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Survey Summary

Survey Background and Demographics

A survey was deployed in late January 2012 and marketed via postcards that were sent to over 700 homes in the City of Ann Arbor where work had been performed approximately five years ago (between 2003-2007) as part of the City of Ann Arbor's Footing Drain Disconnect program. The survey was designed to gather feedback from residents – regardless of whether they lived in the home at the time disconnection took place – regarding their experience with various aspects of the program. The results will be used to inform the way the program is administered in the future. The survey was closed in March 2012, at which time 92 respondents had completed the survey. A large majority (92.6%) of respondents lived in the home at the time of the disconnection. Perimeter performed over one-third (36.5%) of the disconnections, followed closely by Hutzel (29.2%) and trailed by RDC (14.6%).

Water in Basement Before vs. After Disconnection

Nearly half of all respondents (48.9%) report having experienced no water in the basement prior to the disconnection, a proportion that remains steady (52.6%) following the disconnection. One-quarter of respondents (25.5%) experienced clear water (such as seepage through foundation walls and windows) in the basement prior to disconnection; while 35.8% of respondents experienced clear water in the basement following disconnection – an increase of over ten points. The proportion of residents who experienced wastewater in the basement diminished after disconnection, dropping from 10.6% prior to 7.4% after disconnection.

Homeowners' Insurance

When asked whether they carry homeowners' insurance to cover damage related to water in the basement, respondents were split roughly into thirds among the choices: 35.5% reported that they do carry insurance for this purpose; 29.9% responded that they do not; and 34.4% do not know. Even so, of those who report carrying insurance, 50% do not know specifically which type of coverage (i.e., sanitary sewer backup vs. clear water seepage/inflow) they have.

Satisfaction Ratings

Respondents are largely satisfied with the program aspects evaluated by the survey. Nearly 70% were either "very satisfied" (34.8%) or "satisfied" (34.8%) with the interior restoration performed, which is similar to results related to exterior restoration (27.5% "very satisfied"; 40.7% "satisfied"). Over sixty percent (62.7%) of respondents reported being "very satisfied" (29.7%) or "satisfied" (33.0%) with the overall experience of the program, with slightly fewer indicating that they are "very satisfied" (30.4%) or "satisfied" (30.4%) with the performance of equipment installed. Over half (55.8%) of respondents are "very satisfied" (30.8%) or "satisfied" (25.3%) by the level of protection provided by the disconnection to date. Only 39.6% of respondents report being "very satisfied" or "satisfied" by the responsiveness of program staff; however, 36.3% of respondents selected "not applicable/don't know" to this question. A cross-tab report was prepared to evaluate the difference between homeowners who experienced water in the basement following disconnection; no reliable correlation was found between that metric and satisfaction results.

Equipment Installation, Replacement/Addition, Maintenance

Nearly four-fifths (78.3%) of respondents reported having a sump pump installed as part of the disconnection; over a third (35.7%) of respondents have replaced or added a sump pump since the disconnection. Over one-third (35.9%) installed a battery-powered backup pump during disconnection; one-quarter (25.0%) have replaced or added this piece of equipment. Similarly, 33.7% of respondents had a check valve as part of the original project, and 25% have replaced or added a check valve. Of equipment that was not part of the original disconnection, 14.3% of respondents have added an alarm that sounds when water is sensed in the basement, and a slightly smaller proportion of respondents have added a rain garden or basement drainage system (10.7% each).

Over half of respondents (52.5%-57%, depending on the question) have not conducted any maintenance on the equipment. Of those who have conducted maintenance, nearly thirty percent (27.9%) was performed by an unpaid person (the homeowner or family member/friend); 15.1% was performed by a paid contractor. Most reported that the maintenance was "relatively easy" (22.5%) or presented an "acceptable level of effort" (21.3%); only 3.8% indicated the maintenance was "difficult."

Comments

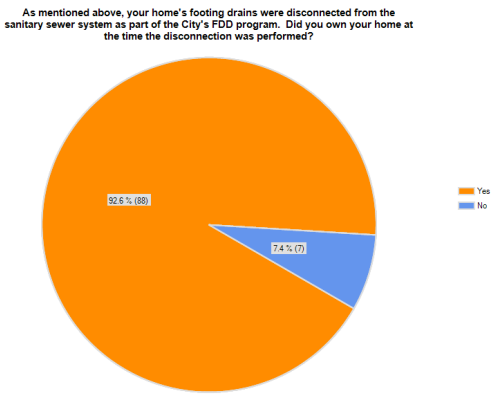
Open-ended comments reveal additional insights about satisfaction ratings. Equipment concerns dominate the content in this area: twelve (12) respondents report sump pump malfunction, ten (10) indicate discomfort with the additional burden or risk presented by installed equipment, and six (6) commenters noting malfunction of other equipment (battery backup sump, check valves). Exterior and interior restoration concerns were represented in five (5) comments each; an equal number of respondents (5) report satisfaction with the program or results. Suggestions for improvement reflect these concerns, calling for adjustments to installation design, equipment, or process (14 comments), and suggesting improved communication (9 comments), among other topics.

Conclusions and Implications

The introduction of water to basements that were dry prior to the disconnection should be investigated. As part of the program's commitment to quality and responsiveness, equipment should be evaluated against a performance quality standard. Similarly, program staff could consider implementing proactive outreach at logical intervals following the disconnection; with over one-third of respondents feeling as though they do not have a basis from which to evaluate staff's responsiveness, program staff may consider not waiting to be contacted before following up. This implication is particularly apparent in regard to preventive maintenance: residents' understandable frustration related to equipment failure could perhaps be prevented if program staff were to contact participants with information or reminders about warranty expiration, simple maintenance activities and scheduling, and so forth. This suggestion is corroborated by the fact that nearly half (48.3%) of respondents requested additional contact following the survey.

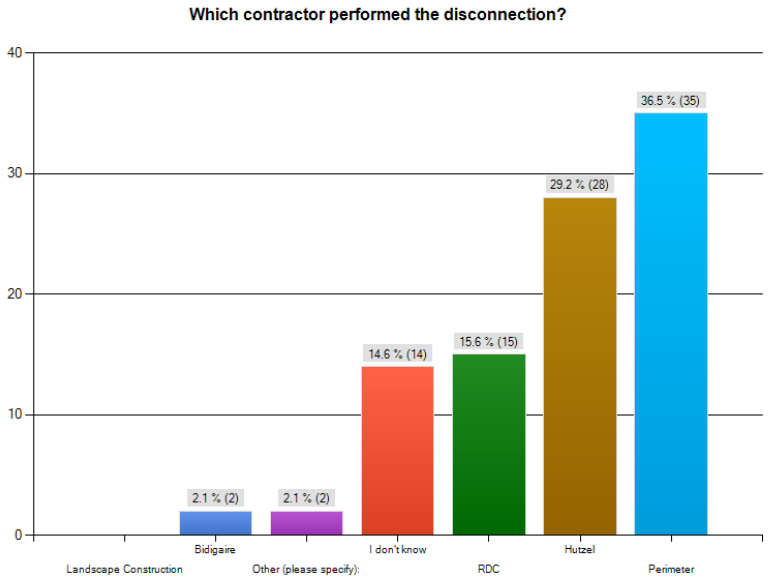
Detailed Survey Results

Question 1: Did you own your home at the time the disconnection was performed?



- Yes, owned the home: 92.6%
- No: 7.4%

Question 2: Which contractor performed the disconnection?

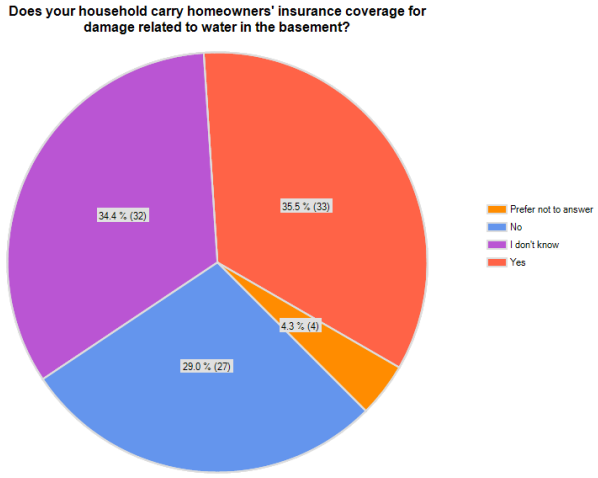


- Landscape Construction: **0%**
- Bidigare: **2.1%**
- Other: **2.1%** (*responses:* don't recall; Hutzel)
- I don't know: **14.6%**
- RDC: **15.6%**
- Hutzel: **29.2%**
- Perimeter: **36.5%**

Questions 3 and 4: Did your home experience water in the basement before/after the disconnection?

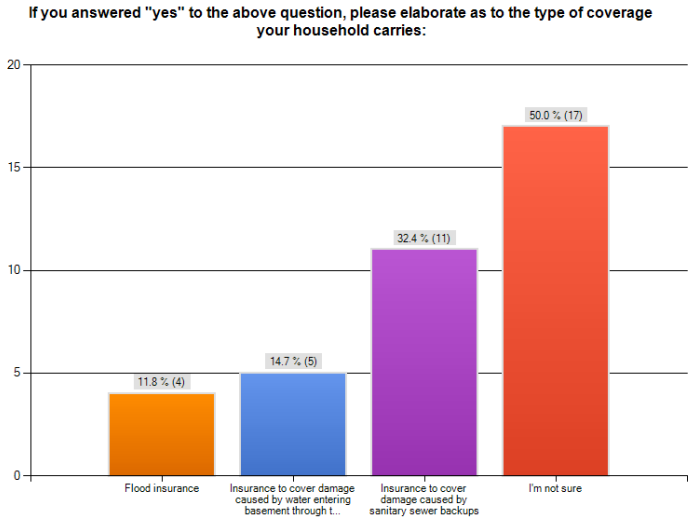
	Before	After	Change
No water in basement	48.9%	52.6%	↑ 3.7% increase
Yes: clear water	25.5%	35.8%	↑ 10.3% increase
Yes: wastewater	10.6%	7.4%	↓ 3.2% decrease
Yes: not sure which kind of water	6.4%	4.2%	↓ 2.2% decrease
I don't know	8.5%	0%	↓ 8.5% decrease

Question 5: Does your household carry homeowners' insurance coverage for damage related to water in the basement?



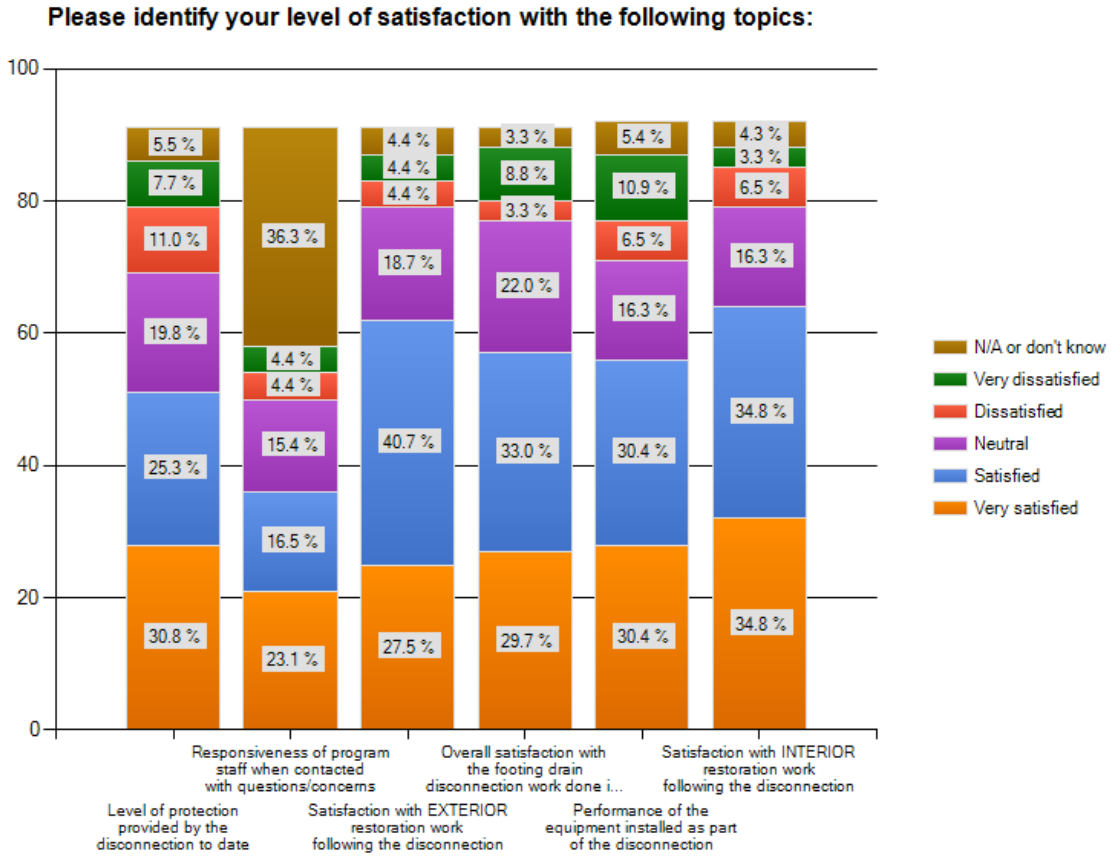
- Yes: **35.5%**
- No: **29.0%**
- I don't know: **34.4%**
- Prefer not to answer: **4.3%**

Question 6: If you answered "yes" to the above question, please elaborate as to the type of coverage your household carries



- Flood: **11.8%**
- Clear water inflow: **14.7%**
- Sanitary sewer backup: **32.4%**
- I'm not sure: **50.5%**

Question 7: Please identify your level of satisfaction with the following topics:



- **Level of protection provided by the disconnection to date**
  - Very satisfied: 30.8% / Satisfied: 25.3% / Neutral: 19.8%
  - Dissatisfied: 11.0% / Very dissatisfied: 7.7%
  - Not applicable or don't know: 5.5%

- **Responsiveness of program staff when contacted with questions/concerns**
  - Very satisfied: 23.1% / Satisfied: 16.5% / Neutral: 15.4%
  - Dissatisfied: 4.4% / Very dissatisfied: 4.4%
  - Not applicable or don't know: 36.3%

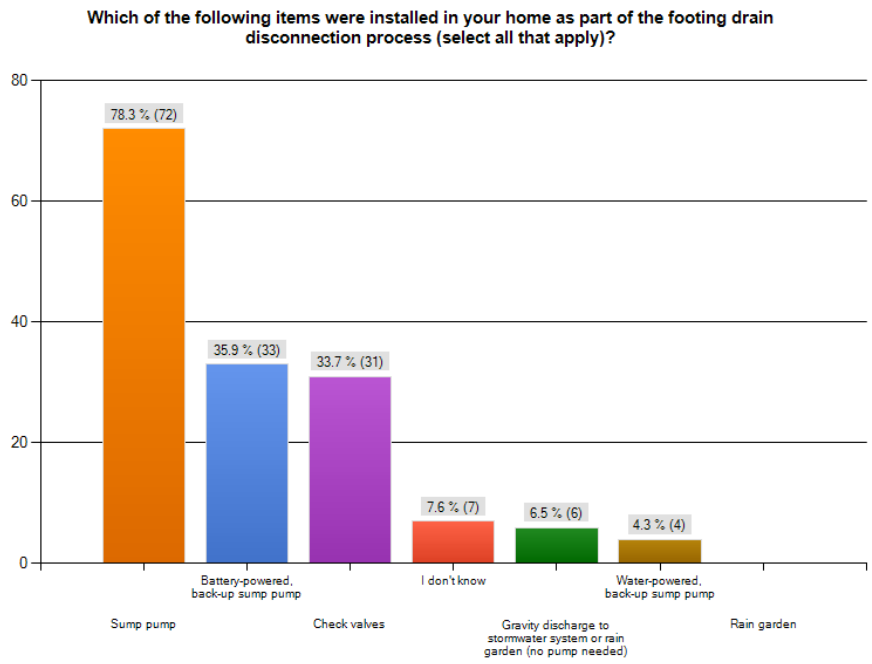
- **Satisfaction with exterior restoration work following the disconnection**
  - Very satisfied: 27.5% / Satisfied: 40.7% / Neutral: 18.7%
  - Dissatisfied: 4.4% / Very dissatisfied: 4.4%
  - Not applicable or don't know: 4.4%

- **Overall satisfaction with the footing drain disconnection work done in your home**
  - Very satisfied: 29.7% / Satisfied: 33.0% / Neutral: 22.0%
  - Dissatisfied: 3.3% / Very dissatisfied: 8.8%
  - Not applicable or don't know: 3.3%

- **Performance of the equipment installed as part of the disconnection**
  - Very satisfied: 30.4% / Satisfied: 30.4% / Neutral: 16.3%
  - Dissatisfied: 6.5% / Very dissatisfied: 10.9%
  - Not applicable or don't know: 5.4%

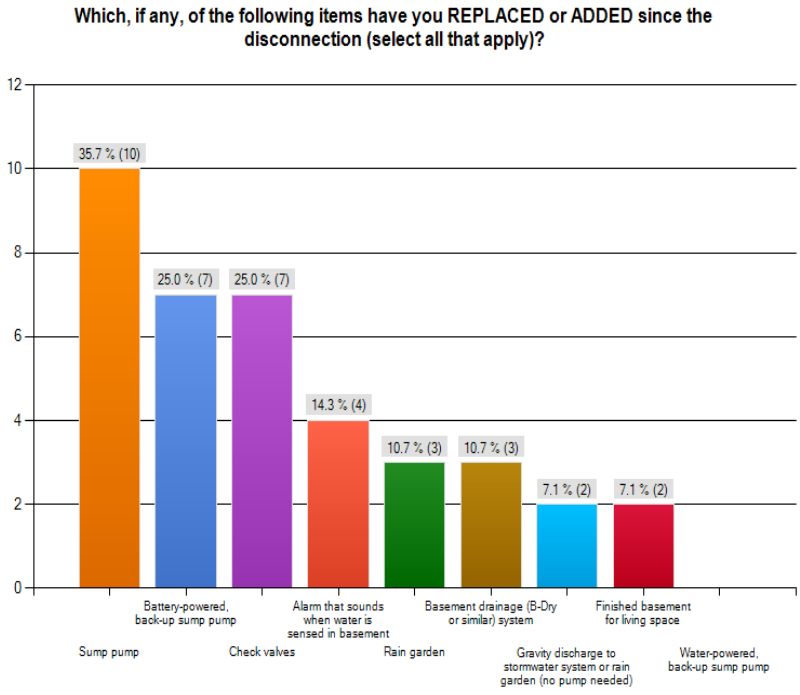
- **Satisfaction with interior restoration work following the disconnection**
  - Very satisfied: 34.8% / Satisfied: 34.8% / Neutral: 16.3%
  - Dissatisfied: 6.5% / Very dissatisfied: 3.3%
  - Not applicable or don't know: 4.3%

Question 9: Which of the following items were installed in your home as part of the footing drain disconnection process (select all that apply)?



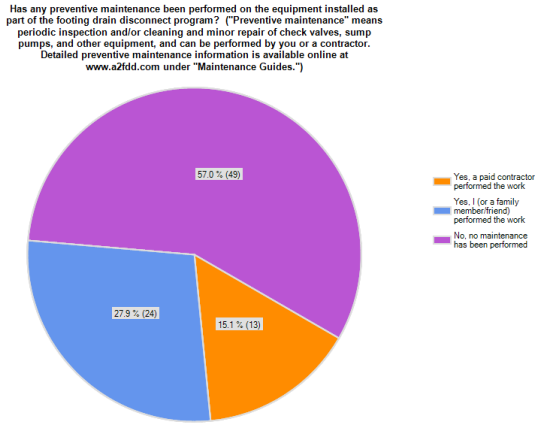
- Sump pump: **78.3%**
- Battery-powered backup sump: **35.9%**
- Check valves: **33.7%**
- I don't know: **7.6%**
- Gravity discharge system: **6.5%**
- Water-powered backup sump: **4.3%**
- Rain garden: **0%**

Question 10: Which, if any, of the following items have you REPLACED or ADDED since the disconnection (select all that apply)?



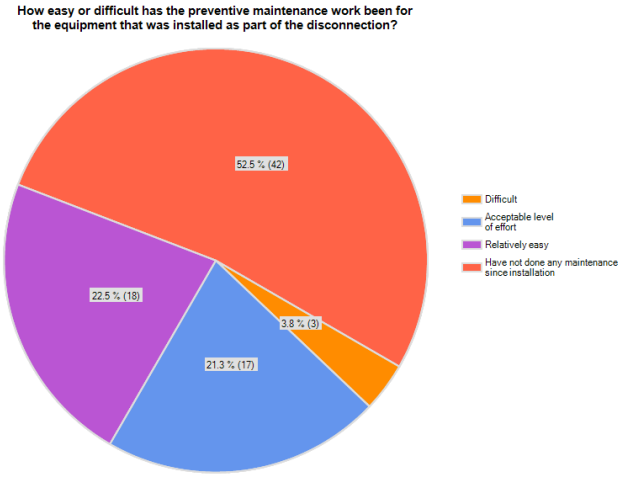
- Sump pump: **35.7%**
- Battery-powered backup sump: **25.0%**
- Check valves: **25.0%**
- Alarm sensor: **14.3%**
- Rain garden: **10.7%**
- Basement drainage system: **10.7%**
- Gravity discharge system: **7.1%**
- Finished basement: **7.1%**
- Water-powered backup sump: **0%**

Question 11: Has any preventive maintenance been performed on the equipment installed as part of the footing drain disconnect program?



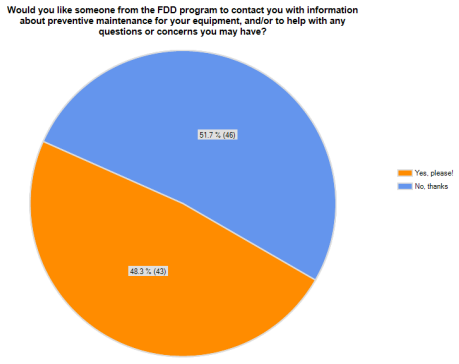
- No, no maintenance has been performed: **57.0%**
- Yes, I (or a family member/friend) performed the work: **27.9%**
- Yes, a paid contractor performed the work: **15.1%**

Question 12: How easy or difficult has the preventive maintenance work been for the equipment that was installed as part of the disconnection?



- No maintenance performed: **52.5%**
- Relatively easy: **22.5%**
- Acceptable level of effort: **21.3%**
- Difficult: **3.8%**

Question 14: Would you like someone from the FDD program to contact you with information about preventive maintenance for your equipment, and/or to help with any questions or concerns you may have?



- Yes, please: **51.7%**
- No, thanks: **48.3%**

Open-Ended Responses

Question 8: Please share any comments you might have that will help us understand your rankings above *(note: meaning, in question 7, "please identify your level of satisfaction with the following topics (level of protection, responsiveness of staff, exterior/interior restoration, etc.")*.

Dissatisfaction due to equipment malfunction: sump pump (12)

- The switch remained on and in so doing, the motor burned out and it cost me $300.00 to replace.
- 2 years into the installation my pump started to spew water all over the floor. The repairperson from Hutzel's said not to worry about charges - it was "cheap plastic parts from China". I was surprised when I was billed for over $100.00. I was threatened with court action if I did not pay. No one else on my block had problems with with equipment malfunctioning. I would not recommend Hutzels again
- The pump failed last year; we had major water coming in from where the footings would have moved the outside foundation water to the sump that caused this senior citizen couple endless hours of clean-up.
- Not long after the sump pump was installed, it quit working during a rain storm. A lot of water came in to our basement from all the seams where the cement floor meets the walls. It created quite a mess to clean up, ruined the rugs we had on the floor, and required a service call to fix the sump pump. We had never had water in our basement before this and were quite unhappy. Fortunately, we haven't had any water in the basement recently.
- I have now had three incidents of water problems directly related to the sump pump that never happened before this installation. I just had to replace the sump pump, which failed (and turned out to be discerned as a "piece of crap" as said by my contractor who pulled it out) after having to deal once again with flooding in my basement. When all was said and done, this latest wet basement incident cost me another $650 for new pump, labor and blowers. I am beyond annoyed at the frustration and cost this 'project' has caused. I feel that Hutzel completely took advantage and installed an incredibly inferior piece of equipment AND they convinced me, and the project director, that I needed to spend the additional $700 at installation for the backup battery which served zero purpose before it malfunctioned and died. GOOD FREAKING GRIEF.
- There are times when the pump does not work
- One year ago the sump pump died when we were on vacation. We even had a new battery backup installed before we left--never anticipated the sump pump itself dying. Thank good our son was checking the house and called Perimeter before too much damage was done. What is the lifespan of a sump pump anyway? You should let homeowners know. I didn't expect it to kick the bucket after just 4 years.
- Sump pump works well except during extended rain when it was overwhelmed. I hope recent drainage work in our area reduces such situations which have happened twice in the last 10 years--one of which was after the footing drain disconnect.

- My pump broke down 2 years after instillation and the battery was dead. I was not told after the instillation that I was supposed to check on the batter water. The pump was replaced as it was under warranty, but I have had to buy two new batteries since mu initial problem. I have also experienced sewage backups in my basement.
- Sump pump was defective after two years. I had to replace at my own expense.
- The fact that we had a sump pump malfunction within the first 3 years says to me that quality of equipment might have not been the best. I believe the city could have found a better way to take care of this problem for a lot less money.
- The only water we've had in the basement was last summer when the sump pump (installed as part of this program) malfunctioned and flooded our laundry room.

Dissatisfaction with equipment: viewed as an unwelcome burden/source of risk (10)

- It all works well so far. I don't know what will happen when the power fails in the neighborhood again (this happens every few years). Also, when the sump pump motor eventually dies I guess I know it by seeing water in the basement. I'm sure I'll change my mind about this project then.
- FDD program displaced risk for water in basement to homeowner who previously never had any problem, now reliant upon primary sump pump operation and optional battery back-up sump; have had one occurrence of primary pump float getting stuck triggering backup sump
- Lost use of part of basement, no problems before, so was nothing to protect against. Installed backup water powered pump to get protection against sump pump failure
- The fact that when the motor dies out that the homeowner is responsible for the charges of replacing it and or fixing it, I think just like the initial installation all expenses occurred should be welcomed and paid by the city.
- Since I didn't have a problem, the change didn't help me--only gave me another potential mechanical problem (e.g., sump pump and back-up battery inspection and maintenance)
- Although we haven't had any problems, I don't feel like I completely understand the sump pump, and worry I wouldn't know if it stopped working.
- "Level of protection..." - didn't have a problem before, not a problem since. Of course, if the power goes out during a rain storm, then I will have a problem.
- I am challenged to recommend a system (as installed by A2) that could fail during severe weather due to power outage and flood the basement. The gravity drain method is far superior when properly implemented.
- While I am satisfied by the work done by Hutzel, I am uneasy about the potential for having water get into the basement due to failure of the sump pump system (power failure, or other reason). So far we are lucky no water has come in. The battery back-up system no longer works however. The system does run frequently during rain, though we are on a hill.
- No flood yet, but this neighborhood has recently had long power outages and my sump pump is in crawl space, where I never go.

Dissatisfaction due to equipment malfunction: battery backup, check valve, other (6)

- The battery for the backup system died prematurely. When I replaced it, I purchased a battery that would not spurt its acid everywhere.
- Water comes out of the pipe next to the drain periodically. After a heavy rain I still get water coming into my basement.
- The system seemed to work until last spring (about for 4/5 years) when we had a major flood. Our assumption was the check valve would stop flooding, even in major rains, but it didn't. I bailed water for 8/9 hours to avert a complete disaster and then did all cleanup (another 5/6 hours) and repairs (another 8 hours but only nominal out of pocket cost) on my own, and I am getting a little bit old for that. I was told during this flood the system will work "most of the time" and I guess that has been true. But I worry it will happen again in the next major rain. This is a perpetual worry for us in any significant rain, especially in the spring. We love Ann Arbor. But this has left us with continuing anxieties. I suspect not a lot can be done given the current state of the infrastructure but, thanks for listening.
- The rubber gasket below the check valve on our system split recently, causing some minor flooding. The problem was fixed rather easily, though I was surprised the gasket failed.
- Back up battery died within a few years after installation and we could not disable the alarm. We couldn't find replacement battery for awhile so had to listen to outrageously loud alarm all that time. Replacement was costly and a real pain to connect (with alarm blaring all the while). Our sump is under the stairs in a closet so it's difficult to access and there's no light. I personally cannot even lift the battery so I don't know what I'm going to do if my husband is not around to carry the thing up the stairs.
- The reason for the latest flooding problem was a faulty cutoff valve that was installed by Perimeter. I have since then installed the best cutoff valve I could find so that won't occur again.

Miscellaneous/Neutral (6)

- Please call me
- So far I've not need assistance.
- We have leakage through our cinder block walls which has been unaffected by the FDD project
- I just moved in the year the disconnect was done on my home so I do not know if the basement ever had sewer backup. I have never had a backup.
- It's been so long ago, I don't have a clear memory. Do know that I haven't had a problem since and that my sump pump runs pretty often.
- We had water back up from the floor drain again this spring. I was able to use our shop vac to suck it up and dump it into the sub pump which pumped it back outside. We had lots to clean up, but with tile floor now instead of carpet it made it easier.

Appreciate the program; satisfied with results (5)

- Our "water problems" had to do with foundation problems allowed to develop before we

bought the house. The FDD in fact help DRY our basement! The survey questions regarding water aren't reflective of that ...

- We have had no problems associated with the equipment or the work done to date. High quality materials and professionally done.
- Because of location of house (relatively high) I wondered why we needed the protection. Must have been we are in a district. Of course I don't know much about such things and the prevention is clearly better to have if I ever needed a cure.
- If all contractors were as good as RDC, there would be a lot of happy campers out there!
- Service by RDC was great. No questions or concerns have arisen.

Exterior restoration problems (5)

- When the parking strip of grass was dug up, the re-seeding wasn't effective to restore the lawn.
- Didn't need it. Ground settled at excavation. Will have added expense of backup system - I did not like that.
- The "grass" that was planted was overtaken by weeds.
- Grass was not fixed. I was left with several bare spots and spots where grass initially grew, later died. It took another year to get my yard back
- Outside, we believe that an evergreen tree's roots were damaged. The stress from this may have made it vulnerable to the disease that is slowly killing it.

Installation or interior restoration problems (5)

- Restoration was not needed. I do see minor cracks in the basement floor that were not there before.
- No tile was replaced - when removed it shows the concrete floor. A large air gap should have been caulked when the pipe was installed thru the brick wall.There is now a hole in the black cover where the cords are inserted.
- After the FDD work, an area near the construction site now leaks onto my carpeted basement floor after heavy rain events. I assume there is a crack in the foundation which allows ground water to enter. I'm very concerned about mold that may be present between the wood paneled walls & the cinderblock walls
- Location of sump and piping limits options for finishing basement. Concrete around sump is not as finished as original floor
- Sump pump was not tested after install. PVC connection was not glued, causing leak. New trap in floor drain was not filled with water, causing sewer gas odor. Basement floor had to be retiled by me at my own cost.

Sump pump noise (4)

- Unable to use basement bedroom because of the noise, water flowing and gurgling.
- I have been extremely unhappy with the sump pump - it banged loudly every time it emptied with was a lot. I will write more in a letter to send to the city.
- Also, the sump pump itself is very very noisy and we can hear it throughout our entire

house.

- The sump pump is very noisy. Hutzel came back out and installed more supports to keep the pipes from rattling, but it is still very loud. I also think it has increased our electric bills.

Dissatisfaction with program: did not have water prior to disconnection but do now (2)

- I did not have water in my basement prior to having the work done and have had several instances since.
- Having never had water in our basement before, it is difficult to adjust to having water coming with every storm. Had we known this, we would've opted to pay the $100/month extortion to keep our carpeting & furnishings. A young man came out & videoed the water one time & that has been the extent of ANY response by you folks. This has been a nightmare!

Objections to the program for philosophical reasons (1)

- In my opinion it was another wasteful project, as Ann Arbor so often engages in to waste taxpayers donations to City government.

Question 12: Comments elaborating on response to "How easy or difficult has the preventive maintenance work been for the equipment that was installed as part of the disconnection?"

- City should be required to perform any and all maintenance or replacements required.
- Not sure who I would contact since I do not want to deal with Hutzels again
- Except for the battery.
- I think the program would be effective if someone would come by and check out the equipment. I have felt about it that it was nice to be given the piece of equipment in case I need it but I really have no idea to use it, service it, trouble shoot issues surrounding it.
- It was difficult to get the "lid" off the sump pump.
- Had to replace back-up system; have only done occasional sump pump inspections
- Not difficult so much as a real pain in the neck
- Not told what kind of maintenance needed, other than battery
- For some reason I did not initially realize that the battery backup system needed to have the water replaced and checked. This led to the eventual failure of the battery. I have not replaced it yet and the charger is now failed as well.
- Guessing, since I didn't do it myself
- Too expensive.....i am retired and on fixed income
- Family checked, but no serviceable parts visible.
- Had to replace a check valve.
- THE EQUIPMENT IS NOT THE PROBLEM, IT IS THE WHOLE CONCEPT!!

Question 13: What suggestions do you have for improving the Footing Drain Disconnection program for homeowners?

Adjust the installation design, equipment, or process (14)

- Position sump pump near a drain so water runs to drain if needed.
- Do something so I do not get water coming out of the pipe next to my drain and stop water coming into the basement after a heavy rain.
- I think it would be good if there was an overflow drain tube that would go from the sump to the previously used system, as an emergency backup.
- Mandate that he sump pump be of a higher quality than the Hydromatic installed in 9/2003 by RDC. The plumber who replaced it last year with a Zoeller, said that the Hydromatic was an "inferior" product.
- Pump was put in at wrong time of year (winter with frozen ground) Pipe feed water to lawn and resulted in water in basement until work could be finished
- Have exterior basement walls inspected by a disinterested third party before exterior excavation is filled.
- Install higher quality pumps.
- All pumps should installed with a backup
- Please look into a method that would be installed outside of someone's house, so the basement would not flood upon a failure of the system. There could be alarms that could be used to allow people to address the issue, but not cause damage to one's house. Frequent power failures in the area can lead to potential flood issues. Thank you.
- Make gravity feed option available where possibe.
- Skip the battery back pump and use the money to buy a higher quality sump pump.
- Make sure that quality check valves are installed in the system. This failure caused the sump pump to actually fill the basement due to the failure!
- Buy backup pumps at bulk discount prices and pass price on to homeowners. Water backup is more reliable than battery according to research I have done.
- Better information, better contractors, better equipment.

Improve communication (9)

- You should warn homeowners that they may have water seepage into their homes. I had none before the disconnection, but do now.
- Just keep explaining how useful an improvement it is!!!
- Tell people the life expectancy of the sump pump and how often they should replace the battery.
- There is no information available about when/ how to replace battery for battery back-up systems
- Provide more information on battery backups or backup pumps.
- There was no information given to me about the battery back-up system or how to maintain the system. I got different vague answers from Hutzel and from the City indicating it was easy to replace the battery when it really is not easy for an older person to do and when even the type of battery to buy isn't in any instructions. The City had no place I could go for instructions and information and I went around in circles, trying to figure out what I was supposed to do to maintain this. Hutzel said just to buy one the size of the box. Perimeter said I should have one that I could check the water

levels. Oscar Nordstrom promised me twice he would come out and check the decibel levels on the noise, but he never did. All in all, a very unsatisfactory experience.
- Need more complete info on how the pump operates, what is reasonable maintenance, how to determine when it is near the end of its life and should be replaced before it fails. We are completely dependent on its functioning properly--our basement would flood even with relatively mild rain...
- I didn't realize/remember we should be considering preventive maintenance. I appreciate the survey, since it gave me the information that there is online info. on preventive maintenance.
- Improved communication and education on what the requirements are for maintenance of the installed pump

Miscellaneous (6)

- This is my first experience with a sump pump
- When the power goes out the sump pump doesn't work and the basement gets wet. Bad idea on your part. Personally, I hate this system.
- I don't love. I would love to feel like a flood was highly unlikely, but at this point (a major flood last year), my guess is that will take some time.
- I had just painted my basement floor and it ended up looking like it needed to be done again. Pock marks and uneven floor left to work with. Have not gotten around to it yet.
- None really. We are pretty happy with it as prior to the work, we experienced serious flooding three different times.
- Help us elderly/disabled/low income disproportionately impacted by this shifting of risk from govt. to individual homeowners.

Stop the program (3)

- Reconnect the footing drains for homeowners
- Discontinue program. Allow me to get rid of my noisy sump pump!!!!!
- Stop this nonsense

Provide maintenance assistance (2)

- Have someone check in and go through how to maintain the equipment. Otherwise, it was a good idea but not operable because the intended recipients don't know anything about why it's there and how it works, esp. if things were working fine before.
- I didn't know Preventive Maintenance was necessary. I am not sure whether this Preventive Maintenance is something to get more money from me or for real.