Customer Satisfaction with Philadelphia Water Department Services, Customer Assistance Programs and Construction Projects

A Report of the 2017 Survey and Focus Groups

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Executive Summary

Overview

The City of Philadelphia (City) acting through its Water Department (PWD) is committed to customer satisfaction and building public support for its infrastructure investments that result in cleaner waterways. Following a study led by ImpactED leadership in 2016, in the spring of 2017, PWD commissioned ImpactED to conduct a mixed methods research study of customer, construction project and customer assistance programs satisfaction. The study consisted of a city-wide survey of over 2,000 residents and 9 focus groups with customers, and culminated in a detailed report of findings and recommendations for improvement. This report describes the research methodology and the resulting findings and recommendations.

The Survey

In total, 2,015 began the survey and 1,902 completed it with sufficient demographic information to allow for appropriate weighting. The weighted sample represents the population of Philadelphia, ages 18 and older (1,208,990 people in total). Residents from every habited city zip code participated in the survey. The survey was available on the web (www.PDWsurvey.com, text message, over the phone or in person.

Focus Groups

In total, 64 customers of Philadelphia Water Department participated in 9 focus groups. Three of the focus groups were conducted on general customer experiences, three with recipients of the Homeowner's Emergency Loan Program (HELP) and three with residents from recently completed construction project areas (West Philly – 40523, Summerdale - 20502, and Kemble Park – 50044).

Findings: General Customer Satisfaction

- 68% of customers are satisfied or very satisfied with their experience with PWD (an 8% decline from 2016) and there is variation in satisfaction across sub groups.
- 56.7% of Philadelphians drink tap water most often while at home and 67.4% rate the water quality as excellent or good.
- Residents who pay their bills using ZipCheck have the highest levels of satisfaction, but Online Banking is the most common bill-paying method.
- Billing and payment issues are the greatest source of complaints for customers.
- Few residents have engaged with PWD in person or over the phone, but when used, these services are rated highly: in-person 80.5% excellent or good and 56.4% for phone.
- Customers want more and better communication from PWD related to programs, construction and repairs, meetings and events, and PWD accomplishments in the City.
- Overall trust in PWD is high, but significantly related to race, gender and age.
- Many Philadelphian recognize the environmental contributions of PWD's work in the City, and those who contribute want to see a kick-back.
- Philadelphian's think the water infrastructure locally is better than for the nation as a whole, but many more Philadelphians "don't know" as compared to national survey respondents.

Recommendations

- **Improve communications** with customers/residents and provide more information:
- **Collect customer email addresses** to enable better communication in this preferred mode
- **Promote the use of ZipCheck** to increase bill-paying and overall satisfaction (customers who paid their bills using ZipCheck were the most satisfied, but Online Banking was most popular)
- Offer more support for senior citizens
- **Make bill-paying easier** (more comparable to PECO and PGW processes) and provide greater explanation of the Stormwater charge
- To build trust that PWD is delivering safe drinking water to residents' homes, **consider a campaign that highlights the quality of PWD water and any improvements in water quality** (taste, odor and clarity) over the last 10-15 years. This could also encourage residents to drink (filtered or unfiltered) tap water instead of bottled water.
    - ✓ Emphasize this strongly for residents with lower levels of trust, such as those identifying as non-White

Findings: Construction Projects

- Many residents are unclear about what is considered a "PWD construction project."
- Most residents never knew the purpose of the project.
- The majority of residents said they were not inconvenienced at all or only a little inconvenienced by the construction.
- The survey showed that only a small percentage of residents were dissatisfied with the Quality of Life Specs: courtesy and professionalism, cleanliness, timeliness and daily working hours of the project; focus group participants also expressed some dissatisfaction.
- Residents in West Philly (40523) and Summerdale (20502) knew about the project and its purpose ahead of time; residents near Kemble Park (50044) heard about more from opposition groups and never learned the purpose
- There was a general desire for more and better project-related communication and information.
- Residents were confused about other work happening around the same times.
- Several residents felt that contractors did not appropriately respect the properties and lives of the residents.
- Many residents did not feel that they were made "whole again" after the project was completed.
- Residents want more opportunities to give feedback.

Recommendations

- Hold focus groups (or community meetings) with residents to **allow them to voice their concerns and share feedback** on construction projects prior to starting and also during projects.
- **Improve efforts to provide residents with accurate information** about project purpose, timeline, known disruptions (water shut offs, parking issues, etc.) and construction site safety information.
- Explore ways of **distinguishing for residents the differences between construction projects and repairs**

- Allow residents to **sign up for/opt-in to received email or next notifications for project updates** (i.e., related to timeline, etc.)
- **Increase visibility of PWD Inspector** for residents.
- Ensure that residents' homes, properties and streets are left **in same or better condition than before the project** (consider power-washing homes)
- **Survey residents for feedback immediately after project is finished.**

Findings: Customer Assistance Programs/HELP

- Overall, 76.6% of CAPs participants reported being satisfied or very satisfied with their experience.
- Many residents perceived that they do not qualify for any of CAPs.
- Most HELP recipients said they discovered and reported their defect themselves.
- Enrolling in HELP is easy!
- Some residents are distrustful of the City with respect to the homeowner vs. City responsibilities, as well as use of contractors.
- HELP participants often did not feel the projects were sufficiently completed (or that properties, streets and neighborhoods were made whole again).
- Communication between PWD HELP office, Inspectors, Contractors and HELP recipients was not always clear and streamlined.
- Participants were frustrated with the billing process and reported confusion about the two bills and credits to different accounts.

Recommendations

- **Increase awareness about CAPs for all PWD customers**
- Consider providing **discounts for senior citizens on HELP repairs**
- Once the work is "completed" by the Contractor, **verify recipient/customer satisfaction/get feedback from customers (could be in the form of a survey)**.
- Improve communication between recipients, Inspector, Contractors and Water Revenue.
- **Unify the billing process** for HELP loans and water bills.
- **Make homeowner responsibilities clearer** to all residents

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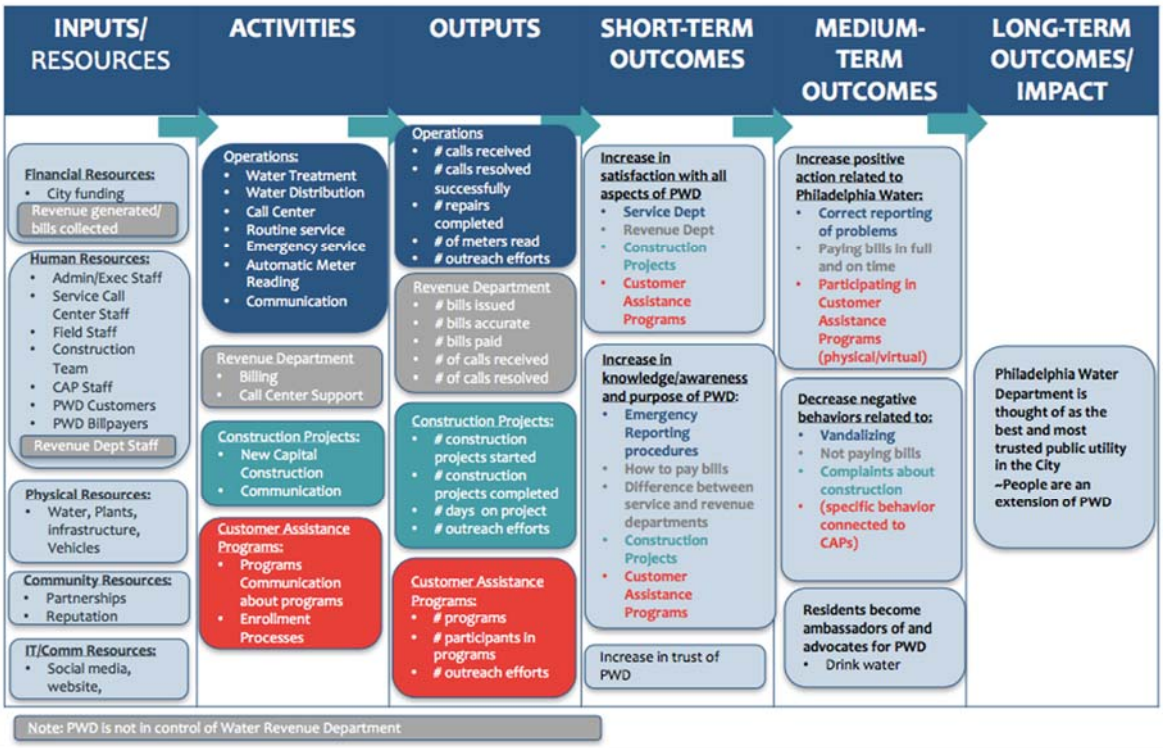
Project Background & Methods

The Philadelphia Water Department (PWD) is committed to customer satisfaction and building public support for its infrastructure investments that result in cleaner waterways. The Department serves 2.5 million people in the City of Philadelphia and surrounding communities.

The Public Affairs team at PWD has a proven commitment to conducting research and evaluation through engaging their customers in sharing feedback to drive improvement. In the spring of 2016, PWD conducted a Comprehensive Customer Satisfaction Survey, completed by nearly 2,000 customers and bill payers, as well as a Construction Project Satisfaction survey of 400 residents affected by construction projects. In 2017, PWD commissioned ImpactED at the University of Pennsylvania to continue the work and engage customers in the City to share their feedback.

The driving goals of the Public Affairs division is to build appreciation for PWD infrastructure, to provide highly satisfactory services to customers, and to further environmental stewardship of the City's waterways. Strategic research and evaluation is critical to achieving these goals and will serve to guide PWD's work in future years and help identify core strengths and weaknesses in customer satisfaction and program efficacy. In 2017, ImpactED leveraged a mixed methods approach to gathering data to drive impact. ImpactED executed a citywide, multimodal survey to PWD customers, as well as conducted nine focus groups with key customer stakeholder groups. Figure 1 shows the initial draft of the PWD Public Affairs Logic Model, from which the research was framed. The logic model illustrates the inputs/resources and activities of the Public Affairs team across four key areas: operations, revenue, construction projects and Customer Assistance Programs (CAPs). The right-hand side shows the outputs related to particular activities and the associated short, medium and long-term outcomes. The team plans to further develop the logic model in the coming year.

Figure 1. PWD Public Affairs Logic Model



The ultimate goal for the Public Affairs team is for PWD to be thought of as the best and most trusted public utility in the City. In the shorter term, PWD is looking to increase satisfaction with all aspects of PWD, increase knowledge and awareness around the work of PWD and increase overall trust in PWD. The following report describes the research methods used for the project as a whole, and then describes the findings and recommendations for PWD related to Operations and Revenue, Construction Projects and Customer Assistance Programs.

Quantitative Data Collection – The Survey

Instrument Development

The Comprehensive Survey used for quantitative data collection in the 2017 PWD study was collaboratively developed by researchers at ImpactED at the University of Pennsylvania and Public Affairs staff at PWD. The survey consisted of three sections: customer satisfaction, construction satisfaction, and Customer Assistance Program (CAPs) satisfaction. The overall purpose was to gather information about the experiences of customers and residents in Philadelphia to inform improvements. The survey questions were multiple choice with the exception of one open-ended question (see Appendix A for the full survey protocol).

Recruitment and Administration

Participants for the survey were recruited in multiple ways. In May of 2017, each bill from the Water Revenue Bureau contained an invitation to participate in the 2017 Philadelphia Customer Satisfaction Survey, via web, SMS text message, or by phone. Figure 2 shows the "bill-stuffer" invitation.

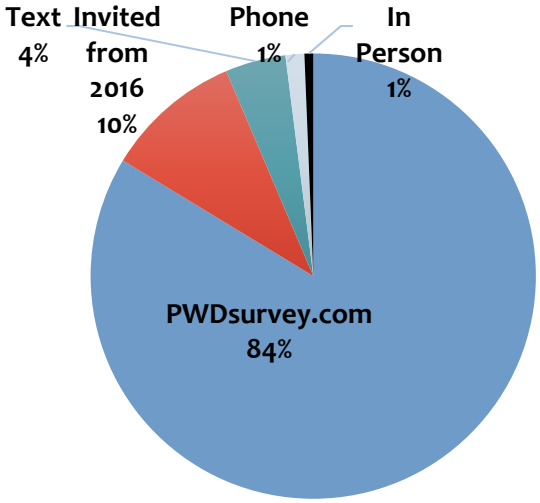
Figure 2. 2017 Bill Stuffer Survey Invitation

In addition to the bill-stuffer invitation, all respondents to the 2016 PWD Customer Satisfaction survey who indicated a willingness to participate in future PWD research were invited via email or phone. Additionally, ImpactED conducted in-person surveys at the Municipal Services Building (MSB) where customers were paying in-person. Finally, PWD released a press release on the survey and recruited using social media.

The survey launched by invitation only to 2016 respondents in April of 2017. The public survey was open from May 1, 2017 – June 15, 2017. At the close of the survey, four $100 gift cards were raffled off to randomly selected survey participants.

The majority of participants were recruited from the bill-stuffer invitation and other media sources that directed people to the website www.PWDsurvey.com. Of the 2016 survey respondents, 233 responded to the email invite to take the 2017 survey. In terms of mode, 1,965 people took the survey via web, 103 by text, 32 by phone and 15 in person. The chart below shows this distribution.

Figure 3. Modes of Survey Participation



The Sample

In total, 2,015 began the survey and 1,902 completed it with sufficient demographic information to allow for appropriate weighting. The weighted sample represents the population of Philadelphia, ages 18 and older (1,208,990 people in total[i]) (see Appendix C for full Weighting Methodology Report).

The demographics of the survey respondents are shown below, along with the demographics of the general population of the City of Philadelphia.

Table 1. Demographic Characteristics of Survey Respondents and Philadelphians

	Survey Respondents (Unweighted)	Philadelphia County			Survey Respondents (Unweighted)	Philadelphia County
Gender				**Education**		
Male	44.4%	46.2%		HS or Less	16.1%	50.7%
Female	55.6%	53.8%		Some College	22.8%	25.9%
Age				College Graduate	26.8%	14.4%
18-24	1.3%	15.3%		Beyond College	34.3%	9.0%
25-34	14.0%	22.7%				
35-44	15.7%	15.7%		Less than $19,999	7.2%	
45-54	15.4%	15.9%		$20,000 to $34,999	10.0%	
55-64	24.9%	14.4%		$35,000 to $49,999	10.5%	
65+	28.7%	15.9%		$50,000 to $74,999	15.4%	
Race/Ethnicity				$75,000 to $99,999	11.9%	
White	65.3%	39.6%		$100,000 to $149,999	11.1%	
Black	18.9%	40.9%		$150,000 or more	8.8%	
Hispanic	4.1%	11.5%		Prefer not to answer	25.2%	
Other/Mixed	11.7%	8.0%				

Residents from nearly every zip code in the city respondent to the survey, as well as bill payers across the region. The figures below show the number of respondents from each zip code (both in the region and in the City of Philadelphia); the darker color blue indicates a greater number of people participating from the zip code.

Figure 4. Number of Respondents per Zip Code in the Region

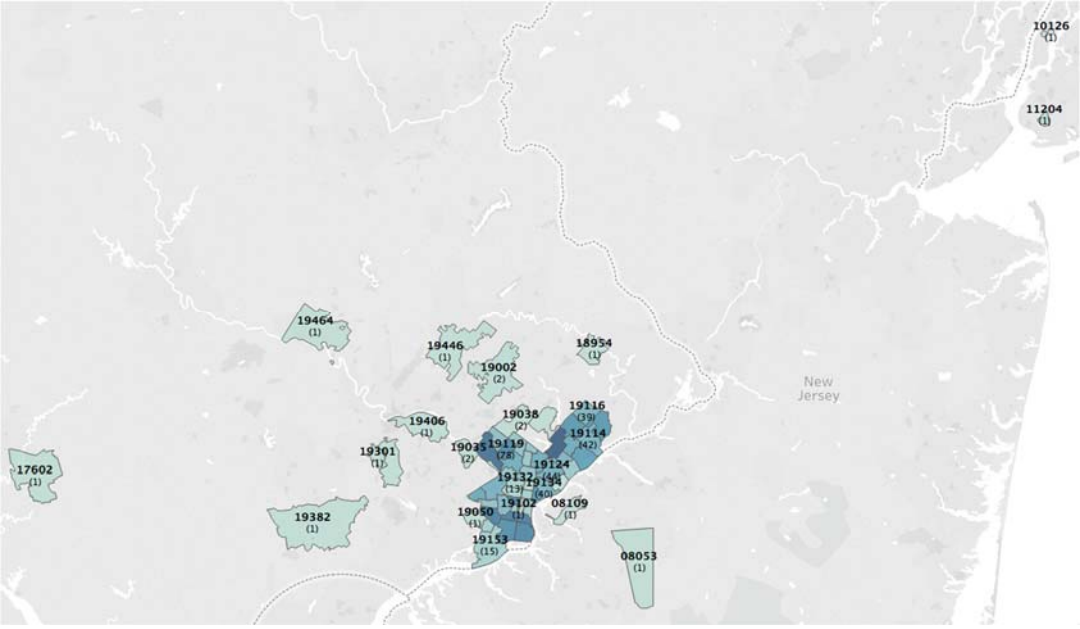
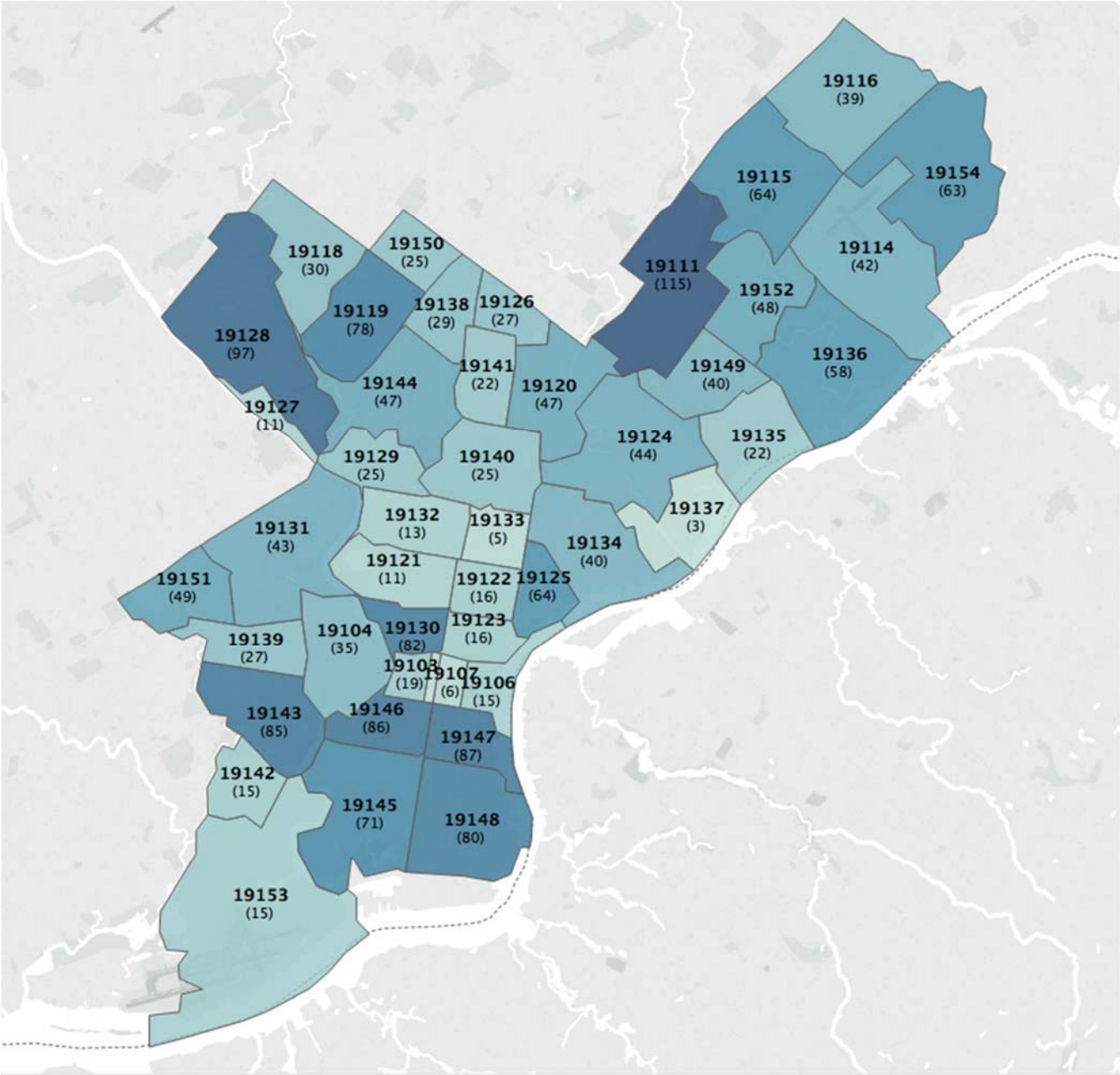


Figure 5. Number of Respondents per Zip Code in Philadelphia



Data Analysis

After weighting the survey data to represent all residents 18 and over in Philadelphia, the research team used descriptive and inferential statistics to understand responses to each question and performed subgroup analyses on several variables to better understand indicators across key subgroups. Inferential statistics include use of analysis of variance (ANOVA) to describe differences in variables across different sub groups, and correlational analysis to understand the relationships between participants' responses to different questions. We also used simple linear regression to understand the contribution of multiple variables to one variable of interest (i.e. contribution of bill paying satisfaction to overall satisfaction).

Qualitative Data Collection – Focus Groups

Instrument Development

In collaboration, ImpactED and the PWD Public Affairs team developed three focus group protocols for the set of focus groups on: general customer experiences, construction project experiences, and experiences with the Homeowners Emergency Loan Program (HELP). The protocols were designed to align with logic model and the surveys and to last 1 hour.

Recruitment and Administration

The research team recruited participants for each focus group in different ways. For the general customer experience focus groups, participants were recruited by web and phone from the 2016 survey. For HELP customers, PWD mailed a focus group invitation two weeks prior to all loan recipients. Participants mainly enrolled by phone. For the construction project focus groups, PWD selected three recently completed sites and invited residents from blocks that had been affected by closures.

Focus groups lasted one hour each and participants were compensated $25 cash or gift card for their time.

The Sample

In total, 64 customers of Philadelphia Water Department participated in focus groups. In the general customer experience focus group, participants ranged from the 18 – 24 age group through 65 and over; half of the participants identified as Black/African American and the other half as White. In terms of educational attainment, participants ranged from high school diploma or GED to graduate degrees. Participants in the construction project focus groups were diverse and reflected the demographics of the neighborhoods, but were generally older residents. Participants in the HELP focus groups were almost exclusively African American and over the age of 55 and ranged in education level from less than a high school degree to a bachelor's degree.

Data Analysis

The focus groups were audio recorded, transcribed and coded for themes. A summary memo was submitted to PWD after each set of focus groups.

General Customer Experiences: Operations and Revenue

The following section reports on findings related to general PWD operations and revenue/billing.

General Customer Experiences

- **68% of customers are satisfied or very satisfied with their experience with PWD (an 8% decline from 2016) and there is variation in satisfaction across sub groups.**

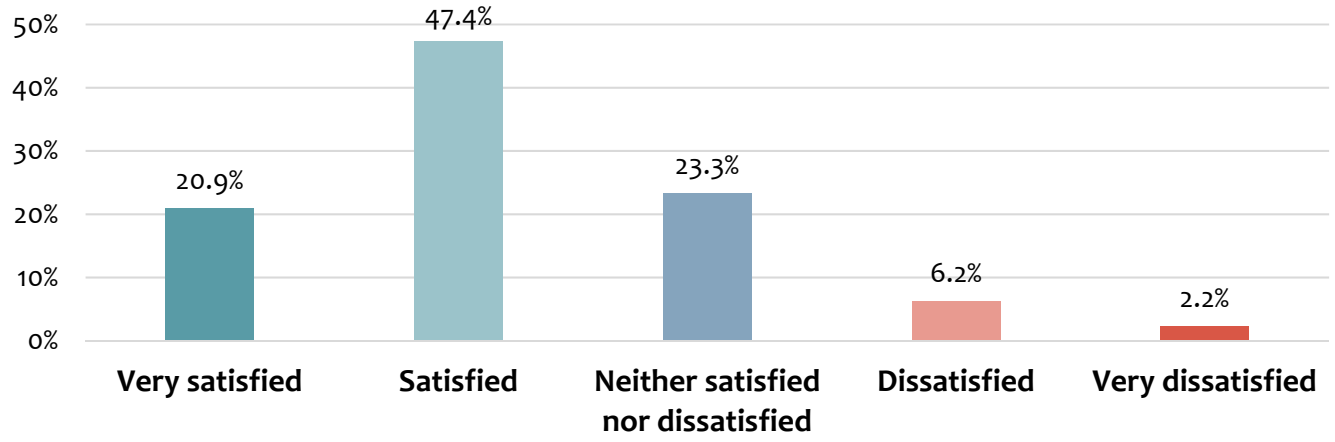
The overall customer satisfaction rating for 2017 significantly declined 8% from 2016[ii]. Some of the open ended survey comments spoke to this decline as customers were frustrated in large part with their bills and the billing process as a whole. For example, in FY 2017, the billing system was not processing checks and payments, and customers were receiving shut off notices in error.

In addition, the "Stormwater Charge," implemented in 2010, where Residential customers pay a standard amount based on the average surface area of impervious cover on residential properties and the average square footage throughout the city, is still a point of confusion and frustration for customers, who do not understand the fee and see it as an unfair charge: "Stormwater charge is MAJOR rip off." Both of these factors may have negatively influenced overall customer satisfaction.

> *"They need to get the billing process fixed. I have gotten shut off notices when the accounts are not credited. When sending check sometimes it takes a month for them to cash it. Have had PWD show up to turn water off when they haven't cashed the check in over the month and they forced to write a check even though the first check never cleared."*

Figure **6** below shows the distribution of satisfaction responses from the 2017 survey.

Figure 6. Overall Satisfaction with PWD



There was also significant variation in satisfaction across subgroups. Table 2 below shows the ways in which different demographic groups responded. The percentages sum across the rows and show the distribution of responses for all individuals in that sub-categories (e.g., males of Black). Results show some differences in overall satisfaction related to demographic variables. Cells are highlighted to show the highest and lowest values. In general, older residents were more satisfied than younger residents and males were more satisfied than females. There were no differences in satisfaction between those who identified as White, Black or Hispanic. Residents with more than a college degree were more satisfied than those who had a high school diploma or less. Customers earning more than $150,000 per year were significantly less satisfied than those in other income brackets.

Table 2. Overall Satisfaction by Demographic Group

		Very Satisfied	Satisfied	Neither	Dissatisfied	Very Dissatisfied	%Satisfied or Very Satisfied
Age	18-24	19.4%	44.9%	35.7%	0.0%	0.0%	64.3%
	25-34	8.9%	55.4%	25.2%	8.0%	2.5%	64.3%
	35-44	20.6%	42.4%	30.9%	4.7%	1.4%	63.0%
	45-54	18.8%	47.9%	20.5%	8.5%	4.4%	66.6%
	55-64	27.1%	47.1%	16.6%	7.2%	2.0%	74.2%
	65+	35.7%	43.2%	14.5%	4.6%	2.0%	78.9%
Gender	Male	23.9%	47.0%	22.1%	5.7%	1.4%	70.8%
	Female	18.7%	48.1%	24.3%	6.1%	2.8%	66.8%
Race	White	25.7%	44.2%	23.0%	5.5%	1.6%	69.9%
	Black	19.0%	52.1%	20.4%	5.9%	2.6%	71.1%
	Hispanic	19.1%	37.8%	32.8%	7.3%	3.0%	56.9%
	Other/mixed	12.0%	55.3%	22.8%	7.7%	2.2%	67.3%
Highest Level of Education	HS or less	25.7%	45.0%	22.5%	5.0%	1.9%	70.7%
	Some college/Assoc Deg	18.6%	48.7%	23.2%	6.7%	2.9%	67.2%
	College Degree	15.0%	50.6%	25.3%	7.0%	2.1%	65.7%
	Beyond College	13.8%	50.3%	25.7%	7.9%	2.3%	64.2%
Income	Less than $19,999	14.3%	55.2%	22.3%	6.0%	2.3%	69.5%
	$20,000 to $34,999	23.9%	49.4%	19.6%	6.0%	1.0%	73.4%
	$35,000 to $49,999	29.9%	38.8%	24.0%	6.9%	0.5%	68.6%
	$50,000 to $74,999	17.6%	50.3%	18.2%	9.6%	4.3%	67.9%
	$75,000 to $99,999	26.7%	43.2%	25.7%	2.5%	1.9%	69.9%
	$100,000 to $149,999	15.7%	58.2%	18.3%	6.9%	0.8%	74.0%
	$150,000 or more	11.9%	46.2%	23.5%	10.2%	8.3%	58.1%
	Prefer not to answer	21.8%	41.6%	30.9%	3.6%	2.2%	63.4%

Zip code data presented on the next page.
Note: Row percentages sum to 100%. Differences described below are results of ANOVA with $p<.05$.

Overall Satisfaction with PWD by Zip Code			Weighted					
	Weighted N	Unweighted N	Very satisfied	Satisfied	Neither	Dissatisfied	Very dissatisfied	% Sat or Very Sat
OVERALL	1,198,032	1,888	20.9%	47.4%	23.3%	6.2%	2.2%	68.3%
No Zip Code	52,356	33	14.1%	54.3%	5.7%	24.4%	1.5%	68.4%
19102	131	1	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
19103	2,908	19	22.0%	35.7%	40.6%	1.7%	0.0%	57.7%
19104	22,548	33	34.0%	35.0%	31.0%	0.0%	0.0%	69.0%
19106	1,492	15	4.9%	53.4%	41.7%	0.0%	0.0%	58.3%
19107	736	6	23.9%	20.0%	56.1%	0.0%	0.0%	43.9%
19111	70,495	114	14.1%	53.1%	24.8%	7.3%	0.8%	67.2%
19114	20,699	42	23.1%	50.9%	14.7%	7.0%	4.3%	74.0%
19115	23,408	64	44.1%	39.1%	15.5%	0.3%	1.0%	83.2%
19116	15,880	36	8.0%	66.1%	23.8%	0.0%	2.1%	74.1%
19118	5,375	30	5.1%	53.0%	27.6%	14.3%	0.0%	58.1%
19119	36,173	77	17.7%	57.7%	19.0%	5.3%	0.3%	75.4%
19120	51,316	45	20.2%	54.6%	17.5%	1.3%	6.3%	74.8%
19121	10,119	11	2.8%	18.9%	68.3%	10.0%	0.0%	21.7%
19122	7,141	16	3.4%	29.1%	44.8%	22.7%	0.0%	32.5%
19123	4,573	16	1.6%	25.2%	46.1%	27.1%	0.0%	26.8%
19124	57,305	42	27.5%	59.5%	7.9%	5.1%	0.0%	87.0%
19125	30,642	64	15.1%	48.1%	31.4%	2.9%	2.5%	63.2%
19126	13,570	27	10.9%	51.0%	30.6%	7.5%	0.0%	61.9%
19127	3,703	11	39.8%	23.3%	9.0%	7.2%	20.7%	63.1%
19128	41,458	97	19.9%	53.7%	19.3%	4.1%	3.0%	73.6%
19129	4,497	25	34.4%	45.0%	5.6%	0.9%	14.1%	79.4%
19130	17,551	82	22.3%	49.3%	14.3%	9.9%	4.2%	71.6%
19131	30,879	41	25.2%	55.0%	13.3%	4.7%	1.9%	80.2%
19132	12,612	13	13.4%	52.2%	34.4%	0.0%	0.0%	65.6%
19133	18,145	5	0.0%	64.8%	35.2%	0.0%	0.0%	64.8%
19134	32,363	39	16.8%	25.0%	47.6%	9.1%	1.6%	41.8%
19135	26,867	20	22.9%	23.5%	52.4%	1.3%	0.0%	46.4%
19136	45,886	57	55.9%	29.8%	9.9%	4.2%	0.2%	85.7%
19137	1,269	3	0.0%	89.4%	0.0%	0.0%	10.6%	89.4%
19138	29,896	29	18.8%	32.7%	42.7%	3.1%	2.8%	51.5%
19139	18,295	26	31.3%	37.7%	22.7%	5.0%	3.3%	69.0%
19140	39,234	25	28.0%	49.5%	21.3%	1.2%	0.0%	77.5%
19141	21,116	21	29.6%	50.7%	19.8%	0.0%	0.0%	80.3%
19142	26,823	14	13.8%	7.0%	68.8%	0.0%	10.5%	20.8%
19143	75,682	82	17.4%	59.1%	13.2%	10.0%	0.3%	76.5%
19144	27,859	47	9.2%	63.7%	26.1%	0.6%	0.5%	72.9%
19145	39,545	71	14.0%	59.7%	20.6%	3.2%	2.6%	73.7%
19146	37,098	86	30.0%	40.8%	19.4%	9.8%	0.0%	70.8%
19147	23,105	86	14.0%	40.8%	41.9%	0.8%	2.6%	54.8%
19148	45,960	79	18.8%	61.5%	12.8%	6.1%	0.7%	80.3%
19149	20,550	39	17.5%	61.1%	19.4%	2.1%	0.0%	78.6%
19150	16,529	25	15.7%	55.4%	11.0%	7.7%	10.3%	71.1%
19151	33,200	48	9.5%	44.1%	27.6%	13.7%	5.1%	53.6%
19152	24,071	47	24.2%	33.3%	26.5%	12.3%	3.7%	57.5%
19153	15,376	15	6.9%	38.2%	6.8%	23.1%	25.0%	45.1%
19154	39,682	62	31.0%	32.6%	31.5%	4.2%	0.7%	63.6%
Outside of Philadelphia	1,914	2	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%

- **56.7% of Philadelphians drink tap water most often while at home and 67.4% rate the water quality as excellent or good.**

The majority of Philadelphian's reported they drink tap water most often while in their homes – both filtered and unfiltered (56.7%). This finding was not significantly different from the reported water consumption practices in 2016. The figure below shows the distribution of the types of water residents drink most often while at home.

Figure 7. Water Drinking Practices at Home in Philadelphia

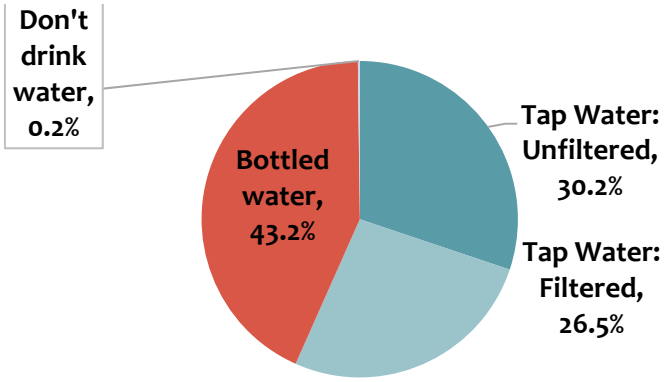


Table 3 shows the distribution of water drinking practices by demographic groups of age, gender, race, and highest level of education.

Bottled water was consumed most often by residents ages 35-44, those who identified as Black/African American, and those with a high school diploma or less. When comparing levels of overall satisfaction with PWD by water drinking behaviors, residents who drink unfiltered tap water most often at home were significantly more satisfied with PWD than those who drank bottled water.

Table 3. Water Drinking by Demographics

		Tap Water: Unfiltered	Tap Water: Filtered	Bottled Water
Age	18-24	28.6%	33.1%2	38.3%
	25-34	29.5%	25.3%	44.9%
	35-44	22.8%	26.8%	50.1%
	45-54	36.2%	22.4%	41.4%
	55-64	32.6%	26.6%	40.7%
	65+	31.7%	25.8%	42.3%
Gender	Male	35.8%	27.9%	36.2%
	Female	25.6%	24.7%	49.6%
Race	White	41.8%	39.9%	18.2%
	Black	23.7%	13.0%	63.4%
	Hispanic	11.4%	17.5%	71.2%
	Other/mixed	29.1%	36.2%	34.0%
Highest Level of Education	HS or less	28.5%	17.1%	54.4%
	Some college/Assoc Deg	31.8%	25.0%	42.9%
	College Degree	30.4%	41.0%	28.2%
	Beyond College	34.1%	52.0%	13.9%
Income	Less than $19,999	29.2%	11.9%	58.9%
	$20,000 to $34,999	32.7%	17.8%	49.3%
	$35,000 to $49,999	34.4%	21.2%	44.4%
	$50,000 to $74,999	27.1%	25.2%	47.4%
	$75,000 to $99,999	45.1%	35.8%	19.1%
	$100,000 to $149,999	24.2%	50.7%	25.1%
	$150,000 or more	30.1%	55.1%	14.6%
	Prefer not to answer	24.6%	32.2%	43.0%

Zip code data presented on the next page.
Note: Row percentages sum to 100%. Differences described below are results of ANOVA with $p<.05$.

Residents ages 45-54 years old and those who identified as White drank unfiltered tap water most often while at home, and those who identified as White and Other/mixed races and those with more than a college degree drank filtered tap water most often while at home. A much higher proportion of lower income residents reported drinking bottled water as compared to higher earning residents. Of those earning less than $19,999 per year, 58.9% said they drank bottled water most often while at home (compared to 41.1% who drank filtered or unfiltered tap water). Amongst residents earning more than $150,000, only 14.6% reported drinking bottled water, and 85.2% drink filtered or unfiltered tap water!

Focus group participants had mixed drinking habits and opinions about the taste and quality of the water. Some drank unfiltered tap water without issue or concern, while others said they did not drink or even cook with the tap water. Older participants tended to drink bottled water, citing bad taste and odor of the water, while young participants drank unfiltered water without concern.

Water Drinking by Zip Code			Weighted				
	Weighted N	Unweighted N	Unfiltered	Filtered	Bottled	Don't Drink	Tap
OVERALL	1,208,990	1,901	30.2%	26.5%	43.2%	0.2%	56.6%
No Zip Code	61,177	45	11.8%	16.3%	70.8%	1.1%	28.1%
19102	131	1	100.0%	0.0%	0.0%	0.0%	100.0%
19103	2,908	19	74.6%	21.8%	3.7%	0.0%	96.3%
19104	24,685	34	31.6%	37.4%	31.0%	0.0%	69.0%
19106	1,492	15	25.6%	62.6%	11.8%	0.0%	88.2%
19107	736	6	58.1%	41.9%	0.0%	0.0%	100.0%
19111	70,495	114	37.8%	22.7%	39.5%	0.0%	60.5%
19114	20,699	42	40.6%	31.4%	27.9%	0.0%	72.1%
19115	23,408	64	22.3%	52.6%	25.1%	0.0%	74.9%
19116	15,880	36	22.7%	30.1%	46.6%	0.6%	52.8%
19118	5,375	30	42.6%	46.4%	11.0%	0.0%	89.0%
19119	36,173	77	21.7%	21.9%	56.5%	0.0%	43.6%
19120	51,316	45	33.6%	24.8%	41.6%	0.0%	58.4%
19121	10,119	11	43.6%	21.5%	34.9%	0.0%	65.1%
19122	7,141	16	5.8%	61.8%	32.4%	0.0%	67.7%
19123	4,573	16	29.2%	66.9%	3.9%	0.0%	96.1%
19124	57,305	42	36.6%	9.8%	53.6%	0.0%	46.4%
19125	30,642	64	51.4%	35.4%	12.0%	1.2%	86.9%
19126	13,570	27	28.6%	31.2%	40.2%	0.0%	59.8%
19127	3,703	11	41.1%	51.7%	7.2%	0.0%	92.8%
19128	41,458	97	35.2%	50.8%	14.1%	0.0%	86.0%
19129	4,497	25	28.0%	50.1%	21.9%	0.0%	78.1%
19130	17,551	82	29.3%	59.6%	11.1%	0.0%	88.9%
19131	30,879	41	13.8%	13.9%	72.3%	0.0%	27.7%
19132	12,612	13	3.2%	15.8%	81.0%	0.0%	19.1%
19133	18,145	5	58.7%	0.0%	38.7%	2.6%	58.7%
19134	32,363	39	38.4%	14.3%	47.3%	0.0%	52.7%
19135	26,867	20	42.4%	11.1%	46.5%	0.0%	53.5%
19136	45,886	57	13.3%	46.8%	39.9%	0.0%	60.1%
19137	1,269	3	55.6%	44.4%	0.0%	0.0%	100.0%
19138	29,896	29	30.4%	3.5%	66.1%	0.0%	33.9%
19139	18,295	26	53.8%	16.3%	29.9%	0.0%	70.1%
19140	39,234	25	21.4%	8.3%	70.3%	0.0%	29.7%
19141	21,116	21	30.7%	31.0%	38.2%	0.0%	61.8%
19142	26,823	14	10.6%	4.9%	84.5%	0.0%	15.5%
19143	75,682	82	25.0%	27.1%	48.0%	0.0%	52.0%
19144	27,859	47	5.4%	46.4%	48.2%	0.0%	51.8%
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19146	37,098	86	33.5%	33.9%	32.6%	0.0%	67.4%
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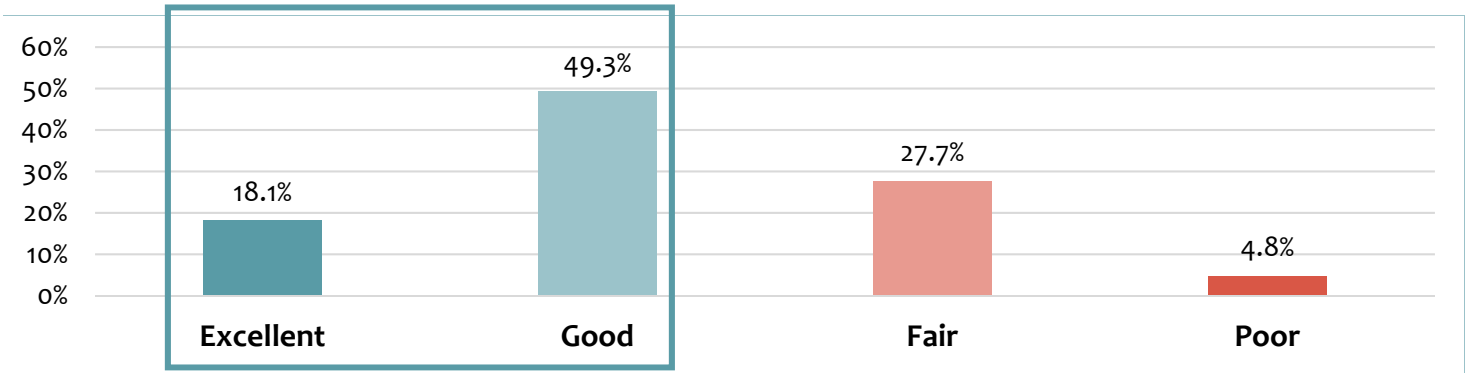
19148	45,960	79	37.4%	40.6%	22.0%	0.0%	78.0%
19149	20,550	39	44.4%	23.9%	31.7%	0.0%	68.3%
19150	16,529	25	25.4%	12.7%	61.9%	0.0%	38.1%
19151	33,200	48	7.7%	16.7%	75.4%	0.2%	24.4%
19152	24,071	47	41.4%	24.3%	34.3%	0.0%	65.7%
19153	15,376	15	39.9%	11.9%	48.2%	0.0%	51.8%
19154	39,682	62	55.8%	24.9%	19.3%	0.0%	80.7%
Outside of Philadelphia	1,914	2	100%	0%	100%	0%	100.0%

The graph below shows that 67.4% of residents rate the quality of the water that comes out of their tap at home as excellent or good. This was a non-significant decline from 2016, when 71% of residents rated the quality of the water as excellent or good.

Figure 8. Rating of Water Quality



The table below shows some of the observed differences in water quality rating across demographic groups. Results of an ANOVA show that there are significant differences in rating of water quality, with residents in the 55-64 and 65+ age groups giving higher ratings than the 35-44 and 45-54 age groups and males giving higher ratings that females. Residents identifying as White gave significantly higher ratings than Blacks, Hispanics and Other/mixed races. Residents with a high school diploma or less gave significantly lower ratings than those with a college degree or more. Income was also related to rating of water quality, with those earning less than $24,999 rating the water quality lower than those earning between $75,000 - $99,999 and over $150,000.

Table 4. Rating of Water Quality by Demographics

		Excellent	Good	Fair	Poor	% Excellent/Good
Age	18-24	17.9%	47.7%	24.0%	10.4%	65.6%
	25-34	21.7%	44.0%	29.8%	4.6%	65.6%
	35-44	14.3%	46.8%	35.7%	3.2%	61.1%
	45-54	13.5%	46.9%	35.4%	4.3%	60.3%
	55-64	21.8%	54.1%	18.6%	5.5%	75.9%
	65+	19.0%	56.8%	20.9%	3.2%	75.8%
Gender	Male	22.6%	49.7%	25.7%	2.1%	72.2%
	Female	14.8%	48.6%	29.6%	6.9%	63.5%
Race	White	27.3%	55.0%	15.2%	2.5%	82.3%
	Black	10.0%	47.6%	38.7%	3.7%	57.6%
	Hispanic	10.9%	40.0%	31.4%	17.7%	50.9%
	Other/mixed	23.0%	39.8%	34.0%	3.1%	62.9%
Highest Level of Education	HS or less	18.7%	44.6%	30.9%	5.8%	63.3%
	Some college/Assoc Deg	13.1%	52.9%	30.5%	3.5%	66.0%
	College Degree	21.9%	53.5%	20.1%	4.5%	75.4%
	Beyond College	24.8%	54.4%	16.8%	3.9%	79.3%
Income	Less than $19,999	20.7%	37.1%	33.2%	9.0%	57.8%
	$20,000 to $34,999	16.1%	47.7%	28.0%	8.2%	63.8%
	$35,000 to $49,999	12.0%	58.3%	27.8%	1.9%	70.3%
	$50,000 to $74,999	13.2%	54.9%	28.8%	3.1%	68.1%
	$75,000 to $99,999	25.0%	59.9%	12.4%	2.7%	84.9%
	$100,000 to $149,999	29.6%	37.0%	29.1%	4.4%	66.6%
	$150,000 or more	28.5%	51.9%	16.6%	3.0%	80.3%
	Prefer not to answer	17.8%	48.7%	30.1%	3.5%	66.4%

Zip code data presented on the next page.
Note: Row percentages sum to 100%. Differences described below are results of ANOVA with $p<.05$.

The survey results were echoed in the focus groups. Older residents and many African American residents had a bad impression of the taste and clarity of the water, driven by perceptions formed many years ago, and told younger residents about it.

The fact that a higher percentage of residents rate the water quality as excellent or good than are drinking the tap water most often indicates that some residents might be drinking bottled water for reasons other than the taste, odor and drinking quality. The sugary beverage tax imposed in 2016 may also play a role in this.

"you guys are transplants, years ago, Philadelphia water was horrible, you could taste the chlorine!" Another shared, "it's safer now than it was 10-15 years ago… you used to see a cloud coming up, now its sparkling and clear!" -45-54-year-old African American Female

Water Quality Rating by Zip Code			Weighted Responses (Row %)				
	Weighted N	N	Excellent	Good	Fair	Poor	%Excel/Good
Overall	1,208,766	1,900	18.1%	49.3%	27.7%	4.8%	67.4%
No Zip	61,177	45	6.8%	23.8%	51.4%	18.0%	30.6%
19102	131	1	100.0%	0.0%	0.0%	0.0%	100.0%
19103	2,908	19	23.0%	64.4%	7.6%	5.1%	87.4%
19104	24,685	34	8.6%	39.3%	24.3%	27.9%	47.9%
19106	1,492	15	22.4%	27.4%	50.2%	0.0%	49.8%
19107	736	6	72.2%	27.8%	0.0%	0.0%	100.0%
19111	70,495	114	20.4%	57.7%	20.3%	1.7%	78.0%
19114	20,699	42	34.2%	43.8%	20.2%	1.7%	78.1%
19115	23,408	64	46.0%	35.1%	16.8%	2.2%	81.0%
19116	15,880	36	11.4%	60.5%	27.7%	0.4%	71.9%
19118	5,375	30	11.9%	36.3%	39.4%	12.5%	48.1%
19119	36,173	77	9.9%	58.7%	28.3%	3.1%	68.6%
19120	51,316	45	5.3%	71.5%	19.6%	3.5%	76.9%
19121	10,119	11	0.0%	59.0%	41.0%	0.0%	59.0%
19122	7,141	16	11.7%	44.5%	33.0%	10.7%	56.2%
19123	4,573	16	41.2%	49.6%	9.3%	0.0%	90.7%
19124	57,305	42	20.1%	30.1%	49.8%	0.0%	50.2%
19125	30,642	64	25.1%	64.0%	9.5%	1.4%	89.1%
19126	13,570	27	12.2%	52.4%	35.4%	0.0%	64.6%
19127	3,703	11	51.3%	41.5%	7.2%	0.0%	92.8%
19128	41,458	97	32.0%	46.8%	14.8%	6.3%	78.9%
19129	4,497	25	33.1%	54.8%	12.1%	0.0%	87.9%
19130	17,551	82	26.5%	55.6%	15.2%	2.8%	82.1%
19131	30,879	41	2.0%	50.8%	42.6%	4.6%	52.8%
19132	12,612	13	13.4%	50.7%	22.5%	13.5%	64.0%
19133	18,145	5	58.7%	24.3%	8.6%	8.4%	83.0%
19134	32,363	39	19.5%	28.0%	51.0%	1.6%	47.5%
19135	26,867	20	18.2%	22.6%	19.4%	39.9%	40.8%
19136	45,886	57	40.8%	45.9%	10.5%	2.8%	86.6%
19137	1,269	3	0.0%	89.4%	10.6%	0.0%	89.4%
19138	29,896	29	1.3%	41.1%	57.6%	0.0%	42.4%
19139	18,295	26	17.2%	59.5%	17.6%	5.6%	76.7%
19140	39,234	25	10.9%	49.4%	36.3%	3.4%	60.4%
19141	21,116	21	15.8%	75.2%	7.5%	1.5%	91.0%
19142	26,823	14	2.7%	74.3%	23.1%	0.0%	76.9%
19143	75,682	82	6.5%	54.2%	35.2%	4.2%	60.6%
19144	27,859	47	8.1%	49.5%	41.8%	0.7%	57.6%
19145	39,545	71	15.9%	63.3%	17.2%	3.6%	79.1%
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19147	23,105	86	33.4%	48.0%	17.2%	1.4%	81.4%
19148	45,960	79	29.9%	46.1%	23.8%	0.2%	76.0%
19149	20,550	39	20.9%	69.5%	9.6%	0.0%	90.4%
19150	16,529	25	20.0%	52.6%	15.3%	12.1%	72.6%
19151	33,200	48	6.8%	27.2%	57.0%	9.0%	34.0%
19152	24,071	47	27.3%	50.0%	21.9%	0.8%	77.3%
19153	15,153	14	6.2%	29.0%	64.8%	0.0%	35.2%
19154	39,682	62	30.9%	65.1%	3.7%	0.3%	96.0%
Outside PHL	1,914	2	0%	0%	100%	0%	0.0%

Revenue/Bill Paying

Residents who pay their bills using ZipCheck have the highest levels of satisfaction, but Online Banking is the most common bill-paying method.

Eighty-eighty and a half percent (weighted n = 1,069,444) of survey respondents were the person primarily responsible for paying PWD for their water bill. Online Banking was the most popular mode of bill paying amongst the respondents (28.3%), followed by Mail (22.3%) and in-person (13.2%).

Table **5** shows the number and percentage of respondents who paid using different options, and then the percentage of respondents who were satisfied or very satisfied and the dissatisfied or very dissatisfied with the the bill paying process. Bill payers who used ZipCheck had the highest level of satisfaction (91.2%), particularly as compared to those who pay over the phone (47.9%) and using eCheck (55.3%).

Table 5. Methods of Bill Paying and Levels of Satisfaction

Weighted n = 1,064,974	Online Banking	Mail	In-Person	Online with Credit Card	eCheck	ZipCheck	Phone
weighted n	**302,687**	**238,080**	**140,810**	**131,392**	**121,277**	**106,539**	**24,188**
%	**28.3%**	**22.3%**	**13.2%**	**12.3%**	**11.4%**	**10.0%**	**2.3%**
% (Very) Satisfied	72.8%	61.3%	61.4%	59.4%	55.3%	91.2%	47.9%
% (Very) Dissatisfied	12.3%	18.7%	12.2%	29.1%	31.1%	4.3%	5.2%

There was a strong positive correlation between overall satisfaction with PWD in general and the bill-paying process by customers ($r=0.5600$, $p<.001$).

Billing and payment issues are the greatest source of complaints for customers.

Both the survey and focus group data strongly show that customers are highly frustrated with the billing process and payment structure for water in Philadelphia. In the survey, 43% of all open ended questions were related to billing, and in each of the focus groups, billing was discussed in a highly negative context.

Related to payment method, there was a lot of confusion about which methods incur a charge and which do not. In all of the focus groups, there were many discussions about how one could pay and which methods incurred charges. Several participants did not know about the ZipCheck or eCheck options. One person reported feeling "degraded" when trying to make a payment in person at the 22nd Street payment center for not doing things perfectly. It was also very clear that residents did not clearly understand the differences between PWD and WRB.

Related to the price of water bills, many people did not understand the Stormwater charge and there was a general perception that the price of the water bills was increasing. Some brought up the idea of wanting more ongoing rewards for participating in Rain Check and other green programs.

While some residents mentioned improvements in the updated billing website, several people across focus groups expressed dislike for the phrasing of the "late charge" on the water bills.

Few residents have engaged with PWD in person or over the phone, but when used, these services are rated highly: in-person 80.5% excellent or good and 56.4% for phone.

The figures below show the proportion of residents who had interacted with PWD in the following ways, and for those who had engaged with PWD, their rating of the service provided.

Figure 9. Interactions with PWD

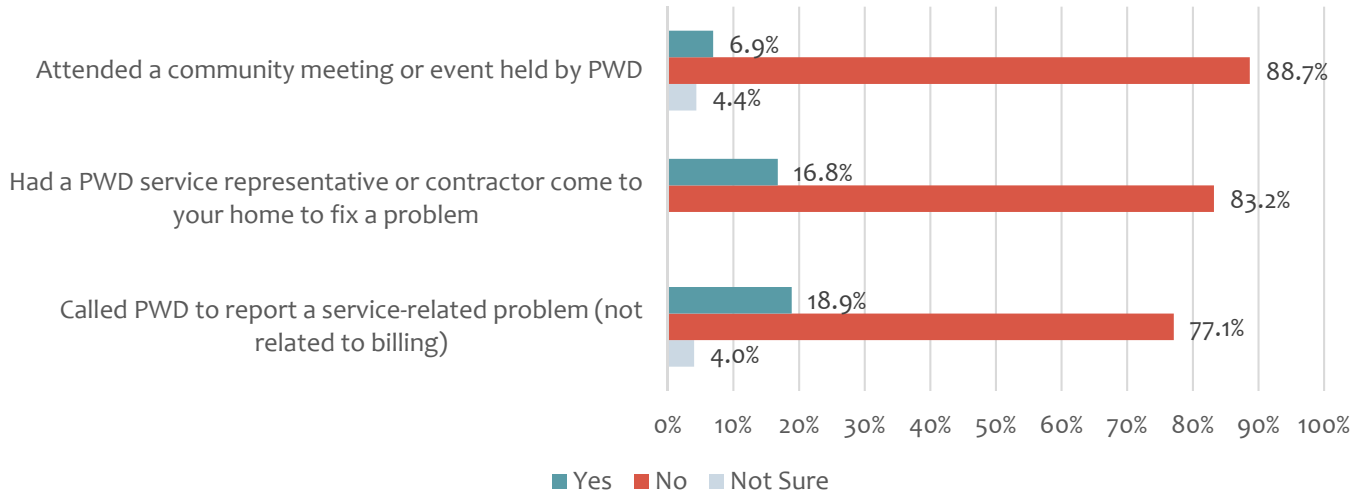
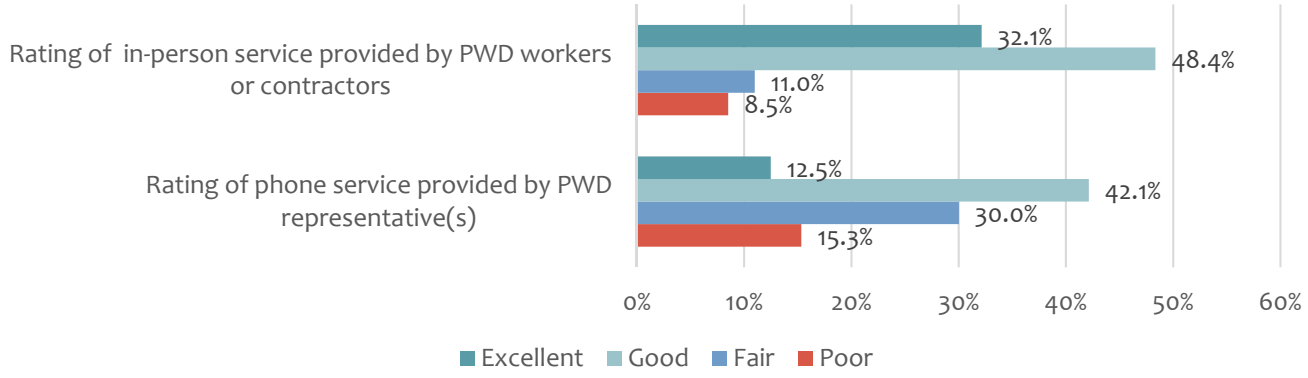


Figure 10. Rating of PWD Service



Many focus group participants spoke highly of PWD phone service and the fact that PWD even had customer service in the first place! Negative phone service experiences were primarily related to Water Revenue.

Customers want more and better communication from PWD related to programs, construction and repairs, meetings and events, and PWD accomplishments in the City.

Evident in all focus groups and survey responses, customers wanted more information about:

- ✓ PWD programs including CAPs
- ✓ Construction projects and repairs
- ✓ Meetings and events
- ✓ Information about the positive initiatives PWD is doing in the City (like Green City, Clean Waters)
- ✓ Annual reports or regular updates about the current water conditions, how water is being purified and best practices around drinking and using water (i.e. after a rainstorm, etc.).

Very few of the focus group participants had ever received any information from PWD about either planned service interruptions or community meetings. Residents wanted to see notifications and information shared in the following ways:

- ✓ Email
- ✓ Text messages
- ✓ Flyers
- ✓ Mail
- ✓ Signage around sites

"Email because that's something you look at everyday. You look at your email, you check your phone, your text messages… So I like to be able to get something I can save and go back to. That's why I like email because I can always put it somewhere, put it in a folder or save it, archive it, whatever, and I can come back and look for it." –Summerdale (20502) Resident

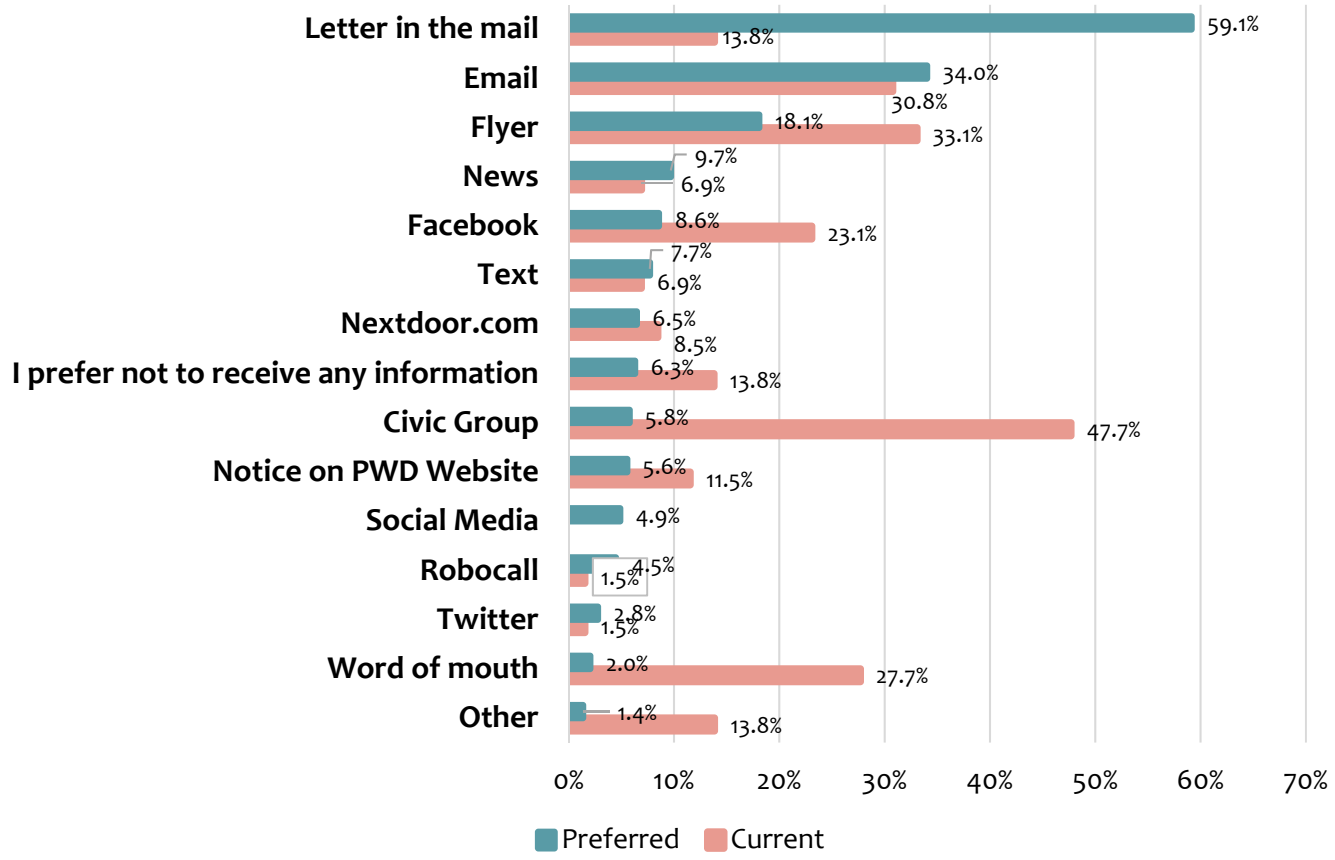
For community meetings and related announcements, residents wanted to see notices in the paper (generally less aggressive outreach compared to those for service interruptions). Of note, some residents did mention hesitancy in asking for additional communications in fear it would lead to higher bills!

Figure 11 shows the ways in which survey respondents had been notified of community events, compared to the ways all residents would prefer to be notified about upcoming projects, community meetings or events.

"I like the notification to the house, and like you said, an email or something direct." –Focus Group participant

Civic associations, word of mouth, flyers and Facebook appear to be largely responsible for information currently received. Residents wanted to see letters in the mail and emails – and were willing to share email addresses for PWD communication purposes, as well as phone numbers for text messages.

Figure 11. Preferred and Current Methods of Notification about Upcoming PWD Projects, Community Meetings or Events



Note: preferred weighted n = 1,201,217; current weighted n = 83,348

The table below shows the distribution of the preferred modes of communication by different age groups. Each cell shows the percentage of the given age group that prefers that particular mode of communication.

Table 6. Preferred Modes of Communication by Age Group

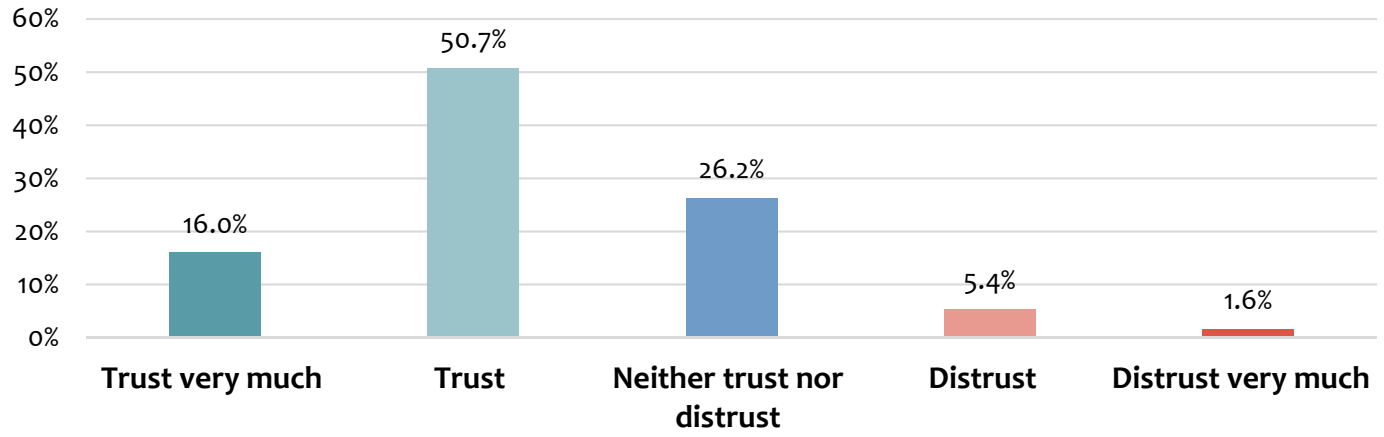
	18-24	25-34	35-44	45-54	55-64	65+
Flyer	8.6%	12.8%	18.2%	19.7%	18.3%	15.7%
Letter in the mail	78.8%	62.3%	59.5%	59.2%	66.7%	69.3%
Email	11.5%	26.0%	36.7%	28.7%	27.1%	25.9%
Civic Group	0.0%	3.8%	2.5%	1.3%	3.4%	3.0%
Facebook	16.6%	10.3%	9.2%	3.2%	5.1%	2.8%
Twitter	1.0%	2.7%	2.3%	0.9%	2.2%	1.3%
Nextdoor	6.4%	3.7%	1.7%	3.5%	4.2%	2.8%
News	18.0%	11.1%	7.5%	3.4%	12.0%	9.5%
Notice on PWD Website	13.2%	14.1%	8.2%	4.6%	5.0%	2.6%
Word of Mouth	6.0%	1.3%	2.3%	0.1%	1.7%	1.2%
Text	9.0%	6.7%	10.0%	6.7%	10.3%	4.4%
Robocall	0.0%	0.7%	1.8%	3.9%	7.4%	4.2%
Other	0.0%	1.2%	0.3%	0.4%	1.2%	1.1%
Prefer not receive info	1.4%	5.6%	4.5%	3.1%	5.5%	3.5%
Social Media	7.6%	5.6%	4.5%	2.1%	2.3%	1.7%

There were no clear age-related trends, and amongst all age groups, letter in the mail and email were the two most popular choices. The greatest proportion of residents ages 18-24 said they wanted to PWD communication through Facebook, social media and Nextdoor.com

Overall trust in PWD is high, but significantly related to race, gender and age.

Figure 12 shows that 66.7% of residents trust PWD or trust very much that PWD is delivering safe drinking water to their homes.

Figure 12. Trust of PWD



There was a strong positive correlation between overall satisfaction with and trust in PWD by customers ($r=0.57$ $p<.001$). However, trust that PWD is delivering safe drinking water was related to other demographic factors that overall satisfaction was not.

Residents who identified as White were significantly more trusting of PWD than all other races; males were significantly more trusting than females. There were some differences related to age, with older residents generally more trusting overall. There were no differences related to education. The fact that White residents are significantly more trusting than Black and Hispanic residents of PWD, but are not anymore satisfied is worth paying attention to. There were no significant differences in trust related to income, but observationally a higher proportion of higher income residents said they trust or trusted very much as compared to lower income residents.

"I just don't like the taste so that's why I don't drink it. I do question the safety of the water. I don't think that bottled water is much different but I can tolerate the taste of bottled water." –African-American Female, age 55

"couple of weeks ago, we smelled something different in the tap water. Then we found out that the chlorine levels were high in the city water. I am not sure anymore if it is safe to drink it. I don't trust bottled waters, either. I would like to get more information about safety for drinking water from the tap." – Female, age 25 - 34

While many of the focus group participants thought poorly of the odor, taste and quality of the water, they also trusted PWD and had a high view of the water infrastructure in Philadelphia. Some had tested their water, and there was a perception that things have gotten better over the last 10-15 years.

Table 7. Trust in PWD by Demographics

		Trust Very Much	Trust	Neither	Distrust	Distrust Very Much	% Trust/ Trust Very Much
Age	18-24	20.1%	46.6%	31.1%	2.2%	0.0%	66.7%
	25-34	9.4%	50.0%	36.0%	3.8%	0.8%	59.4%
	35-44	11.7%	50.9%	26.4%	10.4%	0.7%	62.6%
	45-54	13.2%	53.7%	22.2%	7.4%	3.6%	66.9%
	55-64	24.2%	49.4%	20.0%	4.9%	1.4%	73.7%
	65+	22.9%	51.5%	19.6%	3.8%	2.2%	74.4%
Gender	Male	22.7%	51.2%	22.7%	2.6%	0.8%	73.9%
	Female	10.7%	50.6%	29.2%	7.6%	1.9%	61.3%
Race	White	23.4%	53.2%	18.5%	4.0%	0.9%	76.5%
	Black	11.4%	51.8%	27.8%	7.4%	1.7%	63.2%
	Hispanic	10.6%	32.7%	49.6%	5.1%	2.1%	43.3%
	Other/mixed	12.2%	56.0%	24.8%	4.3%	2.7%	68.2%
Highest Level of Education	HS or less	16.6%	50.2%	27.4%	3.9%	2.0%	66.7%
	Some college/Assoc Deg	14.4%	52.3%	27.3%	5.3%	0.8%	66.7%
	College Degree	18.1%	46.9%	23.5%	10.3%	1.3%	64.9%
	Beyond College	15.8%	54.5%	21.9%	6.4%	1.5%	70.2%
Income	Less than $19,999	9.7%	55.6%	29.3%	3.3%	2.1%	65.3%
	$20,000 to $34,999	19.7%	47.1%	28.6%	2.6%	2.1%	66.8%
	$35,000 to $49,999	19.7%	47.2%	26.2%	6.7%	0.2%	66.9%
	$50,000 to $74,999	14.4%	49.2%	25.6%	8.8%	2.0%	63.6%
	$75,000 to $99,999	18.1%	55.9%	21.2%	3.9%	1.0%	73.9%
	$100,000 to $149,999	17.2%	54.7%	19.4%	8.7%	0.0%	71.9%
	$150,000 or more	19.7%	57.6%	16.6%	4.3%	1.8%	77.3%
	Prefer not to answer	16.0%	48.5%	27.6%	6.1%	1.9%	64.5%

Zip code data presented on the next page.
Note: Row percentages sum to 100%. Differences described below are results of ANOVA with $p<.05$.

Trust in PWD (A14b)			Weighted					
	Weighted N	Unweighted N	Trust Very Much	Trust	Neither	Distrust	Distrust Very Much	% Trust/ Very Much
OVERALL	1,170,008	1,863	16.0%	50.7%	26.2%	5.4%	1.6%	66.7%
No Zip Code	49,645	33	6.7%	62.4%	25.7%	2.3%	2.9%	69.0%
19102	131	1	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
19103	2,908	19	15.5%	52.1%	27.3%	5.1%	0.0%	67.6%
19104	22,368	31	26.6%	35.6%	29.5%	8.4%	0.0%	62.2%
19106	1,492	15	18.6%	22.5%	52.0%	6.9%	0.0%	41.1%
19107	736	6	9.9%	68.2%	21.9%	0.0%	0.0%	78.1%
19111	69,464	111	18.8%	58.1%	20.1%	2.3%	0.7%	76.9%
19114	20,699	42	21.5%	45.0%	31.3%	2.2%	0.0%	66.5%
19115	23,126	63	43.7%	44.9%	8.8%	1.1%	1.6%	88.6%
19116	15,880	36	9.9%	49.3%	7.0%	33.8%	0.0%	59.2%
19118	5,302	29	10.8%	57.9%	27.7%	3.6%	0.0%	68.7%
19119	35,929	75	9.4%	73.8%	13.3%	1.2%	2.3%	83.2%
19120	51,316	45	13.1%	44.7%	32.4%	3.7%	6.1%	57.8%
19121	10,119	11	0.0%	50.4%	49.6%	0.0%	0.0%	50.4%
19122	7,141	16	0.0%	65.5%	30.2%	4.2%	0.0%	65.5%
19123	4,573	16	2.3%	74.9%	17.9%	4.9%	0.0%	77.2%
19124	57,305	42	22.7%	48.6%	23.1%	3.3%	2.4%	71.3%
19125	30,642	64	21.4%	57.6%	18.0%	1.6%	1.4%	79.0%
19126	13,570	27	7.0%	45.1%	45.4%	2.6%	0.0%	52.1%
19127	3,703	11	39.8%	53.0%	0.0%	7.2%	0.0%	92.8%
19128	40,097	94	20.2%	54.4%	23.0%	2.2%	0.3%	74.6%
19129	4,497	25	25.9%	65.1%	8.1%	0.9%	0.0%	91.0%
19130	17,551	82	21.7%	51.2%	17.8%	9.3%	0.0%	72.9%
19131	29,180	40	3.0%	51.9%	24.7%	18.3%	2.0%	55.0%
19132	12,612	13	12.3%	53.3%	34.4%	0.0%	0.0%	65.6%
19133	18,145	5	0.0%	61.3%	32.6%	6.1%	0.0%	61.3%
19134	32,363	39	10.8%	43.4%	40.7%	3.4%	1.6%	54.3%
19135	26,867	20	21.3%	28.8%	49.7%	0.2%	0.0%	50.2%
19136	45,533	56	39.0%	42.2%	16.0%	2.9%	0.0%	81.1%
19137	1,269	3	0.0%	33.9%	55.6%	10.6%	0.0%	33.9%
19138	29,896	29	0.8%	61.8%	34.3%	3.1%	0.0%	62.6%
19139	14,472	24	18.1%	35.2%	39.6%	5.8%	1.3%	53.3%
19140	39,234	25	17.7%	35.7%	40.6%	1.7%	4.3%	53.4%
19141	21,116	21	18.7%	63.7%	14.0%	2.2%	1.5%	82.3%
19142	26,823	14	11.9%	9.8%	63.3%	4.5%	10.5%	21.7%
19143	60,076	77	7.7%	58.9%	29.8%	3.7%	0.0%	66.5%
19144	27,859	47	13.6%	40.1%	45.8%	0.5%	0.0%	53.7%
19145	39,487	70	7.3%	55.9%	29.8%	4.1%	3.0%	63.2%
19146	37,098	86	3.5%	60.1%	26.4%	10.0%	0.0%	63.6%
19147	23,105	86	11.4%	59.3%	17.2%	9.2%	2.8%	70.8%
19148	45,960	79	23.7%	62.5%	12.2%	1.6%	0.0%	86.3%
19149	20,550	39	32.9%	54.9%	10.8%	1.4%	0.0%	87.8%
19150	16,529	25	12.1%	49.0%	20.6%	7.4%	10.9%	61.1%
19151	32,953	47	7.7%	28.0%	21.0%	43.1%	0.2%	35.7%
19152	24,071	47	25.4%	44.9%	24.4%	4.4%	0.8%	70.3%
19153	15,376	15	6.9%	37.1%	46.6%	9.4%	0.0%	44.0%
19154	39,549	61	28.2%	62.6%	6.7%	1.5%	1.0%	90.8%
Outside of Philadelphia	1,690	1	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%

- **Many Philadelphian recognize the environmental contributions of PWD's work in the City, and those who contribute want to see a kick-back.**

> *"Please continue to promote projects like rain check, and continue to innovate with projects like these." – White Male, age 25-34*

> *"I'm grateful for the work of the Green City, Clean Waters initiative; it's a good feeling to know that simply having a rainbarrel installed at my house (for free!) makes a difference. I have been debating whether to take the next step of arranging for porous paving/a larger unpaved area in my yard. I know I would be quicker to take action if I were expecting a more substantial rebate." – White Female, age 25-34*

Overall, many focus group conversations and survey responses spoke quite positively of PWD. Focus group respondents who knew about Green City, Clean Waters were excited about and wanted to know more about initiatives, and recommended PWD do a better job of externally communicating their findings. Residents appreciated PWD's transformation of vacant lots, stormwater reduction, infrastructure investments, and innovative projects. Several residents in the survey who participated in Rain Check reported wanting to see a reduction in their Stormwater fees or other incentive for "helping out PWD." One resident equated participating in Rain Check and getting charged the Stormwater fee to the energy company charging those who installed solar panels.

They felt overall, PWD had a positive reputation and that the people who work for PWD really care about the city. There was an overall positive perception of PWD as a "public utility" company as compared to other privatized companies.

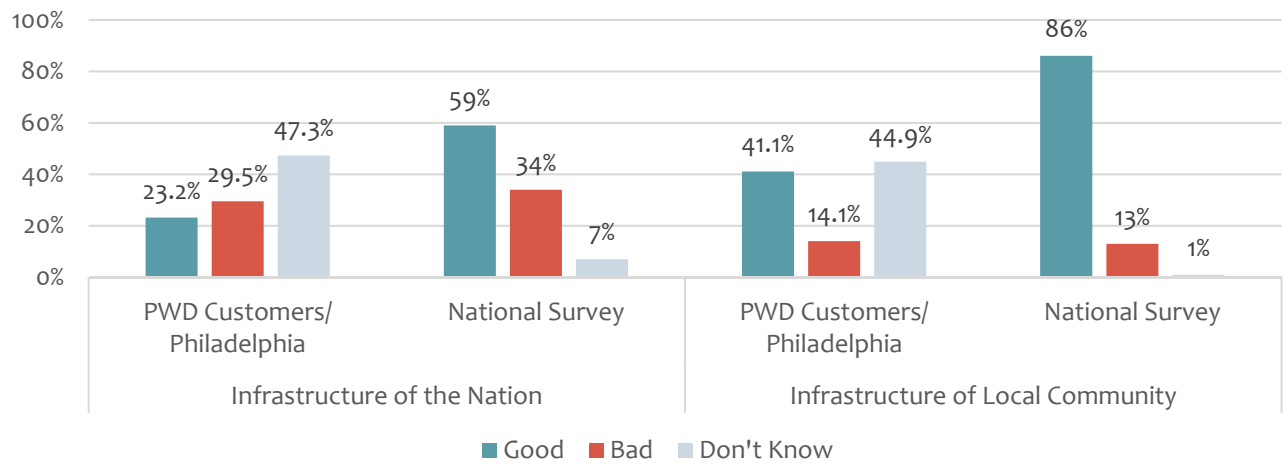
> *"Unlike the other utilities, the water department really focuses on our quality of life, like improving our quality of life, whereas I don't think PECO or PGW could care less about the quality of my life, as long as like, you know, I'm paying the bill to get those services, hot water or whatever it is. But I feel like the water department has a broader mission." – Focus Group participant*

Almost 15% of all comments in the survey were also very positive overall, and provided short praise of PWD.

- **Philadelphian's think the water infrastructure locally is better than for the nation as a whole, but many more Philadelphians "don't know" as compared to national survey respondents.**

Results of a national survey[iii] show that 59% of Americans think the condition of the water infrastructure in the nation is good, while 86% think the water infrastructure in their local community is good. For PWD customers, a higher proportion of also felt that the local infrastructure was better than the national infrastructure which was echoed in the focus groups, where residents compared Philadelphia favorably to other cities in U.S., and the U.S. as a whole to other countries in the world. Overall, Philadelphians ratings of the national and local infrastructure as "good" were lower than national reports, but this is a result of the fact that far more Philadelphia residents indicated "don't know" to both questions. The figure below shows the results from PWD customers as compared to a national sample.

Figure 13. Perceptions of Current Condition of Water Infrastructure



Recommendations

- **Improve communications** with customers/residents and provide more information:
  - ✓ On important topics: water infrastructure/conditions, best practices on drinking water, bill paying (difference between PWD and WRB), contents of bill
  - ✓ Related to the great things PWD is doing – Green City, Clean Waters, Green Projects, CAPs
  - ✓ Focus in particular on key groups of people/specific locations
- **Collect customer email addresses** to enable better communication in this preferred mode
- **Promote the use of ZipCheck** to increase bill-paying and overall satisfaction (customers who paid their bills using ZipCheck were the most satisfied, but Online Banking was most popular)
- Offer more support for senior citizens
- **Make bill-paying easier** (more comparable to PECO and PGW processes) and provide greater explanation of the Stormwater charge
- To build trust that PWD is delivering safe drinking water to residents' homes, **consider a campaign that highlights the quality of PWD water and any improvements in water quality** (taste, odor and clarity) over the last 10-15 years. This could also encourage residents to drink (filtered or unfiltered) tap water instead of bottled water.
  - ✓ Emphasize this strongly for residents with lower levels of trust, such as those identifying as non-White

Construction Projects

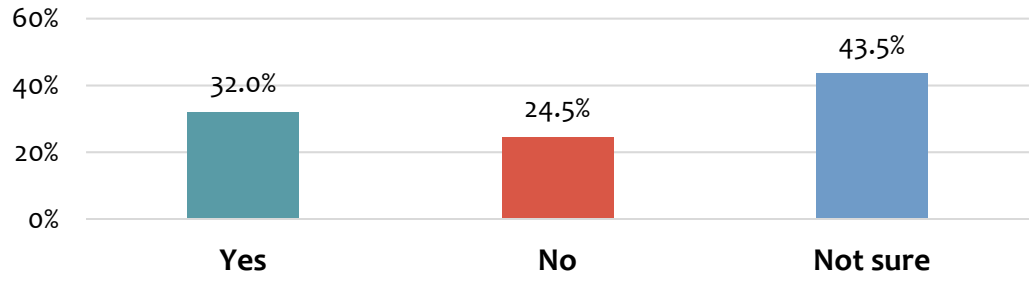
The following section describes findings and recommendations related to construction projects generate from the city-wide survey and the site-specific focus groups. The findings are reported separately, as the types of projects that were referenced are different across the groups.

City-wide Perception of PWD Construction Projects

- **Many residents are unclear about what is considered a "PWD construction project."**

The comprehensive survey asked all residents: "In the past 12 months, did a PWD construction project take place within a 10-minute walk of your home/residence?" Results indicated that 43.5% of residents were "not sure" if they did (see Figure 14) – indicating that residents were either unclear who was responsible for construction projects taking place near their homes, or residents were unclear about what constituted a PWD construction project.

Figure 14. Residents Living within a 10-minute Walk of a PWD Construction Project in the Past 12 Months



This was also true in the focus groups, as residents were recruited because they lived on a block that had been affected by a particular project, but many often discussed other repairs, projects or issues.

Only the 32% of residents who indicated "Yes" (weighted N = 384,056) were asked the series of questions on construction project satisfaction. See Appendix E for the list of construction projects referenced by respondents.

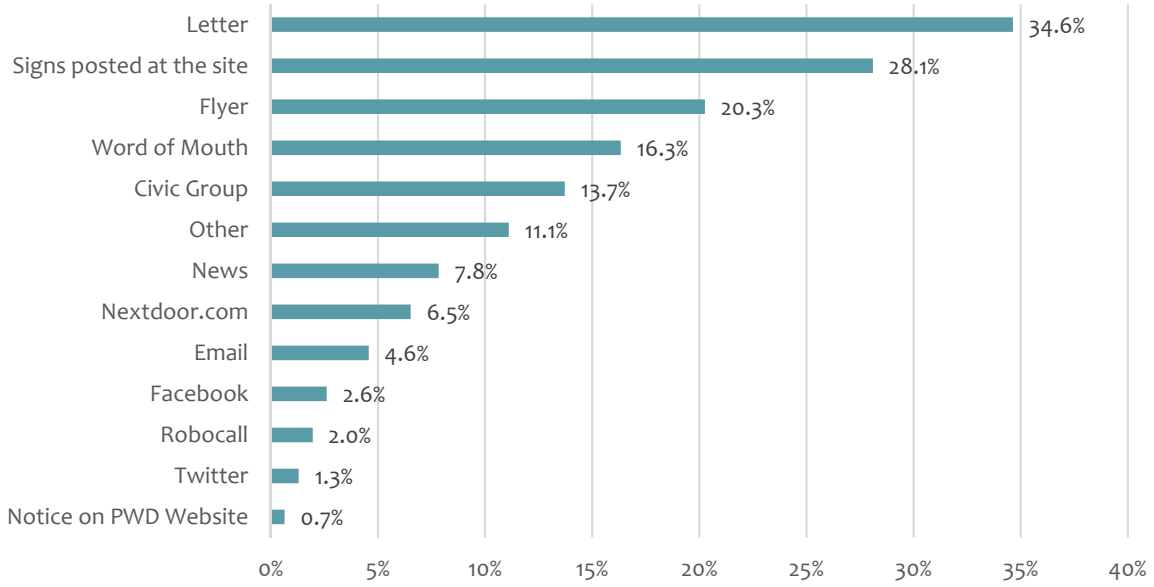
The following findings in this section relate only to residents who reported that they lived within a 10-minute walk of a PWD construction project that took place in the last 12 months (weighted N = 384,056). **NOTE: Many of the projects that residents considered PWD construction projects did not actually fall under the classification of PWD construction projects, but were PWD repairs, or possibly construction projects of other companies. The following results should be interpreted within this context.

- **Most residents were not aware of the projects before they started, but letters in the mail, signs at the site, and flyers were the most common ways people learned about the project.**

Only 21.4% of residents said they were aware of the project before it started.

Figure 15 shows the different ways people reported learning about the projects before they started.

Figure 15. Methods of Learning about PWD Projects

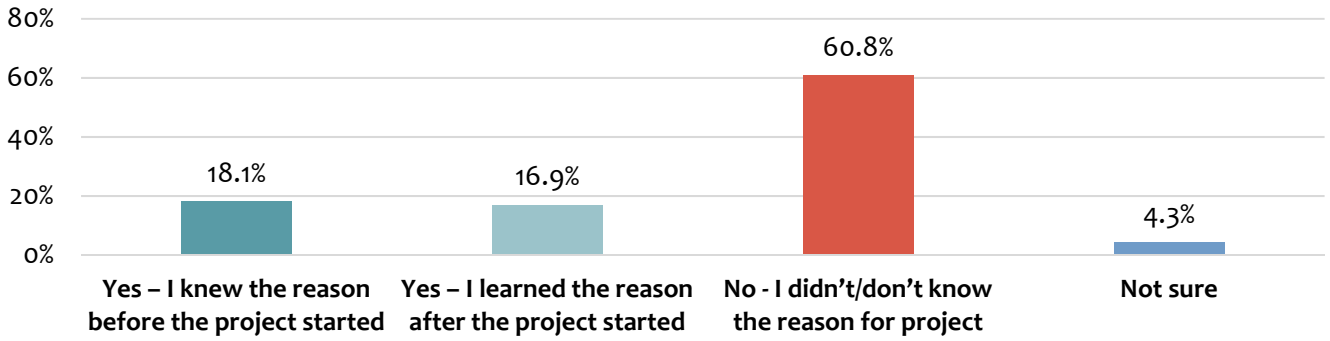


Most residents never knew the purpose of the project.

Only about one third of residents ever knew the purpose of the project, and of them, only half knew before the project started.

Figure 16 shows if and when residents knew the purpose of the project.

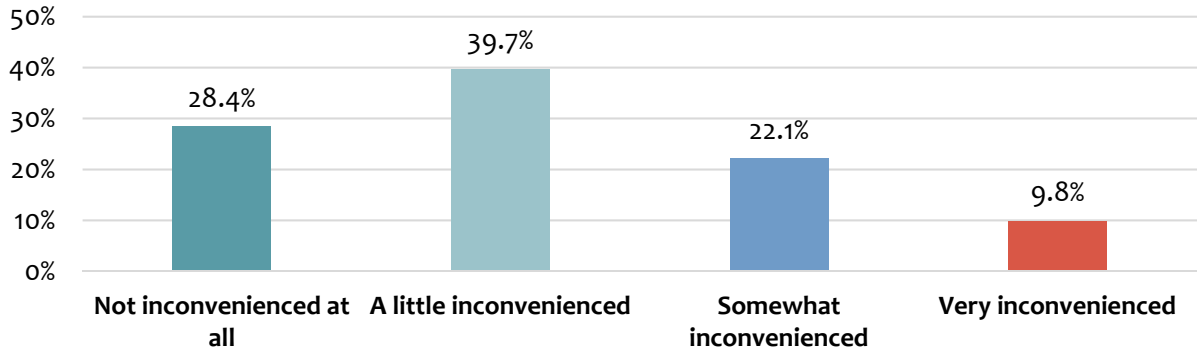
Figure 16. Knowledge of Project Purpose



The majority of residents said they were not inconvenienced at all or only a little inconvenienced by the construction.

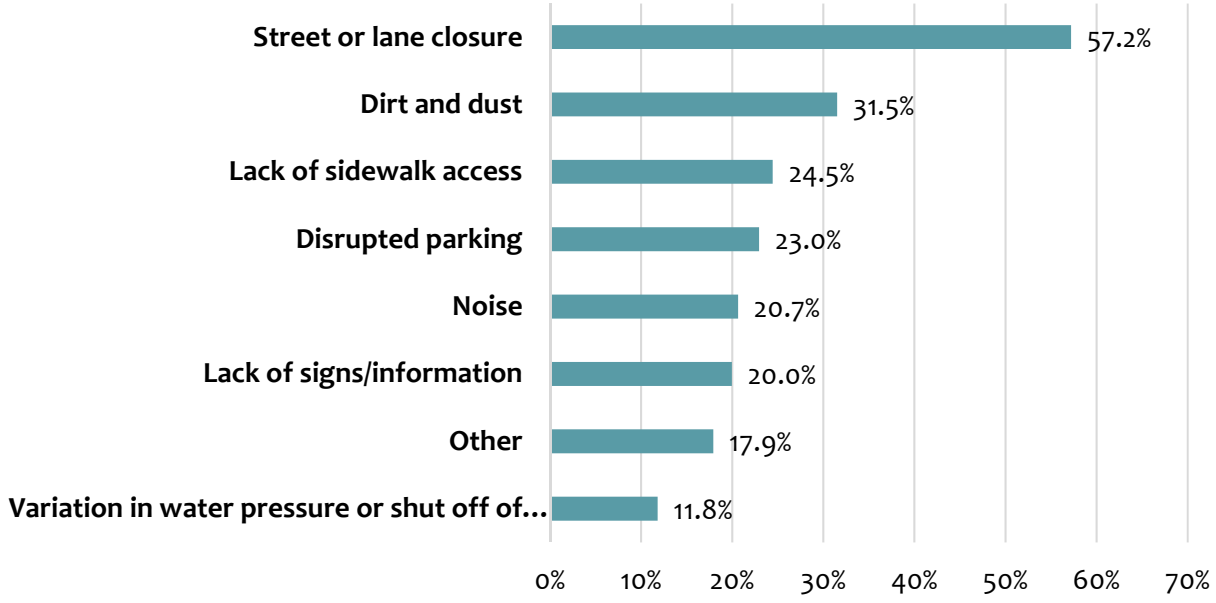
Only a small proportion of residents said they were very inconvenienced by PWD construction projects.

Figure 17. Level of Inconveniences Caused by Construction Projects



Residents reported that street or lane closures were the biggest inconveniences, but it appears contractors did a better job of reducing inconveniences related to noise, dust and dirt. The figure below shows the percentage of respondents who indicated experiencing the following inconveniences. The percentages do not sum to 100% as many residents experiences multiple inconveniences.

Figure 18. Reported Construction Project Inconveniences

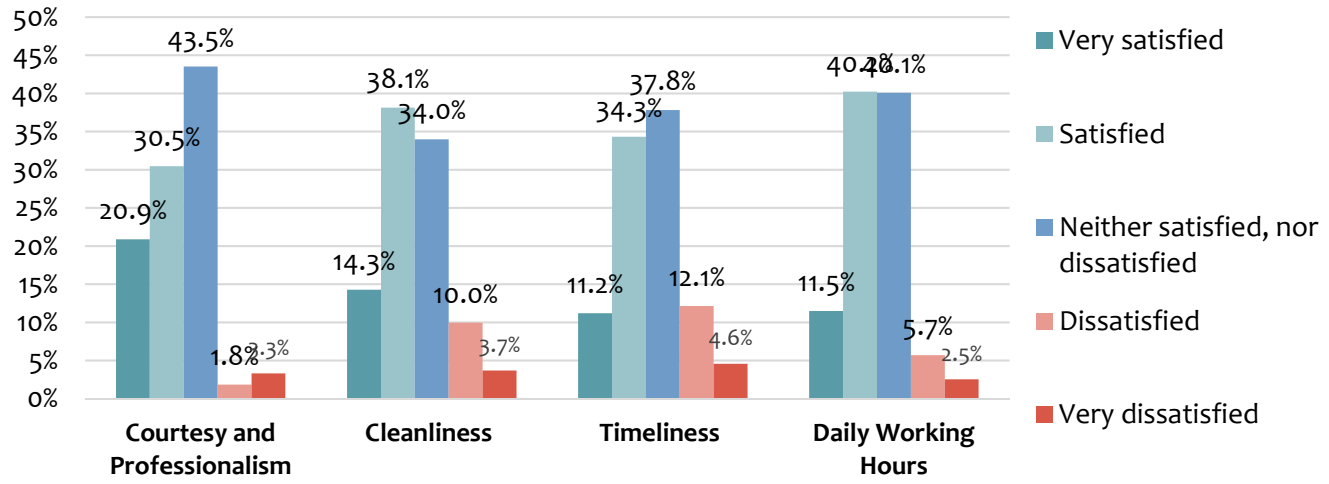


- **The survey showed that only a small percentage of residents were dissatisfied with the Quality of Life Specs: courtesy and professionalism, cleanliness, timeliness and daily working hours of the project; focus group participants also expressed some dissatisfaction.**

In nearly every case, when asked about their level of satisfaction or dissatisfaction with various aspects of the construction project, the most common answer was "neither satisfied, nor dissatisfied." This may be indicative of residents not having an opinion about the site, or not having gotten close enough to the

construction area. **In some cases, if the "construction projects" that residents described were actually repairs, these categories may not be relevant in the same way.**

Figure 19. Satisfaction with Quality of Life Specs



Many survey respondents expressed a lot of frustration around project timeline.

> *"Timeliness and professionalism in completing projects in my neighborhood. We often are waiting months for repairs to our mains with torn up streets in the meantime"*
> *-- 25-34 year-old, White female*

A small number of residents who were dissatisfied or very dissatisfied with the daily working hours were asked more specifically about the house: 71.3% said it was because work ended too late (only 2% said that it started too early). One focus group participant from Summerdale (20502) complained of the work starting too early. From the focus groups, at both Summerdale (20502) and West Philly (40523), residents were most dissatisfied with the timeliness of the project – primarily in terms of the unpredictable and delayed timeline. Residents from both areas also did express feeling a lack of courtesy from contractors (discussed in more detail below). In all focus groups, residents were less concerned with site cleanliness in terms of dirt and dust, but more so in terms of the equipment left around by the contractors, and the safety hazards created.

Construction Project: Residents Experiences

The following findings are drawn from the three focus groups conducted with residents of recently completed construction project areas: West Philly (40523), Summerdale (20502) Ave and Kemble Park (50044). Residents at the three sites had very different experiences that are described below.

- **Residents in West Philly (40523) and Summerdale (20502) knew about the project and its purpose ahead of time; residents near Kemble Park (50044) heard about more from opposition groups and never learned the purpose.**

In Summerdale (20502) and West Philly (40523), most residents knew about the project before it started. Almost everyone received a letter in the mail, a few attended a community meeting, and some also heard about it from their Block Captain. Most were satisfied with the mode of notifications, but were frustrated by the fact that the construction did not begin for a reported 7 months after the letter indicated it would. In Summerdale (20502) and West Philly (40523), residents had a general sense that the projects were replacing old infrastructure – but often were not entirely clear on the specific purpose. The focus of their understanding was mainly the implications of the projects on their own lives (e.g., water being shut off). Residents mainly learned about the project objectives from the civic groups.

In Kemble Park (50044), residents remembered a lot of confusion about what the project was going to be and that some organizations were sending around literature to encourage residents to stop the project from happening. Residents described getting information and fliers in their door that was in opposition to the PWD project at the park, but ultimately learned that the project was starting once they saw PWD placards and signs at the park. Residents described rumors that circulated around the project related – related to residents' fears that an apartment building of other housing units were going to be built at the park.

"This is the letter, and it just says that they were gonna change the – the sewer lines. Because they were over 100 years old, so I didn't have a problem with it." – West Philly (40523) Resident (holding letter)

"Sure. They explained it briefly. Replacing the water mains, blah, blah, blah – 'We should be done by this time, but if it isn't, at least you're warned. Fill up your tub, buckets, water, whatever; your basement tub, so that you got some kinda water.'" – Summerdale (20502) Resident

"I had something from the community stuck in the door but I know that was a lot of misinformation going around. And I think that helped to start a lot of negativity, as far as what was being done." – Kemble Park (50044) Resident

"I mean, just the community people were just upset that they were building or tearing up the park and they probably didn't really know exactly what was going on. Like the lady over here said that she thought they were tearing it up to build apartments. You know? And people just didn't know exactly what. So, maybe in future reference, they could make it better so that everybody could really know exactly what's going on because I didn't even go to the meeting at the church because the things I was hearing from the neighbors were so boisterous and negative," – Kemble Park (50044) Resident

"Yeah, I just see it there but if somebody put a gun to my head and said, "What is the function of it?" I couldn't tell you." – Kemble Park (50044) Resident

Even after the project had been completed, residents near Kemble Park (50044) were not aware of the purpose of the project. Much of this stemmed from initial confusions about what the project was and when and where it was happening, however, residents did not learn the function of the work that was completed.

There was a general desire for more and better project-related communication and information.

Residents wanted more information about the project goals, timeline and what to expect before, during and after project. They were interested in receiving information across multiple modes, including email and text. They suggested that residents be given the opportunity to opt into email and/or text updates throughout the project.

Residents wanted ***accurate information*** related to:

- The project timeline and schedule and any changes to that
- Working times of workers
- Timing of water shut offs
- Street closures and parking implications
- Safety at the site (plans for creating safe environment for children)
- Protection of property and public trees

"I think when they sent out the letter, if they would have put something like, "If you wish to get updates about this, you can register your email address." And that way, you could either have a website that you could go to to get updates on the service for just your particular issue that you're having – your construction project. They could either have a website set up, or you could sign up for email updates on it." – Summerdale (20502) Resident

Residents were confused about other work happening around the same times.

Across all of the sites, residents described other work happening around the time of the PWD construction project, but they were not always clear who was doing what. In the case of West Philly (40523), they did not feel that PGW and PWD had appropriately coordinated and thus created added inconveniences for residents. In Summerdale (20502) residents described LED lights being installed (possibly by the same contractors) at the same time).

"I paid attention but I didn't, because of this project going on with the gas company. So, initially, I thought that this was for this and then I read it again and it said, you know, the water department. You know, my neighbor and I were comparing. I said, "I think this is for the water department." But, again, with this project going on with the gas company, I was a little confused."—Kemble Park (50044) Resident

"Then you got the Water Department doing their thing, then you got the gas company coming in worked on it little bit here, little bit there taking care of their customers." –Summerdale (20502) Resident

"The gas line on our block was replaced – I wanna say one – maybe one-and-a-half years prior – so the whole street was dug up, and there was kinda an opportunity for coordination that wasn't taken advantage of I guess… then a year-and-a-half later, the water … and now our street's really patchy. The sidewalk's really patchy and – it's gonna just stay that way. And I think some coordination could've really assisted both projects a great deal – financially and for all of the benefit of the people that live on the blocks from a timing –. Because it was years of living in a – dirt and mud." –West Philly (40523) Resident

- **Several residents felt that contractors did not appropriately respect the properties and lives of the residents.**

> *"I think that – it felt kind of like there was a lack of respect" – West Philly (40523) Resident*
>
> *"they were working in the street, and they didn't care what they threw in the street."; "I had seven nails [in m tires]. They didn't care what they threw in the street; they just threw it." – Summerdale (20502) Residents*

Several residents, particularly in West Philly (40523) and Summerdale (20502), shared reports of thoughtless damage done to their properties, sidewalks, gardens, flowers, etc. Many residents felt the contractors showed little respect by the way they left materials and debris around the streets, and also throwing trash in the streets. In Summerdale (20502), residents reported contractors storing equipment on people's lawns and leaving dangerous equipment and pipes out in the open. One resident in West Philly (40523) shared a very aggressive interaction with a contractor where she reported he was drinking alcohol on the job and threatened her.

In addition, the distinction between the PWD Inspector and the contractors was not clear to all residents. Many residents were not able to identify the inspector at the project, nor were they aware that there were both PWD and non-PWD employees at the site.

- **Many residents did not feel that they were made "whole again" after the project was completed.**

Many residents shared experiences of damage to their property that resulted from the construction projects and the work of the contractors. Several residents described being shocked by the condition of their streets and individual properties when the contractors were left and had "finished." In both West Philly (40523) and Summerdale (20502), several residents reported that they ended up having to pay out of pocket to have damages repaired (such as repairing damaged/broken concrete).

> *"They supposedly had took pictures of every property prior to the work starting, and they were supposed to leave us completely whole. We are still waiting for that.'*
> *– West Philly (40523) Resident*

> *"They still haven't completed the job. A lot of fences are not right – [they] put cracks in the sidewalk that did not already have cracks in it."*
>
> *"I happened to have my yard with nice, new topsoil put in flowers. They came along, dug it all out." --West Philly (40523) Residents*

Somewhat related, many residents expressed frustration the construction did not reduce the water bill. Residents felt both that they should have gotten some sort of "kick-back" from having lived through the inconvenience of the project, but also that the projects should have made the system more efficient, and thus reduce their bills.

- **Residents want more opportunities to give feedback.**

Residents in each of the three focus groups expressed appreciation for being asked to participate in the focus group. In addition, residents suggested that PWD administered a post-project survey to all residents affected by construction projects at the close of the project in order to get feedback and address the issue of residents "not feeling whole again."

> *"if they had gave us some kinda survey, "We finished with your block. How was – a) b) c)? Then that way they could've gotten the feedback directly from the people that were affected." -- West Philly (40523) Resident*

Recommendation

- Hold focus groups (or community meetings) with residents to **allow them to voice their concerns and share feedback** on construction projects prior to starting and also during projects.
- **Improve efforts to provide residents with accurate information** about project purpose, timeline, known disruptions (water shut offs, parking issues, etc.) and construction site safety information.
- Explore ways of **distinguishing for residents the differences between construction projects and repairs**
- Allow residents to **sign up for/opt-in to received email or next notifications for project updates** (i.e., related to timeline, etc.)
- **Increase visibility of PWD Inspector** for residents.
- Ensure that residents' homes, properties and streets are left **in same or better condition than before the project** (consider power-washing homes)
- **Survey residents for feedback immediately after project is finished.**

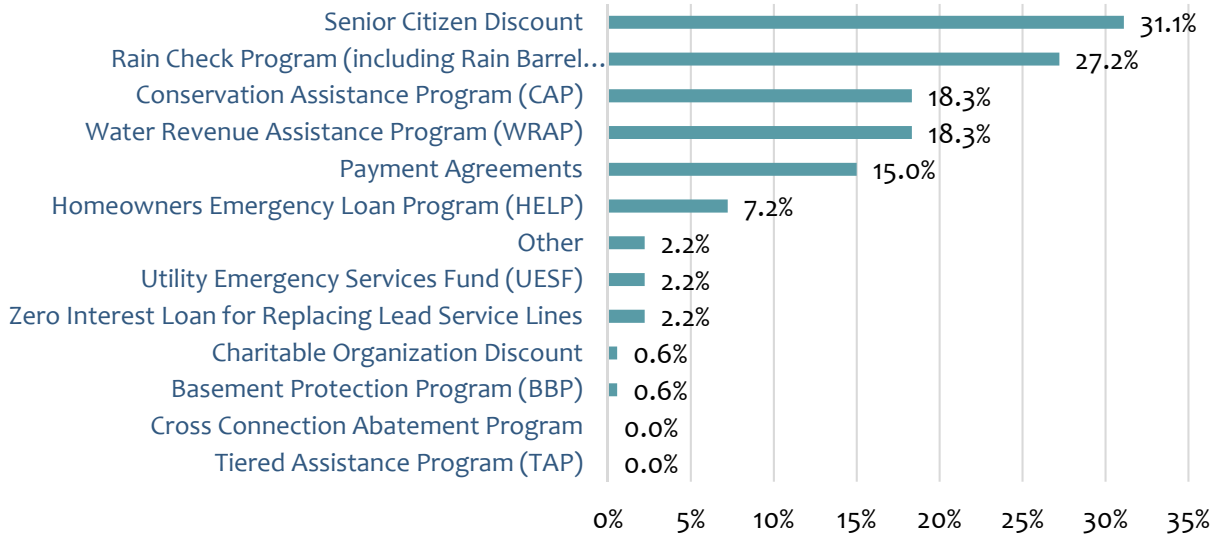
Customer Assistance Programs

General CAPs

The Philadelphia Water Department offers a number of programs to help both residential and non-residential customers. The survey found that as of spring 2017, 47.4% of Philadelphians reported that they knew about any of the PWD Customer Assistance Programs (CAPs) such as Senior Citizen Discount, Water Revenue Assistance, Homeowners Emergency Loan, Conservation Assistance and Rain Check. Awareness of CAPs was significantly related to respondents' age: of residents aged 65 and over, 58.8% were aware of CAPs, where as only 38.5% of those ages 25-34. Awareness of CAPs was not related to any other demographic factor. Out of residents who were aware of CAPs, only 29.7% reported having participated in one or more CAPs (approximately 14.7% or residents overall), although not all of them indicated which programs).

Figure 20 below shows the programs 2017 survey respondents participated in.

Figure 20. CAPs Participation 2017

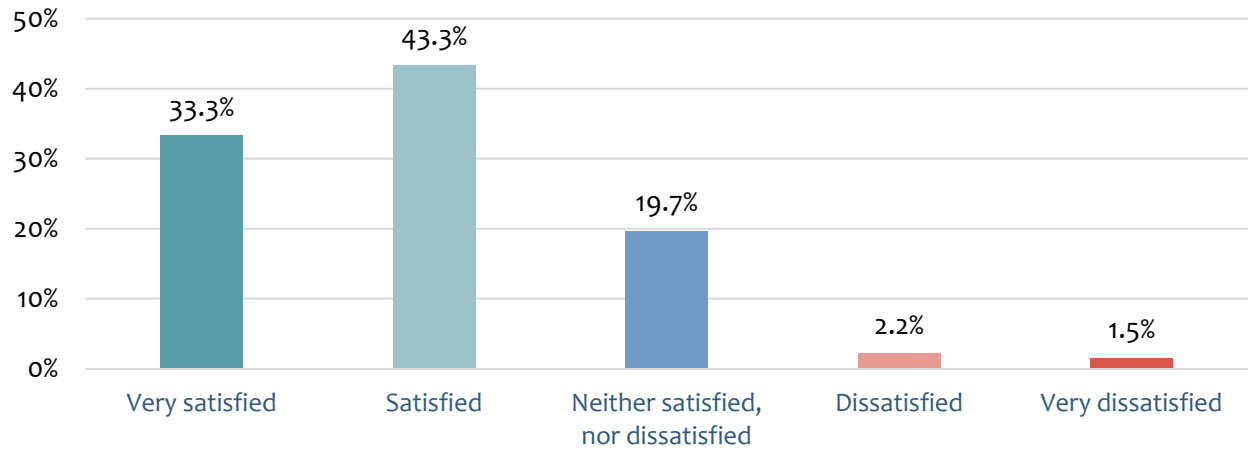


Weighted n = 165,539

Overall, 76.6% of CAPs participants reported being satisfied or very satisfied with their experience.

Figure 21 below shows the overall distribution of CAP participant satisfaction across all programs in 2017. Satisfaction levels with CAPs were higher those 65 and over as compared with other age groups, and those with beyond a college education.

Figure 21. Overall Satisfaction with CAPs

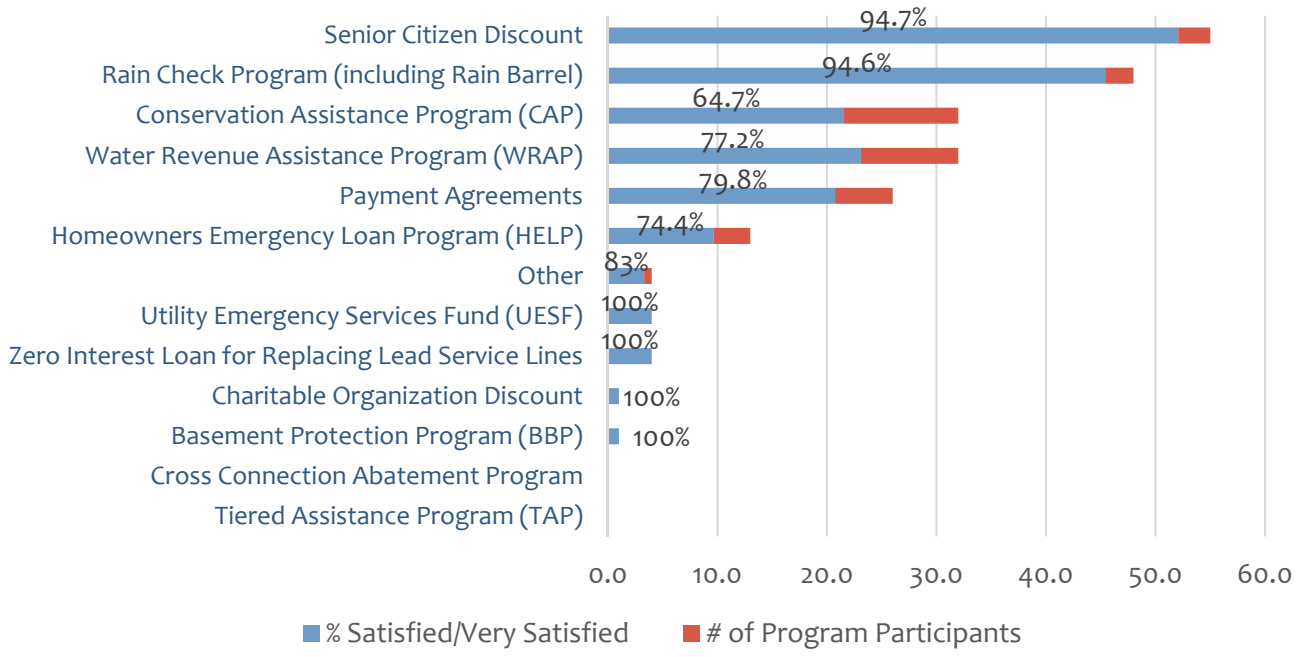


Weighted n =165,466

Figure 22. Percent of Participants Satisfied/Very Satisfied by CAP Participation

Figure **22** below shows the percentage of CAP participants that said they were satisfied or very satisfied, by CAP. The length of the bar (in red) shows the relative number of people who indicated participating in the various programs, and the blue bar and marked percentage indicates the proportion were satisfied or very satisfied. The Senior Citizen Discount program and the Rain Check program were the most popular CAPs for residents in the survey, and 94.7% of people were satisfied or very satisfied with the Senior Citizen Discount program and 95.6% were satisfied with Rain Check. Other programs had lower levels of satisfaction – such as Conservation Assistance Program, where only 64.7% of people were satisfied.

Figure 22. Percent of Participants Satisfied/Very Satisfied by CAP Participation

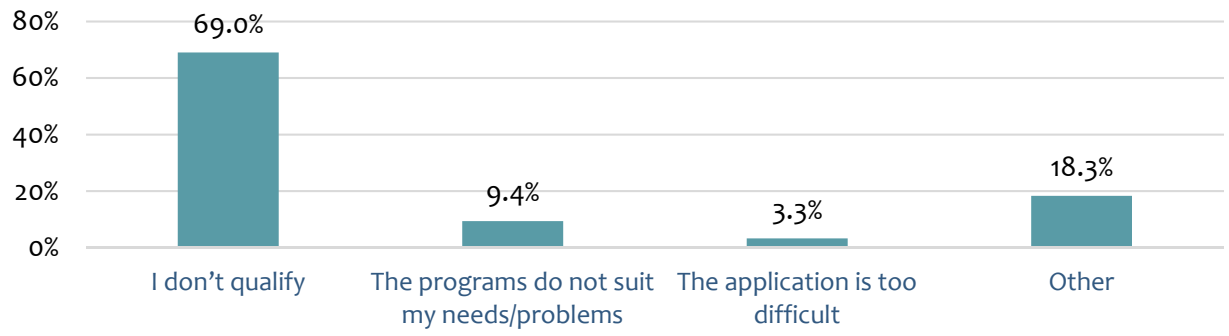


Many residents perceived that they do not qualify for any of CAPs.

The primary reason that people who reported being ***aware of CAPs*** said they did not participate in CAPs was that they did not qualify (or perceive they did not qualify (69.0%). Just over 9% reported that the programs did not meet their needs or problems and 3.5% said their application was too difficult. Additionally, 18.3% said there were other reasons for their not participating – many of whom reported not knowing about CAPs (despite indicating they knew about them in the previous question). In the open-ended response section of the survey, several people noted that the qualifications for Customer Assistance Programs were too high, particularly the Senior Citizen Discount program, which some resident thought should start at 50 or 60. Other residents who reported not qualifying for CAPs may have been only aware of or referring to one or a few of the programs (like Senior Citizen Discount or HELP). It is possible that there were other programs, that they would have qualified for, that they were not aware of (such as Rain Check). Future surveys may consider differentiating awareness of different types of CAPs based on demographic characteristics and qualifications.

> *"I have a duplex, which disqualified me to obtain a loan to change of lead pipes." – Black male, age 25-34*

Figure 23. Reasons Those Who Are Aware of CAPs Do Not Participate



Weighted n = 396,179

Customer Assistance Program: Homeowner's Emergency Loan Program (HELP)

Survey results indicated that 74.4% of recipients of the Homeowner's Emergency Loan Program (HELP) recipients are satisfied or very satisfied with their experience in the program. This sentiment was echoed in the focus groups, as generally, participants were satisfied with and grateful for the program. The focus groups provided deeper understanding of participants' experiences while receiving HELP. The key findings are reported below.

> *"I'm really satisfied. I'm glad at the fact that I didn't have to get a loan. And I'm glad I never looked for a plumber. I was satisfied about that. And I consider that a blessing. But know there's sometimes still things do happen." – HELP Recipient*

Most HELP recipients said they discovered and reported their defect themselves.

Mostly all participants reported the problem that ultimately led to their Notice of Defect (NOD), which included:

- Water coming out of hole in ground
- Water coming out of curb track
- Curb trap (multiple)
- Sewage in the basement
- Sinkhole in lawn
- Neighbor had a sinking lawn
- Water in basement (after it rained)
- Vent not connecting

Some were disappointed to learn that what they thought was a good thing (reporting a problem to the Water Department) turned out to cost them a lot of money. Everyone was informed of HELP at the time they received the NOD.

Enrolling in HELP is easy!

Nearly every respondent reported that the enrollment and signup process for HELP was straightforward and easy – *"So simple it was unbelievable."* Several noted the need to be current on one's water bill, which seemed reasonable. Most enrolled over the phone or with an Inspector. Most participants felt it was clear and easy to have the Water Department/City overseeing the process, seemed the "s*afest choice."*

- **Some residents are distrustful of the City with respect to the homeowner vs. City responsibilities, as well as use of contractors.**

Participants were mixed on their understanding of the problems that resulted in a Notice of Defect. Several mentioned that the diagram was helpful. Many felt it was "unfair" that residents were responsible for some of these costs. There were some residents who believed that the City was using HELP to pay for their own updates, and that contractors who worked with the City to complete work for HELP recipients were able to charge more than other contractors.

> *"This sounds so unfair because those pipes in the street belong to the City. – They are old. – Exactly. So why are they making the residents pay for it?"*

> *"they want you to pay to have their city pipes in place. I don't think they would offer anything like that and I think we're getting a big rip-off for the amount that's being charged for the work that's being done when you have a water problem. I think that it's way more than what it should be but I think*

- **HELP participants often did not feel the projects were sufficiently completed (or that properties, streets and neighborhoods were made whole again).**

The most common complaint from HELP recipients was that contractors often left the sites in bad shape, having damaged parts of the property such as the cement, and then disappearing. One woman brought pictures of the condition in which her sidewalk was left (broken cement, dirt and caution tap) after the contractor had "finished." Others did report high quality work and satisfaction with the Inspector, Contractor and the entire process.

> *"And after he left, he said, 'I'll be back.' Until this day, I have not heard from him. I called the office several times. I called the Water Department. And they said they were no longer involved, and that would have to be – and it's in the contract. It says that you would have to contact the contractors yourself. And I called back to the – I have paperwork and everything that people who I call up until this day."*

- **Communication between PWD HELP office, Inspectors, Contractors and HELP recipients was not always clear and streamlined.**

Most focus group participants demonstrated an understanding of the relationship between the Inspector and the Contractors – and that the Inspector needed to come by at the end of the job to approve that the work had been done correctly – *"[the supervisor] let us know if the work is completed. And if you're satisfied, then they'll get their money. Other than that, they won't get their money."* However, many focus group participants reported that this did not happen, and others did not have an understanding of who were PWD employees and who were not. Some residents reported feeling that PWD and the Inspectors were completely disconnected from the contractors.

Residents reported issues with contractors including price changing, reliability, project completion and communication and were frustrated. Some suggested that residents should not have to contact the Contractors (that should be the city's responsibility).

> *"It's up to the homeowner to go and fight with the contractors about the work that they're doing. At one time years ago, they would have an inspector to come out and inspect the work before the contractor finishes it."*

Recipients also reported that calling the "HELP-Line" was sometimes frustrating because it usually resulted in needing to leave a message, however, overall the HELP representatives were polite and helpful.

- **Participants were frustrated with the billing process and reported confusion about the two bills and credits to different accounts.**

Many of the billing-related concerns have already been addressed since the incidents took place, but HELP recipients also reported complains about the phrasing of the penalty payment on the general water bills.

Recommendations

- **Increase awareness about CAPs for all PWD customers**, using methods addressed in the previous section
  - ✓ Identify which specific CAPs lack awareness and target those
- Consider providing **discounts for senior citizens on repairs for defects covered by HELP**.
- Once the work is "completed" by the Contractor, **verify recipient/customer satisfaction/get feedback from customers (could be in the form of a survey)**.
  - ✓ This is already being done in some areas (e.g., Rain Check) but should be expanded to HELP
- Improve communication between recipients, the Inspector, the Contractors and Water Revenue.
- **Unify the billing process** for HELP loans and water bills.
- **Make homeowner responsibilities clearer** to all residents using through visual diagrams circulated regularly.

Concluding Items

Limitations

There were several limitations to the data collection methods used in this study. Pertaining to the survey, convenience sampling was used to recruit participants. The survey sample was a non-probability-based sample and those who opted to take the survey were not reflective of the population in the City of Philadelphia. Post-stratification weighting addressed this issue. In addition, the survey modes had some limiting factors. While the survey was available in multiple modes including web, text message, phone and in-person, there was limited capacity for the in-person option. Field interviewers intercepted bill-payers during designated times at the Municipal Services Building (MSB), and thus all residents did not have an equal opportunity to participate in the in-person version of the survey. Finally, the survey was only available in English and thus excluded the non-English speaking population.

Recommendations for Further Research

(1) **Future research should include real-time, post-project surveys to evaluate the work of the contractors completing construction projects and work related to HELP.** Residents should be surveyed immediately after the completion of projects; both the construction project and HELP focus groups revealed a strong need for this post-project engagement. The survey should include questions

assessing the degree to which residents' properties and surrounding areas were returned to their original state after the project was completed and satisfaction with various aspects of the contractors' work. Administering surveys may be built into contractors' Scope of Work, and PWD may aggregate data to assess the overall effectiveness of different contractors and project types.

(2) Future research should compare survey findings with internal, administrative data. There were several survey findings, related to CAPs participation and bill-paying practices that should be compared to the actual administrative data available from the Water Revenue Bureau and the CAPs teams. These comparisons will help to contextualize and frame the survey findings, and give further insight into the group of people that participated in the survey.

(3) Future research should compare findings with external, national data. Several of the questions in the survey may be able to compared to national data. Future studies should look to acquire national data to better understand PWD customer experiences in the national context.

End Notes

[i] US Census Bureau, 2011-2015 American Community Survey 5-year Estimates.
[ii] All statistical tests use standard threshold for significance threshold *p<.05, **p<.01, ***p<.001.
[iii] National Survey: Value of Water Coalition. January 27-31, 2016. Conducted by Linda DiVall, President & CEO of American Viewpoint Geoffrey Garin, President of Hart Research