

CONSERVE FLORIDA CLEARINGHOUSE

2014 EZ Guide Online User Manual

Version 2.2.0.8

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1 Introduction

EZ Guide Online is the latest version of a water conservation tool intended for use by potable water utilities in the state of Florida. The purpose of EZ Guide Online is to identify the most cost efficient water conservation practices available to a water utility by estimating and analyzing its current water use on a parcel by parcel basis. Further information and background can be found at <http://www.conservefloridawater.org>.

This user's guide is intended to serve as a step-by-step walkthrough of the operation of the EZ Guide Online. It does not describe the analytical methods and data sets used in the EZ Guide operation.

Questions regarding the EZ Guide Online should be directed to the Conserve Florida Clearinghouse, which can be contacted at support@conservefloridawater.org or 1-866-640-9732.

2 Prerequisites

To create a conservation profile in the EZ Guide Online, two prerequisites must be met: informational requirements and technical requirements. All prerequisites have been kept as simple as possible, and should be readily obtainable by any eligible utility.

2.1 Informational Requirements

EZ Guide operation requires a minimum of 2 pieces of information to be provided by the user.

1. The Utility's current service area boundary. This is best defined in a GIS shapefile, although the Clearinghouse will work with other accurate definitions whenever possible. PDFs and other image formats (jpegs, tiffs, etc.) are not encouraged as they do not have georeferencing data, and are difficult to use to define coverage areas accurately at the parcel scale.
2. The Potable Water System IDs (PWSID) that are used by the utility to report their water production to the Florida Department of Environmental Protection (FDEP).

This information only needs to be provided once; subsequent profiles will reuse the utility data. If previously provided information becomes out of date, updated information can be provided and used to update profiles already created. The walkthrough will indicate where the above information can be provided to the Clearinghouse.

Familiarity with other aspects of the utility's water use is highly recommended, as this will greatly help in refining the EZ Guide Online's water use breakdown analysis. Things helpful to be familiar with include:

- Issued water permits
- Utility monthly water production
- Utility imported and exported treated water
- Results of recent utility water audits
- Outdoor irrigation characteristics (prevalence of automatic sprinkler use, prevalence of private irrigation wells)
- Commercial, Industrial, and Institutional (CII) account distribution and account numbers
- Utility projected population and water use growth

2.2 Technical Requirements

The EZ Guide Online is an online web application and requires easily obtainable computer resources.

- A computer with available Internet connection
- Active e-mail account that will accept mail from support@conservefloridawater.org (for account registration)
- A recent version web browser*

* Internet Explorer 8 and Firefox versions 3 and later have been confirmed to work. Other browsers will likely work fine as well, but have not been specifically tested.

A spreadsheet and word processing program may be useful as well for viewing detailed data and reports when available, but they are not required.

3 EZ Guide Online Universal Features

Certain features and usability aids are available throughout the EZ Guide.

- Tool tips containing definitions and explanations are available in many locations within the EZ Guide and can be viewed by holding the pointer over a term of interest for approximately 1 second.
- Sections of the EZ Guide that have been viewed and completed will be indicated by a green checkmark next to the menu item in the left navigation menu.
- Each EZ Guide Online section includes an initial “Introduction” page which briefly describes the purpose(s) of that section.
- EZ Guide Online sections cannot be completed until the previous sections are completed first. The EZ Guide will present a warning if sections are attempted out of order. Once completed, any previous section can be re-visited at any time.
- When returning to a profile in the EZ Guide Online, it will return the user to the last page edited to help the user keep track of where they were working. This position is saved once per profile, so different users will be returned to the same location.
- EZ Guide default data that is overwritten by a user is stored and can be displayed or restored at any time. Source information is indicated along with the data values.
- Some EZ Guide pages are designated as “Detail” pages and display detailed data used in the EZ Guide analysis. These pages are considered optional to typical EZ Guide use, and will only be covered in a general manner in the user’s guide.

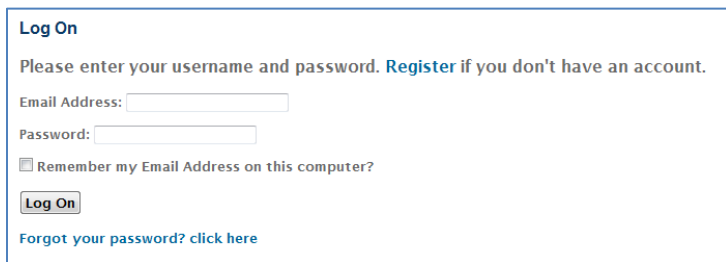
It should also be noted, that throughout the EZ Guide Online are references to Conservation Best Management Practices (BMPs) and Measures. The Clearinghouse has defined BMPs to be conservation practices that can be analyzed for quantifiable water savings. Measures are conservation practices that are currently unquantified. Some practices that are currently classified as measures may become quantifiable and reclassified as BMPs as further analytical methods are developed.

4 EZ Guide Online Walkthrough

The EZ Guide Online is located at <http://ezguide.conservefloridawater.org>. The EZ Guide may be accessed at that site directly.

4.1 Creating a User Account

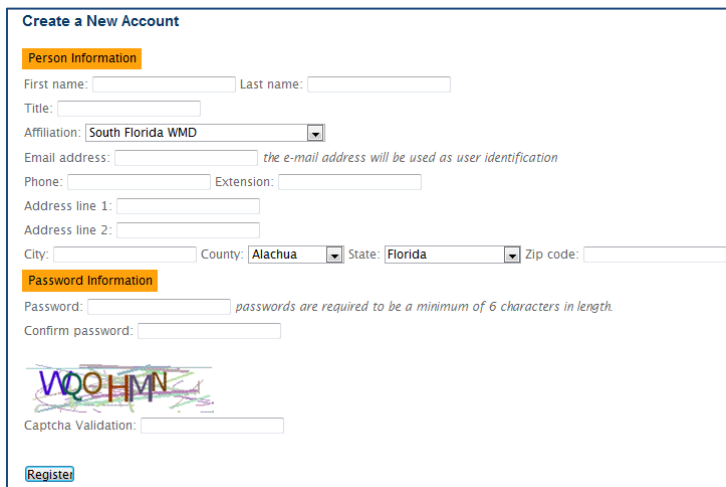
The first step to accessing the EZ Guide Online is to create a new user account. This is accomplished by clicking the “Register” link on the Logon screen, which is presented automatically when first accessing the website.



The screenshot shows a 'Log On' form with the following elements: a title 'Log On', a prompt 'Please enter your username and password. Register if you don't have an account.', an 'Email Address:' label with a text input field, a 'Password:' label with a text input field, a checkbox labeled 'Remember my Email Address on this computer?', a 'Log On' button, and a link 'Forgot your password? click here'.

Figure 1- Logon screen

You are then presented with a “Create a new account screen”.



The screenshot shows a 'Create a New Account' form with two main sections: 'Person Information' and 'Password Information'. The 'Person Information' section includes fields for 'First name:', 'Last name:', 'Title:', 'Affiliation:' (a dropdown menu showing 'South Florida WMD'), 'Email address:' (with a note 'the e-mail address will be used as user identification'), 'Phone:', 'Extension:', 'Address line 1:', 'Address line 2:', 'City:', 'County:' (a dropdown menu showing 'Alachua'), 'State:' (a dropdown menu showing 'Florida'), and 'Zip code:'. The 'Password Information' section includes fields for 'Password:' (with a note 'passwords are required to be a minimum of 6 characters in length') and 'Confirm password:'. Below these sections is a 'Captcha Validation:' field with a captcha image showing the letters 'WOOHNN' and a 'Register' button.

Figure 2 - Creating a new user account

Fill out the requested information, and click the register button. You will then receive an e-mail to the address you provided in the account information. The e-mail will contain a confirmation link. Following that link will take you to a new web page where you will be presented with a message that your account was confirmed and is now active.

Once you have confirmed and activated your account, you can return to the log on screen and use your account e-mail address and password to log on to the EZ Guide Online. Optionally, you may select to have the EZ Guide Online remember your e-mail address so you will not need to re-enter it in the future.

The EZ Guide will only remember the username for the particular user, computer, and web browser currently being used at that time.

Your user account can be edited at any time by selecting the “Your Account” link in the upper right corner of the browser window. If you forget your password, the “Forgot your password?” link will initiate a process to reset it (you will need to utilize the EZ Guide account’s associated e-mail account to complete the password reset).

When activating an account or resetting a password, it is possible that the e-mail generated by the EZ Guide is incorrectly identified as spam or junk mail. If you are expecting an e-mail from the EZ Guide and have not received it after a short period of time, check your e-mail account’s junk mail folder. If it is not located there, contact Clearinghouse support.

4.2 Choosing a Profile

Once logged in, the EZ Guide will present you with choices to “Start a new profile”, “Edit or view an existing profile”, or “Manage utility information.”



Conserve Florida Water's Utility Planning Site

Start a new conservation profile...
[Start profile](#)

Edit or view an existing profile...
[Continue with profile](#)

Manage your utility information...
[Manage Utility Information](#)

Figure 3 - Choosing a profile

4.2.1 Creating a New Profile

If you have not previously created a profile, there will be no available profiles if you select the “Continue with profile” option. Selecting the “Start profile” option will take you to the “Profile” EZ Guide module.

4.2.2 Choosing an Existing Profile

If you have previously created profiles, choosing the “Continue with profile” option will take you to a page listing all of the profiles you have created or have “edit” or “view” permissions.

Existing Profile							
Continue with an existing profile							
Links	Profile Name	Status	Last Modified Date/Time	Last Modified By	Dor Update Needed	Import/Export Profile	Delete Profile
Continue	1/26/2012 Workshop	In Progress	1/26/2012 3:19:55 PM			Export	
Continue	10-26-2011 Workshop	In Progress	1/26/2012 2:42:37 PM	Conserve Florida Clearinghouse		Export	
Continue	Aggregate	In Progress	3/31/2012 10:25:48 AM	Randy Switt		Export	
Continue	Test - Randy	In Progress	5/19/2013 10:12:00 PM			Export	Delete

Figure 4 - Choosing an existing profile

Selecting “Continue” will take you to the last edited page in that profile. The “Export” option is not yet implemented, but will allow you to export the profile data for offline backup. You may also delete a profile of which you are identified as an “Owner” (see section 4.4.2 for description of permissions).

4.2.3 Managing Utility Information

Choosing the “Manage your utility information” option will take you to the “Utility Definition” EZ Guide module. This module is where you can view, edit, or create Utility definitions.

4.3 Utility Definition Module

The utility definition module allows you to create, view and edit utility definitions. Utility definitions include information concerning the utility contacts, address, service area boundary and PWSIDs associated with the utility. At least one utility definition is required when completing an EZ Guide profile. Once a utility has been defined and approved, it can be used in multiple profiles.

Only one utility definition may exist for any given utility. If the utility definition information is incorrect or out of date, the existing definition should be corrected and/or updated.

When arriving at the utility definition module (by choosing the “Managing Utility Information” button), you will be presented with a list of Utilities to which you have “Owner”, “Edit” or “View” permissions (the definition of those permissions will be discussed later), and a link to “Define New Utility.” For the listed utilities, you can either “Edit” the definition, or manage utility permissions via the “Manage Permissions” links.

4.3.1 Defining a New Utility

If the utility you are looking for is not in the EZ Guide Online database, then you will need to click the “Define New Utility” link. This will initiate a several page process to collect the information the Clearinghouse needs to prepare a new utility for EZ Guide analysis. The first page collects general characteristics and contact information about the utility which should be readily available to anyone working for, or on behalf of, the utility.

Utilities
In order to define a new utility, you will need to provide the PWSIDs for your utility as well as the necessary shapefiles. Shapefiles for all of the utility PWSIDs need to be zipped up into one zip file and be uploaded to the Clearinghouse. Please ensure you have all of this information before beginning this process.

Utility Information
Utility Name:
Phone: Extension:
Water Supplier Type: **Retail**

The utility service area boundary is used to select the parcels that fall within the area served by the utility. Special care is needed during this step of the process.
If the boundary includes areas not covered by the utility, like projected service areas, or “donuts” that are self served the number of parcels could be over estimated.
On the contrary, if areas served by the utility are not included in the boundaries the numbers of parcels could be under estimated.

Description of Service Area:

Address line 1:
Address line 2:
City: County: **Alachua** State: **Florida** Zip code:

Figure 5 - Defining a new utility definition

After continuing, you will be presented with a page to enter the utility’s associated PWSIDs.

Public System Water Ids (PWSIDs)

To add a PWSID click the "Add PWSID" link which is located below the table, to edit a PWSID click "Edit", to remove a PWSID click "Remove". Once the PWSID list is created or changed the system will import Basic Facility Report (BFR) and Monthly Operation Report (MOR) data from data obtained from the Florida Department of Environment Protection. The data is also can also be reimported by going to the "Options" page which is available from the main menu.

After the PWSIDs are added, you may send a request to the Clearinghouse to associate the parcel IDs with your PWSIDs in the DOR database. Your request must be processed by the Clearinghouse prior to the time you complete the Audit module. After the PWSIDs have been saved a link will be available called "EZ Guide Utility Data Request". This link is located on the page where you select your profile. In order to make the request you will be required to upload a file representing the Service Area Boundaries. Once the Clearinghouse completes the data request, the system will import Parcel data associated with utility

Links Public System Water Id (PWSID)

Add Pwsid

Continue

Figure 6 - Associating utility PWSIDs

At least one PWSID is required, but as many as needed may be entered.

Add PWSID

PWSID:

Save Cancel

Figure 7 - Entering a PWSID

The PWSID numbers must exist within the EZ Guide database, and you will be informed if it cannot be found. Once you have added all the applicable PWSIDs, clicking "continue" will take you to the next page.

The next page is where you will upload a compressed file (in zip format) containing one or more files that the Clearinghouse can use to define the utility's service area boundary. As discussed at the beginning of this user guide, it is best if these files define a GIS shapefile.

EZ Guide Utility Data Request - File Upload

Shapefiles for all of the utility PWSIDs need to be zipped up into one zip file and be uploaded to the Clearinghouse. Please name the zip file with an easy to identify name. A suggested naming convention is *UtilityNameShapefiles.zip* where *utilityName* is the name of your utility

Please specify the zipped shapefile(s) matching the utility's service area

Filename[.zip]: Browse...

Upload

Figure 8 - Uploading a utility service area boundary

Once this file is uploaded, the Utility definition information is forwarded to the Clearinghouse and Clearinghouse staff is notified. If the utility information is complete and consistent, then the Clearinghouse should be able to prepare and have the utility definition available for use in the EZ Guide Online within 24-48 hours depending on any utility processing backlog. If Clearinghouse staff encounters any inconsistencies or errors, they will contact you directly through the contact points identified in your user profile, initially by e-mail and then by phone if deemed necessary and

appropriate. Once the utility definition has been completed by the Clearinghouse, you will receive an e-mail notification.

After receiving the completion notification, you can return to the EZ Guide Online, and use the utility definition in an EZ Guide Profile.

4.3.2 Editing Utility Definitions

Once the utility definition has been completed by the Clearinghouse, you will see it listed on the “Managing utility information” page. Selecting the “Edit” link adjacent to the utility name, you will be taken through a series of pages nearly identical to the utility definition pages. On these pages you can edit and update any utility information that may be incorrect or out of date, including the utility service area boundary. Changes will be submitted to the Clearinghouse for consistency checking and updating as appropriate.

4.3.3 Manage Utility Permissions

Due to privacy concerns, utility definitions are only accessible to EZ Guide users that have been granted permission to use them. Three permission levels are granted to users of utility definitions:

- Owner
- Edit
- View

“Owner” permissions are granted by default to the original requestor of the utility definition.

Users with “Owner” permission may:

- Use the utility definition in EZ Guide profiles
- Submit changes to the utility definition (see “Editing Utility Definitions” above)
- Modify permission levels for other EZ Guide users

Users with “Edit” permissions may:

- Use the utility definition in EZ Guide profiles
- Submit changes to the utility definition (see “Editing Utility Definitions” above)

Users with “View” permissions may:

- Use the utility definition in EZ Guide profiles

Users with “Owner” permissions may edit the utility permissions by selecting the “Manage Permissions” link adjacent to the utility name. Permission levels are easily modified by using the “Edit” link adjacent to the user’s name on the utility permissions page.

Manage Utility Permissions

ABC Utility

Links	User Name	Permission
Edit Remove	Laurel Payne	Owner
Edit Remove	Randy Switt	Edit

[Add Permission](#)

[Continue](#)

Figure 9 - Managing utility permissions

Users may have all permissions revoked by using the “Remove” link. New users may be added by using the “Add Permission” link at the bottom. This opens a form where EZ Guide users can be searched and assigned the appropriate permission level.

Add Permission [X]

User Name: Permission: **Owner** ▼

[Save](#)

Figure 10 - Adding a user to utility permissions

Only existing EZ Guide users may be assigned permissions. If you would like to assign permissions to a person who does not yet have a user account, direct them to first create an EZ Guide user account.

4.3.4 Requesting Permission to Use a Utility Definition

EZ Guide users may request permission to use a utility definition in an EZ Guide profile. This is done from the “Profile” module (discussed later). Users with “Owner” permissions to the requested utility definition will receive an e-mail when permission is requested, which will include a link and sufficient information to grant the requesting user permission if the “Owner” deems the request appropriate.

4.4 Profile Module

The profile module defines the general characteristics of the profile, including what utility(ies) will be analyzed, permission levels, and any associated water use permits.

4.4.1 Introduction to Profiles

The purpose of the Profile Module is briefly described on this page.

4.4.2 Profile Page

The profile page in the profile module is where you define a profile name and associate what utility(s) the profile will be analyzing.

Profile

Typically a profile is associated with only one utility, but the system will allow you to select more than one.
If the desired utility does not exist in our database, please click on the "Define New Utility" link below to define it.

This form has two steps:

1. Name the profile
2. Associate your profile with one or more utilities

Note that your utility will not appear in the list until it has been approved. You will receive an e-mail from Conserve Florida Water Clearinghouse when your utility is approved.

ProfileName

Links	Utilities	Data Request Status	Parcel Count	Service Boundary
Remove	City of	Request Approved	1,933	View Map

[Add Utility](#)

Figure 11 - Profile page

The profile name can be any name of your choosing. The Clearinghouse suggests that it be something unique and descriptive that includes the name of the Utility(ies) or area being analyzed for later identification.

4.4.2.1 Adding a Utility

To add a utility for analysis, click the "Add Utility" link, which takes you to a search page.

Utility(s) to be associated with this Profile

Please select an existing utility from the auto-complete textbox for the Utility Name

Utility Name: [Available Utilities](#)

[Define New Utility](#)

Figure 12 - Adding a utility to a profile

The “Utility Name” search field will immediately search all previously defined utilities in the EZ Guide Online database to which you have at least “View” permissions once two or more characters are entered. Matching entries are displayed in a drop down list, and once a desired utility is displayed it can be selected by clicking on it.

If a utility you are planning to analyze is not available in the dropdown list, you may click the “Available Utilities” link to view all the utilities defined within the EZ Guide online to which you do not have permissions. From this list you may request permission to use a utility definition within your profile. Your request will automatically be sent to the EZ Guide users who have the ability to add the requested permission. You will be notified if and when the Utility “Owner” grants the requested permission. Response time will depend upon the associated EZ Guide user.

At least one utility must be associated with a profile. More than one utility may be analyzed together, but there is a limit of 400,000 parcels that may be analyzed in a single profile. This limit is set to ensure reasonable performance of the EZ Guide tool. The “Define New Utility” link will take you to the new utility definition portion of the “Utility Definition Module” described previously. You should use this link if your utility has not been previously defined.

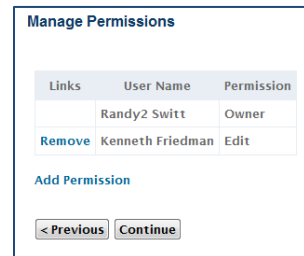
When available, each utility will have a “View Map” option in its row, which will open an additional web browser tab and display the utility’s service area boundary superimposed on a Google Maps® adjustable map view

4.4.3 Manage Permissions

This page displays the users who have access to the current profile, and allows profile owners to alter those users’ access rights.

Only the profile owner can change profile access levels. Three types of permissions are available.

- Owner – can view and edit profile **and** alter user permissions
- Edit – can view and edit profile data **except** for user permissions
- View – can view but not edit profile data



Links	User Name	Permission
	Randy2 Switt	Owner
Remove	Kenneth Friedman	Edit

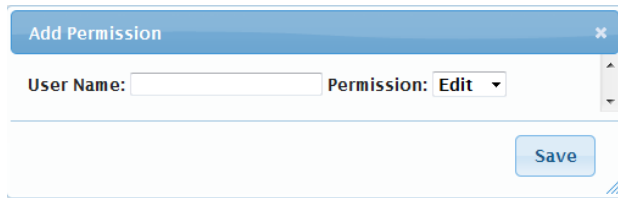
[Add Permission](#)

[< Previous](#) [Continue](#)

Figure 13 - Manage profile permissions

Users not listed have no access to the profile. Owners can add and remove users and give them “Edit” or “View” permissions, but only EZ Guide administrators can change owner rights. If you would like to transfer owner rights, please contact Clearinghouse staff at the contact link at the bottom of the page.

Clicking the “Add Permission” button presents a search box.



The image shows a modal dialog box titled "Add Permission". It contains a text input field labeled "User Name:" and a dropdown menu labeled "Permission:" with "Edit" selected. A "Save" button is located at the bottom right of the dialog.

Figure 14 - Adding a user to profile permissions

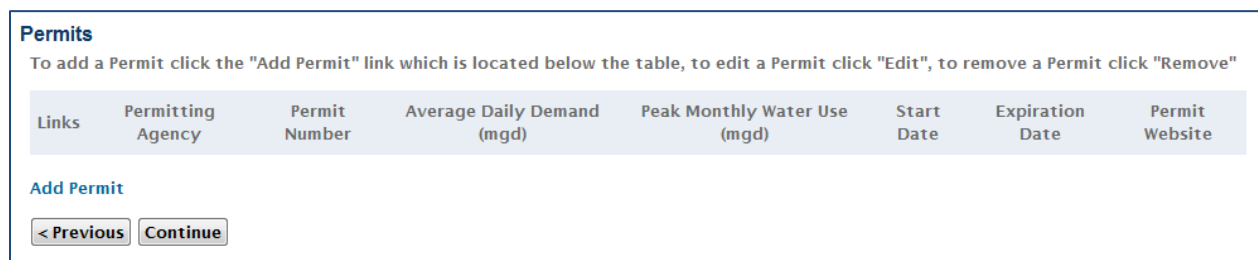
After two or more characters are entered in the search box, the EZ Guide user database will automatically be searched and display the user's names in a dropdown list. Clicking on the user account in the dropdown list will select it.

Only people who have created user accounts in the EZ Guide Online system can be granted profile level permissions. If you would like to have a person without a user account view or edit a profile, you should contact that person and request that they create their own user account first.

Once permissions have been set as desired, you can "continue" to the next page.

4.4.4 Permits

This page allows you to define the water use permits associated with the utility(ies) in the profile.



The image shows the "Permits" section of a web application. It includes a title "Permits", a instruction "To add a Permit click the 'Add Permit' link which is located below the table, to edit a Permit click 'Edit', to remove a Permit click 'Remove'", and a table with 8 columns: Links, Permitting Agency, Permit Number, Average Daily Demand (mgd), Peak Monthly Water Use (mgd), Start Date, Expiration Date, and Permit Website. Below the table is an "Add Permit" link and two buttons: "< Previous" and "Continue".

Links	Permitting Agency	Permit Number	Average Daily Demand (mgd)	Peak Monthly Water Use (mgd)	Start Date	Expiration Date	Permit Website
Add Permit < Previous Continue							

Figure 15 - Permits page

Permit information is not currently utilized in EZ Guide analysis, and is included for ease of comparison and documentation.

Selecting the "Add Permit" link will present you with a Permit form where all the relevant information can be entered.

Figure 16 - Adding permit data

The “Permit Website” field can be completed with a link to the appropriate e-permitting documentation at the associated permit agency, if available.

4.4.5 Profile Summary

The next page informs you that the Profile module has been completed. Each EZ Guide Online module includes a summary page that presents a summary of information entered and produced in the module. Each summary page also provides two options for saving or printing it. The “Print Report” option opens the summary page on a separate web browser tab without the EZ Guide Online left or top navigation bars, providing a “printable view” that can be neatly output to a printer. The “Output to Word Document” option will provide a word formatted document (.doc) that contains all the summary page information except for any charts present in the page. This is due to a limitation of dynamic file generation. Where feasible a table of values is provided in place of the chart. Most charts on the summary page are provided with an option to download to your computer, after which they can be pasted into the generated word document if desired.

4.5 Water Supply Analysis Module

The water supply analysis module reviews the historical water production of the profile utility(ies), facilitates correction of any errors in the reported data, identifies a representative year for water use analysis, and provides for identification of imported and/or exported water.

4.5.1 Introduction to Water Supply Analysis

The Introduction page briefly describes and overview and purpose of the Water Supply Analysis Module.

4.5.2 Water Supply Analysis

This page displays the aggregated utility water production data as reported to the Florida Department of Environmental Protections (FDEP) in the monthly operation reports, and directs you to select a calendar year on which to base the EZ Guide's water budget analysis.

The first chart (Monthly Treated Water) displays the profile monthly water supply over the most recent 10 years available to the EZ Guide.

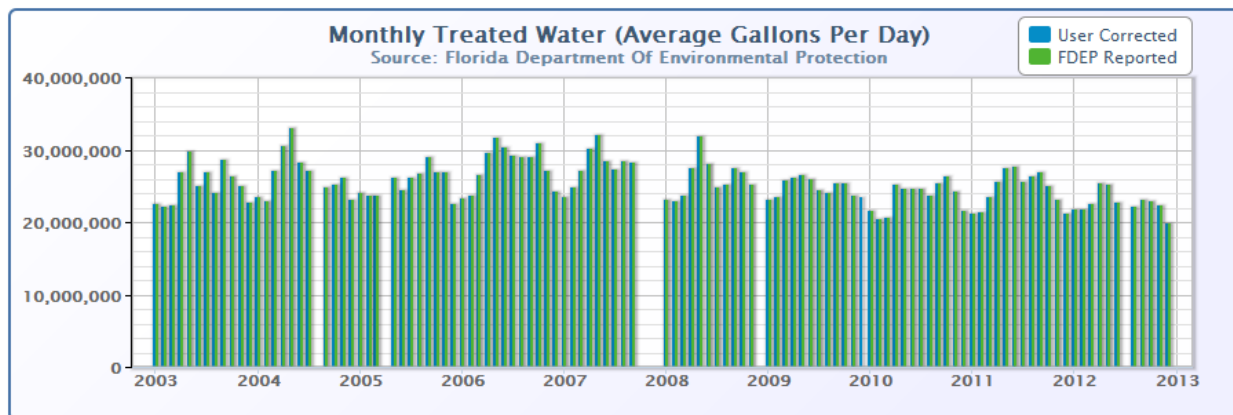



Figure 17 - Monthly Treated Water chart

Three things to look for on this chart are:

- Water production levels and trends over time. Are they increasing or decreasing?
- Water production seasonality. Is water production fairly even across all months, or are there repeating peaks during the winter or summer months? Repeating water production peaks can indicate a high percentage of seasonal irrigation use, or a large seasonal population.
- FDEP reporting errors. It is not unusual to find that some months are missing in the FDEP reporting data, or that they were delivered or transcribed incorrectly. Scale errors seem to be common. Such errors can be corrected on a subsequent EZ Guide page. If error corrections have already been entered, they will displayed on this chart as "User Corrected".

The next table (Summary Monthly Treated Water from Florida DEP) contains the same data as the above chart in table form, but also adds statistical information such as annual average and seasonal water use. The table defaults to displaying only the statistical information, but clicking the "Toggle Months" link at the bottom of the table will display the individual month data as well.

Summary Monthly Treated Water From Florida DEP (Average Gallons per Day)					
Year 	Average	Base	Seasonal	Peak	Standard Deviation Of Monthly Water Use
2000	6,883,833	5,971,000	912,833	8,029,000	368,366
2001	6,250,916	6,039,000	211,916	6,695,000	552,624
2002	5,609,666	799,000	4,810,666	6,755,000	1,761,266
2003	6,146,500	5,655,000	491,500	6,867,000	681,422
2004	6,699,606	5,915,000	784,606	7,517,000	1,809,590
2005	6,775,822	6,436,095	339,727	7,494,064	378,577
2006	7,377,956	6,574,499	803,457	8,232,645	671,006
2007	7,538,178	6,674,534	863,644	8,352,870	1,961,127
2008	7,221,949	6,715,966	505,983	8,273,128	1,854,290
2009	7,328,686	6,126,902	1,201,784	7,724,999	668,524
Average	--	--	--	--	--
Min	--	--	--	--	--
Max	--	--	--	--	--
Standard Deviation	--	--	--	--	--



  Toggle Months

Figure 18 - Summary Monthly Treated Water table

The last page section includes the data entry field for the Water Budget Analysis year.

Year for Analysis:

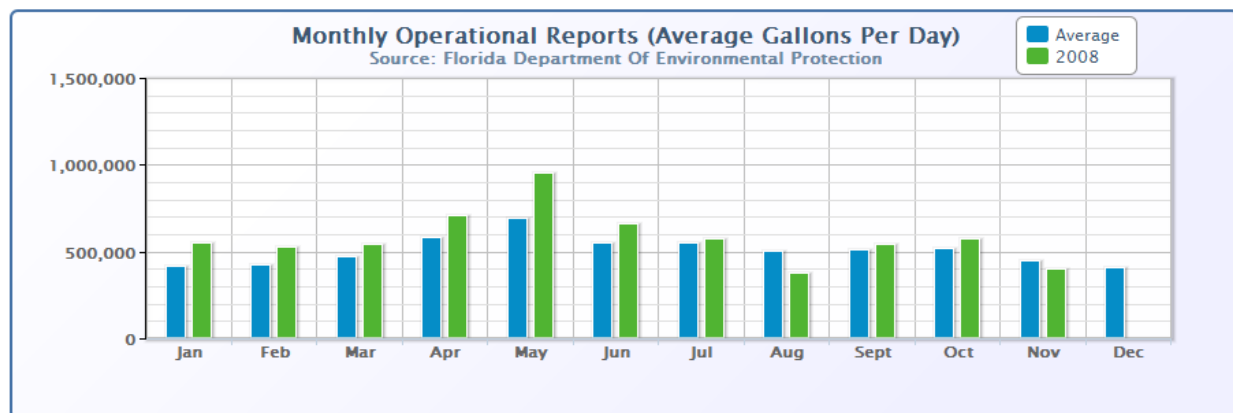


Figure 19 - Monthly Operational Reports annual comparison chart

This is the year that the water budget analysis uses for its analysis of water end uses. To decide which year to enter for this field, several factors should be considered:

- The analysis year should be as accurate as possible (You will be given a chance to correct values on the next page).
- The analysis year should reflect water use trends, and therefore be as recent as possible.
- The analysis year should be representative of typical water use. Years that are atypical, such as years in which extreme drought or multiple hurricane events significantly affected water use, should be avoided.

The data and information displayed in the table and chart on the page above should assist in determining the best year to choose.

Selecting an analysis year, prior to clicking the “Save Analysis Year” button, will display the selected year’s monthly water use data on the “Monthly Operational Reports” chart as compared to the “average” water use as determined by averaging each month over the 10 years of FDEP data. This display should assist you as well in determining how “representative” a given year is for analysis.

4.5.3 Water Supply Data Review

This page displays the selected analysis year water production data, and allows the user to correct erroneous data reported or entered into the FDEP monthly operation report database.

The table displays the reported data for the analysis year.


DEP Monthly Operation Report Flow Data - Click on column header to sort the column					
Month-Year	Millions Of Gallons Per Month	Average Gallons Per Day	Quartile Validity	Data Source	Action
Jan-2009	224.359	7,237,386	OK	DEP	
Feb-2009	208.618	7,450,642	OK	DEP	
Mar-2009	235.874	7,608,838	OK	DEP	
Apr-2009	228.063	7,602,099	OK	DEP	
May-2009	231.476	7,466,967	OK	DEP	
Jun-2009	231.750	7,724,999	OK	DEP	
Jul-2009	230.066	7,421,482	OK	DEP	
Aug-2009	229.154	7,392,064	OK	DEP	
Sep-2009	218.327	7,277,566	OK	DEP	
Oct-2009	235.298	7,590,257	OK	DEP	
Nov-2009	211.351	7,045,033	OK	DEP	
Dec-2009	189.934	6,126,902	Highly Suspect	DEP	
 Toggle Defaults					

Figure 20 - DEP Monthly Operation Report Flow Data table


The “Quartile Validity” column rates the likelihood of data error for each month based on its statistical divergence from the rest of the reported data. Possible ratings are “OK”, “Suspect”, and “Highly Suspect”. If, after examination, the data is determined to be in error, you can select the row to be edited, and click the “” button in the lower left of the table. A data entry form will be presented where the data can be overridden.

Figure 21 - Entering corrected flow data

Overridden data is indicated with a notation in the “Data Source” column, and a “Restore” action will become available in the “Action” column. Default values can be viewed after being overridden by clicking the “Toggle Defaults” link at the bottom of the table.

4.5.4 FDEP Basic Facility Report

This page displays the latest basic facility report (BFR) data (contained in the EZ Guide database) as reported to FDEP. The EZ Guide utilizes this information as comparison data for calibrating the end use water analysis in the Water Budget module.

The table (Basic Facility Reports) on this page displays the aggregated data from the BFR records of the associated profile utilities; along with the CFWC estimate of Utility accounts, and a preliminary estimate of the profile gross gpcd.


Year	Number Of PWS IDs	Design Capacity Gallons/Day	Number Of Plants	Service Connections	Population Served	Sell To Population	CFWC Total Accounts	Gross GPCD	Data Source
2008	1	1,440,000	1	1,481	3,703	0	1,403	144	User
2009	1	1,440,000	1	1,481	3,703	0	1,403	158	DEP

+ ✎ 🗑️ 🔄 Toggle Defaults
 Page 1 of 1
 View 1 - 2 of 2

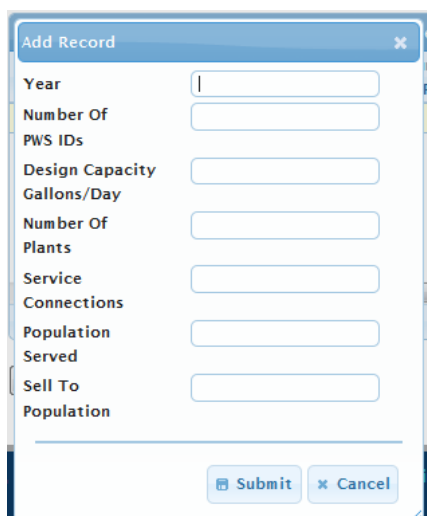
Figure 22 - Basic Facility Reports table

The CFWC estimate of total accounts is based upon the enumerated parcels contained within the utility service area boundary. This is not an exact one-to-one correspondence to the number of “billing” accounts within a utility, as a utility may have multiple accounts within a parcel, as well as other complicating factors. However, the EZ Guide on-line methodology is mostly independent of the number of accounts, and this number is provided mainly to ensure that the correspondence between CFWC total accounts and BFR reported service connections is in the same range. A larger difference may indicate an issue in the service area boundary definition.

The preliminary gpcd is estimated by using the annual water use indicated in the analysis year previously chosen and the served population indicated in the BFR. Other gross gpcd calculations may differ depending on the definition and methodology used. However the EZ Guide uses the gross gpcd definition and method approved and agreed upon by FDEP. The gpcd calculation also adjusts for any imported or exported water entered into the following page (see 4.5.4), once that page is completed.

BFR values may be edited by selecting the table row and choosing the “” link in the lower left. Edited values will update the “Data Source” indicated to “User”. Default values can be viewed by selecting the “Toggle Default” button at the bottom of the table.

The EZ Guide will use the provided BFR data even if the analysis year differs from the BFR report year unless you enter a table row with appropriate year for your analysis year (if different). You may enter a new row of data by choosing the “+” link from the lower left of the table. A form will be provided to enter the BFR information.



Add Record

Year

Number Of PWS IDs

Design Capacity Gallons/Day

Number Of Plants

Service Connections

Population Served

Sell To Population

Submit

Cancel

Figure 23 - Adding additional basic facility report data

4.5.5 Other Water Supply Data

This page allows you to indicate whether the utility(ies) is importing or exporting any treated water, and to indicate the water production cost of water.

The top table (Treated Water Imports and Exports) displays a row of imported/exported treated water data for each BFR row on the previous page.

This value for the water production cost defaults to \$5 per kgallon, but should be modified to reflect the costs to the selected utility(s). The discount rate defaults to a 5% annual rate, but can be changed to more closely match estimated rates. The table values are edited in the same manner as previous EZ Guide tables.

4.5.6 Summary

The next page informs you that the Water Supply Analysis module has been completed. Module inputs and outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to word document options.

4.6 Audit Module

The Water Audit Module is where information regarding your water audit schedule, method, and results is collected.

4.6.1 Introduction to Water Audit

The Introduction page briefly describes and overview and purpose of the Water Audit Module.

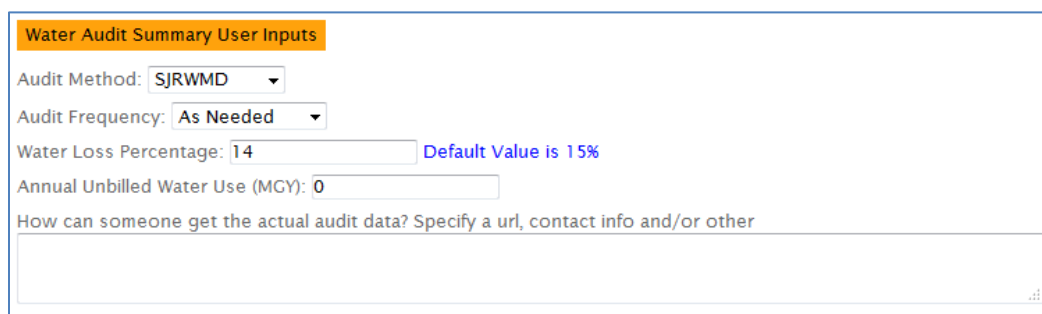
4.6.2 Water Audit Summary

This page initially presents a description of water audit terminology and a table listing five of the most commonly used audit methods in the State of Florida, a short description, and web links to supporting information. The methods listed are:

- M36 – A method detailed in Manual 36 from the American Water Works Association. A Microsoft Excel worksheet implementing the method has been developed by the Conserve Florida Clearinghouse and is available.
- AWWA 4.0 – The AWWA Water Loss Control Committee Free Water Audit Software v. 4.0.
- SWFWMD – A method documented and put forth by the Southwest Florida Water Management District
- SJRWMD – A method documented and put forth by the St. John’s River Water Management District
- Florida Rural Water Audit – A method documented and put forth by the Florida Rural Water Association

The method used should be determined by a) the requirements set by the regulatory body directly overseeing your utility, and b) the method you feel is most relevant and efficient to use.

The Water Audit information is entered in the next section. Frequency of audits and the audit method should be readily available to utility staff.



The screenshot shows a web form titled "Water Audit Summary User Inputs". It contains the following fields:

- Audit Method:** A dropdown menu with "SJRWMD" selected.
- Audit Frequency:** A dropdown menu with "As Needed" selected.
- Water Loss Percentage:** A text input field containing "14". To its right, a blue text label reads "Default Value is 15%".
- Annual Unbilled Water Use (MGY):** A text input field containing "0".
- How can someone get the actual audit data? Specify a url, contact info and/or other**: A large text area for additional information.

Figure 27 - Water Audit Summary User Inputs

The water loss percentage should be obtained from the audit performed most closely to the selected study year. The EZ Guide uses a default value of 15% to allow you to continue Profile data entry and analysis if the value is not immediately available, and should only be changed once that value is obtained.

Annual Unbilled Water Use is provided to allow utilities with significant amounts of unbilled water use to account for its contribution to the profile water budget. Examples of unbilled water use include:

- Periodic system flushing
- Emergency fire equipment use and maintenance
- Municipal and Government projects irrigation (initial irrigation for landscaping establishment for example)

The last user field is where you should provide one or more ways someone reviewing the profile could obtain detailed information about your water audit. This can be a person to contact, a link to an e-permitting document, or any other reasonable method.

4.6.3 Summary

The next page informs you that the Audit module has been completed. Module inputs and outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to Word document options.

4.7 Water Budget Module

The water budget module accomplishes three main tasks:

- Identification and description of previously enacted conservation programs (both measures and BMPs)
- Presentation of the EZ Guide Online's end use water analysis
- Calibration of the end use water analysis to reported water production values

Completion of this module will provide you with a breakdown of your estimated water use by sector (Single Family Residential, Multi-Family Residential, Commercial, Industrial, and Institutional Sectors). The water budget analysis also provides a parcel level end use water breakdown that enables the following BMP analysis module to identify and analyze specific groups of parcels for water conservation potential.

4.7.1 Introduction to Water Budget Summary

The Introduction page briefly describes and overview and purpose of the Water Budget Module.

4.7.2 Historical Conservation Programs (BMPs)

On this page, you can add conservation BMP programs that you have previously implemented. Entered programs are displayed in a table at the top of the page.

Links To Actions	Installation Year	Sector	Fixture Type	Fixture usage rate	Number Of Fixtures Retrofitted	Cost Per Fixture
Edit Remove	1997	Single Family	Toilet	1.8 gallons/flush	3500	\$180.00
Create New						

Figure 28 - Historical Conservation Programs (BMPs) page

New BMPs may be added by selecting the "Create New" link at the lower left corner of the table. This will bring up an entry form asking for needed information about the program.

Historical Conservation Programs
If this program spans multiple years, please create an entry for each year.

Implementation Year: 1993 ▼

Sector Type: Single Family ▼

Fixture Type: Toilet ▼

Water Use for New Fixtures: 0 gallons/flush

Number Of Fixtures Retrofitted: 0

Fixtures available for retrofit: 27120

Cost Per Fixture: \$ 0

Save

Cancel

Figure 29 - Entering Historical Conservation BMP Programs

Conservation programs already created may be edited or deleted by choosing the appropriate action link on the appropriate table row.

Programs that span multiple years should be entered as multiple plans, one for each year of implementation. This allows the EZ Guide analysis to adjust the water budget to reflect the water use reduction appropriately over time.

4.7.3 Historical Conservation Programs (Measures)

On this page, you can add conservation measure programs that you have previously implemented. Entered programs are displayed in a table at the top of the page.

Measures
A **Measure** is a non-quantitative component of a conservation plan. Additional measures not listed can be added as a "Custom Measure". Measures currently implemented by the utility should be added and described by clicking on the "Create New" link. To edit a Measure click "Edit" and to remove a Measure click "Remove".

Links To Actions	Measure Name	Implementation Year	End Year	Description
Edit Remove	Conservation rate structure	2000		Phased in 2nd phase of structured rates

* indicates custom measure

[Create New](#)

Figure 30 - Historical Conservation Programs (Measures) page

New measures may be added by selecting the "Create New" link at the lower left corner of the table. This will bring up an entry form asking for needed information about the program.

Measures
Measure Name: -- Select --
Implementation Year: 1993
End Year:
Description of Measure:

Figure 31 - Entering Historical Conservation Measures

You may choose any measure identified in the drop down list, or select "Custom Measure" from the bottom of the list, and name a measure not included in the list. Conservation programs already created may be edited or removed by choosing the appropriate action link on the appropriate table row.

4.7.4 Calibration

The Calibration page allows you to:

- review the water usage breakdown estimated by the EZ Guide analysis
- compare it to the values reported to FDEP and others
- change calibration parameters to improve the match between EZ Guide estimates and reported values

4.7.4.1 Water Use by Sector

The “Calibrated Water Budget by Sector” chart is a pie graph displaying the estimated total water use of the utility(s) as partitioned into the constituent sectors.

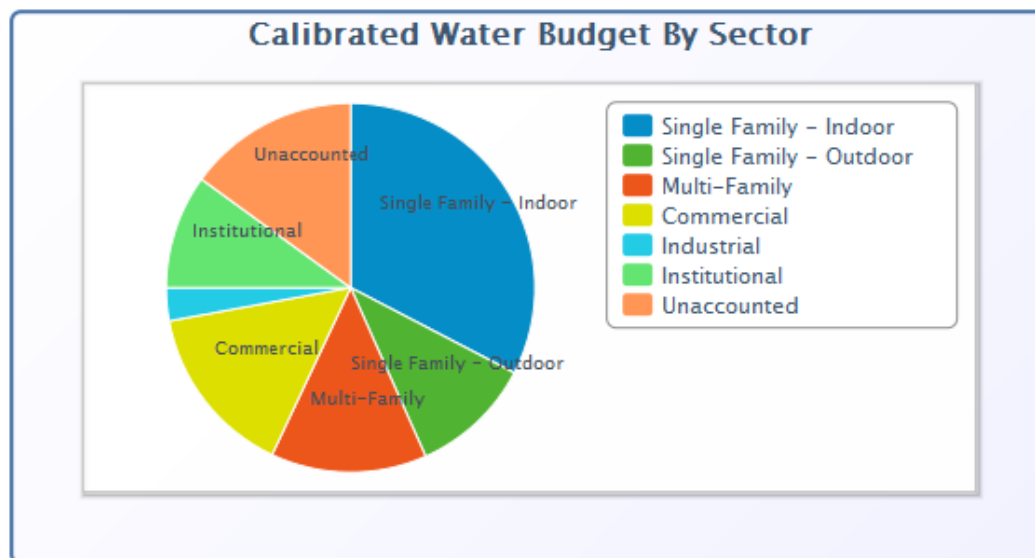


Figure 32 - Calibrated Water Budget by Sector

Hovering your pointer over any particular sector will display the percentage water use of that sector.

The adjacent table (Difference Between FDEP and CFWC Estimate) displays the values for population, total water use and gpcd from FDEP reported data and EZ Guide analysis results.

Difference Between FDEP and CFWC Estimate			
	FDEP Data	CFWC Estimate	% Difference
Population Served	62,052	57,426	-7.46%
Total Water Use (MGY)	2,674.27	3,013.93	12.70%
GPCD	118	144	22%

Figure 33 - Difference Between FDEP and CFWC Estimate Table

It is not unexpected or unusual for one or more of these estimates to have a large percentage difference. The primary purpose of the calibration process is to improve the EZ Guide total water use estimate, so the total account or population estimates may remain significantly different without adversely affecting the EZ Guide analysis or results.

For population estimates, the EZ Guide analysis uses average household sizes from US Census Block data. We have found that estimated values from this approach seem to be very accurate, and when it diverges widely from FDEP reported values (as reported in the utility Basic Facility Report records, see the “FDEP Basic Facility Report” page in the “Water Supply Analysis Module”) the EZ Guide estimate seems to be more accurate. As the EZ Guide analysis depends upon population values at the parcel level, there are no direct calibration parameters for population, however gross and residential gpcd estimates can be calculated using both EZ Guide estimated and user supplied population values.

The next table (Water Use Summary by Sector) displays (per water use sector):

- percent of total water use
- residential gpcd (where appropriate)
- gross gpcd
- population
- % of total population
- Average water use per heated square foot

Water Use Summary By Sector							
Sector	% Water Use	Residential GPCD	Gross GPCD	Population	% Total Population	Average Gallons Per Heated Square Foot Per Day	Links
Single Family	46.2%	97	51	91,650	53%	0.094	
Single Family - Indoor	40.5 %	85	45	---	---	0.08	Details
Single Family - Outdoor	5.7 %	12	6	---	---	0.01	Details
Multi-Family	25.3%	60	28	82,092	47%	0.642	Details
CII	14.5%	--	16	---	---	0.112	Details
Commercial	11.5 %	--	13	---	---	0.14	Details
Industrial	0.8 %	--	1	---	---	0.04	Details
Institutional	2.2 %	--	2	---	---	0.09	Details
Unaccounted	14.0%	--	16	---	---	--	
Total	100.0%	--	111	173,742	100%	0.152	

Figure 34 - Water Use Summary by Sector Table

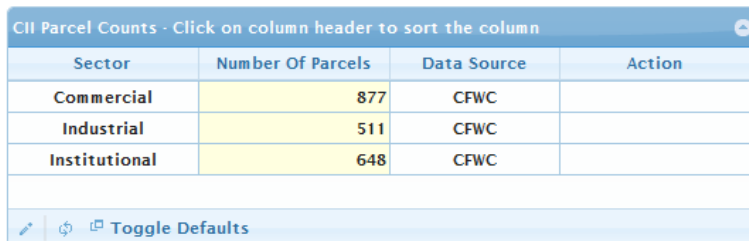
The “detail” links available for the indicated rows lead to extensive tables detailing many of the interim values used in the EZ Guide analysis methodology. Several editable values on the detail pages should not be modified unless there is analysis and data to support the changes. Further information and discussion about parameters on these pages should be directed to the Conserve Florida Clearinghouse.

4.7.4.2 Water Budget Calibration

The goal of your calibration changes will be to bring the reported total water use and EZ Guide estimated total water use to as close agreement as possible. How close is “good enough” or “acceptable” will depend on your utility(s) characteristics and the specific purpose for which you intend to use the EZ Guide Online results. The Clearinghouse has found that calibrating the estimated and reported total water use values to within 10% is usually reasonably easy to accomplish and provides good results for use in comparing water conservation practice effectiveness (which is undertaken in the following EZ Guide Online module).

The six tables following the Water Use Summary table are where you will be calibrating the EZ Guide analysis.

The “CII Parcel Counts” table will modify the number of CII accounts estimated by the analysis.



Sector	Number Of Parcels	Data Source	Action
Commercial	877	CFWC	
Industrial	511	CFWC	
Institutional	648	CFWC	




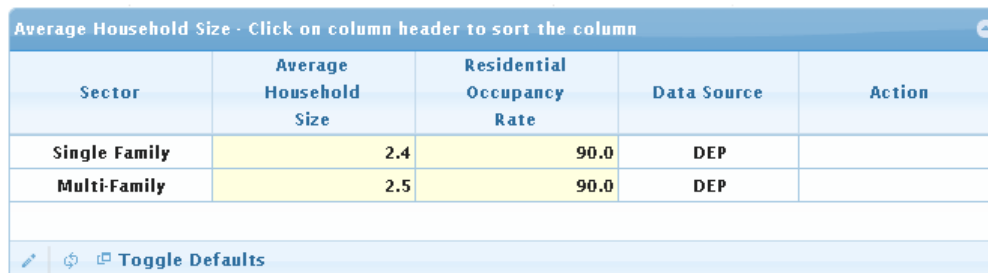
   Toggle Defaults

Figure 35 - CII Parcel Counts Table

It is helpful to be familiar with the number of CII service accounts in your utility(s). The number of parcels (or accounts) can be modified in the same manner as other data tables have in the rest of the EZ Guide online, and should be changed to match your utilities values.

The “Average Household Size” table calibrates the average people per home values and vacancy rates that are estimated and used by the analysis.



Sector	Average Household Size	Residential Occupancy Rate	Data Source	Action
Single Family	2.4	90.0	DEP	
Multi-Family	2.5	90.0	DEP	




   Toggle Defaults

Figure 36 - Average Household Size Table

The initial default estimates are based on the latest census data for the census blocks within the identified utility service area boundary(s). Modifying these values should only be done with extensive supporting data. Modifying these values will affect both the analysis population and water use estimates.

The “Single Family Outdoor Configurables (Irrigation Application Rates)” table calibrates the amount of overall irrigation.

Single Family Outdoor Configurables (Irrigation Application Rates)						
Water Restrictions	Mean Irrigable Application Rate With Sprinkler (Inches/Month)	Mean Irrigable Application Rate Without Sprinkler (Inches/Month)	Max Irrigable Area Cutoff (acres/parcel)	% of Irrigable Area Irrigated	Data Source	Action
No Restriction	2.00	1.25	1.00	100.00	CFWC	

Figure 37 - Single Family Outdoor Configurables Table

For these values it will be helpful to be familiar with irrigation practices and trends in your utility area. Editing this table allows you to modify any water restrictions in effect in your area, as well as the average irrigation application rate, maximum irrigable area cutoff, and irrigated area percentage. Since the Clearinghouse has found that accounts with automatic sprinklers display distinctly different irrigation trends than accounts utilizing manual irrigation methods, two separate **mean irrigation application rate** values are provided. The **max irrigable area cutoff** allows you to set the largest parcel area considered to be irrigable. Greater parcel areas are limited to the identified cutoff amount. **% of irrigable area irrigated** allows you to specify a reduction of estimated irrigable area applied to all analyzed parcels. This enables you to adjust the total estimated irrigated area and outdoor water use.

The “Single Family Irrigation Configurables” table calibrates how many accounts are irrigating and the source of the irrigation water.

Single Family Irrigation Configurables											
Effective Home Build Date	Total Accounts	% w/Automatic Sprinklers	Number of Residences w/Automatic Sprinklers	% w/Sprinklers Using Potable Water	Number of Residences w/Sprinklers Using Potable Water	% w/Automatic Sprinklers Using Potable Water	Number of Residences w/Automatic Sprinklers Using Potable Water	% w/Automatic Sprinklers Using Potable Water irrigating in excess of theoretical requirements	Number of Residences w/Sprinklers Using Potable Water, irrigating in excess of theoretical requirements	Data Source	Action
<1983	4937	9	444	50	222	25	1123	27	60	CFWC	
1983-1994	1914	23	440	50	220	25	368	27	59	CFWC	
>1994	1030	61	628	50	314	25	100	27	85	CFWC	
Totals Or Weighted Average	7881	19	1512	50	756	25	1591	27	204		

Figure 38 - Single Family Irrigation Configurables Table

Each table row represents a range of years indicating when the affected homes were built. Values in that row will only affect homes identified as being built in the associated date range. The values represent the percentage of homes in the indicated class that have automatic sprinklers, as well as how many homes that have automatic sprinklers use utility supplied potable water for irrigation. Also, you may indicate what percentage of homes which do not have automatic sprinklers, but use utility supplied potable water for irrigation. The final two columns identify the percent of homes that are irrigating in excess of the theoretical irrigation demand for those homes with and without automatic sprinkler systems. Currently theoretical demand is set at 25” per year for the EZ Guide analysis. In the future, it is planned to add the theoretical demand amount as a user configurable value.

The final tables (“Service Life for Residential Fixtures”, “Service Life for Residential Outdoor” and “Service Life for Commercial Fixtures”) contain the estimated service lives for water use fixtures and BMPs considered in the EZ Guide analysis.

Service Life for Residential Fixtures			
Fixture Type	Service Life (Years)	Data Source	Action
Toilet	40	CFWC	
Clothes Washer	10	CFWC	
Showerhead	40	CFWC	
Faucet	15	CFWC	
Toggle Defaults			

Service Life for Residential Outdoor			
Fixture Type	Service Life (Years)	Data Source	Action
Soil Moisture Sensor	5	CFWC	
Non Potable Irrigation System	25	CFWC	
Irrigation Audit	5	CFWC	
Toggle Defaults			

Service Life for Commercial Fixtures			
Fixture Type	Service Life (Years)	Data Source	Action
Toilet	25	CFWC	
Urinal	25	CFWC	
Faucet	15	CFWC	
Pre-rinse Spray Valve	5	CFWC	
Showerhead	8	CFWC	
Water Audit	5	CFWC	
Toggle Defaults			

Figure 39 - Service Life Tables

The EZ Guide analysis accounts for passive replacement (replacements that occur without outside assistance or encouragement) by applying a replacement cycle based on the service life. The default fixture lives applied in the EZ Guide online were obtained from Clearinghouse analysis and literature reviews. They may be updated as desired, but changes should be based on solid analysis and data as results can be significantly different.

As updating the service lives significantly affects the underlying EZ Guide analysis, any changes made to the service life values will require that the water budget analysis be redone. The EZ Guide Online will indicate when this is necessary and provide an appropriate warning.

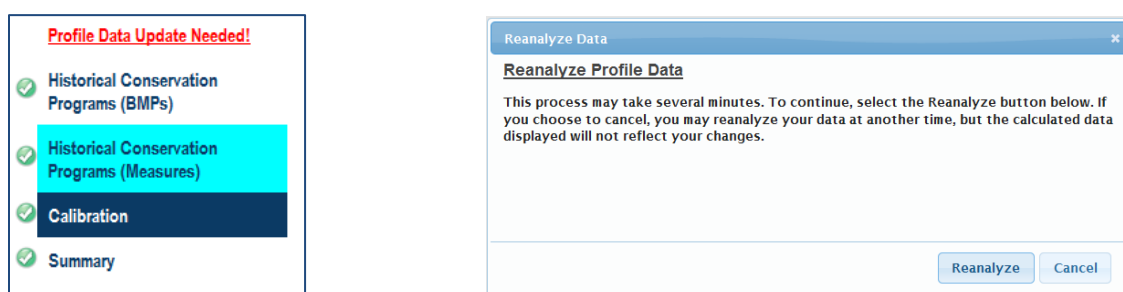


Figure 40 - Updating Profile Data

The calibration process allows for many different inputs that have effects which may not be readily apparent. A summary of the commonly used calibration parameters is listed below, and the direction of their effect (increase or decrease) on the EZ Guide estimated total water use for the profile. The magnitude of the effect may vary widely depending of the profile characteristics.

Parameter	Effect on Total Water Use (when parameter is increased)	Notes
<i>CII</i>		
Number of Parcels - Commercial	Increase	
Number of Parcels - Industrial	Increase	
Number of Parcels - Institutional	Increase	
<i>Household Size</i>		
Average Household Size	Increase	Will also increase Population
Residential Occupancy Rate	Increase	Will also increase Population
<i>Single Family Outdoor</i>		
Water Restrictions	Decrease	Increase means more restrictive
Irrigable Application Rate with Sprinkler	Increase	
Irrigable Application Rate w/o Sprinkler	Increase	
% with Automatic Sprinklers	Increase	Applies to any time period
% with Sprinklers using Potable Water	Increase	Applies to any time period
% w/o Automatic Sprinklers using Potable Water	Increase	Applies to any time period
Number of Residences w/Sprinklers Using Potable Water, irrigating in excess of theoretical requirements	Affects BMPs only	Applies to any time period
<i>Service Lives</i>		
Service Life	Increase	Applies to all fixtures

4.7.5 Summary

On this page you will currently find a summary of the results of your water budget calibration. The first three charts and tables (“Calibrated Water Budget by Sector”, “Difference Between FDEP and CFWC Estimate”, and “Water Use Summary By Sector”) display the calibrated results of the previous page. The remaining tables (“Initial Water Budget - Property Information” and “Initial Water Budget - Water Use”) summarize more information on the estimated water use breakdown. These tables should provide you with a better understanding of how water is used within your utility. All important Module inputs and outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to Word document options.

4.8 Projections Module

The Projections module defines the conservation analysis planning period and the population and water use projections over that period. The module does not do a projection analysis as it is expected that most, if not all, utilities will perform periodic use projections that are based on much more data than is available to the module. Instead, this module allows the results of those analyses to be entered and utilized by other modules in EZ Guide Online. Specifically, the projected values are used as a baseline to demonstrate and compare the effects of a defined water conservation plan.

4.8.1 Introduction to Projections

The Introduction page briefly describes and overview and purpose of the Projections Module.

4.8.2 Planning Horizon

The Planning Horizon page defines the conservation planning period which is the period over which potential conservation practices are analyzed for efficiency and cost-effectiveness.



Planning Horizon

Planning Period

Analysis Year: 2008 - [To change the Analysis Year return to Water Supply Analysis page](#)

Planning Period Beginning Year: 2013

Planning Period Duration: 20 ▾

Continue

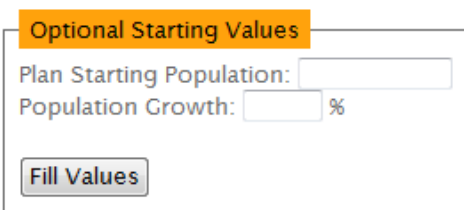
Figure 41 - Planning Horizon Page

The analysis year that was specified for the water budget calibration is provided for reference. You should provide a year for the beginning of the planning period, and a planning period duration. You may choose 5, 10, or 20 years for the duration (as these are typical permitting and planning periods).

4.8.3 Population Projection

The Population Projection page allows the utility population projections to be entered and visualized.

The “Optional Starting Values” box at the top of the page is a user aide to assist in quickly filling values if you prefer to enter the population based on a constant rate of growth.



Optional Starting Values

Plan Starting Population:

Population Growth: %

Fill Values

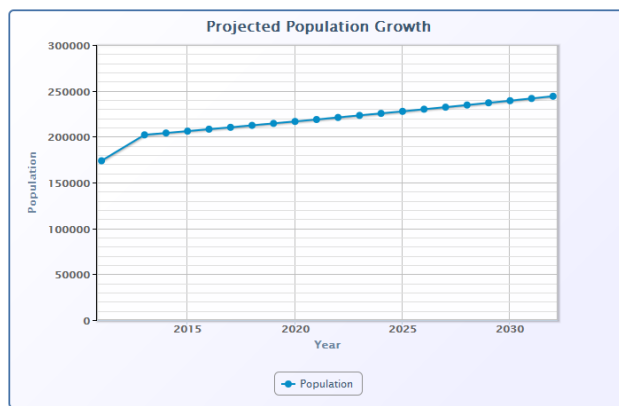
Figure 42 - Population Optional Starting Values

The next table allows you to enter the population each year in the planning horizon.

Year	Population
2011	173,742
2013	<input type="text" value="202000"/>
2014	<input type="text" value="204020"/>
2015	<input type="text" value="206060"/>
2016	<input type="text" value="208121"/>
2017	<input type="text" value="210202"/>
2018	<input type="text" value="212304"/>
2019	<input type="text" value="214427"/>
2020	<input type="text" value="216571"/>

Figure 43 - Population Projection Table

On the right side of the page is a chart displaying the population values in the planning horizon table.



[Update Chart](#)

Figure 44 - Projected Population Growth Chart

The analysis year value is displayed as well for reference. Due to a web page function limitation, if the values in the table are updated, the “Update Chart” button located under the chart must be pressed to update the displayed values.

4.8.4 Water Use Projections

The Water Use Projections page displays projected water use by sector over the planning horizon, and allows the default projection parameters to be modified to adjust the projected use to match user expected estimates.

4.8.4.1 Projected Water Use – Indoor

The Projected Water Use – Indoor section of the page displays the parameters used to estimate the projected indoor water use and a summary table of the estimated values.

The “Projected Water Use for New Construction – Indoor” table displays the distribution of population between single family and multi-family sectors and the estimated number of new households and population resulting from the estimated total population growth. Estimates of projected (to the end of the planning period) residential gpcd and residential density (average people per house) are also displayed.

Sector Name	Percent Occupied Households	Number of Occupied Households	Population	Residential GPCD	Average People per House	Action
Single Family new construction built after analysis year (2011)	52	15,395	37,256	64.7	2.42	Restore CFWC
Multi-Family new construction built after analysis year (2011)	48	14,365	33,038	64.7	2.30	Restore CFWC

Figure 45 - Projected Water Use for New Construction – Indoor

The occupied household distribution, residential gpcd’s and residential density can all be edited to adjust the projected indoor water use estimates to match expected projected water use values. Initial percent values for occupied households and the average people per house are set to the existing values from the Water Budget module. Residential GPCD is initially set to the rate for households using fixtures with usage rates that meet current Florida plumbing standards. The resulting estimated projected water use rates, gpcd’s and percentages are broken down and displayed in the “Projected Water Use – Indoor” table.

Sector	Number of Occupied Households	Population	Water Use (MGD)	Residential GPCD	Gross GPCD
Single Family homes built on or prior to analysis year (2011)	39,486	92,083	5.96	64.7	24.4
Multi-Family homes built on or prior to analysis year (2011)	33,993	81,658	5.28	64.7	21.6
Single Family new construction built after analysis year (2011)	15,395	37,256	2.41	64.7	9.9
Multi-Family new construction built after analysis year (2011)	14,365	33,038	2.14	64.7	8.8
Totals	103,239	244,035	15.79	---	64.7

Figure 46 - Projected Water Use - Indoor Table

4.8.4.2 Projected Water Use – Outdoor

The Projected Water Use – Outdoor section of the page displays the parameters used to estimate the projected outdoor water use and a summary table of the estimated values.

The “Irrigation Application Rates for Existing Single Family Homes – Outdoor” table displays the values for outdoor usage parameters set in the Water Budget module.

Irrigation Application Rates for Existing Single Family Homes - Outdoor				
Watering Restrictions	Mean Irrigable Application Rate With Sprinkler (Inches/Month)	Mean Irrigable Application Rate Without Sprinkler (Inches/Month)	Max Irrigable Area Cutoff (acres/parcel)	% of Irrigable Area Irrigated
Once Per Week	1.00	1.25	1.00	100

Figure 47 - Irrigation Application Rates for Existing Single Family Homes - Outdoor Table

The values from this table are used as the default values for the “Single Family Projected Outdoor Configurables (Irrigation Application Rates)” table which specifies the values used for estimating the projected outdoor water use. If these parameters are expected to be different than the default values, they may be edited in this table.

Single Family Projected Outdoor Configurables (Irrigation Application Rates)						
Water Restrictions	Mean Irrigable Application Rate With Sprinkler (Inches/Month)	Mean Irrigable Application Rate Without Sprinkler (Inches/Month)	Max Irrigable Area Cutoff (acres/parcel)	% of Irrigable Area Irrigated	Data Source	Action
No Restriction	1.00	1.25	1.00	100	CFWC	

Toggle Defaults

Figure 48 - Single Family Projected Outdoor Configurables (Irrigation Application Rates) Table

The next table in this section, “Water Use for Existing Homes – Outdoor”, displays and summarizes the irrigation distribution values entered in the Water Budget module.

Water Use for Existing Homes - Outdoor											
Effective Home Year Built	Total Occupied Households	Population	% w/Automatic Sprinklers	Number of Households w/Automatic Sprinklers	% w/Sprinklers Using Potable Water	Number of Households w/Sprinklers using Potable Water	% w/o Automatic Sprinklers Using Potable Water	Number of Households w/o Sprinklers Using Potable Water	% w/Automatic Sprinklers Using Potable Water irrigating in excess of theoretical requirements	Number of Households w/Sprinklers Using Potable Water, irrigating in excess of theoretical requirements	Average Irrigated Area (square feet)
<1983	24,592	59,512	9	2,213	50	1,106	25	5,595	27	299	8,551
1983 - 1994	9,956	24,093	23	2,290	50	1,145	25	1,916	27	309	9,868
1995 - 2011	9,180	22,215	61	5,600	50	2,800	25	895	27	756	8,375
Total Or Weighted Average	43,728	105,821	23	10,103	50	5,051	25	8,406	27	1,364	8,814

Figure 49 - Water Use for Existing Homes - Outdoor Table

This table provides a convenient reference to use when editing the distribution values for irrigation for projected homes in the next table, “Projected Single Family Irrigation Coefficients”.

Projected Single Family Irrigation Coefficients										
Effective Home Year Built	Total Occupied Households	Population	% w/Automatic Sprinklers	Number of Households w/Automatic Sprinklers	% w/Sprinklers Using Potable Water	Number of Households w/Sprinklers using Potable Water	% w/o Automatic Sprinklers Using Potable Water	Number of Households w/o Sprinklers Using Potable Water	% w/Automatic Sprinklers Using Potable Water irrigating in excess of theoretical requirements	Number of Households w/Sprinklers Using Potable Water, irrigating in excess of theoretical requirements
> 2011	15,395	37,255	61	9,391	50	4,696	25	1,501	27	

Toggle Defaults

Figure 50 - Projected Single Family Irrigation Coefficients Table

Default values for this table are taken from the last row of the previous table (Figure 49).

The final table in the Projected Outdoor Water Use section is a summary table of projected water use and other values based on the parameters in the preceding tables.

Summary of Projected Outdoor Water Use						
Effective Home Year Built	Total Occupied Households	Population	Average Irrigated Area (square feet)	Water Use (MGD)	Residential GPCD	Gross GPCD
<1983	24,592	59,512	8,551	0.57	4.4	2.3
1983 - 1994	9,956	24,093	9,868	0.29	2.2	1.2
1995 - 2011	9,180	22,215	8,375	0.27	2.1	1.1
2012 - 2032	15,395	37,255	8,375	1.13	8.9	4.6
Total	59,123	143,077	--	2.26	--	9.2

Figure 51 - Summary of Projected Outdoor Water Use Table

4.8.4.3 Projected Water Use – CII

The only table in this section (CII) displays a summary of the estimated projected water use from existing and new commercial, industrial and institutional sectors.

CII				
Sector	Heated Area (sf)	Water Use (MGD)	Gross GPCD	Links
Existing Commercial	16,200,096	2.22	9.1	
Existing Industrial	4,017,310	0.16	0.6	
Existing Institutional	4,744,376	0.42	1.7	
New Commercial	6,554,920	0.89	3.7	Details
New Industrial	1,625,321	0.04	0.2	Details
New Institutional	1,919,737	0.18	0.7	Details
Totals	35,061,760	3.91	16.0	

Figure 52 - CII (Projected Water Use) Table

The “details” links will open another page where all the land use codes are listed with the default values for Weighted Average Water use rates and projected total heated area for new construction. These values can be modified to more accurately represent known specific information about CII projected growth.

Land Use Code w/Description	Weighted Average Water Use Coefficient (gal/hsf/month)	Total Heated Area for New Construction (sf)	Total Water Use for New Construction (MGD)	Data Source	Action
11 - Stores One-Story	1.73	1,397,195.56	0.0793	CFWC	
12 - Mixed Use - Store and Office, Store and Residential, or Residential Com	1.84	182,119.16	0.0110	CFWC	
13 - Department Stores	2.04	55,159.54	0.0037	CFWC	
14 - Supermarkets	6.54	104,251.78	0.0224	CFWC	
15 - Regional Shopping Centers	2.74	1,102.52	0.0001	CFWC	
16 - Community Shopping Centers	2.66	545,306.36	0.0477	CFWC	
17 - Office Buildings, Non-Professional Services Buildings, One Story	2.80	1,169,424.82	0.1075	CFWC	
18 - Office Buildings, Non-Professional Service Buildings, Multi-Story	1.33	347,064.11	0.0152	CFWC	
19 - Professional Service Buildings	3.33	726,503.45	0.0795	CFWC	
20 - Airports, Commercial or Private. Bus Terminals, Marine Terminals, Piers a	25.53	27,606.27	0.0232	CFWC	
21 - Restaurants, Cafeterias	27.56	159,495.88	0.1444	CFWC	
22 - Drive-in Restaurants	26.97	91,991.36	0.0815	CFWC	
23 - Financial Institutions (Banks, Savings and Companies, Credit Services)	5.81	156,053.18	0.0298	CFWC	
24 - Hospitals, Clinics, Offices	1.76	100,613.71	0.0063	CFWC	

Figure 53 - CII Projected Water Use Analysis - Detail Page

4.8.4.4 Projected Water Use – Unaccounted

The final section on the Water Use Projections page allows the unaccounted water use fractions to be updated as necessary. The values shown, Existing Infrastructure Unaccounted Water Use and Projected Infrastructure Unaccounted Water Use, are used to estimate the amount of water not accounted for in direct sector water use.

Existing Infrastructure Unaccounted Water Use (%):	<input type="text" value="14"/>
Projected Infrastructure Unaccounted Water Use (%):	<input type="text" value="14"/>

Figure 54 - Unaccounted Water Use Rates

As in the water audit module, these include treated water losses, infrastructure water leaks, meter calibration errors, unbilled water use, and other factors. Existing and projected unaccounted water use is separated as use rates may be different due to age and quality of the infrastructure.

4.8.5 Summary

The next page informs you that the Projections module has been completed. The planning period start date and duration are displayed, as well as a table summarizing the categorized (by sector) estimated projected water use for existing and new construction.

Projected Water Use for 2031 - Summary By Sector					
Sector	% Water Use	Residential GPCD	Gross GPCD	Population	% Total Population
Single Family homes built on or prior to analysis year (2011)	27.4	64.7	24.4	92,083	38
Single Family new construction built after analysis year (2011)	3.1	64.7	2.8	36,553	15
Multi-Family homes built on or prior to analysis year (2011)	24.3	64.7	21.6	81,658	33
Multi-Family new construction built after analysis year (2011)	2.9	64.7	2.6	33,741	14
Single Family Outdoor - homes built on or prior to analysis year (2011)	5.2	12.2	4.6	--	--
Single Family Outdoor - new construction built after analysis year (2011)	5.2	30.9	4.6	--	--
CII Existing Construction	12.8	--	11.4	--	--
CII New Construction	5.1	--	4.6	--	--
Existing Infrastructure Unaccounted Water Use	11.3	--	10.1	--	--
Future Infrastructure Unaccounted Water Use	2.7	--	2.4	--	--
Totals	100.0	--	89.2	244,035	100

Figure 55 - Projected Water Use for <End of Plan Year> - Summary by Sector

Charts are also included which display the projected water use and projected gross gpcd values for each sector over the planning period. For display purposes, growth is assumed to be linear over that period.



Figure 56 - Projected Water Use and GPCD Charts

Sectors may be selected or de-selected in the legend for display in each chart for easier comparison between sectors.

Module outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to Word document options.

4.9 BMP Analysis Module

The BMP Analysis module analyzes conservation BMP practices and provides a list of prioritized and recommended practices for implementation. It accomplishes this by utilizing the water budget analysis results from the previous module along with information regarding BMP costs and water use rates that you provide. The detailed nature of the end use water analysis utilized in the water budget analysis allows the BMP analysis to identify specific groups of accounts or parcels that are likely to be most affected by each BMP. This allows those BMPs that will affect the greatest number of accounts and have the greatest impact on overall water use to be identified and compared, and be targeted to specific groups of parcels that will have the greatest net benefit to the utility.

4.9.1 Introduction to BMP Analysis

The BMP Introduction page presents an overview of the EZ Guide Online intent and methodology for BMP analysis. It is intended to provide a sense and direction of the operation of the module while you are completing it.

4.9.2 Single Family Indoor BMPs

This page is where you will specify the Single Family Residential (SFR) Indoor BMP retrofit and rebate options that you would like to consider using.

The first table (Attributes of Single Family Residential Indoor Fixtures) allows you to specify the water use rates of three levels of conservation options (Conventional, Better, and Best) for each of the four available indoor fixtures: Toilets, Clothes Washers, Showerheads, and Faucets.

Attributes of Single Family Residential Indoor Fixtures						
Fixture Level	Toilets gallons/flush	Clothes Washers gallons/load	Showerheads gallons/minute	Faucets gallons/minute	DataSource	Action
Conventional	1.60	36.00	1.85	1.50	CFWC	
Better	1.28	25.20	1.70	1.50	CFWC	
Best	0.80	14.40	1.50	1.50	CFWC	

Figure 57 - Attributes of Single Family Residential Indoor Fixtures Table

Each increasing fixture level will have a lower water use rate. You should enter the options that are most readily available to your conservation program and that you would most like to compare. The EZ Guide Online defaults are based on some of the most commonly considered water conserving fixtures in previously implemented conservation programs. Editing data in this table is done as with previous data tables in the EZ Guide Online.

The second table (Total Utility Cost per Fixture) allows you to specify the per fixture cost of retrofitting or rebating each fixture type.

Total Utility Cost per Fixture						
Fixture Level	Toilets	Clothes Washers	Showerheads	Faucets	DataSource	Action
Conventional	150.00	450.00	30.00	45.00	CFWC	
Better	180.00	550.00	31.00	55.00	CFWC	
Best	300.00	750.00	33.00	70.00	CFWC	
Toggle Defaults						

Figure 58 - Total Utility Cost per Fixture Table

You should enter the entire cost incurred to your program, including any installation or administrative costs **per fixture**. Do not include any costs incurred by the customer.

The detail links presented below the tables provide detailed information regarding the BMP cost and water savings analysis for each fixture type.

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- [Details - Toilet Retrofit Benefits](#)
- [Details - Clothes Washer Retrofit Benefits](#)
- [Details - Showerhead Retrofit Benefits](#)
- [Details - Faucet Retrofit Benefits](#)

Figure 59 - Single Family Indoor BMPs Detail Links

Tables on these pages contain detailed information regarding estimated water savings and costs associated with different specific groups of parcels as divided up by conservation potential. These groups are considered independently when analyzing BMPs for cost effectiveness and water savings.

4.9.3 Single Family Outdoor BMPs

This page is where you will specify the Single Family Residential (SFR) outdoor BMP retrofit and rebate options that you would like to consider using.

The initial table “Market Potential of Single Family Outdoor BMPs” at the top of the page is a summary of the single family customer counts that are recommended for targeting by the available outdoor BMPs. This table is for informational use only.

Market Potential of Single Family Outdoor BMPs			
Device or Practice	Target market description	SFR customers in target market	% of total SFR customers
Soil Moisture Sensor	Number of SFR Residencies who have a sprinkler, irrigate from the potable system, and irrigate above baseline irrig.	1,364	3.12%
Non Potable Source Rebate (Reuse)	Number of SFR Residencies who have a sprinkler and irrigate from the potable system with access to reuse	0	0%
Irrigation Audit	Number of SFR Residencies who have a sprinkler and irrigate from the potable system	5,051	11.55%

Figure 60 - Market Potential of Single Family Outdoor BMPs Table

The first user input table (Attributes of Single Family Outdoor Devices) allows you to specify the average savings rate and device cost for three outdoor BMPs (soil moisture sensors, non-potable irrigation systems, and irrigation audits) for the applicable market of SFR customers defined in the above table. Defaults from an analysis of Gainesville Regional Utilities are provided, and can be overridden with utility specific data if available. Editing data in this table is done as with previous data tables.




Attributes of Single Family Outdoor Devices				
Device or Practice	Average Savings Rate (gal/1,000 ft ² /day)	Device Cost	DataSource	Action
Soil Moisture Sensor	24.19	0.10	CFWC	
Non Potable Irrigation System (eg. Reuse)	22.76	0.50	CFWC	
Irrigation Audit	5.69	0.06	CFWC	
   Toggle Defaults				

Figure 61 - Attributes of Single Family Outdoor Devices Table

For the device cost inputs, the entire unit cost incurred to the program, including any installation or administrative costs should be entered. Do not include any costs incurred by the customer.

The third table allows specification of reuse attributes. The non-potable offset credit is a percentage (0%-100%) of irrigation water saved from switching a customer to reuse which a utility can be credited with. This value varies depending on which water management district a utility is in. The default is set at 100%, which allows full credit of reuse water savings.




Reuse Attributes				
Non Potable Offset Credit(%) (eg. Reuse)	Reuse Accessibility(%)	DataSource	Action	
100.00	5.00	CFWC		
   Toggle Defaults				

Figure 62 - Reuse Attributes Table

Reuse accessibility refers to the percentage of SFR customers within a utility who have current access to an existing reuse system but which are not yet hooked up to the system. This is typically a small percentage of customers within a utility, with 5% being the default value.

The detail links presented below the tables provide detailed information regarding the BMP cost and water savings analysis for each of the three SFR outdoor BMP options.

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- [Details - SMS Retrofit Benefits](#)
- [Details - Reuse Retrofit Benefits](#)
- [Details - Irrigation Audit Retrofit Benefits](#)

Figure 63 - Single Family Outdoor BMPs Details Links

Tables on these pages contain detailed information regarding estimated water savings and costs associated with different specific groups of parcels as divided up by conservation potential. Parcel level water savings is estimated based on specified average savings in the Attributes of Single Family Outdoor Devices combined with an assumed distribution of savings for the potential market of eligible SFR customers. These groups are considered independently when analyzing BMPs for cost effectiveness and water savings.

4.9.4 Multi-Family Indoor BMPs

The data tables, links and instructions for completing this page are identical to those for the previous Single Family Indoor BMP page. Please refer to that page's section (4.9.2) for explanation.

4.9.5 CII BMPs

This page is where you will specify the Commercial, Industrial, and Institutional (CII) BMP retrofit and rebate options that you would like to consider using.

The first table (Attributes of CII BMPs) allows you to specify the water consumption rates of three levels of conservation options (Conventional, Better, and Best) for each of the five available indoor fixtures: Toilets, Urinals, Faucets, Showerheads, and Pre-rinse Spray Valves. An additional CII BMP option is the Site-Specific Water Audit, with 15% (default) water savings on top of the savings from the other five BMP options.

Attributes of CII BMPs							
Fixture Level	Toilets gallons/flush	Urinals gallons/flush	Faucets gallons/minute	Showerheads gallons/minute	Pre-rinse Spray Valves gallons/minute	Water Audit	DataSource
Conventional	1.60	1.00	2.20	2.20	1.60	0.15	CFWC
Better	1.28	0.50	1.50	2.00	1.25	0.15	CFWC
Best	0.80	0.00	0.50	1.50	1.00	0.15	CFWC

Figure 64 - Attributes of CII BMPs Table

Each increasing fixture level will have a lower water use rate. You should enter the options that are most readily available to your conservation program and that you would most like to compare. The EZ Guide Online defaults are based on some of the most commonly considered water conserving fixtures in previously implemented conservation programs. Editing data in this table is done as with previous data tables in the EZ Guide Online.

The second table (Total Utility Cost per Fixture) allows you to specify the per fixture cost of retrofitting or rebating each fixture type.

Total Utility Cost per Fixture								
Fixture Level	Toilets	Urinals	Faucets	Showerheads	Pre-rinse Spray Valves	Water Audit \$/sq. ft.	DataSource	
Conventional	150.00	320.00	45.00	30.00	50.00	0.10	CFWC	
Better	180.00	375.00	310.00	55.00	60.00	0.10	User	R
Best	300.00	275.00	70.00	32.00	70.00	0.10	CFWC	

Figure 65 - Total Utility Cost per Fixture Table

You should enter the entire cost incurred to your program, including any installation or administrative costs **per fixture**. Do not include any costs incurred by the customer.

The detail links presented below the tables provide detailed information regarding the BMP cost and water savings analysis for each fixture type.

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- [Details - Single-use Toilet Retrofit Benefits](#)
- [Details - Mixed-use Toilet Retrofit Benefits](#)
- [Details - Urinal Retrofit Benefits](#)
- [Details - Faucet Retrofit Benefits](#)
- [Details - Showerhead Retrofit Benefits](#)
- [Details - Pre-rinse Spray Valve Retrofit Benefits](#)
- [Details - Water Audit Retrofit Benefits](#)

Figure 66 - CII BMPs Detail Links

Tables on these pages contain detailed information regarding estimated water savings and costs associated with different specific groups of parcels as divided up by conservation potential. These groups are considered independently when analyzing BMPs for cost effectiveness and water savings.

4.9.6 BMP Goals

The BMP Goals page is where you will define what conservation goal you would like to meet. After a short explanation of the optimization process, you are presented with the analysis year and projected plan end gross gpcd values, and the estimated maximum possible gpcd savings that could be attained if **every highest-water saving** BMP were implemented.

Analysis Year (2012) Gross GPCD: 193
Projected Plan End (2033) Gross GPCD: 178
Max Possible BMP GPCD Savings: 38

Figure 67 - BMP Goals GPCD Table

As the maximum possible BMP gpcd savings is a complex calculation and may take a significant (up to several minutes) to complete, a small animated graphic will display in its place while it is being calculated.



Figure 68 - Max Possible GPCD Savings calculation graphic

The rest of the page will be displayed while it is being calculated.

Following that, you will find the entries for goal type and target.

Figure 69 - BMP Goal Type and Target

BMP goal type can be either “Target Gross gpcd” or “Program Budget”, which will optimize the BMP options for an identified gpcd goal or maximize program budget, respectively. The target type will change depending on the type of BMP goal you choose. If you choose “Target Gross gpcd”, you will see “Target gpcd”. If you choose “Program Budget”, you will see “Total Budget”.

If you would like to have a better idea of the cost and water savings of the BMP options that are available and will be considered during the optimization process, you may choose the “View all BMP options” link on this page. This will open a separate page containing two charts that display the cost effectiveness, total cost, and cumulative water savings for every BMP option. The large number of BMP options does cause this page to take a short while to load and display. These charts can provide guidance for selecting good BMP goal targets. Hovering over any individual point on either chart will identify the BMP fixture type and target characteristics of the parcel group.

Once you have specified a BMP goal type and target value, selecting “save and continue” will initiate the optimization and will take you to the next page when it completes. An indication that the optimization is taking place is displayed until it is finished.

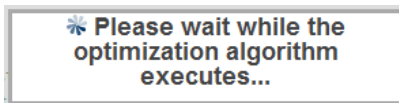


Figure 70 - BMP Optimization execution graphic

The process should not take more than 2-4 minutes to complete.

4.9.7 BMP Results

The BMP Results page presents a table and two charts displaying your optimized and recommended BMP options.

The first table displays a summary of the recommended BMP implementations, broken down by fixture type.

BMP Summary Information					
BMP Type	Optimum Number Of Implementations	Cost Of Implementation	Total Savings Gallons/Day	Total Savings Gross GPCD	Subgroup Detail Links
Toilet	---	---	---	---	---
Residential	10570	2,114,000.00	479,944.20	6.19	Details
Commercial	0	0.00	0.00	0.00	Details
Urinal	0	0.00	0.00	0.00	Details
Clothes Washer	0	0.00	0.00	0.00	Details
Showerhead	---	---	---	---	---
Residential	9697	193,940.00	1,118,556.49	14.43	Details
Commercial	0	0.00	0.00	0.00	Details
Faucet	---	---	---	---	---
Residential	0	0.00	0.00	0.00	Details
Commercial	0	0.00	0.00	0.00	Details
Pre-rinse Spray Valve	0	0.00	0.00	0.00	Details
Water Audit	0	0.00	0.00	0.00	Details
Soil Moisture Sensor	0	0.00	0.00	0.00	Details
Non Potable Irrigation System (eg. Reuse)	0	0.00	0.00	0.00	Details
Irrigation Audit	0	0.00	0.00	0.00	Details
Total	20,267.00	2,307,940.00	1,598,500.70	20.62	

Figure 71 - BMP Summary Information Table

The detail links lead to pages that contain details on each individual BMP implementation for that fixture type.

Fixture Benefit Programs														Net of Retro
Retrofit Level	Time Period	Sector	Fixtures Per House	Existing Fixtures	Optimal Fixtures to Retrofit	Existing Gallons Per Fixture Per Day	Retrofitted Gallons Per Fixture Per Day	Water Savings Gallons Per Fixture Per Day	BMP Program Water Savings Gallons Per Day	BMP Program Cost \$/Day	BMP Program Cost \$/k Gallons	Cost Effectiveness Of BMP Program \$/k Gallons ±	Net of Retro	
Better	<1983	Single Family	1	655	655	75.83	18.57	57.26	37,503.92	11.21	0.30	4.70		
Better	<1983	Multi-Family	1	1,337	1,337	74.66	18.29	56.37	75,368.30	22.88	0.30	4.70		
Better	1983-1994	Single Family	1	782	782	53.62	18.34	35.28	27,586.60	13.38	0.49	4.51		
Better	1983-1994	Multi-Family	1	1,703	1,703	52.79	18.06	34.73	59,146.37	29.14	0.49	4.51		
Better	<1983	Single Family	2	5,920	5,920	37.92	9.29	28.63	169,483.37	101.30	0.60	4.40		
Better	<1983	Multi-Family	2	82	82	37.33	9.14	28.19	2,311.22	1.40	0.61	4.39		
Better	<1983	Single Family	3	453	453	25.28	6.19	19.09	8,645.94	7.75	0.90	4.10		
Better	1983-1994	Single Family	2	5,706	5,706	26.81	9.17	17.64	100,645.25	97.64	0.97	4.03		
Better	1983-1994	Multi-Family	2	1,110	1,110	26.39	9.03	17.37	19,275.53	18.99	0.99	4.01		
Better	<1983	Single Family	4	48	48	18.96	4.64	14.31	687.09	0.82	1.20	3.80		
Better	1983-1994	Single Family	3	231	231	17.87	6.11	11.76	2,716.33	3.95	1.46	3.54		
Best	>1994	Single Family	1	913	913	25.12	11.31	13.81	12,606.47	18.75	1.49	3.51		
Best	>1994	Multi-Family	1	1,609	1,609	24.73	11.13	13.59	21,872.62	33.04	1.51	3.49		

Figure 72 - BMP Summary Detail Table

These tables detail every BMP implementation considered, which ones are recommended, and the results of the cost and water savings analysis. These tables can be sorted on any desired column by clicking the column header and selecting the “up” or “down” arrow to sort by ascending or descending values respectively.

You can use these tables to identify and quantify the BMP options that the EZ Guide Online has recommended as the optimal choices for your profile to reach the BMP goal that you specified.

The first chart displays the cost effectiveness and cumulative water savings of your recommended BMP options.

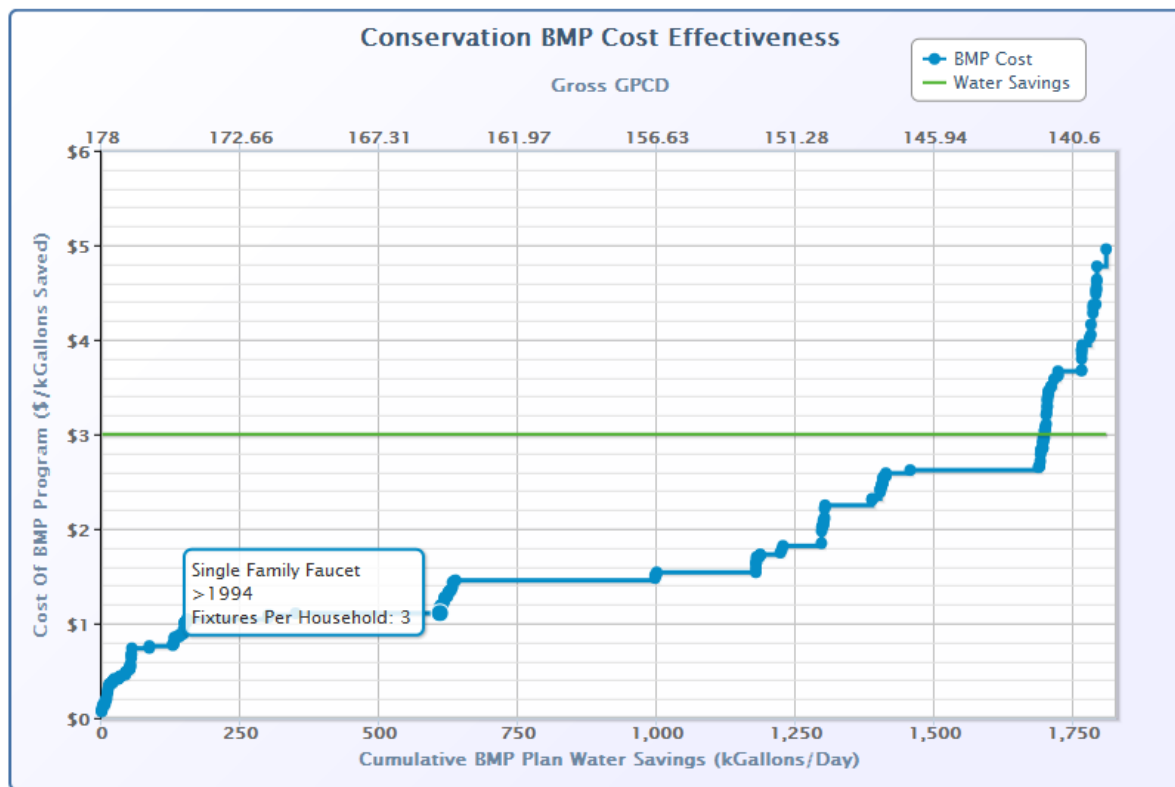


Figure 73 - Conservation BMP Cost Effectiveness Chart

The horizontal green line is the cost of water production that you entered in the Water Supply Analysis>Other Water Supply Data page. From this chart you can see which BMP implementations are most cost effective and save the most water.

Hovering over any point will display the identifying BMP characteristics. Clicking on any point will open a window displaying the EZ Guide analysis results and estimates for that BMP option.

Details	
Sector	Single Family
Fixture Description	Toilet
Time Period	<1983
Cumulative BMP Plan Water Savings (kGallons/Day) - X axis	589.19
Cost of BMP Program (\$/kGallons) - Y axis	0.9
Existing Fixture Count	453
Planned Fixture To Retrofit	453
BMP Program Water Savings (kGallons/Day)	8.65
BMP Program Cost (\$/Day in service)	\$7.75
BMP Program Cost (\$/kGallons)	\$895.95
Net Benefits Of Retrofit Program (\$/Day)	\$35.48
BMP Program Total Cost (\$)	\$113,250.00
Cumulative BMP Program Cost (\$/day)	\$233.88

Ok

Figure 74 - Conservation BMP Cost Effectiveness Chart Detail Window

The second chart displays the cumulative program cost for the same BMP options.

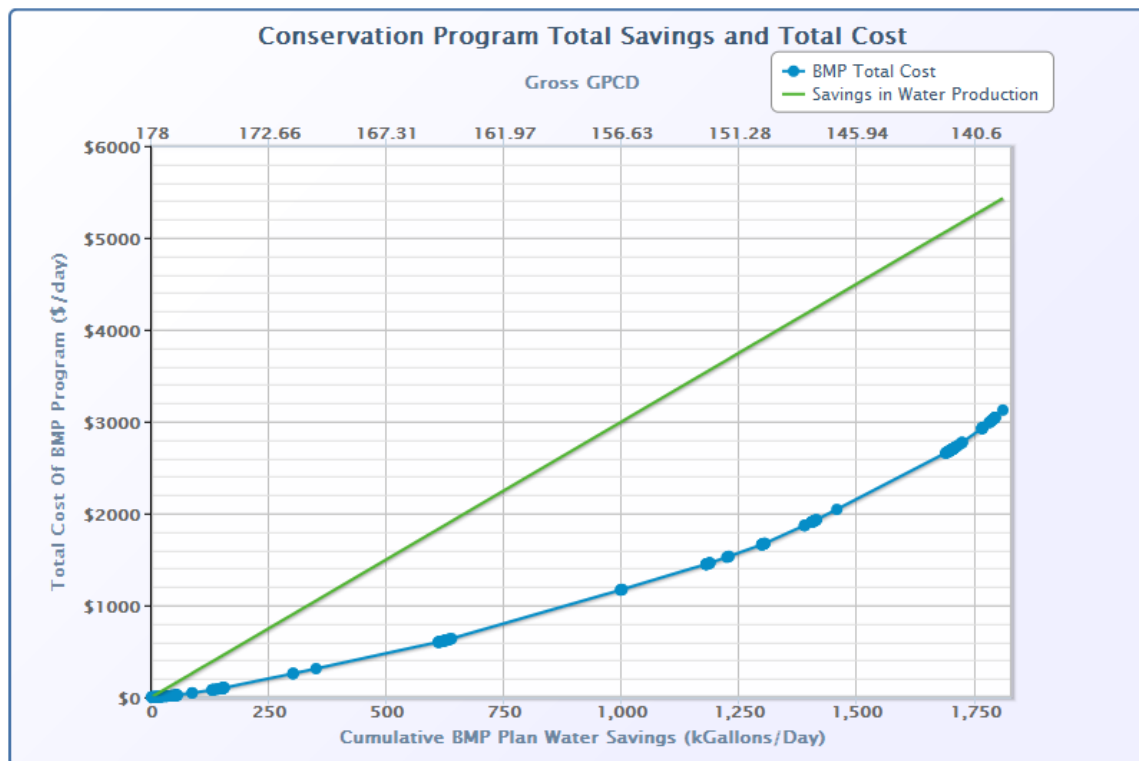


Figure 75 - Conservation Program Total Savings and Total Cost Chart

The diagonal green line displays the cost of producing the equivalent amount of water (using the same cost of water as the chart above) per day as would be saved by implementing the identified water saving practices. This chart allows you to get an idea of the estimated total cost of your recommended program implementation, and the estimated cost savings that would result.

4.9.8 Summary

The next page informs you that the BMP Analysis module has been completed. Module inputs and outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to word document options.

4.10 Planning Module

The Planning Module is where the details of your conservation plan are defined. The plan consists of identifying all conservation BMPs that will be implemented, and the schedule of their implementation by year and quantity. Once your plan is completed, the module will display an estimate of the plan's impact on projected water use and gpcd, as well as a compiled implementation plan of BMPs.

4.10.1 Introduction to Planning

The Introduction page briefly describes and overview and purpose of the Projections Module.

4.10.2 BMP Planning

The BMP Planning page provides two options for setting the initial plan state.

The “Delete Existing Plan” option will delete any BMPs already added to the plan. This option should be used if you would like to start your BMP plan with no previously added BMPs. This action is irreversible, so care should be taken if you have already spent time entering plan information. A warning is presented before your plan is deleted.

The “Set Plan to Optimum” option will delete any existing BMPs in the plan and add all the BMPs that were included in the “Optimum Plan” recommended by the BMP Analysis optimizer. The implementation rates are set to the total recommended in the “Optimum Plan” and evenly distributed across the conservation plan duration. For example, if 200 implementations were recommended for a 20 year plan, 10 implementations would be set each year for all 20 years. This option sets the plan *initial* state, and you may update and edit the plan details afterward. As this option will delete or modify any BMPs already entered in the plan, a warning is presented before it is applied.

4.10.3 Single Family BMP Plan

The Single Family BMP Plan page shows a summary of the Single Family Indoor BMPs chosen to be included in the conservation plan.

Single Family Indoor BMP Plan									
Links To Actions	Effective Build Date	Retrofit Level	Fixture Type	Fixtures Per House	GPCD Saved	Fixture Cost	Net Benefits per Retrofit (\$/year)	Existing Fixtures	Planned Retrofits
Edit Remove	<1983	Best	Showerhead	1	1.54	25.00	0.19	260	260
Edit Remove	<1983	Best	Toilet	2	1.11	200.00	0.03	500	500
Edit Remove	1983-1994	Best	Showerhead	1	0.66	25.00	0.23	153	153
Edit Remove	1983-1994	Best	Toilet	2	0.82	200.00	0.06	302	302
Edit Remove	>1994	Conventional	Faucet	2	0.47	15.00	0.06	248	248
Edit Remove	>1994	Conventional	Faucet	3	3.82	15.00	0.00	3,045	3,045
Edit Remove	>1994	Best	Showerhead	1	0.71	25.00	0.16	189	189
Edit Remove	>1994	Best	Showerhead	2	2.04	25.00	0.01	1,090	1,090
Edit Remove	>1994	Best	Toilet	2	1.72	200.00	0.00	1,300	1,300
Add BMP									
Previous Continue									

Figure 76 - Single Family BMP Plan Table

The total number of implementations is displayed for each BMP. To edit and view the detailed implementation schedule by year, select the “Edit” option for the desired BMP. A new page is opened where you can enter the number of implementations for each year for the first 5 years of your plan, and then for year 10 and year 20 (if your planning period is that long).

Edit Selected BMP

Effective Home Build Date: 1983-1994

Retrofit Level: Best

FixtureType: Toilet

Fixtures Per House: 2

Fixture Cost: \$200.00

Total Cost: \$60,400.00

Total Cost (Present Worth): \$39,646.44

GPCD Savings: 0.82

Fixtures available to retrofit: 302

Optimal fixtures to retrofit: 302

Planned fixtures to retrofit: 302

Total fixtures remaining: 0

Enter number of planned retrofits:

2013:

2014:

2015:

2016:

2017:

2018 - 2022:

2023 - 2032:

Figure 77 - Edit Selected BMP Page

An option is provided to evenly distribute the available BMP implementations over the plan duration. Values can be edited after they have been distributed using this method.

To remove a previously added BMP, choose the “Remove” link on the main page. You must confirm the action before it is removed.

To add a new BMP, choose the “Add BMP” link at the bottom of the page. A table of all the Single Family Indoor BMPs will be displayed along with some helpful reference information.

Add BMP

Please select BMP to add to your BMP Implementation Plan

Effective Home Build Date	Retrofit Level	Fixture Type	Fixtures Per House	Fixture Cost	Net Benefits per Implementation	Existing Fixtures	Optimal Retrofit
>1994	Best	Showerhead	2	25	14.77	980	980
>1994	Conventional	Showerhead	2	20	10.23	980	0
>1994	Better	Showerhead	2	22.5	12.17	980	0
<1983	Conventional	Toilet	2	200	3.29	450	0
<1983	Better	Toilet	2	250	6.03	450	0
<1983	Best	Toilet	2	200	13.26	450	0
1983-1994	Conventional	Toilet	2	200	7.5	272	0
1983-1994	Better	Toilet	2	250	10.2	272	0
1983-1994	Best	Toilet	2	200	17.36	272	0
>1994	Conventional	Faucet	4	15	6.75	252	252
>1994	Better	Faucet	4	17.5	6.59	252	0
>1994	Best	Faucet	4	20	6.42	252	0
<1983	Conventional	Showerhead	1	20	38.66	234	234
<1983	Better	Showerhead	1	22.5	42.7	234	0
<1983	Best	Showerhead	1	25	48.12	234	0
>1994	Conventional	Faucet	2	15	14.5	224	224
>1994	Better	Faucet	2	17.5	14.34	224	0
>1994	Best	Faucet	2	20	14.17	224	0
>1994	Best	Showerhead	1	25	30.17	170	170
>1994	Conventional	Showerhead	1	20	20.96	170	0
>1994	Better	Showerhead	1	22.5	24.9	170	0
>1994	Conventional	Toilet	3	200	-4.2	150	0

Page 1 of 1
View 1 - 84 of 84

Add Selected BMP
Cancel

Figure 78 - Add BMP selection Table

The table may be sorted on any column by clicking on its header. Clicking on the column header again will reverse the sort order (ascending to descending, or vice-versa). Clicking anywhere on the desired BMP will highlight the row, after which selecting the “Add Selected BMP” will open the edit page for that BMP. Once your implementation schedule is defined, it will be added to your conservation plan.

4.10.4 Multi Family BMP Plan

The Multi Family BMP Plan page is identical to the Single Family BMP Plan page except that only Multi Family BMPs are displayed and available to be added.

4.10.5 Single Family Outdoor BMP Plan

The Multi Family BMP Plan page is identical to the Single Family BMP Plan page except that only Multi Family BMPs are displayed and available to be added.

4.10.6 CII BMP Plan

The CII BMP Plan page is identical to the Single Family BMP Plan page except that only Commercial, Industrial, and Institutional BMPs are displayed and available to be added.

4.10.7 Summary

The Planning Module Summary page includes a detailed implementation plan of your conservation plan displayed in a table along with the total cost (displayed as present worth based on the beginning year of the plan) and the total water saved in million gallons over the plan period.

Implementations													
Fixture Type	Effective Year Built	Retrofit Level	Fixtures Per House (SF,MF) or Land Use Code	2014	2015	2016	2017	2018	2019 - 2023	2024 - 2033	Total Cost (Present Worth)	Water Saved (MG) Over Planning Horizon	Related Parcels
Single Family	***	***	***	***	***	***	***	***	***	***	***	***	
Toilet	<1983	Better	1	19	19	19	19	19	95	185	\$44,806.17	28.27	BMP Parcels
Toilet	<1983	Better	2	141	141	141	141	141	703	1,400	\$331,672.29	105.85	BMP Parcels
Toilet	<1983	Better	3	76	76	76	75	75	375	750	\$177,668.87	37.77	BMP Parcels
Toilet	<1983	Better	4	7	7	7	7	6	30	60	\$14,802.33	2.34	BMP Parcels
Toilet	1983-1994	Better	1	13	13	13	13	13	62	120	\$29,830.12	25.44	BMP Parcels
Toilet	1983-1994	Better	2	257	257	257	257	257	1,285	2,562	\$605,112.53	264.33	BMP Parcels
Toilet	1983-1994	Better	3	466	466	466	466	466	2,330	4,658	\$1,097,417.52	319.96	BMP Parcels
Toilet	1983-1994	Better	4	62	62	62	62	62	310	620	\$146,032.18	31.93	BMP Parcels
Toilet	>1994	Better	1	15	15	15	15	15	71	140	\$34,173.05	10.39	BMP Parcels
Toilet	>1994	Better	2	334	334	334	334	334	1,670	3,335	\$786,241.52	121.21	BMP Parcels
Showerhead	>1994	Best	1	144	144	144	144	144	720	1,436	\$62,115.74	308.42	BMP Parcels
Faucet	>1994	Best	2	91	91	91	91	91	455	906	\$83,409.48	229.40	BMP Parcels

Figure 79 - BMP Summary Implementation Table

The table is divided into sections for each water use sector (Single Family, Single Family Outdoor, Multi Family, and CII), and has totals for cost, water savings, and gpcd savings at the bottom. The listed water saved is over the planning period only. Many BMPs will continue to provide water savings and benefits beyond the planning period.

The right-most column of the table provides links that will download a comma-delimited file which contains a list of the parcel ids and selected parcel attributes of those parcels that are included in that BMP. This file can be used to target implementations for that BMP, and can be used in ArcGIS to create a map of implementation locations. For Outdoor BMPs, this file contains all the Single Family Residential parcels as the EZ Guide cannot identify those parcels that are over-irrigating (which is critical to targeting Outdoor BMPs). Therefore, for outdoor BMPs, it is important to use this list in conjunction with Utility supplied billing information to identify those candidate accounts.

Below the implementation table two charts are displayed. The first chart displays the projected water use with and without water savings from the conservation plan.

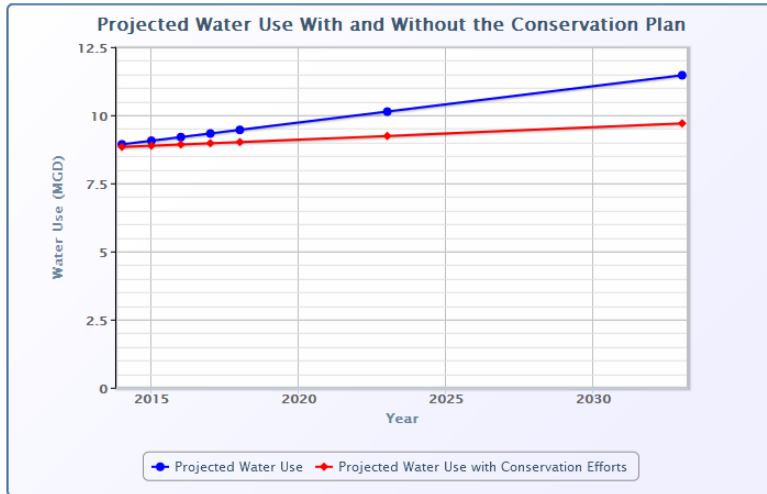


Figure 80 - Projected Water Use With and Without the Conservation Plan Chart

The second chart displays the projected gross gpcd with and without water savings from the conservation plan.

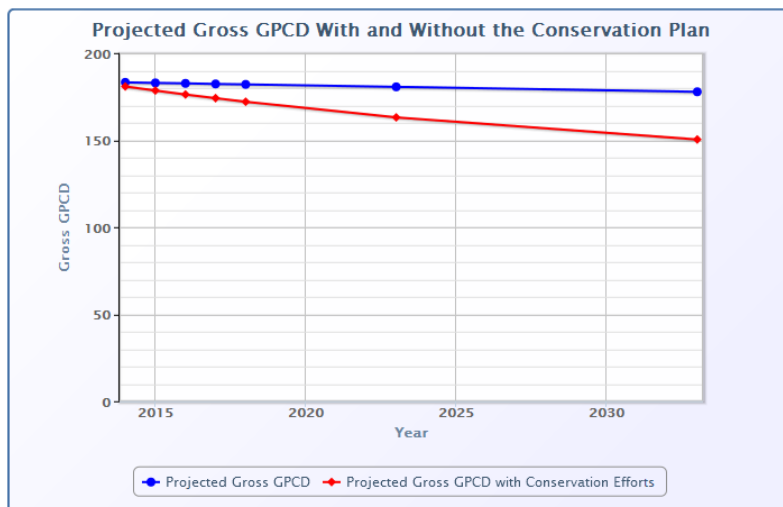


Figure 81 - Projected Gross GPCD With and Without the Conservation Plan Chart

Below these two charts are the same two print/output options that are available to all the other module summary pages.

4.11 Summary Report Module

The Summary Report Module consists of a single page that assists in printing or saving the output of all the previous EZ Guide Online modules.

4.11.1 Introduction to Reporting

The Introduction page briefly describes and overview and purpose of the Summary Report Module.

4.11.2 Summary Report

The Summary Report page contains links to the Summary page for each of the completed EZ Guide Online modules. Links to both the print formatted view and the word formatted file are provided. These links are identical to the links available on the individual summary pages, but are located on this page as well for ease of use.

4.12 BMP Tracking

The BMP Tracking module allows you to track your conservation BMP implementation progress against the projected water use and gpcd baseline values and your conservation plan. The summary of this module can be viewed or used as a report of conservation plan progress towards your conservation goal.

4.12.1 Introduction to BMP Tracking

The Introduction page briefly describes and overview and purpose of the BMP Tracking Module.

4.12.2 BMP Tracking

The BMP Tracking page allows the actual water use and utility service area population to be reported for each year of the conservation plan, as well as the type and quantity of BMPs implemented.

At the top of the page is a brief description of the BMP Tracking module and its purpose. Immediately below the description is a dropdown box to select the year that you would like to report. Below that are places to enter the actual water use and utility service area population.

Plan Year:

Actual Water Use (MG):

Actual Population:

Figure 82 - BMP Tracking Plan Year Selection

All years within the conservation planning period are provided in the Plan year dropdown box. Actual water use for the chosen plan year should be entered in million gallons per day (MGD).

Below those entries is a table listing all of the BMPs included in your conservation plan.

Bmp Tracking - Click on value to edit											
Sector	Fixture Type	Effective Build Date	Retrofit Level	Fixtures Per House	Land Use code	Planned Retrofits	Actual Retrofits	Planned Cost	Actual Cost	Planned Water Savings (MG)	Actual Water Savings (MG)
Single Family	Showerhead	<1983	Conventional	1	--	12	5	240.00	225.00	257	0
Single Family	Showerhead	<1983	Conventional	2	--	4	0	80.00	0.00	43	0
Single Family	Showerhead	<1983	Conventional	3	--	1	0	20.00	0.00	7	0
Single Family	Toilet	<1983	Best	1	--	2	0	400.00	0.00	40	0
Single Family	Faucet	1983-1994	Conventional	2	--	1	0	15.00	0.00	8	0
Single Family	Faucet	1983-1994	Conventional	3	--	5	0	75.00	0.00	27	0
Single Family	Faucet	1983-1994	Conventional	4	--	1	0	15.00	0.00	4	0
Single Family	Showerhead	1983-1994	Best	1	--	7	0	175.00	0.00	135	0
Single Family	Toilet	1983-1994	Best	1	--	3	0	600.00	0.00	73	0

Figure 83 - BMP Tracking Implementation Table

The table may be sorted by any column by clicking on the header of that column. The sort order may be reversed (ascending to descending or vice-versa) by clicking on the header again. The sorted column is indicated by a pair of arrows in its header.

Columns that may be edited are indicated by a light yellow background. These columns are Actual Retrofits, Actual Cost, and Actual Water Savings. The planned retrofits and planned cost from your conservation plan are displayed in the adjacent columns, as well as the projected water savings for the individual BMPs. Entering the actual water savings is not required or necessary, as it is normally very difficult to directly measure the complete water savings from an individual BMP.

If you have implemented any BMPs that were not originally in your conservation plan, you may add that BMP using the “Add BMP” link directly below the table. Any BMPs added in this manner will have zero planned retrofits and planned water savings but still may be tracked and included on the tracking summary.

The bottom of the page contains the identical two conservation plan savings charts displayed in the Planning Module, with a curve added in red for any values you have entered for the actual water use for each plan year. The first chart displays annual water use.

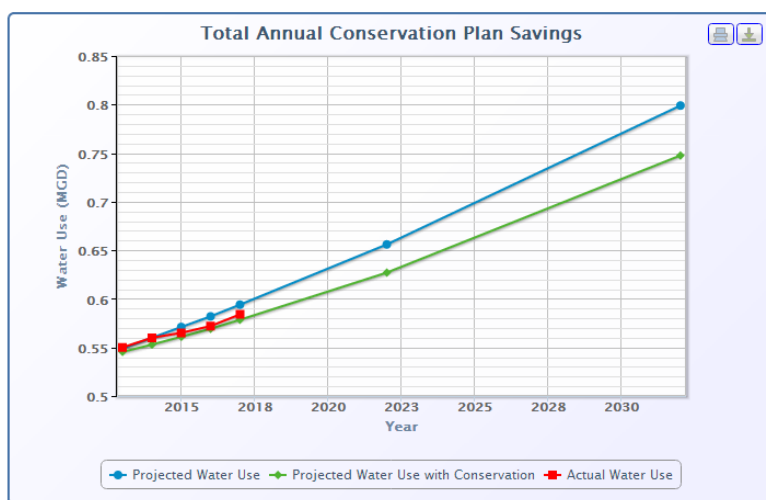


Figure 84 - Total Annual Conservation Plan Savings Chart

The second chart displays gross gpcd.

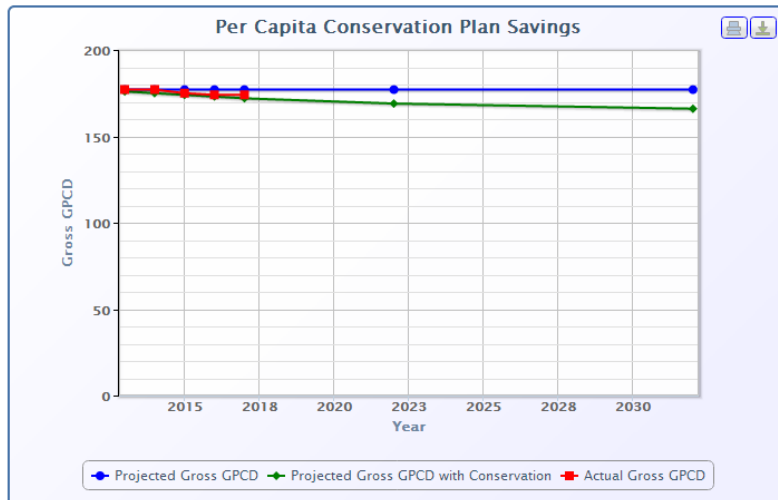


Figure 85 - Per Capita Conservation Plan Savings

These charts will not automatically update as you enter and change values in the BMP Tracking table. A button is provided directly above the first chart (“Total Annual Conservation Plan Savings”) that will update and refresh the charts after changes.

Only the actual water use and actual population entered for each plan year will affect the charts, actual water savings reported for individual BMPs is not displayed or used to create the charts.

4.12.3 Summary

The next page informs you that the Projections module has been completed. It includes a detailed list of BMP implementations grouped by year, as well as the “Total Annual Conservation Plan Savings” and “Per Capital Conservation Plan Savings” charts. Module inputs and outputs are presented in the same manner as the Profile Summary page (see section 4.4.4), including the printable view and export to word document options.

5 Future Updates

Funding for the Conserve Florida Clearinghouse and the EZ Guide Online application from FDEP and associated sources was discontinued as of June 30, 2014. Public availability of the existing EZ Guide Online application was discontinued on that date. Any interest in using the EZ Guide Online should be directed to the Florida Department of Environmental Protection. It is anticipated that continued development and support of the EZ Guide application and methodology will occur through the University of Florida and other entities.

6 Contact Information

Inquiries regarding the EZ Guide Online application should be directed to the contacts below.

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- Florida Department of Environmental Protection
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- Southwest Florida Water Management District
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- Florida Department of Revenue