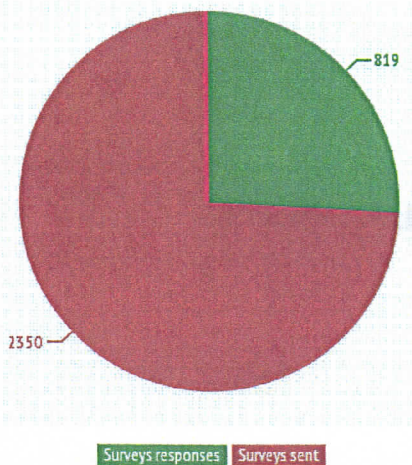


City of Ann Arbor 2013 FDD Survey Results - Draft

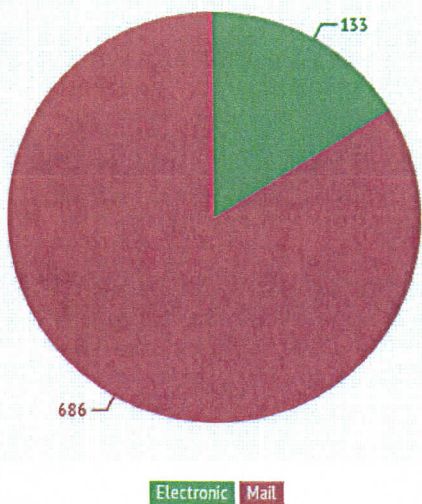
1. Total Surveys completed



2350 surveys sent
819 responses

34.85% surveys returned

2. On line survey responses vs. mail in survey responses



133 on line

686 mail responses

3. Validity of survey results

819 responses of 2350 surveys sent = 99% probability

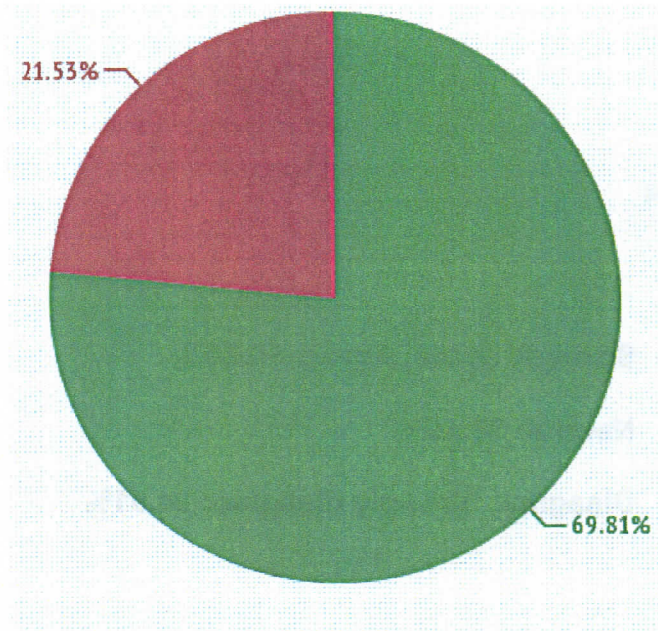
Confidence level = 99%

Margin of error = 3.6% +/-

4. Geographic dispersion of responses

TBD. Respondent addresses are being correlated.

5. Overall level of satisfaction regarding sump pump installation



Very satisfied, Satisfied:

69.81%

Dissatisfied, Very Dissatisfied:

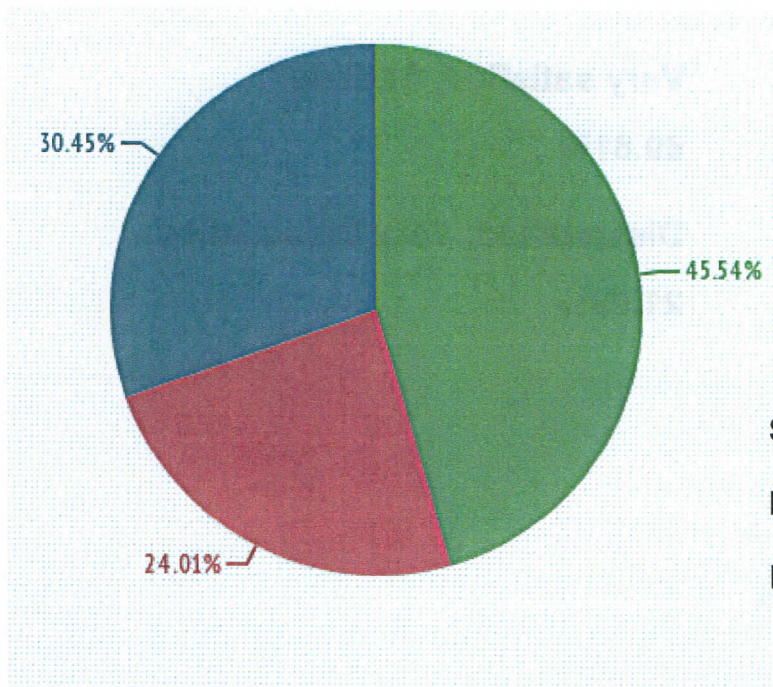
21.53%

Satisfied, Very Satisfied **Dissatisfied, Very Dissatisfied**

Answer Choices—	Responses—
Very satisfied	28.20%
Satisfied	41.61%
Dissatisfied	13.17%
Very dissatisfied	7.83%

While the majority of survey respondents report satisfaction or neutral feelings regarding their sump pump installation, about 1/5 of respondents report feeling degrees of dissatisfaction.

6. I would recommend a sump pump installation to a neighbor:



Strongly agree, Agree: 45.54%

Neutral: 30.45%

Disagree, Strongly disagree: 24.01%

Agree, Strongly Agree Disagree, Strongly Disagree Neutral

Answer Choices	Responses
Strongly agree	21.04%
Agree	24.50%
Neutral	30.45%
Disagree	11.76%
Strongly disagree	12.25%

The majority of respondents would recommend a sump pump installation to a neighbor. Nearly one third are neutral and nearly one quarter disagree or strongly disagree.

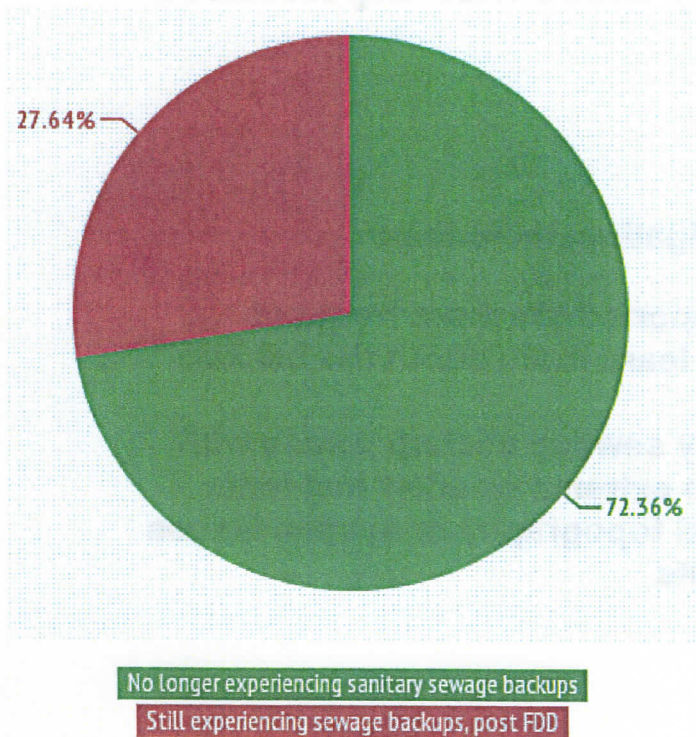
7. Total restoration costs listed by those who experienced sanitary sewage backups.

\$304.227

We recommend further/follow up investigation, including:

- a. Speaking with residents who've reported the most frequent incidents and the highest costs to learn more about the backup incidents and causes**
- b. Cross referencing dates of sanitary sewage backup issues with FDD installations dates and known extreme weather incidents**
- c. Analyze addresses to find potential topography or system issues contributing to the backup incidents**

8. Respondents that experienced sanitary backups prior to FDD and who are NOT experiencing them after.



The majority - 72.36% - of respondents who had experienced sanitary sewage backups are NO LONGER experiencing them after having an FDD/sump pump installation.

27.64% of respondents who had experienced sanitary sewage backups ARE still experiencing them, after having an FDD installation.

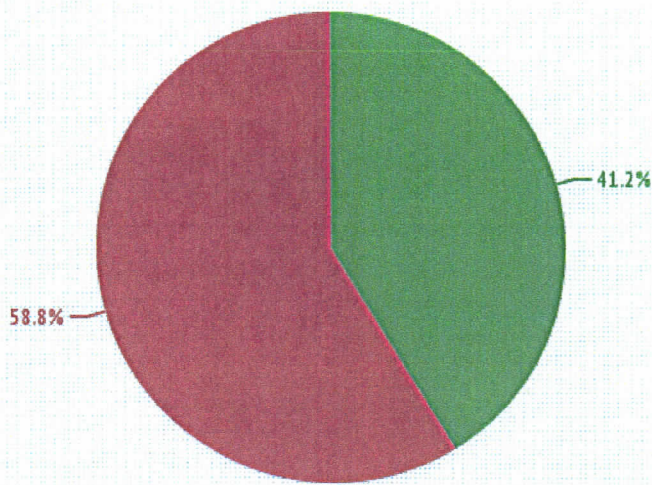
More details:

123 of 819 or 15% of respondents reported experiencing sanitary sewage backups PRIOR to FDD/sump pump installation

89 of 819 or 10.87% of respondents had sanitary sewage backups prior to FDD/sump pump installation and have not had one after the FDD.

34 of 819 or 4.15% of respondents continue to have sanitary sewage backups after FDD/sump pump installation

9. Respondents that experienced water flooding/seepage/dampness prior to FDD and are NOT experiencing it after.



41.2% of respondents who had experienced water flooding/seepage/dampness before FDD are NOT experiencing them after having FDD.

58.8% of residents who had experienced water flooding/seepage/dampness before FDD CONTINUE to experience them after having FDD.

No longer experiencing wetness/flooding/seepage, post FDD
Continue to experience wetness/flooding/seepage, post FDD

Answer Choices	Responses
Water flooding	38.56% 145
Seepage	58.78% 221
Dampness	51.60% 194

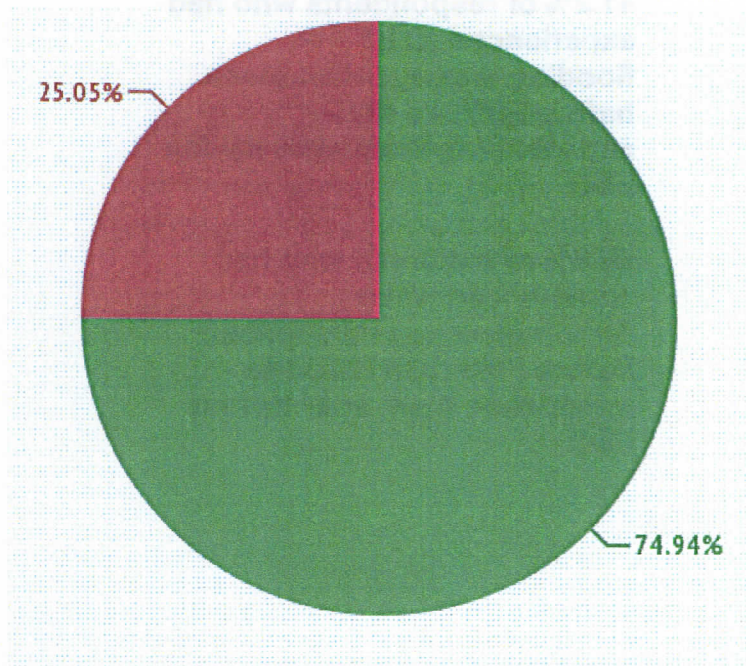
More details:

407 of 819 or 49.7% of respondents reported experiencing water flooding/seepage/dampness before FDD

168 of those 407 respondents or 41.28% reported experiencing water flooding/seepage/dampness prior to FDD and are NOT experiencing it after FDD

While it appears that the FDD and sump pump installation solved water issues for over 40% of residents experiencing them, a larger number continue to have wetness issues.

10. Respondents that experienced NO water flooding/seepage/dampness prior to FDD and ARE experiencing them after.



No new wetness/flooding/seepage after FDD

No wetness/flooding/seepage before FDD, now experiencing after FDD

411 respondents or 50.1% of 819 total respondents reported experiencing NO water flooding/seepage/dampness PRIOR to FDD.

103 respondents or 25.06% of the 411 who reported experiencing NO flooding/seepage/dampness before the FDD, said they DID experience flooding/seepage/dampness AFTER the FDD.

	Total
Water flooding	66
Seepage	50
Dampness	44

We recommend further investigation of these 103 respondents to attempt to determine the cause of wetness issues.

11. Total restoration costs

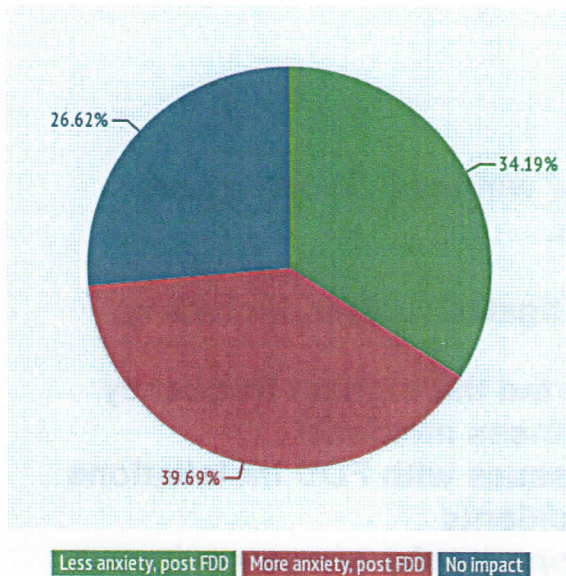
Respondents reported \$460,170 in costs for wetness, flooding and seepage, post FDD/sump pump installation.

We recommend that these results be investigated further, including:

- d. Speaking with residents who've reported the highest frequency and costs to learn more about the wetness incidents**
- e. Cross referencing dates of wetness issues with FDD installations dates and known extreme weather incidents**
- f. Analyze addresses to find potential topography or system issues contributing to the wetness incidents**

12. Peace of mind results

How has the installation of a sump pump affected your peace of mind?



280 or 34.19% of respondents reported a significant reduction in anxiety or some reduction in anxiety, after the FDD and sump pump installation

325 or 39.68% reported some increase in anxiety or significant increase in anxiety, post FDD

218 or 26.62% reported no impact

13. Distribution of concerns about sump pumps

Please indicate your concerns, if any, about the sump pump in your residence.

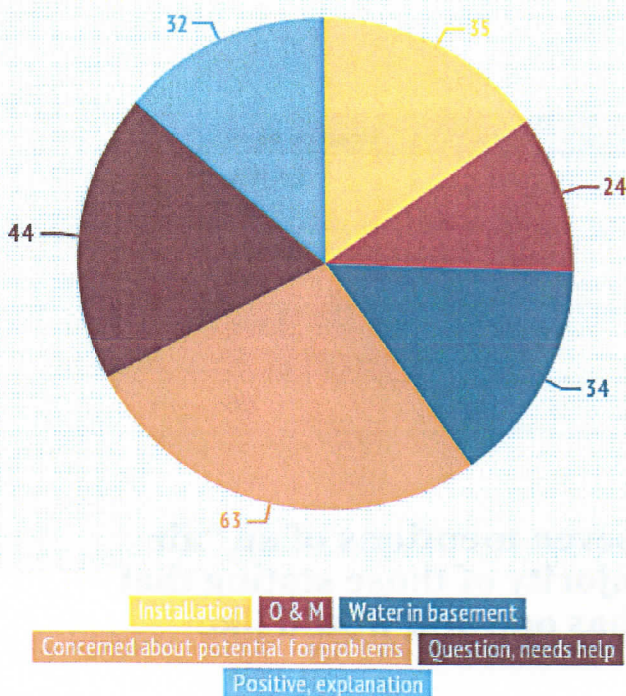
Answer Options	Not concerned	Concerned	Very concerned
Sump pump malfunction.	220	313	188
Lack of a backup system.	311	219	127
Replacing sump pump.	279	286	124
Water flooding from sump pump hole.	353	210	112
Disrupted my basement design/style.	485	107	87
Reduction in property value due to sump pump.	448	146	74
Going up and down stairs to check on sump pump.	483	120	59
Noise from the pump.	503	130	58

14. Distribution of survey comments:

Survey respondents were invited to provide comments, and 320 did.

Comments were categorized as follows:

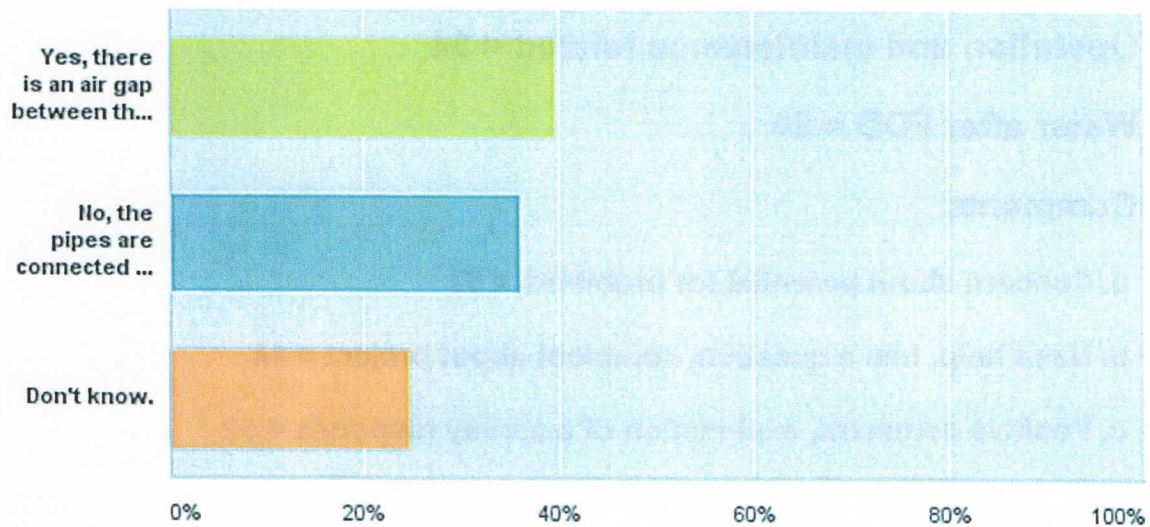
1. Installation related = 35
2. Operation and maintenance related = 34
3. Water after FDD = 24
4. Comments
 - a. Concern about potential for problems = 63
 - b. Need help, has a question, comment about project = 44
 - c. Positive comment, explanation of a survey response = 52



15. Air gap

Q20 Please look at the discharge pipe that exits your home. Is it connected directly to the pipe coming up from the ground or is there an air gap between the two pipes?

Answered: 785 Skipped: 34



Answer Choices	Responses
Yes, there is an air gap between the two pipes.	39.49% 310
No, the pipes are connected to each other without an air gap.	35.92% 282
Don't know.	24.59% 193
Total	785

In addition to these results, there are seven mentions of an “air gap” in the 320 comments, with the majority of those stating that they are not sure whether their home has one and would like someone to check their connection.