

Ultra-Low Flow Toilet Flapper
**MARKETING AND IMPLEMENTATION
STRATEGIES PROGRAM**

PREPARED FOR TAMPA BAY WATER
IN COOPERATION WITH
THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



**ULF Toilet Marketing and Implementations Strategies Program
Final Report**

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Section 1: Executive Summary

Tampa Bay Water is Florida's largest wholesale water provider, supplying potable water to more than 2 million residents in the Hillsborough-Pasco-Pinellas tri-county areas, including the cities of Tampa, St. Petersburg, and New Port Richey. Regional conservation efforts are coordinated and implemented by Tampa Bay Water and its six Member Governments. Tampa Bay Water has a nine-member Board of Directors made up of representatives from the cities of Tampa and St. Petersburg and from Hillsborough, Pasco and Pinellas counties. The Board is made up of two elected officials from each Member county and one elected official from each Member city.

According to Tampa Bay Water estimates, ultra low flow (ULF) toilets installed in new homes in the Tampa Bay region are estimated to reduce regional water demand by more than 15 million gallons per day (mgd) cumulatively by 2010. Rebate projects implemented by Tampa Bay Water Member Governments (Members) will save up to 4.2 mgd through retrofitting existing homes without ultra low flush toilets by 2005. Approximately \$17 million has been spent through 2003 by Members and the Southwest Florida Water Management District (District) on ULF toilet rebate retrofit programs.

The flapper is the main component in the new and rebated fixtures that will require replacement during the life of the fixture. Therefore, selection and installation of the appropriate replacement flapper is critical in sustaining the life of the fixture's water savings. Tampa Bay Water worked with its Member Governments to take the first step in identifying correct flapper replacement, quantification of make, model, and model number of all toilets rebated in the Tampa Bay Region. Toilet makes and models were paired with manufacturers' recommended flapper replacement.

ULF Toilet Flapper Marketing and Implementation Strategies Program

Tampa Bay Water developed a ULF Toilet Flapper Marketing and Implementation Strategies Program (program) to provide menu options and implementation strategies to secure savings. The program's main objectives are to:

- Retain savings of existing rebated and installed ULF toilets by identifying and overcoming barriers to improper flapper replacement
- Provide information to the industry and the public on proper selection and installation of chemical-resistant, well-fitting replacement toilet flappers
- Increase public awareness of the importance of leak detection and for matching the correct replacement flapper to the toilet's design flushing capabilities

The goal of this program was to create various marketing and implementation strategies to three identified publics based on research conducted locally, nationally, and internationally. The three publics are:

- Rebated Customers that have received rebates for toilets installed in their homes from local governments in the Tampa Bay region
- Consumers that have Energy Policy Act related low flow plumbing fixtures in homes built from 1995 forward
- Industry that sells toilets and replacement flappers to customers in the region

Tampa Bay Water and the District partnered to fund the program. A management committee was established to guide project implementation.

In the spring of 2003, the committee agreed to request statements of qualifications from marketing and communications consultants to assist the committee in the development of this communications program. In the fall of 2003, the committee selected Roberts Communications and Marketing, Inc. (consultant) as the consultant.

The consultant developed menu options to allow Members the flexibility to choose and implement programs they deem appropriate for their specific utility. Program elements that are regional in nature may be cost-effectively implemented by Tampa Bay Water, the District or in combination with other entities nationwide.

Menu options were developed in a stepwise fashion. The first task completed was creation of an overall creative concept or “theme” for use on all program materials produced. This strategy layers the communication targeting efforts for the various audiences identified. The consultant used information from project meetings, project objectives and survey information provided in the statement of qualifications to produce campaign materials in the menu of options.

All menu options produced are consistent with the overall theme and message of the program. These options are available for local, regional, and nationwide use and implementation. Options provide enough detail for governments to implement a program from documentation and derive a cost for proposed programs. The outcome of this marketing and strategies development effort is being shared with a nationwide consortium of water utilities. This could provide part of the blueprint for securing savings for more than 25 million ULF toilets installed in homes built from 1995 until present.

Section 2: Project Background

2.1 Tampa Bay Water

Tampa Bay Water is an inter-local governmental agency, originally established in 1974 as the West Coast Regional Water Supply Authority, reorganized and renamed in 1998, pursuant to an Amended and Restated Inter-local Agreement among Tampa Bay Water's Member Governments (Members). Members include Hillsborough, Pasco and Pinellas Counties, and the cities of St. Petersburg, Tampa and New Port Richey. It supplies wholesale water to more than 2 million residents encompassing the Members.

Regional conservation programming through the former agency began in the late 1980s. The agency had been involved in regional coordination of water conservation programs and created various procedures, methods, and intergovernmental relationships that formed the basis of the conservation responsibilities provided under Tampa Bay Water.

The interlocal agreement that defines Tampa Bay Water's conservation role specifically states conservation implementation programming should be primarily the responsibility of the Members. Tampa Bay Water should continue to plan and coordinate conservation programming throughout the region. In 1996, their Board approved a Master Water Plan identifying that at least 10 mgd of conservation savings were required by its Members in 2000 and at least an additional 7 mgd of savings were required by 2005.

Members' water conservation programs are directly linked to these savings requirements and Tampa Bay Water. Therefore, the agency works with its Members to quantify conservation program savings and predict future savings that will help the agency exceed its Board-approved goals.

2.2 Southwest Florida Water Management District and Cooperative Funding

The Southwest Florida Water Management District (District) is an agency responsible for managing water resources. The District governs water resources in all or part of 16 counties in more than 10,000 square miles of west central Florida and is one of five regional water management districts in Florida. The District's primary responsibilities include water supply, water quality, natural systems and flood protection. Water management activities include resource regulation (water use, stormwater and well construction permitting), water resource development, preservation and protection of natural lands, data collection, flood protection and control operations and funding support for local and regional water-related projects.

Through ad valorem taxing powers provided to the District and its eight hydrologically delineated Basin Boards, the organization historically has provided funding for a variety of conservation projects, including low-flow toilet rebates. Governments receiving cooperative funding may receive up to a 50 percent match from the District and are required to provide the balance from their own funds.

The District has financially supported ULF toilet rebate programs initiated by various Members. Because of this toilet rebate funding, the District entered into an agreement with Tampa Bay Water to help ensure that monies spent on long-term conservation programs meet their intended goal. The flapper is the main component in these rebated fixtures that will require replacement during the life of the fixture. Therefore, selection and installation of the appropriate replacement flapper is critical to preserving the fixture's conservation capabilities.

2.3 Statement of Problem

According to Tampa Bay Water estimates, ULF toilets installed in all new homes since 1995 (as required by the National Energy Policy Act (EPAct) in the Tampa Bay region were estimated to reduce regional water demand by 5.25 mgd by 2000 and more than 15 mgd cumulatively by 2010. Rebate projects implemented by Members will save approximately 4.2 mgd through retrofitting existing homes, built before requirements of EPAct, with low flow toilets by 2005. Members and the District collectively have spent in excess of \$17 million in rebate program implementation. Predicted water savings associated with the ULF toilets can be negatively affected by lack of or incorrect toilet flapper replacement. Replacing the 1.6 gallons per flush (gpf) flapper with the correct equivalent 1.6 gpf replacement will help ensure the water conservation efforts of the ULF fixture will continue throughout the fixture's 20-year life.

A number of governments within and outside the United States, the American Water Works Association, and other entities have identified toilet flapper deterioration, lack of durability, and lack of fit standards for new and replacement flappers as a major contributor to loss of conservation savings associated with ULF toilet fixtures. Based on a review of existing literature and studies, this deterioration occurs through changing quality in the water utilities' delivery system (switch from chlorine to chloramines) to, what is considered the largest culprit, toilet tank disinfectants (chlorine tablets).

Proper toilet flapper replacement will make certain ULF toilet operation is consistent with the conservation goals adopted in Tampa Bay Water's Master Water Plan, and it will provide the added benefit of cost savings for consumers on utility bills. Furthermore, proper flapper replacement has the potential to provide savings for Members by lowering the costs of initial water treatment, and deferring capital costs associated with construction of new, or expansion of existing, water and wastewater treatment facilities.

2.4 Master Toilet and Flapper List Development

Tampa Bay Water, with the help of other partners, created a toilet flapper discussion group in 2002 to identify commonality in issues dealing with flapper deterioration, research designed to solve this problem, programs developed to quantify and replace worn flappers and as a springboard to discuss and compare notes on efforts to date and proposed. Conference calls were held approximately each quarter to exchange information and ideas on research and implementation strategies.

Members include:

- Tampa Bay Water
- City of Austin, Texas
- City of Seattle, Washington
- City of San Jose, California
- City of Los Angeles
- East Bay Municipal District
- Metropolitan Water District

- Koeller and Company
- Marin County, California
- Veritec Consulting, Ontario

This effort has provided significant dividends to efforts being developed in the Tampa Bay region. For example, the City of Seattle's Barrier Analysis survey (toilets) was used as background information and was provided in the request for statement of qualifications from consultants interested in the ULF Toilet Marketing and Implementation Strategies Program. In early 2002, Tampa Bay Water conducted the first phase of research to identify locally and nationally marketed and sold toilet makes and models. Toilets were paired with manufacturers' recommended replacement toilet flappers with the specific makes and models. The result of this research indicated that the flapper's individual physical fit and specific gravity must be uniquely matched to each toilet's flushing capacity and mechanisms. Matching the make and model of a toilet with the correct replacement flapper will provide the proper seal and clearing of the bowl, while continuing to provide water conservation.

Tampa Bay Water worked with each Member's toilet rebate processing service in 2003 to quantify exactly which makes and models of toilets were rebated in the region. The assessed information indicates that approximately 90 percent of all toilets rebated in the region were limited to 18 makes and models of toilets (**See Appendix B**).

Following this effort, the organization provided co-funding in 2003 for a project sponsored by the Canadian Water and Wastewater Association (CWWA) that tested 44 of the most popular toilet models (two samples of each). The three primary purposes of the project were to:

- Develop a performance assessment and relative ranking for each of the 30 to 40 models based upon a very realistic test media
- Perform a "water exchange" test to determine each fixture's ability to evacuate all of the waste
- Determine the proper setting for each fixture when fitted with two of the most popular brands of adjustable after-market replacement flappers

The project was established as an international partnership involving leading water efficiency specialists in both Canada and the United States. Tampa Bay Water's primary objective, in addition to the long-term applicability of flow and quality per make and model of toilet, was to secure information on after-market flappers that applied to the top 90 percent of toilets rebated in the region. This information will provide a base from which to develop various implementation strategies for its Members.

While the project was being completed, Tampa Bay Water continued to contact different manufacturers for updated information on newly developed toilet makes and models, manufacturers recommended original equipment and after market flappers, and identification of toilets no longer manufactured. Following completion of the CWWA study, the table was updated to include the proper flapper setting for each fixture fitted with popular brands of adjustable after-market replacement flappers. This table has been used extensively by other utilities throughout the country and was developed to be a part of the next phase of this work.

In addition, Tampa Bay Water has been in contact with replacement flapper manufacturers to determine how to optimize the correct replacement of original equipment manufactured toilet flapper parts.

Section 3: Management Committee

3.1 Committee Membership

Tampa Bay Water and the Southwest Florida Water Management District (District) partnered to fund the ULF Toilet Marketing and Implementation Strategies Program. They worked collectively to form the ULF Toilet Marketing and Implementation Strategies Committee (committee). This committee was made up of Tampa Bay Water Member government representatives from the cities of Tampa and St. Petersburg, and Hillsborough, Pasco and Pinellas counties, as well as Tampa Bay Water staff and District representatives.

ULF Management Committee Members

Lisa Krentz, City of Tampa
Norman Davis, Hillsborough County
Chris Claus, City of St. Petersburg
Barbara Born, Pinellas County
Annemarie Hammond, Pasco County
John Walkinshaw, SWFWMD
Malcom Castor, SWFWMD
Virginia Sternberger, SWFWMD

Other Reviewers

Sandra Anderson, City of Tampa
Phoenix McKinney, City of Tampa
John Parks, City of St. Petersburg
Rhianna Pensa, Tampa Bay Water
Carol Imbriani, Tampa Bay Water
Alys Brockway, Hernando County Utilities

3.2 Program Objectives

Tampa Bay Water developed a ULF Toilet Flapper Marketing and Implementation Strategies Program (program) to provide menu options and implementation strategies to secure savings. The program's main objectives are to:

- Retain savings of existing rebated and installed ULF toilets by identifying and overcoming public barriers to flapper replacement
- Provide information to the industry and the public on proper selection and installation of chemical-resistant, well-fitting, replacement toilet flappers
- Increase public awareness of the importance of leak detection and for matching the correct replacement flapper to the toilet's design flushing capabilities

The goal of this program was to create various marketing and implementation strategies to three different ultra-low flush segments or publics based on research conducted locally, nationally, and internationally. The three publics are:

- Rebated (customers)
- Non-Rebated (customers)
- Industry (retail/wholesale)

3.3 Selecting Consultant

Upon identification of program objectives and affected publics, the committee put out a statement of qualifications for an outside consultant to develop this communications program. In the fall of 2003, the committee selected Roberts Communications and Marketing, Inc. (consultant) as the consultant for the development of the program.

3.4 Management of Contract Deliverables

The consultant worked through the committee to produce the scope of services for the program. The focus of the program is to develop public/industry-marketing strategies that will encourage correct replacement of worn or leaking flappers. Included in the program are menu options that provide flexibility to the Members in choosing from those programs to implement those that are the most cost effective for their utility. Each of the items in the scope of work was selected based on their effectiveness for use by each of the Members locally and for their use regionally.

3.5 Review Process

The committee established a formal review process. During a series of monthly meetings, each item developed by the consultant was presented to the committee for review and feedback. The committee members then took each item back to their respective organizations for further evaluation. Each committee member submitted a final review and feedback to the consultant. The menu options were then revised based on committee member feedback with final versions being presented at subsequent committee meetings.

Menu options will be available for local, regional, and nationwide use and implementation. Detailed implementation strategies for Members are identified in this report and include a projected range of cost for the menu options.

Section 4: Menu of Options and Descriptions

Billboards

To be effective, these are short, catchy and to the point. Each billboard has a call to action with a Web site address. The billboards are all similar in design and graphic treatment. The billboards reflect the overall look and feel of the campaign and may be used to build awareness. The toilet with the arrow has become a graphic icon for the campaign. This toilet will be seen on all items related to the campaign.

Billboard Option #1



- This first billboard addresses the conservation issue surrounding a leaky flapper.

Billboard Option #2



- Addresses the rebate audience.
- Message creates awareness that a low-flow toilet may not be saving water if it has a leaky flapper.

Billboard Option #3



- Humor is used to gain attention and awareness.-like the old joke, “is your refrigerator running?” this gets right to the bottom of the flapper issue.
- Utilization of humor is a way to break through barriers and reach people who have had a running toilet.
- Audience is reached in that they either know how annoying a running toilet can be or that they have a running toilet and don't know why.

Billboard Option #4



- Humor is again used to gain attention and awareness.-
- This billboard features a play on the quirky television commercial “Clap on. Clap off. The Clapper.”
- It is a catchy, attention-getting billboard which will prompt people to go to the Web site to find out, “What is a flapper?”

Billboard Option #5



- This billboard addresses the conservation issue and has a direct call to action.
- It is effective in encouraging the audience into wanting to find out more information about a flapper and how to stop leaks.

Informational Brochure Side 1

IS YOUR TOILET RUNNING?

Getting to the bottom of a leaky toilet can be perplexing. To find out where the leak is coming from, some detective work is in order.

FIND THE CULPRIT.

To find out if a toilet leak is being caused by the flapper, put 1 teaspoon of food coloring or a dye tablet into the tank. Wait about 15 minutes. If you end up with color in the toilet bowl, you probably have a leaky flapper.

IT'S NOT LOW-FLOW IF IT LEAKS.

Got an ultra low-flow toilet? Think you're saving water and lowering your water bill? Well, maybe not. The truth is, the savings you expect will be lost if you have a leak.

SOLVING THE MYSTERY of the leaky flapper

(MEMBER GOVERNMENT NAME GOES HERE)

GET A CONSERVATION CLUE.

Taking baths and showers, flushing the toilet, washing clothes and doing dishes are all "necessary" uses of water. But the amount you use each time can add up. Fortunately, you have control over how much water you use in and around your home.

While flushing the toilet uses the most water in your home, it's also the easiest place to conserve. Make sure everything is working properly and you'll save water.

In addition to checking the flapper and chain, check the handle. If the toilet handle sticks in the flush position and water runs constantly, replace or adjust it immediately. Also, never use the toilet as a trash can. Because every flush uses 1.6 to 6 gallons of water, depending on your toilet.

For more information about water conservation in and around the home, visit (Member governmental name and website goes here)

(Member Government Logo and Contact Information Here)

The brochure features two images of toilets. The left image shows a toilet with the lid up. The right image shows a toilet with the lid down and a green arrow pointing to the right side of the tank. The background includes faint technical diagrams of toilet components like the overflow tube, chain, flush valve, flapper, and flush discharge.

- This informational brochure includes general information about checking a flapper, water conservation and money savings.
- It includes simple nine-step directions to replace the flapper.
- The brochure copy ties to the billboard campaign in that the subhead copy in the brochure also serves as copy for the billboards.
- The position of the text on the cover was adjusted to ensure that it could be read over a rack bar.

Informational Brochure Side 2



Flush Valve

Flapper

Flush Valve Discharge Tube

Flapper Detail

Ring

Ear

PUT A LID ON LEAKS. CHECK YOUR FLAPPER.

What's a flapper?

A toilet flapper is a rubber mechanism in your toilet tank that's the moving part of the flush valve. A flapper seals water into the tank and allows water to exit the tank when you flush.

Why do you need to check it?

Flappers deteriorate over time as a result of in-tank cleaning products and chemicals used by utilities. That's why they need to be checked every year to make sure they're fitting tightly over the flush tube. Otherwise, you end up with a leaky toilet that can waste a lot of water and seriously increase your water bill.

How much water does a bad flapper waste?

Depending on the extent of the leak, a warped or poorly fitting flapper can waste up to 200 gallons of water a day and may cost you hundreds of dollars a year.

FLAP OFF. FLAP ON. THE FLAPPER.

Follow these fast and easy steps for replacing your flapper:

1. Close the water supply to your toilet. This is typically located behind the bowl, below the tank. If there's no valve or the valve is stuck, turn off the water to the house.
2. Flush the water in the tank and note the length of the chain from the flush handle to the flapper. This will save time when installing the new flapper.
3. If the flapper is connected by a circular ring around the tube, remove the refill tube from the overflow tube. (If not, go directly to step 4.)
4. Remove the chain from the flush lever, then remove the old flapper by sliding it up and off the overflow tube. Or, unhook the flapper ears from the overflow tube. For new plastic flush valves, you may have to bend the flapper ears out and off the pins on the flush valve.
5. Write down the toilet manufacturer and the model number, if you know it. The manufacturer's name is often stamped on the outside of the bowl near the seat hinges and the model number is normally on the inside back of the tank.
6. Take the old flapper and the information you've noted to a plumbing supply or home improvement store that carries replacement flappers.

If you have a 1.6 gpf toilet, the store should have information on the correct replacement flapper and settings for adjustable flappers. Or before you go, you can look it up at www.toiletflapper.org.

Be prepared to pay \$2 - \$10 for the right flapper. And don't forget to get a beaded metal flapper chain replacement.
7. Install the new flapper by sliding it down and over the overflow tube until the ring touches the bottom of the tank, with the flapper bulb centered on the valve opening.

For plastic valves, cut the ring off the flapper along the lines marked "cut" and slip the ears of the flapper over the pins on the flush valves.
8. Reattach the chain to the flush lever and adjust the length as necessary.
9. Turn the water supply valve on slowly, fill the tank and make sure the flapper opens, closes and seals properly.



refill tube

flush lever

beaded metal chain

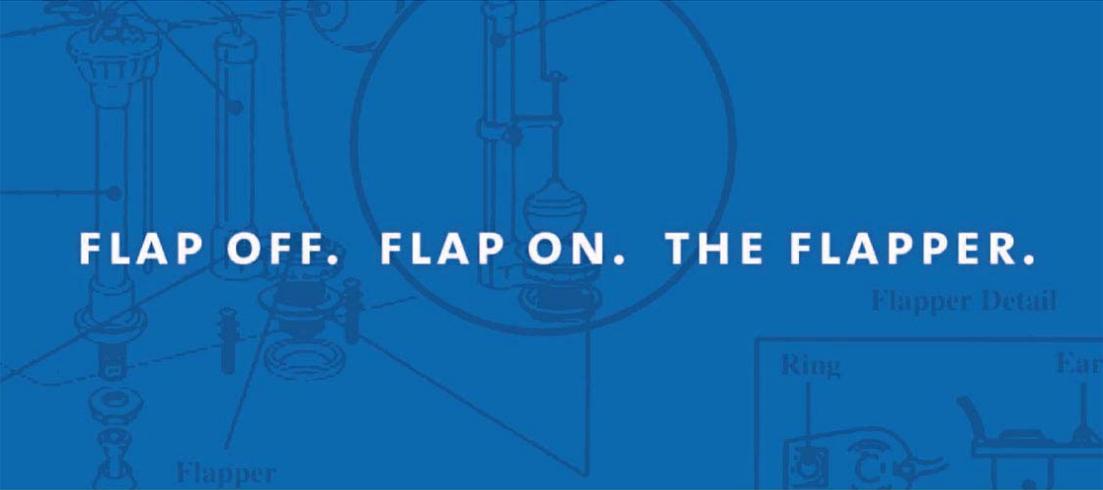
overflow tube

flush valve

flapper

- This is the inside of the information brochure that includes the easy-to-follow directions.
- The schematic of the inner workings of the toilet are illustrated and diagramed, with particular emphasis on the flapper.

How-To Chart



FLAP OFF. FLAP ON. THE FLAPPER.

Follow these fast and easy steps for replacing your flapper:

1. Close the water supply to your toilet. This is typically located behind the bowl, below the tank. If there's no valve or the valve is stuck, turn off the water to the house.
2. Flush the water in the tank and note the length of the chain from the flush handle to the flapper. This will save time when installing the new flapper.
3. If the flapper is connected by a circular ring around the tube, remove the refill tube from the overflow tube. (If not, go directly to step 4.)
4. Remove the chain from the flush lever, then remove the old flapper by sliding it up and off the overflow tube. Or, unhook the flapper ears from the overflow tube. For new plastic flush valves, you may have to bend the flapper ears out and off the pins on the flush valve.
5. Write down the toilet manufacturer and the model number, if you know it. The manufacturer's name is often stamped on the outside of the bowl near the seat hinges and the model number is normally on the inside back of the tank.
6. Take the old flapper and the information you've noted to a plumbing supply store that carries replacement flappers.

If you have a 1.6 gpf toilet, the store should have information on the correct replacement flapper and setting for adjustable flappers. Or before you go, you can look it up at www.toiletflapper.org.

Be prepared to pay \$2 - \$10 for the right flapper. And don't forget to get a beaded metal flapper chain replacement.
7. Install the new flapper by sliding it down and over the overflow tube until the ring touches the bottom of the tank, with the flapper bulb centered on the valve opening.

For plastic valves, cut the ring off the flapper along the lines marked "cut" and slip the ears of the flapper over the pins on the flush valves.
8. Reattach the chain to the flush lever and adjust the length as necessary.
9. Turn the water supply valve on slowly, fill the tank and make sure the flapper works properly.



refill tube
flush lever
fill valve
beaded metal chain
overflow tube
flapper
flush valve

- The how-to chart was revised based on member government recommendations to be a folded piece.
- The size of this piece is 9" x 12" and folds down to 9" x 4".

Utility Bill Insert

check your flapper or
WASTE 200 GALLONS A DAY



www.toiletflapper.org

*And hundreds of dollars a year. Do yourself and the environment
a favor, check your flapper today. A simple dye test will do it.*

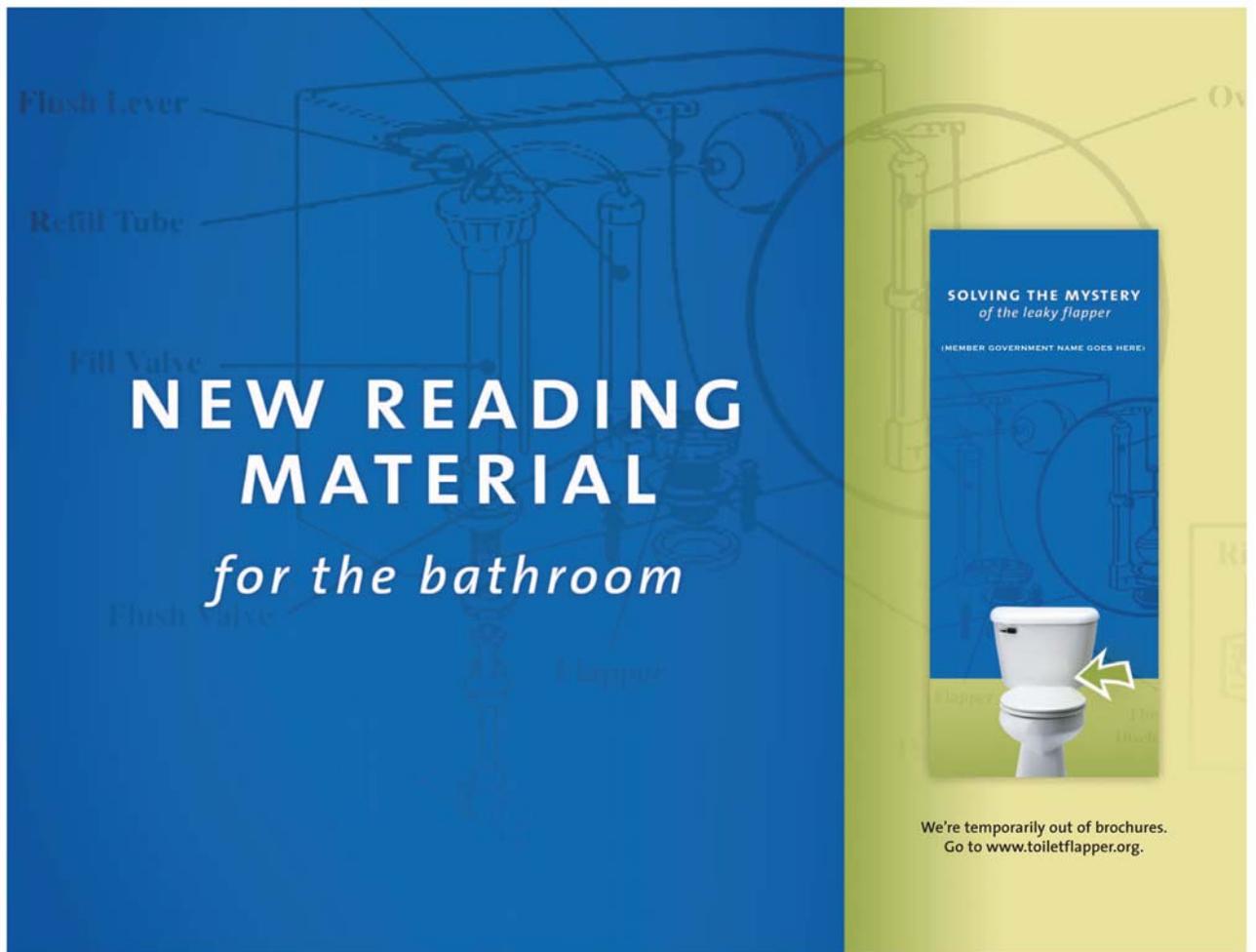
Here's How:

Put a few drops (up to one teaspoon) of food coloring or a dye tablet into your toilet tank. Wait about 15 minutes. If you end up with color in the bowl, the toilet probably has a leaky flapper.

For easy step-by-step instructions on how to replace a leaky flapper, go to www.toiletflapper.org.

- The utility bill insert includes minor copy revisions based on feedback. These revisions include changing the wording on the amount of money wasted each year: instead of listing a certain amount, an estimate was given that still sends a message about the potential money lost due to a leaky flapper.
- Specifications for Members indicated that utility bill inserts were required to be a two color piece.
- Size specifications were provided by Members. All sizes were produced and placed on project CD-ROM.

Poster with Brochure Pocket



- This poster was designed for use as a display piece at public events or to be housed at local government offices.
- The size of the poster was customized to fit into a plastic holder for a convenient display option. The plastic holder also includes a pocket for the informational brochure.
- The size of this piece is 14" x 11".

Web Site Pages – Main Page



All the flap on THE FLAPPER

Welcome to the FLAPPER Home Page. This is where you'll find everything you need to know about checking and replacing a flapper.

Flapper home

How to replace a flapper

Tampa Bay Water

Local Water Utilities

Southwest Florida Water Management District

Find your toilet flapper here

What's a flapper?

A flapper is a rubber mechanism in your toilet tank that is the moving part of the flush valve, sealing water into the tank and allowing water to exit the tank when you flush.

Flappers deteriorate over time as a result of in-tank cleaning products and chemicals used by utilities. That's why they need to be checked every year to make sure they're fitting tightly over the flush tube. Otherwise, you end up with a leak that wastes a lot of water and can seriously increase your water bill.

Depending on the extent of the leak, a warped or poorly fitting flapper can waste up to 200 gallons of water a day and may cost hundreds of dollars a year.

Is your toilet running?

Getting to the bottom of a leaky toilet can be perplexing. To find out where your leak is coming from, some detective work is probably in order.

To find out if a leak is being caused by the flapper, put a few drops to one teaspoon of food coloring or a dye tablet into your toilet tank. Wait about 15 minutes. If you end up with color in the toilet bowl, you probably have a leaky flapper that needs to be replaced.

How much water does a bad flapper waste?

Depending on the extent of the leak, a warped or poorly fitting flapper can waste up to 200 gallons of water a day and may cost you hundreds of dollars a year.

- The Members provided recommended edits to the Web site pages and these were incorporated into the copy.
- There is also a link for customers to look up their toilet model to identify which type of flapper they need for replacement.



[Flapper home](#)

[How to replace a flapper](#)

[Tampa Bay Water](#)

[Local Water Utilities](#)

[Southwest Florida Water Management District](#)

[Find your toilet/flapper here](#)

FLAP OFF. FLAP ON. THE FLAPPER.

Follow these fast and easy steps for replacing your flapper:

- 1)** Close the water supply to your toilet. This is typically located behind the bowl, below the tank. If there's no valve or the valve is stuck, turn off the water to the house.
- 2)** Flush the water in the tank and note the length of the chain from the flush handle to the flapper. This will save time when installing the new flapper.
- 3)** If the flapper is connected by a circular ring around the tube, remove the refill tube from the overflow tube. (If not, go directly to step 4.)
- 4)** Remove the chain from the flush lever, then remove the old flapper by sliding it up and off the overflow tube. Or, unhook the flapper ears from the overflow tube. For new plastic flush valves, you may have to bend the flapper ears out and off the pins on the flush valve.
- 5)** Write down the toilet manufacturer and the model number, if you know it. The manufacturer's name is often stamped on the outside of the bowl near the seat hinges and the model number is normally on the inside at the back of the tank. [FIND YOUR TOILET/FLAPPER HERE](#)
- 6)** Take the old flapper and the information you've noted to a plumbing supply store or home improvement store that carries replacement flappers.

If you have a 1.6 gpf toilet, the store should have information on the correct replacement flapper and settings for adjustable flappers. Be prepared to pay \$2 - \$10 for the right flapper. And don't forget to get a beaded metal flapper chain replacement.
- 7)** Install the new flapper by sliding it down and over the overflow tube until the ring touches the bottom of the tank, with the flapper bulb centered on the valve opening.

For plastic valves, cut the ring off the flapper along the lines marked "cut" and slip the ears of the flapper over the pins on the flush valves.
- 8)** Reattach the chain to the flush lever and adjust the length as necessary.
- 9)** Turn the water supply valve on, fill the tank and make sure the flapper opens, closes and seals properly.

Point-of-Purchase Display



- The point-of-purchase display will be placed in retail stores.
- The copy line adds some subtle humor with a double entendre – the flapper facts are literally new reading material on a bathroom subject and, figuratively, something to read while using the bathroom.
- This display will have quick fact cards that the public can take with them to learn more about checking and replacing their flapper.
- The point-of-purchase display includes minor revisions based upon feedback from Lowe’s Regional Marketing Manager. The main headline was revised to incorporate the message about money wasted as a result of a leaky toilet flapper.
- The dimensions of this piece are 8 1/2” x 11”.

Quick Fact Cards



1. Flushing the toilet consumes the most water inside the home.

2. A low-flow toilet uses 1.6 gallons per flush.

3. Other toilets use up to 6 gallons every time you flush.

4. A flapper is the rubber mechanism in the tank, that is the moving part of the flush valve.

5. Bleach and other chemicals used to treat or purify water may deteriorate a flapper over time.

6. When a flapper doesn't fit snugly, water leaks from the tank into the toilet bowl.

7. Flappers are specific to the make and model number of your toilet. You will need this information for correct flapper replacement.

8. Putting food coloring or a dye tablet in the tank and then seeing color in the bowl, tells you there's a leak.

9. A leaky flapper can waste up to 200 gallons a day and could cost hundreds of dollars a year.

Checking and changing a flapper is a snap.

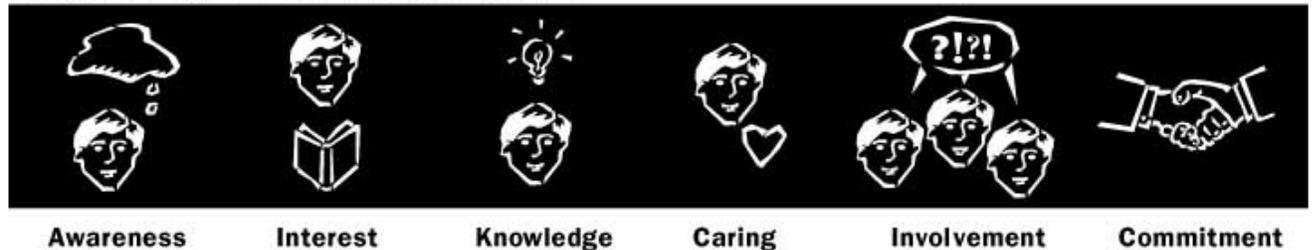
For everything you need to know, including which replacement flapper you need, go to www.toiletflapper.org or contact your local water utility.

- This is the quick fact card that will be included with the point-of-purchase display.
- The card will have a toilet paper look that relates the information to the toilet.
- The size of this piece is 4.75" x 4.25".

Section 5: Recommended Implementation Strategies

The following are recommended implementation strategies based on the awareness to behavior change continuum. Each menu option achieves *at least* one stage of desired program education. The recommended implementation of the menu options is based on reaching the commitment from the public to check their toilet flapper for leaks and replace the flapper if necessary. Each menu option assists in moving the public through the behavior change continuum.

FROM AWARENESS TO BEHAVIOR CHANGE



Different types of media and communications tools are recommended to help all target audiences progress through each stage of the behavior change continuum. **Tactics will work cumulatively to enhance and reinforce each other.**

- **Awareness**

Awareness can be achieved through frequent advertising in a variety of media such as radio, TV or cable and billboards.

- **Interest**

Compelling messages need to be developed. If the audience perceives the messages to be personally relevant, they will become interested and will be primed to receive further knowledge.

- **Knowledge**

A brochure, web site and personal presentations to groups are good ways to impart knowledge.

- **Caring**

The next stage involves more than the head. It involves the heart. People must care about an issue before they will break old ways of thinking and acting. We will appeal to the heart with carefully crafted messages delivered in psychologically impactful ways.

- **Involvement**

If a person is inspired to take action, no matter how small the action is, they become personally invested in some way and move a step closer to commitment. Action leads to involvement, which is the first sign of lasting change.

- **Commitment**

Once a person has taken some kind of action, be it as simple as visiting the Web site or as complex as volunteering their time, it is important that we make it worth their while to become committed for the long term.

Each of the following menu options addresses at least one of the stages above. The following outlines a recommended implementation strategy for each menu option:

Billboard Options – It is recommended that this be developed on a regional basis, to leverage the media buy and gain the maximum exposure within the Member’s service area. This could be accomplished through cooperative funding between Tampa Bay Water and the District. Tampa Bay Water has allocated funds in the 2005 budget for implementation of this option. Local municipalities can also implement this option, although regional implementation would provide continuity and enhance cost effectiveness.

Public Service Announcement – The public service announcement should also be developed on a regional level through cooperation between Tampa Bay Water and the District. It is recommended that this be fully developed in Phase II of this project and used by Members to be aired on local cable channels as well as local government television stations. Tampa Bay Water has allocated funds in the 2005 budget for implementation of this option.

Poster – The Members could produce and implement this option on their own to provide awareness of the program at local special events or to place in the lobby of their service centers. Inexpensive laminate poster holders can be used to display the poster and these also include a brochure pocket.

Utility Bill Insert – Implementation of this option by the Members individually is recommended. This allows each Member to reach their utility customers to build interest in the program.

Point-of-Purchase Display and Quick Fact Cards – This option could be implemented on a regional and a local level. The consultant has already established a relationship with a regional manager of Lowe’s home improvement stores to have these displays placed in a location next to the supply of toilet flappers. These displays could be produced through coordination between Tampa Bay Water and the District to be placed on a regional basis. Members could also implement this locally if they were to establish relationships with other local retail outlets. Tampa Bay Water has allocated funds in the 2005 budget for implementation of this option.

Informational Brochure – It is recommended that Members produce the informational brochures individually. The brochures will feature personalized information on each Member to provide the local information on this program to utility customers. Members can use these brochures for local events, to send to utility customers who have called with questions and to display at local government offices.

How-to Chart – This option could be produced on a regional level for implementation at local retail stores for sponsoring “how-to” clinics. The consultant is working with Lowe’s home improvement stores on a regional basis to sponsor a “how-to” clinic on checking and replacing the toilet flapper. This option could also be implemented on a local level. Members could use this how-to chart to provide utility customers with a step-by-step guide to replacing their toilet flapper. Tampa Bay Water has allocated funds in the 2005 budget for implementation of this option.

Web Site Pages – It is recommended that this item be implemented on a regional level. Tampa Bay Water has already purchased the domain rights for the URL www.toiletflapper.org. This has been registered for the next two years. The Members could provide a link on their utility Web sites to connect to the flapper website. All materials produced in this campaign refer to this Web site for further information.

Flapper Selection Chart – Tampa Bay Water has created a master list of most, if not all, 1.6 gallon/flush toilets sold in the United States (**See Appendix C**). This list is the first one created in the country. It will be updated annually beginning in 2005. This list provides toilet manufacturer, model number, model

name, original flapper information (if available), toilet manufacturers recommended replacement flapper, and three manufacturers of adjustable flappers tested in the *Maximum Performance Testing of Popular Toilet Models* for replacement flapper fit and settings. Other makes and models of flappers are available, but tests verifying their ability to retain toilet flush volumes at 1.6 gallons or less have not been provided. This list, in one fashion or another, will be available on www.toiletflapper.org and will also be developed for use in home improvement stores and other toilet replacement part stores (ex: plumbing supply stores).

Section 6: Estimated Costs for Production

ULF Toilet Flapper Marketing and Implementation Strategies Program- Menu Options Cost Estimate	
Deliverable from Consultant	Estimated Costs to Member Governments
Write and design an informational brochure about water conservation through toilet flapper replacement.	Qty. – 5,000 = \$1,000.00 - \$1,600.00 Qty. – 10,000 = \$1,300.00 - \$1,800.00 Qty. – 20,000 = \$2,000.00 - \$2,400.00 This estimate only includes printing charges.
Write and design 3 Web site pages to be hosted on the Tampa Bay Water Web site.	No estimated hard costs to member governments. Members will be responsible for linking to page.
Write and design a “ how-to ” chart to guide consumers to select the correct flapper replacement.	Qty. – 5,000 = \$1,000.00 - \$1,600.00 Qty. – 10,000 = \$1,300.00 - \$1,800.00 Qty. – 20,000 = \$2,100.00 - \$2,300.00 This estimate only includes printing charges.
Write and design a utility bill insert including information on requesting the brochure and dye tabs.	Qty. – 5,000 = \$1,000.00 - \$1,600.00 Qty. – 10,000 = \$1,300.00 - \$1,800.00 Qty. – 20,000 = \$2,100.00 - \$2,300.00 This estimate only includes printing charges.
Write and design a point-of-purchase display that will include quick fact cards and replacement chart.	Qty. – 100 = \$1,100.00 Qty. – 150 = \$1,300.00 This estimate includes printing, mount to board with easel and plastic holders. This estimate is also contingent on final approval of POP display dimensions that are approved to be placed in retail outlets.
Write and design a billboard campaign.	Costs to member governments will be determined by media buy and possibility of regional campaign funded by Tampa Bay Water.
Write and design quick fact cards .	\$2,000.00 - \$5,000.00 Depending on quantity purchased.
Write a 15- and 30-second PSA for each Member to use on their government channels. This estimate does not include production charges.	Production costs will be approximately \$18,000.00 based on the lowest of three estimates received.
Write and design a poster to be used to display at public events.	Qty. – 500 = \$800.00 - \$2,000.00 Qty. – 1,000 = \$900.00 - \$3,000.00 This estimate only includes printing charges. Plastic displays with a brochure pocket are \$6.99 a piece. The stands are 14" x 11" AHS-A Style A. The Members are also going to have to add a 4" pocket to the displays and that number is BPR-4. They will need to say that the pocket needs to go on the bottom right corner of the stands. There are price breaks for over 100 pieces. The supplier's name for the plastic display is Beemak and their phone number is 1-800-421-4393.

*Estimates were acquired in the summer of 2004. These estimates show the range of the lowest to the highest costs of 3 different vendors.

Section 7: Next Steps

Committee members will be provided with a CD-ROM that contains each of these menu items. Applicable menu options will have space available for government-specific information. The production and the printing of each of these items are at the discretion of the Members. The consultant has the capacity and ability to coordinate the production and printing of any of the menu options.

We recommend that the ULF Toilet Marketing and Implementation Strategies program be taken through a second phase of services. These additional services to be provided include:

- **Complete development of the drafted Public Service Announcement** – This would be an excellent tool to continue to raise awareness of this program and, once produced, could be implemented in multiple areas.
- **Continue coordination with local retail stores** – Lowe’s regional marketing department is interested in implementing the point-of-purchase displays and having Tampa Bay Water sponsor “how-to” clinics on fixing a leaky toilet. We recommend that this be expanded to other regional and local retail outlets in the Tampa Bay area. The point-of-purchase displays and how-to charts will be produced on a regional level to achieve these goals.
- **Implement billboard campaign on regional level** – This is an excellent option to raise awareness on a broad scale. Implementing the billboard options on a regional level would benefit all Members and further the awareness and interest in the program.
- **Publicity** – Initiate media coverage three times through the next phase (first implementation phase) of the project. Write three media releases to be distributed to Members’ area media sources.
- **Coordination with local industry associations** – Initiate contact with local plumbing, heating and cooling association(s) and provide brochures and information regarding water conservation through toilet flapper replacement. Provide plumbers with appropriate messages to relay to customers about flapper replacement.
- **Awareness program for area apartments** – Initiate contact with Bay Area Apartment Association and provide informational materials regarding the toilet flapper replacement program.
- **Develop direct mail postcard** – This would be directed at locations that have already participated in local ULF toilet rebate programs, directing them to the Web site to locate the proper replacement flapper for their toilet(s).
- **Identify and coordinate implementation strategies** – This would optimize Member Government program savings.

Appendices

Appendix A

Scope of Work

Public	Tasks
1. Rebated, Non-Rebated, Industry	Coordination with Tampa Bay Water and its member governments (meetings, phone calls, correspondence) throughout the project time frame.
2. Rebated, Non-Rebated, Industry	Concept/Theme development of project. Develop concept/theme to be used for all project materials.
3. Rebated, Non-Rebated, Industry	Write and design an informational brochure about water conservation through toilet flapper replacement. It will include Web site information and reference material on correct replacement. (Options including stickers and dye tablets can be produced at an additional cost)
4. Rebated, Non-Rebated	Write and design three Web site pages to be hosted on the Tampa Bay Water Web site specifically on the toilet flapper replacement program. Informational material will include a cross-reference chart of toilets and what flapper is needed for replacement, quick reference chart to guide consumers on replacement and contact information for all member governments.
5. Rebated, Non-Rebated	Write and design a chart to guide consumers to easy and correct flapper replacement. It would include more information on conservation through flapper replacement and detailed "how-to" instructions. Information to be provided by Tampa Bay Water.
6. Rebated, Non-Rebated	Write and design a utility bill insert including information on requesting the brochure and dye tablets. This will be used to encourage commitment for replacement of flappers.
7. Industry, Rebated, Non-Rebated	Write and design a point-of-purchase display that will include the quick fact cards and replacement chart. Displays will be placed in retail outlets identified within the member governments.

	Public	Tasks
8.	Rebated, Non-Rebated	Write and design a billboard campaign. Execution of media buying to be determined by member governments. Media buying could be done regionally by Roberts Communications and Marketing.
9.	Rebated, Non-Rebated	Write and design quick fact cards. These cards will be used as a handout or as an easy, leave-behind piece. These can be used at any displays, workshops or meetings.
10.	Rebated, Non-Rebated	Write a 15- and 30-second PSA for each member government to use on their government channels. This estimate does not include production charges.
11.	Rebated, Non-Rebated	Write and design a poster to be used to display at public events. Poster will include a brochure pocket.
12.		Provide final report and evaluation of program to Tampa Bay Water.

Appendix B

Toilet Manufacturer, Model, and Flapper Replacement Information (developed by Tampa Bay Water with input from toilet manufacturers)			Number of Rebates Per Municipality, as of 2/01/03					
Toilet Manufacturer	Toilet Model #	Toilet Model	Hillsborough	Pinellas	Tampa	St. Pete	Totals	%
Gerber	21-702	Aqua Saver	20659	588	10190	9717	41154	30.57%
American Standard	2147	Renaissance	1407	13396	804	1670	17277	12.84%
Briggs	4220	Altima	4978	19	651	3039	8687	6.45%
American Standard	2055	Hunterdon	3671	3	1414	3249	8337	6.19%
Peerless Pottery	5160	Hydromiser	6518	3	1800	2	8323	6.18%
Kohler	K-3420	Wellworth	2491	2458	1057	1388	7394	5.49%
Gerber	21-302	Ultra Flush	604	5615	25	83	6327	4.70%
Briggs	4720	Ultra Conserver	3310		1927	329	5566	4.13%
Mansfield	130-160	Alto	2655		80	38	2773	2.06%
American Standard	2116	Hydra	1106	43	647	204	2000	1.49%
American Standard	2061	Heritage	409	1011	102	382	1904	1.41%
Toto	CST703LF-16R	Kiki	1515		69	132	1716	1.27%
Sterling Plumbing	4020 15	Windham	1278		411	9	1698	1.26%
American Standard	2292	New Cadet Aquameter	1097	47	153	362	1659	1.23%
Eljer	091-4600	Ultra-One	497	946	1	191	1635	1.21%
American Standard	2167	Renaissance	15	1438	124	8	1585	1.18%
Mansfield	130-16	Allegro	525	43	497	276	1341	1.00%
Crane	3-662	Cranemiser	573		616	38	1227	0.91%
St. Thomas Creations	6201	Marathon	532		12	323	867	0.64%
		TOTALS	53840	25610	20580	21440	121470	90.65%

Appendix C

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Toilet Manufacturer	Toilet Model #	Toilet Model	Toilet Manufacturers Original Flapper ¹	Toilet Manufacturers Recommended Replacement Flapper ²	Fluidmaster ¹ (setting 1 min. - 9 max.)	Niagara (setting 1 max., 6 min.)	Frugal/Flush (setting 1 max., 5 min.)	
Kohler	K-3423	Highline/Wellworth	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3456, K-3463	Ironworks	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3324	Kathryn	85655	Genuine Kohler Parts	*	*	*	
Kohler	K-3451, K3453	Memoirs	85655	Genuine Kohler Parts	*	*	*	
Kohler	K-11110	Memoirs	84225	Genuine Kohler Parts	*	*	*	
Kohler	K-14231	Memoirs	84225	Genuine Kohler Parts	*	*	*	
Kohler	K-3429	Memoirs	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3439, K-3462	Memoirs - Stately	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3452	Memoirs - Classic	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-4454	Memoirs	1006958	Genuine Kohler Parts	*	*	*	
Kohler	K- 3465	Pinoir		Genuine Kohler Parts	*	*	*	New in 2003
Kohler	K-3485	Pinoir		Genuine Kohler Parts	*	*	*	New in 2003
Kohler	K-3482	Pinoir		Genuine Kohler Parts	*	*	*	New in 2003
Kohler	K-3483	Pinoir		Genuine Kohler Parts	*	*	*	New in 2003
Kohler	K-3357	Portrait	89825	Genuine Kohler Parts	*	*	*	
Kohler	K-3591	Portrait - two piece	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3360	Revival	84138	Genuine Kohler Parts	*	*	*	
Kohler	K-3555	Revival	83834	Genuine Kohler Parts	*	*	*	
Kohler	K-3386	Rialto (rev. aa)	84314	Genuine Kohler Parts	*	*	*	
Kohler	K-3386	Rialto (rev. da- ea)	84995	Genuine Kohler Parts	*	*	*	
Kohler	K-3386	Rialto (rev. fa)	1000495	Genuine Kohler Parts	*	*	*	
Kohler	K-3434	Rosario Lite	84995	Genuine Kohler Parts	*	*	*	Discontinued
Kohler	K-3435	San Martine	83064	Genuine Kohler Parts				
Kohler	K-3397	San Raphael	If 3 lugs and 3 screws rectangular use flapper 83064, if circular overflow use 87449, rectangular no screws use 83095	Genuine Kohler Parts	*	*	*	
Kohler	K-3398	San Raphael - Powerlite	Flapperless	Genuine Kohler Parts	*	*	*	
Kohler	K-3383	San Raphael	84138	Genuine Kohler Parts	*	*	*	
Kohler	K-3384	San Raphael	84995	Genuine Kohler Parts	*	*	*	
Kohler	K-3466	San Raphael - Elongated			*	*	*	New in 2003
Kohler	K-3467	San Raphael - Round Front			*	*	*	New in 2003
Kohler	K-3323	Santa Rosa	85655	Genuine Kohler Parts	*	*	*	
Kohler	K-3444, K- 3461, K-3464	Serif	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-4608-0	Serif	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-4740 HC	Turbo Flush	x	Genuine Kohler Parts	*	*	*	
Kohler	K-4237	Wellcome Lite	85160	Genuine Kohler Parts	*	*	*	
Kohler	K-3433	Wellworth	85160	Genuine Kohler Parts	1	5	5	
Kohler	K-3438	Wellworth	84225	Genuine Kohler Parts	1	5	5	
Kohler	K-3407	Wellworth	1006958	Genuine Kohler Parts	1	5	5	
Kohler	K-3420	Wellworth	85160	Genuine Kohler Parts	1	5	5	Replaced by Other Wellworth models
Kohler	K-3422	Wellworth	85160	Genuine Kohler Parts	1	5	5	
Kohler	K-3421	Wellworth	84541	Genuine Kohler Parts	1	5	5	
Kohler	K-4620-0	Wellworth Highline	85160	Genuine Kohler Parts	?			
Kohler	K-3458	Wellworth Lite	Flapperless	Pressure Assist	?			
Kohler	K-4350	Wellworth Lite	Flapperless	Pressure Assist				
Kohler	K-4368	Wellworth Lite	Flapperless	Pressure Assist				
Kohler	K-3422X	Wellworth / Peacekeeper	85160	Genuine Kohler Parts	*	*	*	
Mansfield								
Mansfield	130-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	131-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	134-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	135-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	137-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	138-160	Alto	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	130-16	Allegro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	Replaced by the Alto
Mansfield	145-121	Americana	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	130-164	Claro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	131-164	Claro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	134-164	Claro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	135-164	Claro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	138-164	Claro	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	137-160	Comercial Handicapped	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	137-164	Comercial Handicapped	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	130-199	Europa	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	135-199	Europa	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	136-163	Neur	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
				NA = 2" flapper could not be installed				
				Bold = Rebated by Tampa Bay Water Municipalities				
				Orange = Discontinued or Replaced by other models, see comments				

1 - Manufacturers recommend specific flappers. Mfg. outlets may not provide this level of specificity. 2- Manufacturers recommendation. Supply warehouse or internet indicates original flapper available and can be purchased at locations indicated.

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Toilet Manufacturer	Toilet Model #	Toilet Model	Toilet Manufacturers Original Flapper ¹	Toilet Manufacturers Recommended Replacement Flapper ²	Fluidmaster (setting 1 min. - 9 max.)	Niagara (setting 1 max., 6 min.)	Frugal/Flush (setting 1 max., 5 min.)	
Mansfield	136-164	Neur	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	All Mansfield toilets use a flush valve.
Mansfield	700	One-Piece	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	705	One-Piece	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	Service kit required for replacement.
Mansfield	706	One-Piece	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	140-120	Romanesque	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	141-120	Romanesque	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	150-100	Quantum			N/A	N/A	N/A	
Mansfield	158-100	Quantum			N/A	N/A	N/A	
Mansfield	130-189	Wave	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Mansfield	135-189	Wave	Mansfield 211	Service kit No 630-0030	N/A	N/A	N/A	
Niagra								
Niagara	N2210	Constant	N3144T any standard flapper		*	*	*	in limited production
Niagara	N2216	Niagara	No Flapper	Flapperless - No flapper	N/A	N/A	N/A	
Niagara	N2220	Turbo 1.6	N3144T		9	1	5	in limited production
Niagra	N2226	Niagara Elongated	No Flapper	Flapperless - No flapper	N/A	N/A	N/A	
Orion	51149	Royalty			*	*	*	ORION is out of business -
Peerless Pottery								
Peerless Pottery	7660	Hancock	Coast FLAP AS203		*	*	*	
Peerless Pottery	5160	Hydromiser	Hoov-R-Line 93088		*	*	*	Discontinued
Peerless Pottery	5161	Hydromiser	Hoov-R-Line 93088		*	*	*	
Peerless Pottery	5668	Hydromiser	Hoov-R-Line 93088		*	*	*	
Peerless Pottery	7160	Madison	Coast FLAP AS203		*	*	*	
Peerless Pottery	7161	Madison	Coast FLAP AS203		*	*	*	
Peerless Pottery	7164	Madison HC	Coast FLAP AS203		*	*	*	
Peerless Pottery	7668	McKinley	Coast FLAP AS203		*	*	*	
Peerless Pottery	460	Nassau	Coast FLAP AS203		*	*	*	
Peerless Pottery	1606	Predator			*	*	*	
Peerless Pottery	6916	Warrick	Coast FLAP AS203		*	*	*	
Porcher	9712	Vento	1-800-359-3261 ext 5	call 1-800-359-3261 ext 5	*	*	*	
Renovator Supply		Superflush 1.6	Flush Kit	call 1-800-659-2211	*	*	*	
Sanitarios Azteca								
Sanitarios Azteca	415	Genesis	Hoov-R-Line / Coast		*	*	*	
Sanitarios Azteca	402	La Mosa Mercurio	Hoov-R-Line / Coast		*	*	*	
Sanitarios Azteca	410	Sahara	Hoov-R-Line / Coast		1	5	5	
Sanitarios Azteca	411	Sahara La Mosa	Hoov-R-Line / Coast		*	*	*	
Sanitarios Azteca		Vienna EL II	Hoov-R-Line / Coast		*	*	*	
St. Thomas Creations								
St. Thomas Creations	6120	Arlington	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6075	Ashton	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6040	Balboa	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6041	Barcelona	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6071	Barrymore	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6043	Bostonian	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6078	Camelot	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6130	Celebration	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6109	Charleston	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6067	Claridge/Neo-Roma	Hoov-R-Line 9400.021		*	*	*	
St. Thomas Creations	6114	Essense	Hoov-R-Line 9400.021		*	*	*	
				NA = 2" flapper could not be installed				
				Bold = Rebated by Tampa Bay Water Municipalities				
				Orange = Discontinued or Replaced by other models, see comments				

1 - Manufacturers recommend specific flappers. Mfg. outlets may not provide this level of specificity. 2- Manufacturers recommendation. Supply warehouse or internet indicates original flapper available and can be purchased at locations indicated.

