small groups, such as by utility company. That way, you'll get a feel for all the things to be looking for in small doses. Usually the data we have matches the utilities' data. However, when they don't match, the following list covers the most common occurrences and what to do about them.

- **Account numbers from the utility and NFC match, but the building name or address doesn't.**

This happens all the time. The billing address used by the utility company is just that: a billing address. This means that service may actually be provided somewhere else (e.g., the actual building location, a distant radio tower, etc.). Work with your engineering POC to rectify this type of confusion and determine how a change, either with the utility company or TUMS, should be carried out (if at all).

**Note:** TUMS is the Telephone Utility Maintenance System your unit budget staff uses to establish and update utility accounts. These utility accounts are established in TUMS to facilitate payment through the National Finance Center (NFC).

- **Account numbers or building locations/addresses from TUMS are not on record with the utility.** Also included is any situation where either the Forest Service or the utility has a record and the other party doesn't.

Buildings get closed or sold, or utilities may be transferred to a private user. Keep this in mind; TUMS and utility data are static, so changes may happen before or after the times represented by the data sets. Again, work with your engineering or budget POC to get the whole story if you're not able to make a determination.

- **The number of accounts and/or meters doesn't match the number of buildings.**

There are so many possibilities regarding what to do and look for, it is best to contact your engineering POC and go from there. HINT: This situation may require a site visit. If it does, find a way to go along and gain some perspective on the situation. It will help down the road!

These are just a few of the more common things to look for when matching up our records with the utility provider records, but it is likely you'll find a kink unique to your own clean-up. Recognizing that mismatches occur and being able to rectify them will get you confidently on the path to taking a deeper look into the utility bill clean-up. Examining your utility bills is next.

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## 2.4 What to Look for in Utility Bills

This is a list of things to look for when reviewing utility bills for your unit. These questions should be asked of every single utility account because the savings they provide can be significant.

### ***Do we own the facility?***

The best way to answer this question is to talk to the facilities engineer or other engineering staff on your unit. They should be able to help you verify that the Forest Service still owns or leases the property by using I-Web-generated building reports. See **appendices D and E** for information on building I-Web reports.

Sometimes, the property has been sold or transferred to another owner (private or government) and the forest is still paying the utility bills. In this case, inform the current owner of the problem and their responsibility to pay the utilities. Work with the utility provider, your unit's budget personnel, and NFC to remove the Forest Service from payment responsibility. In some cases, you may be eligible for reimbursement for past payment errors. See **appendix G** for sample notification letters.

### ***Do we need the services being provided?***

Verify that electricity, gas, and water are still needed or used at each site. Sometimes the utility service has been disabled or removed, but the Forest Service is still paying a monthly charge for the meter.

- If electricity, gas, or water is no longer needed, work with the utility provider to disconnect the meter and stop the monthly charges. In some cases, electrical transformers can also be removed resulting in payment back to the government.
- If electricity, gas, or water may be needed in the future, it may still be cost effective to disconnect the service now and reconnect at a later date for a small fee. Obtain the details and present the information to the facilities engineer for decision.
- Verify that trash disposal services are still needed at each site.

### ***Is this bill the responsibility of a concessionaire or special use permittee?***

Many Forest Service recreation sites, such as campgrounds, are operated by concessionaires. Your unit may also allow operation of Forest-Service-owned facilities by other entities using special use permits. Contact your unit's developed recreation staff or special use permit administrator to review agreements for these non-FS-operated facilities. Verify who is responsible for paying the utilities.

The Forest Service often agrees to pay for utilities during construction, with the concessionaire responsible for payment upon completion. However, it is possible for this transfer of payment responsibility to be overlooked. Work with your unit's concessionaire liaison, special use permit administrator, budget personnel, and utility provider to get the billing information corrected.

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***Is the rate structure correct?***

Make sure your rates are appropriate both for the total amount and peak amount of energy (electricity, natural gas, and so forth) being used. For example, commercial rates are inappropriate for trailer pads, bunkhouses, and guard stations. Host sites in campgrounds may also qualify for residential rates.

- If the rate structure appears to be inappropriate, discuss the total use, peak use, and type of facility with the utility company to determine the best rate structure.
- Many Forest Service sites have only one meter for the entire site. In some cases, utility rates are determined by the amount of service provided. If this rate structure appears to be causing higher bills, it may be worthwhile to work with the utility company to install meters for individual buildings or for zones within the site.
- Large energy users often are required to pay demand charges. The Forest Service has reduced its presence at many sites, which has reduced energy use. If you find demand charges on utility bills, check the minimum service size for the required demand charges. If the energy use at the site is less than the minimum, work with the utility provider to have demand charges discontinued. Consult with the facilities engineer to ensure discontinuation is appropriate.
- Check for three-phase power charges. Some utility providers charge more for three-phase than single-phase power. At some sites, three-phase power could easily be converted to single-phase. At other sites, conversion would be expensive. If you convert to single-phase, take the opportunity to replace old three-phase equipment and fixtures with more energy efficient and environmentally friendly new equipment and fixtures.

***Are the bills accurate?***

- Review the utility bills for invoice accuracy, redundant billing charges, tariffs, and surcharges. Mistakes happen.
- Verify that the billing statement shows tax exempt status. This also applies to leased facilities if the government is responsible for paying the utilities.
- Look for inconsistencies in rates or monthly charges. There may be accounts incurring late charges because the minimum payment is too low and NFC is waiting for a new 3-month average. These issues should be directed to your budget officer.

***Are seasonal buildings getting closed down properly?***

Verify that buildings that are not used year-round are closed down properly. Several thousand dollars can be wasted heating a building that is closed for the winter. Be sure each building has been properly winterized before shutting off the heat.

### ***Are you eligible for rebates?***

If you are planning or have completed any energy upgrades such as light fixture replacements or installation of energy star appliances, check to see whether your utility provider offers rebates. Contact your utility company or go to [www.dsireusa.org](http://www.dsireusa.org) for information on incentives by state for renewable energy and energy efficiency.

### ***Are there anomalies in utility use?***

Look for spikes or anomalies in energy usage: for example, more water in winter than summer. These spikes may not be errors but could be valuable information for facility managers. Questions on rate structures and spikes or anomalies in usage should be directed to the facilities engineer.

**TIP:** If a building has natural gas service, but no electricity utility account listed, ask why. Similarly, if you know a building operates year round but there is no natural gas utility account or meter, consult the building manager to determine if propane or some other heating fuel is being used. Propane (aka Liquid Propane Gas or LPG) is rarely listed on the Telephone Utility Maintenance System (TUMS) utility account summaries. It is generally paid directly via purchase card or blanket purchase agreement (BPA) at the district or supervisor's office (SO) level.

### ***Last but not least ...***

Look for opportunities to improve service for your unit and the public in general. Direct these issues to the appropriate staff(s).

## **2.5 Utility Account Naming Convention**

This section was developed to help you provide consistent naming of utility accounts. A consistent naming convention will expedite the research process by linking utility accounts to the correct unit and facility. Since TUMS contains character limits, the following naming convention is recommended. For additional information on setting up utility accounts with NFC, see **appendix I**.

Develop a three-line service location address as follows:

Line 1: Numeric Region Unit Identifier, District Name

Line 2: Actual Physical Service Location: Street Address, Suite #, Building/Site Name, etc.

Line 3: City, State, Zip Code

Example:

Line 1: 0213, Columbine RD

Line 2: 18462 CR 501, Vallecito WC

Line 3: Bayfield, CO 81122

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## **2.6 The Utility Bill Clean-up Template**

The utility tracking spreadsheet template in **appendix C** has been developed to help organize the information you collect from the NFC reports, utility vendors, and I-Web reports. The final compilation of all this data into the template will be helpful in answering the questions previously mentioned in section 2.4. **Appendix C** also provides an example of a completed annual usage tab which allows you to track your utility consumption at regular intervals.

## **2.7 Case Study: San Juan National Forest**

The facilities engineer on the San Juan National Forest began her unit's utility bill clean-up process in 2004. Since that time, the San Juan NF has realized an annual average savings of approximately 19% of their total forestwide utility bills which translates into about \$32,000/year. The savings can be significant. The utility bill clean-up process requires continued monitoring to stay on top of utility bills, especially as facilities are conveyed, acquired, or vacated. A summary of the types of changes made and estimated savings can be found in **appendix H**.

## **2.8 What's Next: Continuous Improvement**

After you have completed this process, you will have significant opportunities to work towards reducing your unit's environmental footprint. The sustainability goals set forth in the *Strategic Framework for Responding to Climate Change* set by the Chief and the latest Executive Order that focuses on federal leadership in environmental, energy, and economic performance give guidance for making reductions in energy and water consumption. However, to truly make needed changes, they have to happen on the ground with champions and leaders like you taking initiative and making a difference on your unit.

After you have completed the utility bill clean-up process, please check out the Net Zero Guides which outline the next series of steps you can take to reduce your unit's environmental footprint. The Net Zero guides are currently in development. Check the Sustainable Operations website at <http://www.fs.fed.us/sustainableoperations/> for future posting.

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## ACRONYMS AND ABBREVIATIONS

Acronyms/abbreviations used in this document are listed below in alphabetical order.

Acronym/Abbreviation	Description
ASC	Albuquerque Service Center
ECM	Enterprise Content Management System (Telephone and Utility Invoice Processing Module)
NFC	National Finance Center
POC	Point of contact
SOP	Standard operating procedure
TUMS	Telephone Utility Maintenance System
USDA	United States Department of Agriculture

## APPROVAL SIGNATURE

The following approval reflects the most current version of the SOP.

Approval	
Signature:	
Name:	
Title:	
Date:	
Revision:	

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