

City of Northglenn  
High Efficiency Toilet Giveaway Program  
95% Completion Report  
December 8, 2008

Grant Recipient: City of Northglenn  
11701 Community Center Drive  
Northglenn, CO 80233-8061

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The City of Northglenn (City) hosted a large scale high efficiency toilet (HET) give-away program on July 26, 2008 in an aggressive effort to continue to conserve water. The City gave away 500 dual flush Caroma HETs to eligible residences that currently use 3.5 gallon per flush (gpf) toilets. It is commonly assumed that toilets account for the majority of indoor water use. With the replacement of 500 high volume toilets with HETs, the City anticipates saving 20-25 acre feet of water annually. This project is estimated to cost less than \$80,000. In comparison, the cost to purchase 20 acre feet of water is estimated at \$220,000. This 95% Completion Report document is in partial fulfillment of the Colorado Water Conservation Board's Water Efficiency Grant requirements. A summary of the project status, success of meeting identified goals and objectives, preliminary findings and obstacles, and project modifications are discussed.

### **Project Status**

Program advertising began in April. An article was placed in both the *Northglenn Connection* newsletter and in the utility bill. The *Connection* is mailed to every Northglenn household and business, approximately 15,000 copies. The utility bill insert reached 10,400 households. The local newspaper also picked up the article.

Applications were taken the entire month of May. Citizens could sign up via the City web site, by calling in or completing a paper form. Applications were limited to one per account number, i.e., one per residence. All applications were entered into a web based database. Toilet recipients were chosen from a lottery in a random drawing. Recipient selection took place June 5<sup>th</sup>; notification of winners began on June 6<sup>th</sup>. Email addresses were provided by 327 of the 529 applicants. This allowed City staff to send email notification to these winners, saving considerable expense in staff time and postage. Winners that did not provide an email account were notified via USPS.

State Legislation HB 1343 and HJR 1023, effective August 1, 2006, require documentation that proves legal status. As a result, the City required recipients to complete, in person, an affidavit for verification of eligibility for state and local benefits. The original 500 winners had from June 16th through July 11th to complete their

affidavit. Upon completion of the affidavit, lottery winners were given a coupon with their name, address and account number on it. An arrival time was also printed on the coupon. Customers were requested to arrive within the designated time period printed on their coupon. Long wait lines were avoided by spreading out the arrival times. Coupons were printed on security paper and could not be photocopied. These actions improved check-in efficiency and reduced distribution times. Sixteen of the original winners did not complete affidavits by the July 11th deadline. Persons on the waitlist were contacted and were given until July 23rd to complete the required paperwork.

A committee composed of staff from multiple divisions was formed in May to establish a timeline and identify program tasks and assignments.

Per the grant application, 25 residences were selected to measure pre installation and post HET installation water usage. Care was taken to select only owner occupied residences. A survey has been finalized and distributed with an instructional packet. Toilets were delivered July 11th and were stored at the City Maintenance and Operations facility and were distributed on July 26, 2008.

**Table 1. Project Schedule**

Step #1 Finalize toilet order and delivery plans from toilet manufacturer	<ul style="list-style-type: none"> <li>Negotiate price and delivery plans with toilet manufacturer</li> </ul>	February 2008
Step #2 Secure staffing and give away location	<ul style="list-style-type: none"> <li>Plan Toilet Give Away process</li> <li>Organize labor</li> <li>Secure location for Give Away</li> </ul>	March 2008
Step #3 Marketing	<ul style="list-style-type: none"> <li>Start advertising program in Connections Newsletter, Channel 8 TV station, website, mailers to residents, on the water bill, and through press releases to Sentinel, Post, and News.</li> </ul>	April-June 2008
Step #4 50% Grant Completion Notice to CWCB	<ul style="list-style-type: none"> <li>File 50% completion notice to CWCG</li> </ul>	July 2008
Step #5 Toilet Give Away	<ul style="list-style-type: none"> <li>Setup for Give Away</li> <li>Traffic Control</li> </ul>	July 2008

	<ul style="list-style-type: none"> <li>• Verify address and citizenship</li> <li>• Load Toilets</li> <li>• Hand out surveys</li> </ul>	
Step #6 Collect and Dispose of old toilets	<ul style="list-style-type: none"> <li>• Maintenance and Operations conducted old toilet pickups</li> <li>• 4.88 tons of old toilets were recycled</li> </ul>	Aug-Oct 2008
Step #7 Toilets to be installed and surveys completed	<ul style="list-style-type: none"> <li>• Surveys entered into database</li> <li>• Results compiled</li> </ul>	Sep-Nov 2008
Step #8 95% Completion Report	<ul style="list-style-type: none"> <li>• File 95% Completion notice to CWCB</li> </ul>	Dec 2008
Step #9 Document Winter Water Savings File 100% Completion	<ul style="list-style-type: none"> <li>• Compile list of toilet installations</li> <li>• Compute winter usage and water savings from Utility billing</li> <li>• File 100% Completion notice to CWCB</li> </ul>	Nov 2008  March 2009

### Goals and Objectives

The City has met their goals and objectives for the HET give-away program. Documentation of water savings will be reported in the 100% completion report. The customer satisfaction survey summary report is included as part of this report.

### Preliminary Obstacles and Solutions

The original Caroma, selected for the grant, had a 12 inch rough in. Most of the older homes in Northglenn have a 10 inch rough in. Installing the originally selected toilet would have required considerable modification to the existing plumbing at an additional cost. A substitute bowl that could be fitted to either a 10 or 12 inch rough in by using an offset adaptor was selected to replace the original bowl. This modification increased the program cost by \$7,000. The substitution did not change the dual flush system.

Therefore, no change in estimated water savings is expected. The only other obstacles encountered were minor and mostly related to overlooked details. Calculations of water usage savings from the 25 selected residences were accomplished by a formula for water measurement taken from the Bureau of Reclamation's Water Measurement Manual. All 25 of the replaced toilets were measured and each toilet's gallons per flush were determined. The 25 participants were instructed to track the solid and liquid flush counts for both pre-install (old toilets) and post-install (HET). Collected data was entered into a specialized designed spreadsheet that calculated an average water savings.

**Summary**

The City has successfully completed all identified program tasks to date including; modified procedures to maximize efficiencies, and addressed obstacles encountered. The next phase is the data collection and final reporting phase. A total of 233 replaced toilets were collected and recycled. Water savings will be calculated from the tracked winter water usage of 349 participating residences. Survey response was overwhelmingly positive, with 80% of the total 215 responses stating that they liked the new HET more than their old toilet. The collected survey responses are attached in PDF format.

# PHP Surveyor for The City of Northglenn

## Quick Statistics



## Filter Settings



## SQL Builder



## Results

**No of records in this query: 215**

Total records in survey: 215

Percentage of total: 100.00%

SQL: SELECT count(\*) FROM survey\_34

[Browse](#)
[Export](#)

## Field Summary for Q1:

**Why did you decide to install the new low-flow toilet?**

Answer	Count	Percentage
To reduce my water bill (1)	160	74.42%
To save water and improve the environment (2)	176	81.86%
Someone told me it was a good idea (3)	4	1.86%
My old toilet was broken (4)	10	4.65%
My old toilet needed to be replaced (5)	73	33.95%
I'm selling the home and had to replace my toilets (6)	0	0.00%
Other <a href="#">Browse</a>	36	16.74%

## Field Summary for Q2:

**Your Comments**

Answer	Count	Percentage
Answer <a href="#">Browse</a>	120	55.81%
Not applicable	95	44.19%

## Field Summary for Q8(1):

**Please answer the following:  
[Compared to the old toilet, do you like the new toilet?]**

Answer	Count	Percentage
Not applicable	4	1.86%
More (1)	171	79.53%
Same (2)	26	12.09%
Less (3)	14	6.51%

## Field Summary for Q9(1):

**Compared to your old toilet, your new toilet:  
[Clogs...]**

Answer	Count	Percentage
Not applicable	16	7.44%
More (1)	4	1.86%
Same (2)	25	11.63%
Less (3)	170	79.07%

**Field Summary for Q9(2):**

**Compared to your old toilet, your new toilet:  
[Requires double flushing...]**

Answer	Count	Percentage
Not applicable	9	4.19%
More (1)	27	12.56%
Same (2)	35	16.28%
Less (3)	144	66.98%

**Field Summary for Q9(3):**

**Compared to your old toilet, your new toilet:  
[Requires bowl cleansing...]**

Answer	Count	Percentage
Not applicable	8	3.72%
More (1)	35	16.28%
Same (2)	58	26.98%
Less (3)	114	53.02%

**Field Summary for Q10(1):**

**Please answer the following:  
[Would you recommend your Caroma toilet to others?]**

Answer	Count	Percentage
Not applicable	5	2.33%
Yes (1)	162	75.35%
No (2)	9	4.19%
Not Sure (3)	39	18.14%

**Field Summary for Q10(2):**

**Please answer the following:  
[Would you have purchased a new toilet if a free toilet (or rebate) were not available? ]**

Answer	Count	Percentage
Not applicable	4	1.86%
Yes (1)	57	26.51%
No (2)	82	38.14%
Not Sure (3)	72	33.49%

**Field Summary for Q11(1):**

<b>Rate your new toilet</b> <b>[Using a scale of 1 to 10, with "10" being excellent and "1" being totally unsatisfactory, how would you rate your new toilet?]</b>		
Answer	Count	Percentage
Not applicable	5	2.33%
1 (1)	2	0.93%
2 (2)	3	1.40%
3 (3)	5	2.33%
4 (4)	3	1.40%
5 (5)	6	2.79%
6 (6)	3	1.40%
7 (7)	23	10.70%
8 (8)	38	17.67%
9 (9)	63	29.30%
10 (10)	64	29.77%

<b>Field Summary for Q12:</b> <b>If there were one thing you would want the manufacturer of your toilet to change, what would it be?</b>		
Answer	Count	Percentage
Answer <a href="#">Browse</a>	145	67.44%
Not applicable	70	32.56%

<b>Field Summary for Q3(1):</b> <b>Please answer the following:</b> <b>[How well does the new low-flow toilet clear out the bowl on each flush?]</b>		
Answer	Count	Percentage
Not applicable	2	0.93%
Excellent (1)	93	43.26%
Very Good (2)	81	37.67%
Satisfactory (3)	33	15.35%
Poor (4)	6	2.79%

<b>Field Summary for Q3(2):</b> <b>Please answer the following:</b> <b>[How would you rate how well the toilet cleans the sides of the bowl?]</b>		
Answer	Count	Percentage
Not applicable	10	4.65%
Excellent (1)	60	27.91%
Very Good (2)	90	41.86%
Satisfactory (3)	39	18.14%
Poor (4)	16	7.44%

<b>Field Summary for Q4(1):</b>		
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**Please answer the following:  
[How often do you experience blocking or clogging?]**

Answer	Count	Percentage
Not applicable	9	4.19%
1/2 the time (1)	2	0.93%
1/4 of the time (2)	2	0.93%
Once per month (3)	12	5.58%
Never (4)	190	88.37%

**Field Summary for Q5(1):**

**Please answer the following:  
[How often do you have to "double flush" to clear the bowl?]**

Answer	Count	Percentage
Not applicable	13	6.05%
1/2 the time (1)	13	6.05%
1/4 of the time (2)	34	15.81%
Once per month (3)	61	28.37%
Never (4)	94	43.72%

**Field Summary for Q5(2):**

**Please answer the following:  
[How often do you have to "double flush" to clean the sides of the bowl?]**

Answer	Count	Percentage
Not applicable	17	7.91%
1/2 the time (1)	13	6.05%
1/4 of the time (2)	27	12.56%
Once per month (3)	46	21.40%
Never (4)	112	52.09%

**Field Summary for Q6:**

**Who installed your new low-flow toilet?**

Answer	Count	Percentage
Not applicable	3	1.40%
Self (1)	147	68.37%
Plumber/Contractor (2)	44	20.47%
Other (-oth-)	21	9.77%

**Field Summary for Q7:**

**How was the ease of installation?**

Answer	Count	Percentage
Not applicable	69	32.09%
Very Easy (1)	32	14.88%
Easy (2)	97	45.12%
Difficult (3)	16	7.44%



Very Difficult (4)	1	0.47%
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**PHPSurveyor**  
Version 0.99

