

**STATE OF MICHIGAN**  
**IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW**

**ANITA YU, JOHN BOYER, and  
MARY RAAB,**

**Plaintiff,**

**Donald E Shelton**

**Hon:**

**Case No. /4-18/ CC**

**vs.**

**THE CITY OF ANN ARBOR,  
Defendant.**

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There is no other civil action between these parties arising out of the same transaction or occurrence as alleged in this Complaint pending in this court, nor has any such action been previously filed and dismissed or transferred after having been assigned to a judge, nor do I know of any other civil action, not between these parties, arising out of the same transaction and occurrence as alleged in this Complaint that is either pending or was previously filed and dismissed or transferred or otherwise disposed of after having been assigned to a judge in this court.

**COMPLAINT**

Plaintiffs Anita Yu, John Boyer, and Mary Raab, for their complaint against the Defendant, City of Ann Arbor, by their attorneys Irvin Mermelstein, Esq., M. Michael Koroï, Esq., and Daniel W. O'Brien, Esq. respectfully allege as follows:

### **I. PRELIMINARY STATEMENT**

1. This is an action commenced against the City of Ann Arbor ("the City") pursuant to MCL § 213.23, Article 10 § 2 of the Michigan Constitution, 42 U.S.C. § 1983 and the Fifth Amendment to the United States Constitution. The plaintiffs herein seek compensatory damages, injunctive relief and a declaration that Ann Arbor Ordinance 2:51.1 ("the Ordinance"), enacted to implement the City's mandatory Footing Drain Disconnection Program (FDDP) is unconstitutional and has resulted in a taking of the plaintiffs' private property for public use without due process of law or just compensation.

### **II. THE PARTIES**

2. Plaintiff, Anita Yu, resides at 2362 Georgetown Boulevard., in a home she has owned since at least 1982, in Ward 1 of the City of Ann Arbor.

3. Plaintiffs, John Boyer and Mary Raab, reside at 2273 Delaware Drive , in a home which Plaintiff Mary Raab has owned since 1970, located in Ward 4 of the City of Ann Arbor.

4. The City is a municipal corporation, organized and existing under the laws of the State of Michigan, with an office for the transaction of business located at Larcom City Hall, 301 East Huron Street, Ann Arbor, Michigan 48104.

### **III. JURISDICTION AND VENUE**

5. The Court has subject matter jurisdiction over this matter pursuant to MCL § 600.601(1).

6. Venue is appropriate in this circuit pursuant to MCL § 600.1615.

### **IV. BACKGROUND**

#### **A. The City of Ann Arbor**

7. The City is located in the State of Michigan and is the county seat of Washtenaw County. Upon information and belief, the City was founded in 1824 and currently has a population of approximately 115,000 people, making it the fifth largest city in the State of Michigan. In 1960, the population was less than 68,000.

8. Upon information and belief, the City has a total land area of 28.7 square miles. The City is situated on the Huron River and, in general, the west-central and northwestern parts of the City maintain the highest elevation and the lower elevation sections of the City are along the Huron River and to the southeast.

9. The City is governed by a City Council that has eleven voting members: the mayor and ten City Council members. The City is divided into five wards each of which elects two City Council members. The mayor is elected city-wide and is the presiding officer of the City Council.

**B. History of the FDDP**

10. In the last quarter of the twentieth century, the City experienced significant population growth and corresponding development. Upon information and belief, the City's infrastructure, including its storm and sanitary sewers and drainage facilities, did not keep pace with the rate of development. As a result, there was insufficient capacity during storm events and sanitary sewer overflows ("SSO's") grew more common from the City's Waste Water Treatment Plant into the Huron River.

11. In the 1960's, the City approved plats for subdivisions in southeastern Ann Arbor, including three phases each for the Lansdowne I and Churchill Downs developments. Upon information and belief, the City was well aware at the time that these areas had demonstrable groundwater problems. The Lansdowne I vicinity had a large pond in the middle of the area

(known at the time as “the Cow Pond”) because of heavy runoff and groundwater problems during normal spring rains.

12. Construction began in Lansdowne and Churchill Downs around 1966.

Groundwater problems persisted at that time.

13. All houses were lawfully constructed with footing drain connections to the sanitary sewer lines; as so constructed, they all passed their inspections and received Certificates of Occupancy. Approximately 20,000 per 1982 single family homes in Ann Arbor were constructed with legal footing drain connections to the sanitary sewer system.

14. In 1982, the Michigan State Building (plumbing) Code was amended to prohibit the connection of footing drains to sanitary sewer lines. This change in the state law did not purport to require removal of pre-existing connections of residential footing drains to the sanitary sewers nor did it require the installation of any alternative methods of drainage or other retrofitting.

15. Groundwater and runoff conditions in many areas of the City (including the subdivisions in which plaintiffs' homes are located had worsened since construction of plaintiffs' homes). In 1997, the engineering firm Black and Veatch conducted a study of the storm sewer system in the City of Ann Arbor. Upon information and belief, this study concluded that there were severe problems in the City of Ann Arbor storm sewer system and made recommendations as to how these problems could be corrected. In its 1997 *Storm Water Master Plan Report* to the City, the Black and Veatch firm listed a number of inadequacies in the then present storm water conveyance system including the age of the system's components, increased flows beyond the system's design capacity, increased runoff resulting from expanding development, sedimentation occurring during construction-related runoff, channel bank erosion, structural failures and the construction of private storm water facilities including detention basins which were not being

adequately maintained. With respect to the Malletts Creek watershed, the Black and Veatch firm specifically recommended that the existing storm water conveyance system be replaced.

16. Upon information and belief, the City rejected the Black and Veatch report and did not undertake any of the recommended actions.

17. Heavy rain events in Ann Arbor in August of 1998 and June of 2000 resulted in surcharging (overcapacity conditions) in the Ann Arbor sanitary sewer system at least partly due to the cracked conditions of the sewers, which promoted and promotes infiltration of storm water into the sanitary sewer system.

18. As a result of the number of homes affected, City residents demanded an end to the sewer backups and, in fact, a class action was commenced on behalf of the affected homeowners. At the same time, the Michigan Department of Environmental Quality (MDEQ) demanded that the City take action to end the overflows.

19. Starting in 2000, MDEQ demanded mitigation of sewer flows from the City to prevent further unpermitted SSO's but did not impose a particular solution, including a sewer system upgrade. Upon information and belief, the City was unwilling to upgrade the sewers due to the anticipated capital expenditures which would be necessary to upgrade the underground infrastructure.

20. The City contracted with Camp Dresser McKee (CDMI) to propose a solution which would satisfy the demands of the MDEQ. In June, 2001, CDMI issued its *Sanitary Sewer Overflow Prevention Study* ("*the Study*") to the City. The study's recommendation was that the City "take action to remove rain and groundwater inflow sources into the City sanitary sewer system by implementing a comprehensive city-wide footing drain disconnection program within the City of Ann Arbor."

21. Notably, CDMI the study made no representation as to the legality of its recommended alternative and, in fact, urged caution on the part of the City before any formal action was taken before the City undertook to implement the recommendations in *the Study*. For example, in the Section I. entitled “*Additional Decision Influences*,” the following assessment was made:

***Work on Private Property Causes Concern*** – *For those homeowners that had previously have basement flooding, they generally said that work on their property (basement and lawn) would be acceptable. However, there were some affected homeowners who were very resistant to allowing any work to be performed. There was also a general concern from unaffected homeowners regarding potential work on their property.*

Later on in that same section of *the Study*, the following concern was raised:

***Can the City Work on Private Property?***– *The option of footing drain disconnection was seen as a viable solution only if access to private property could be arranged. The Council was interested in how other communities had handled this issue.*

This concern as to the legal basis for the recommended solution was expressed later in *the Study*, in Section L. entitled “*Final Recommended Program*,” where the following question was raised:

***Legal Authority*** – *Can and will the City of Ann Arbor have the legal framework to accomplish the work required on private property?*

Upon information and belief, the City never sought or obtained a definitive legal analysis of its power and authority to enact legislation requiring mandatory FDD’s or, if it did, that analysis has never been made public.

22. Upon information and belief, the City negotiated with the MDEQ and persuaded the agency to accept the FDDP as a solution to the ongoing problems with sanitary sewer overflows within the City of Ann Arbor. On September 4, 2003, a consent order was entered between the City and the MDEQ which, among other things, required the City to undertake 155 Footing Drain Disconnects (FDD’s) per year for four years for a total of 620 FDD’s. By the time

the consent order was entered into, approximately 150 FDD's had already been performed and were not, therefore, "required" by the consent order. This included the FDD's included in the Plaintiffs' homes.

**C. The Ordinance**

23. On August 20, 2001, the City passed the Ordinance entitled "Program for Footing Drain Disconnect from POTW." (A copy of the ordinance is attached hereto as Exhibit "1.")

24. The Ordinance served four main functions. First of all, the ordinance determined that preexisting, legally permitted and long-standing footing drain connections were "improper." In that regard, the Ordinance authorized the Director of the Utility Department ("Director") for the City to order property owners within a certain "target areas" to correct "improper storm water inflows" from their property or face a monthly fine of One-Hundred Dollars (\$100.00).

25. In fact, in the City's latest iteration of its "Homeowner Information Packet" (v8.4-8/8/2013), the City included the following item in the "Frequently Asked Questions" section of its website:

***Legal Requirements***

*May I choose not to participate in the program? What are the consequences of that?*

Participation in this program is mandated by city ordinance. The FDD program offers Homeowners the opportunity to have the City pay for installation if the work is completed within the schedule of the program. If the homeowner does not comply with the notices to arrange disconnection, a surcharge of \$100 per month will be charged to the homeowner for the additional costs associated with handling un-metered footing drain flows into the sewer system. Disconnection is still required and if done after the 90 day notice expires, the disconnection work will no longer be paid by the city.

(A copy of the most recent Homeowner Information Packet is attached hereto as Exhibit "2").

26. Second, the Ordinance allowed the Director to establish a list of private contractors approved to perform work under the program and established a protocol pursuant to which the homeowner would purportedly enter into a direct contractual relationship with a contractor and the City would not be a party.

27. Third, the Ordinance authorized the City to pay for some or all of the approved work subject to the discretion of the Director. The Ordinance and the Homeowners Information Packet delivered to the designated property owners penalizes those homeowners who wish to have their own contractors perform the FDD or to perform the FDD themselves, by reserving the right of the City to deny all or part of the aforesaid subsidy and deprive such homeowner of City services otherwise provided free (such as permitting, inspection, and direct payment of the FDD Contractor) to property owners who selected a pre-qualified" contractor and the accompanying services of CDMI.

28. Finally, the Ordinance made clear that responsibility for maintaining any improvements constructed under the FDDP, including the maintenance of sump pumps and other equipment, the furnishing of water and electricity, the purchase and installation of any backup systems and all necessary repairs would rest with the homeowner, and not the City or the contractor.

**D. The FDDP is implemented.**

29. Upon information and belief, as of the date of this complaint, more than 2,000 involuntary FDD's have been completed.

30. The City and/or CDMI delivered a Homeowners Packet to Plaintiff, Anita Yu, during or about the first three months of 2003. The Homeowner Packet threatened fines and other actions if Plaintiff Anita Yu failed to give an enforced consent to the entry into her home and



completion of an FDD. The FDD was to be accompanied by the permanent installation of a sump pump and other equipment inside and outside the basement of her home.

31. As required by the Homeowner Packet, plaintiff, Anita Yu, selected Hutzl Plumbing, a Michigan corporation, for FDD work, one of the five "pre-qualified" plumbers to whom her choice was limited by the City under the FDDP to, and did, complete an FDD inside and outside of her home on September 3, and September 4, 2003.

32. As a part of the FDD completed in her home, construction and plumbing work was performed which disconnected her exterior footing drains from the sanitary sewer system. Instead, the required facilities directed ground water and storm water into plaintiff Anita Yu's crawl space through pipes installed through holes drilled through the exterior wall of her home for collection in a sump constructed and installed inside her home as part of the FDD.

33. The groundwater and storm water introduced into the crawlspace by the City or its contractors or independent contractors flows through the pipes drilled through her wall and into the sump throughout the year. The FDD included permanent installation of an electric sump pump to pump water out of the sump, up a vertical pipe approximately eight feet long to be expelled through piping installed through holes drilled through her interior wall and to the exterior of her house for discharge. She currently has no flooding from her sump pump out onto the floor of the crawlspace, by the sump pump runs daily. The sump and sump pump were installed in a location accessible to plaintiff, Anita Yu, only with difficulty as she suffers from a disabling condition that it makes it impossible for her to perform the operation and maintenance mandated by the FDDP and the FDD Ordinance without hiring a contractor at her own cost. Prior to the disconnect, she never experienced any flooding in her basement or crawlspace and had no water flowing into and through her crawl space into a sump pump.

34. Plaintiff, Anita Yu, did not experience a sewer backup before the Ordinance was enacted.

35. Before the disconnect, Ms. Yu had complete peace of mind as a result of the absence of any flooding or other water problems and now she is required to operate and maintain, at her own expense, equipment installed by force of law.

36. The disconnect of Ms. Yu's footing drain was completed *before* the September 4, 2003 entry of the Consent Order between the MDEQ and the City.

37. Plaintiffs, John Boyer and Mary Raab, under threat of compulsion, completed the footing drain disconnect in 2002. Prior to that time, their basement had been dry and they had experienced no flooding, dampness or other water problems in their home. In conjunction with the disconnection of their footing drain, a sump pump was installed in their basement which discharges into their backyard. Since their footing drain was disconnected, their backyard and basement have flooded on a significant and recurring basis. Two flooding events were particularly severe, with the basement living space under water while the sump pumps were fully operational.

38. Mr. and Mrs. Boyer have borne the entire cost of the FDD, including "upgrades" such as a Six-Hundred Dollar (\$600.00) backup hydraulic pump that should have been installed initially, together with cleanup costs, electrical costs and the costs of four to six gallons per minute of City water required to run the hydraulic backup during the regular power outages experienced in their home in Ward 4.

39. The disconnect of the Boyer/Raab footing drain was completed *before* the September 4, 2003 entry of the Consent Order between the MDEQ and the City.

#### **E. The Survey**

40. In January of 2014, the City released the results of its *2013 Sanitary Sewage Wet Weather Evaluation Project Footing Drain Disconnection (FDD) survey*. According to the survey statistics, 2350 surveys were mailed and 850 responses were received. In particular, the following results were noted:

- Of 850 responses, 134 respondents (16%) reported experiencing sanitary sewage backups prior to FDD/sump pump installation. Of these 134 respondents, 34 of the 134 reported continued sanitary sewage backups and 42 of the respondents who *did not* have sanitary sewage backups before the FDD experienced them afterwards.
- Of the 426 respondents who reported experiencing water flooding/ seepage/ dampness problems before the FDD/sump pump installation, 247 experienced continuing flooding/seepage/ dampness problems after the FDD/sump pump installation.
- The total restoration cost for water flooding/seepage/dampness after the FDD sump pump installation among the 158 respondents was Four-Hundred and Fifty-Six Thousand Dollars (\$456,000.00) and the average restoration cost was Three-Thousand, Two-Hundred and Ninety-Seven Dollars (\$3,297.00).
- Among the respondents, almost 40% reported some, or a significant increase in, anxiety as a result of the installation of the sump pumps.

## V. THE PLAINTIFFS' CLAIMS

41. Because the Plaintiffs' homes were constructed in conformity with the then applicable building code and other relevant standards and the Plaintiffs or their predecessors-in-title received Certificates of Occupancy and/or other necessary approvals from the City, the Plaintiffs acquired vested rights to the footing drains and related storm water and sanitary sewer facilities related thereto.

42. Upon information and belief, the Ordinance was not enacted in response to emergency conditions or some other imminent threat to public health, safety or welfare. Rather,

the Ordinance was enacted by the City in order to facilitate a solution to long-standing and self-created conditions in the least expensive and/or most expedient way possible.

43. The mandatory disconnection of the Plaintiff's footing drains and the forced installation of sump pumps and related equipment constituted a physical intrusion by the City, or others acting on its behalf or in its stead, resulting in a permanent physical occupation of the Plaintiffs' property and a significant interference with the Plaintiffs' use of their property.

44. Moreover, the ongoing and perpetual responsibilities for the operation and maintenance of the sump pumps and related equipment represent an unreasonable financial and personal burden upon the Plaintiffs' use and enjoyment of their property and represent an inappropriate delegation by the City to its citizens of its governmental obligations.

45. The Plaintiffs have suffered damage to their property, have been forced to incur costs and expenses as a direct result of the FDDP and will continue to incur such costs and expenses in the future.

46. In addition, Plaintiffs John Boyer and Mary Raab have incurred costs and expenses attributable to flooding and water damage resulting from the FDDP and, upon information and belief, will continue to incur such costs and expenses in the future.

47. Whereas the Plaintiffs previously enjoyed the peace of mind and repose which comes from having dry basements and no water problems, they have, since the implementation of the FDDP, experienced the inconvenience associated with the installation of the sump pump and related equipment, the ongoing burdens associated with the maintenance and operation of the sump pumps and, in general, the diminution in their quality of life attributable to the FDDP.

48. Due to the City's enactment, implementation and enforcement of the Ordinance, the Plaintiffs' properties have been unreasonably burdened, economically impaired, physically

occupied and/or invaded and otherwise damaged, resulting in the *de facto* or inverse condemnation of the Plaintiffs' properties.

**FIRST CAUSE OF ACTION  
MCL SECTION 213.23**

49. The Plaintiffs' repeat and re-allege Paragraphs One through Forty-Eight as if more full set forth herein.

50. The City, through its enactment, implementation and enforcement of the FDDP Ordinance has taken private property for public use as that term is defined in MCL Section 213.23.

51 In so doing, the City has acted in derogation of the requirements of MCL Section 213.23.

52. Alternatively, if the City had attempted to comply with the requirements of MCL Section 213.23, it would have failed in its burden of proving that the taking was necessary in accordance with Section 213.23 (2) because no public necessity of an extreme sort existed, the property taken will not remain subject to public oversight and the property was not selected on facts of independent public significance or concern, including blight.

53. The City has, therefore, proceeded in violation of law and in violation of the Plaintiffs' constitutional rights.

54. As a result of the foregoing, the Plaintiffs are entitled to just compensation.

**SECOND CAUSE OF ACTION  
MICHIGAN CONSTITUTION**

55. Plaintiffs repeat and re-allege Paragraphs One through Fifty-Four as if more fully set forth herein.

56. Article X, Section 2 of the Michigan Constitution reads, in pertinent part, as follows: "Private property shall not be taken for public use without just compensation therefore being first made or secured in a manner prescribed by law."

57. The City, through its enactment, implementation and enforcement of the FDDP Ordinance, has taken the Plaintiffs' properties without due process or just compensation.

58. The Ordinance represents the City's official policy.

59. As a result of the foregoing, the Plaintiffs are entitled to just compensation.

**THIRD CAUSE OF ACTION  
FIFTH AMENDMENT TO THE UNITED STATES CONSTITUTION**

60. Plaintiffs repeat and re-allege Paragraphs One through Fifty-Nine as if more fully set forth herein.

61. The Fifth Amendment to the United States Constitution provides, in pertinent, that private property shall not be taken for public use without just compensation.

62. The City's enactment, implementation and enforcement of the FDDP Ordinance has resulted in the taking of the Plaintiffs' properties without due process or just compensation.

63. As a result of the foregoing, the Plaintiffs are entitled to just compensation.

**FOURTH CAUSE OF ACTION  
42 U.S.C. SECTION 1983**

64. Plaintiffs repeat and re-allege Paragraphs One through Sixty-Three as if more fully set forth herein.

65. The City is a "person" subject to liability under the Federal Civil Rights Act of 1871 (42 U.S.C. Section 1983) for violating the federally-protected rights of others. The enactment, implementation and enforcement of the FDDP ordinance by the City of Ann Arbor has resulted in the violation of the Plaintiffs' federally protected rights, to wit, their right not to have

their property taken without just compensation or due process and their right to be free from mandatory work and physical labor under the Ordinance solely for the supposed benefit of others without pay or protection of law.

66. The enactment, implementation and enforcement of the FDDP Ordinance by the City constitutes a taking of the Plaintiffs' properties by physical invasion and physical occupation without due process or just compensation and the imposition of requirements for mandatory work and physical labor.

67. As a result of the foregoing, the Plaintiffs are entitled to just compensation and to payment for their work, their physical labor and their expenses.

#### **FIFTH CAUSE OF ACTION INJUNCTIVE RELIEF**

68. Plaintiffs repeat and re-allege Paragraphs One through Sixty-Seven as if more fully set forth herein.

69. The Plaintiffs have no adequate remedy at law.

70. In the absence of injunctive relief, the Plaintiffs will continue to (1) endure the physical invasion and physical occupation of their property, (2) assume ongoing and perpetual responsibility for the operation and maintenance of the sump pumps and related equipment installed in their homes for the supposed benefit of others without pay and (3) bear an unreasonable financial and personal burden upon their use and enjoyment of their property.

71. As a result, the Plaintiffs are entitled to injunctive relief, restraining and enjoining the City, its agents, representatives and employees, and all others acting on its behalf or in its stead from taking any further steps to implement or enforce the ordinance.

72. In addition to just compensation, the Plaintiffs are entitled to injunctive relief, requiring the City to reverse, correct and remedy the effects of the unconstitutional taking, and payment for their non-volunteer work and physical labor required by the Ordinance.

**SIXTH CAUSE OF ACTION  
DECLARATORY JUDGMENT**

73. Plaintiffs repeat and re-allege Paragraphs One through Seventy-Two as if more fully set forth herein.

74. The Plaintiffs are entitled to a judgment, declaring that the FDDP Ordinance is unconstitutional, on its face and as implemented, because it authorizes the City to take private property without just compensation therefor and because it allows for such takings without any judicial determination of public use, all in violation of Michigan State Law and the Michigan Constitution, as well as the laws of the United States and the United States Constitution.

**SEVENTH CAUSE OF ACTION  
ATTORNEYS' FEES**

75. Plaintiffs repeat and re-allege paragraphs One through Seventy-Four as if more fully set forth herein.

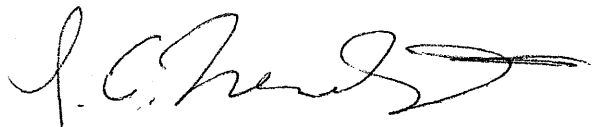
76. As a result of the facts and circumstances of this matter, the Plaintiffs are entitled to reasonable attorneys' fees as allowed by law.

WHEREFORE, the Plaintiffs Yu Boyer and Raab respectfully request judgment as follows:



- A. On their first cause of action, just compensation in accordance with Michigan State Law;
- B. On their second cause of action, just compensation in accordance with the Michigan State Constitution;
- C. On their third cause of action, just compensation in accordance with 42 U.S.C. Section 1983;
- D. On their fourth cause of action, just compensation in accordance with the Fifth Amendment to United States Constitution;
- E. On their fifth cause of action, preliminary and permanent injunctive relief restraining and agents, representatives and employees and all others acting on its behalf or in its stead from taking any other further steps to implement, or enforce the FDD Ordinance and granting such other injunctive relief as to the Court may seem just and proper.
- F. On their third cause of action, a declaration that the City of Ann Arbor's FDDP ordinance is unconstitutional, both on its face and as implemented, and declaration further determining their respective rights and responsibilities of the parties;
- G. On their seventh cause of action, reasonable attorneys' fees as allowed by law;
- H. Such other and further relief as the Court may deem just and proper; and
- I. The costs and disbursements of this action.

Respectfully submitted,



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Dated: February 27, 2014

boyer.comp



## **2:51.1. Program for footing drain disconnect from POTW.**

- (1) *Purpose:* The purpose of this Program is to significantly reduce improper stormwater inflows in the most cost-effective manner, in order to eliminate or reduce instances of surcharged sanitary sewers due to improper inflows, which are inimical to public health and welfare; reduce the chance of a sanitary sewer backup into occupied premises; and to maximize efficient operation of the District's wastewater treatment plants.
- (2) *Definitions:* For purposes of Section 2:51.1 of the Ann Arbor City Code:
1. Improper stormwater inflow shall mean any direct connections (inflow) to the public sewer of sump pumps (including overflows), exterior floor drains, downspouts, foundation drains, and other direct sources of inflow (including but not limited to visible evidence of ground/surface water entering drains through doors or crack in floors and walls) as noted during field inspections by the Utility Department.
  2. Participating owner(s) shall mean those persons that own property within a target area as may have been defined by the Director and who have notified the Director of their decision to participate in the program within 90 days of having been ordered by the Director to correct improper stormwater inflows from their property and meet the eligibility requirements of Section 2:51.1(4).
- (3) *Scope of Program:* All improper stormwater inflow disconnection costs shall be at the owner's expense, except, in accordance with this funded program, the POTW may either reimburse the participating owner of a premises, or pay directly to the participating owner's contractor, for qualifying work up to a maximum of \$3,700.00 ("Funding Cap"), or as may be adjusted under 2:51.1(12), for corrective work to remove improper stormwater inflows for which the initial building construction permit was in existence prior to January 1, 1982 or prior to the date the premises became under City of Ann Arbor jurisdiction. This funding program is referred to in this Section as the "Reimbursement Program," regardless of whether payment is made as reimbursement to the participating property owner or as direct payment to the participating property owner's contractor.
- (4) *Eligible Participants.* This program may be utilized only for: (a) Improper stormwater inflows for which the initial building construction permit was in existence prior to January 1, 1982 or, (b) for premises in areas which came into the jurisdiction of the City of Ann Arbor at a later date, improper stormwater inflows which were in existence prior to the date of such inclusion.
- (5) In every instance where the Director is required to act or approve an action, the action or approval may be performed by a person designated, in writing, by the Director to act as his or her designee.
- (6) *Target Areas; Orders.* The Director may implement and make available this Reimbursement Program throughout the City, or instead only in target areas within the City determined by the Director as having the highest priority for reduction of stormwater inflows based on surcharging problems. When the Director issues orders for removal of improper stormwater inflows in an area where the program is being implemented, the Director shall inform the owner of the availability of the Reimbursement Program. Participation in the Reimbursement Program shall be voluntary; owners declining to participate shall be required to proceed with removal of the improper inflow at the owner's expense.
- (7) *Scope of Work.* The Director shall determine for each participating premises the scope of work for reduction of improper stormwater inflows and sewer backup prevention, which may be paid for with Program funds, with the goal of achieving the most cost-efficient and timely reductions. If work paid for under this Program does not eliminate every improper stormwater inflow for a participating premises, the Director is not precluded from issuing supplemental orders under Chapter 28 of Title II concerning the participating premises. For each participating premises the maximum cost which may be paid with POTW funds to an owner or owner selected contractor shall be the Funding Cap set under 2:51.1(3) or as may be adjusted under 2:51.1(12). If additional work is required it shall be performed at owner expense.
- (8) *Approved Contractors.* The Director may establish a list of private contractors or contractor teams (referred to as "contractor (s)" throughout this section) approved for performing work under this Program based on qualifications including experience, quality of work and insurance. Participating owners may propose additional contractors for inclusion in the approved list.
- (9) *Contractor Selection.* Participating owners shall select an approved contractor in accordance with a process established by the Director. Participating Owners may either select a private contractor from the list or agree to perform the work by him or herself.
1. If the participating owner selects a contractor from the list of approved private contractors to perform the work, after Director review and approval of the contractor selection and contract price, the owner shall contract with the selected contractor for performance of the approved scope of work. The City of Ann Arbor shall not be a party to the contract. The owner's contract shall require the contractor to secure any building permits as may be necessary and shall specify that the owner's final payment to the contractor shall not be made until (i) the work is inspected and approved by the Director and approved by the owner, whose approval shall not be unreasonable withheld, (ii) a release of lien from all contractors or subcontractors performing work on the premises is obtained.
  2. If the participating owner elects to perform the work his or herself, the scope of work, plans and specifications shall be approved in advance by the Director. The Director may establish rules authorizing reimbursement or partial

reimbursement for owner-performed work. No payment shall be made until the work is complete, inspected and approved by the Director. To be eligible for reimbursement, a request for payment must be accompanied by supporting receipts for materials, supplies and equipment.

(10) *Release.* As a condition to participation in the program the owner shall release the City of Ann Arbor, and their officers and employees from all liability relating to the work.

(11) *Payment.* After the work is inspected and approved by the Director and approved by the owner, the Director shall authorize payment for 100% of the cost of the approved work (subject to the funding cap set under 2:51.1(3) or as may be adjusted under 2:51.1(12)) from POTW funds approved for this purpose. Partial payments may not be made except that, at the sole discretion of the Director, a final payment may be made, less a reasonable retention for ensuring the completion of punch list items. Payment may be made to the owner, to the contractor, or jointly to the owner and contractor, in the Director's sole discretion.

(12) *Funding Cap Appeals.*

1. Notwithstanding any maximum reimbursement amount stated elsewhere within this section, the Director, upon a written request from a participating owner, may approve an amount 35% greater than the maximum where extraordinary construction or configuration circumstances require additional construction activity that cause extraordinary expense to achieve the program goals. Extraordinary construction or configuration circumstances do not include those situations where upgrades to the property that do or may increase the value of the property are required to accomplish the sanitary sewer disconnect. The written request from a participating homeowner must be received by the Director no later than 30 days after substantial completion of the construction of the approved scope of work.

2. Notwithstanding any maximum reimbursement amount stated elsewhere within this Section, the City Administrator, upon a written request from a participating owner may approve an increase of any amount, not withstanding any maximum amount stated elsewhere with this Code, in the Funding Cap for a particular premises where extraordinary construction or configuration circumstances require additional construction activity that cause extraordinary expense to achieve the program goals and those expenses can not be accommodated within the 35% available under 2:51.1(12)1. The written request must be delivered to the City Administrator and must be received no later than 30 days after substantial completion of the construction of the approved scope of work.

3. Unless specific appeal procedures are otherwise provided in this code, participating owners aggrieved by a decision regarding a reimbursement amount may appeal that decision. Persons aggrieved by the decision of the Director shall file a written appeal to the City Administrator within 5 days of the decision. Persons aggrieved by the decision of the City Administrator shall file a written appeal of the City Administrator's decision to the City Council within 5 days of the decision.

(13) *Maintenance.* Participating owners shall be responsible for maintaining any improvements constructed under this Program.

(14) *Director Rules.* Within the limitations set forth by this Section 2:51.1, the Director may establish such further criteria and rules as are required to implement this Program.

(15) *Surcharge; Disconnection; Enforcement.*

1. The Director or designee shall provide written notice by certified mail to the sewer user, property owner or other responsible person of any violation of Section 2:51.1 of this Code. This notice shall describe the nature of the violation, the corrective measures necessary to achieve compliance, the time period for compliance, the amount of the monthly surcharge until corrected and the appeal process.

2. For structures or property with actual or potential improper stormwater inflows, the sewer user, property owner or other responsible person shall be given 90 days to correct the illegal or improper activities or facilities contributing to the discharge, infiltration or inflow into the POTW. If corrective measures to eliminate the illegal or improper discharge, infiltration or inflow into the POTW are not completed and approved by the Utility Director or designee, within 90 days from the date of the notice provided in section 2:51.1(15)1, then the director shall impose upon the sewer user, property owner or other responsible person a monthly surcharge in the amount of one hundred dollars (\$100.00) per month until the required corrective measures are completed and approved. If the property owner or responsible party fails to pay the monthly surcharge when due and payable, then the city may terminate the water and sewer connections and service to the property and disconnect the customer from the system. Any unpaid charges shall be collected as provided under Chapter 29 of Title II.

(Ord. No. 32-01, § 1, 8-20-01; Ord. No. 37-02, § 1, 9-3-02)



# Footing Drain Disconnection Program HOMEOWNER INFORMATION PACKET

City of Ann Arbor  
Public Services Area  
[www.a2fdd.com](http://www.a2fdd.com)

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## PROJECT BACKGROUND

Within the City of Ann Arbor, there are groups of homes that have experienced basement backup problems. Many of these have been the result of wastewater backing up from the sanitary sewers through basement floor drains, especially during periods of heavy rainfall. This wastewater presents a potential health risk and can cause damage to the structure and to belongings stored in the basement.

In addition, this excess groundwater places a strain on the sanitary sewer system and must be treated at the Waste Water Treatment Plant. Due to current and future regulations in the State of Michigan, it is critical the Utilities Department minimize the amount of unnecessary groundwater sent as wastewater to the Treatment Plant.

In 1999, the City formed the Sanitary Sewer Overflow Prevention Advisory Task Force to understand the causes of basement backup and develop solutions to the problem. The Task Force was comprised of homeowners, city staff and experts in related disciplines. In addition, the Task Force hired the engineering firm of CDM to assist in the data gathering and analysis. Throughout the project, the Task Force sought to provide the public with project information and solicit homeowner feedback to develop a recommendation that meets the diverse needs of the citizens.

## TASK FORCE FINDINGS AND SOLUTIONS

The Task Force study determined that during heavy storms, rainwater from home footing drains overloads the sanitary sewer system and is the primary cause of basement backups. It was determined that even homes with no current basement backup problems were significant contributors to the basement backup problem for neighboring homes.

There are basically two ways to handle this problem: either reduce the amount of rainwater entering the sanitary sewer system, or provide more capacity in the system to store or carry these flows. Based on analysis and public feedback, the Task Force determined that reducing the amount of rainwater entering the system would be preferable to the public, environmentally responsible and most cost effective.

Therefore, the Task Force recommended that the Mayor and City Council implement a comprehensive citywide footing drain disconnection program within the City of Ann Arbor in order to reduce the amount of rainwater flowing into the sanitary sewer system.

The Task Force recommended a citywide program for a number of reasons.

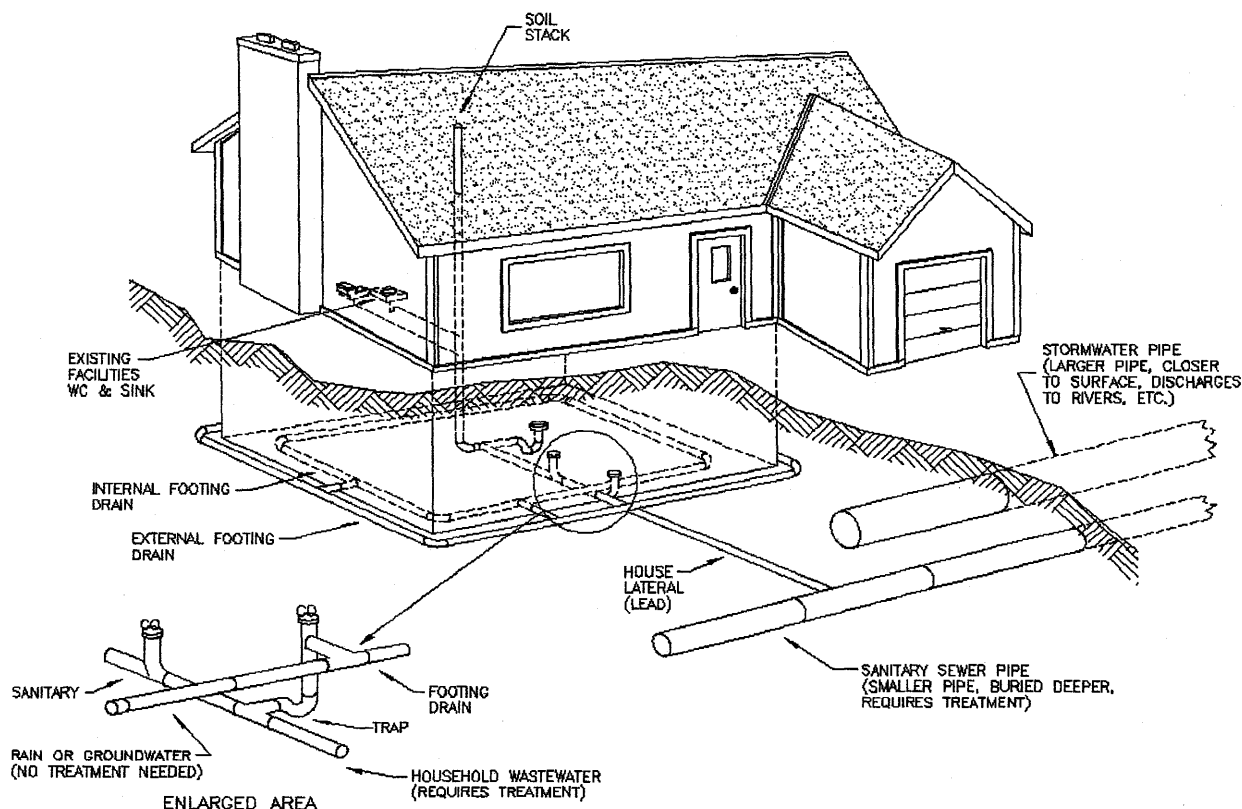
- This basement backup problem is not confined to the five study areas.
- All buildings with connected footing drains contribute to the basement backup problem.
- Footing drain disconnection supports the City in a proactive approach to pending regulatory guidelines in the State of Michigan.
- Decreasing the amount of storm water flow that gets to the Water Treatment Plant reduces both the costs of treatment and the chances for potential overflows into the Huron River.



## WHAT IS FOOTING DRAIN DISCONNECTION?

As shown on Figure 1, footing drains are small (4-inch diameter), perforated drainage pipes located near the foundation of your house. They are intended to keep rainwater that seeps through the ground from building up along the foundation or basement walls. In many homes, the downspouts, which carry rainwater from the gutters, discharge near the foundation walls. This water drains through the soils and into the footing drains. In most homes constructed before the 1980s, the footing drains are connected to the house sanitary connection (house lead) as shown in the figure above. This house lead carries the footing drain flow and wastewater from the house to the sanitary sewer system.

When it is not raining this is not normally a problem, but during a severe storm event too much rainwater can enter the sanitary sewer system. This excess flow can cause the mixture of rainwater and wastewater to backup in the house lead of some homes and cause basement backups.

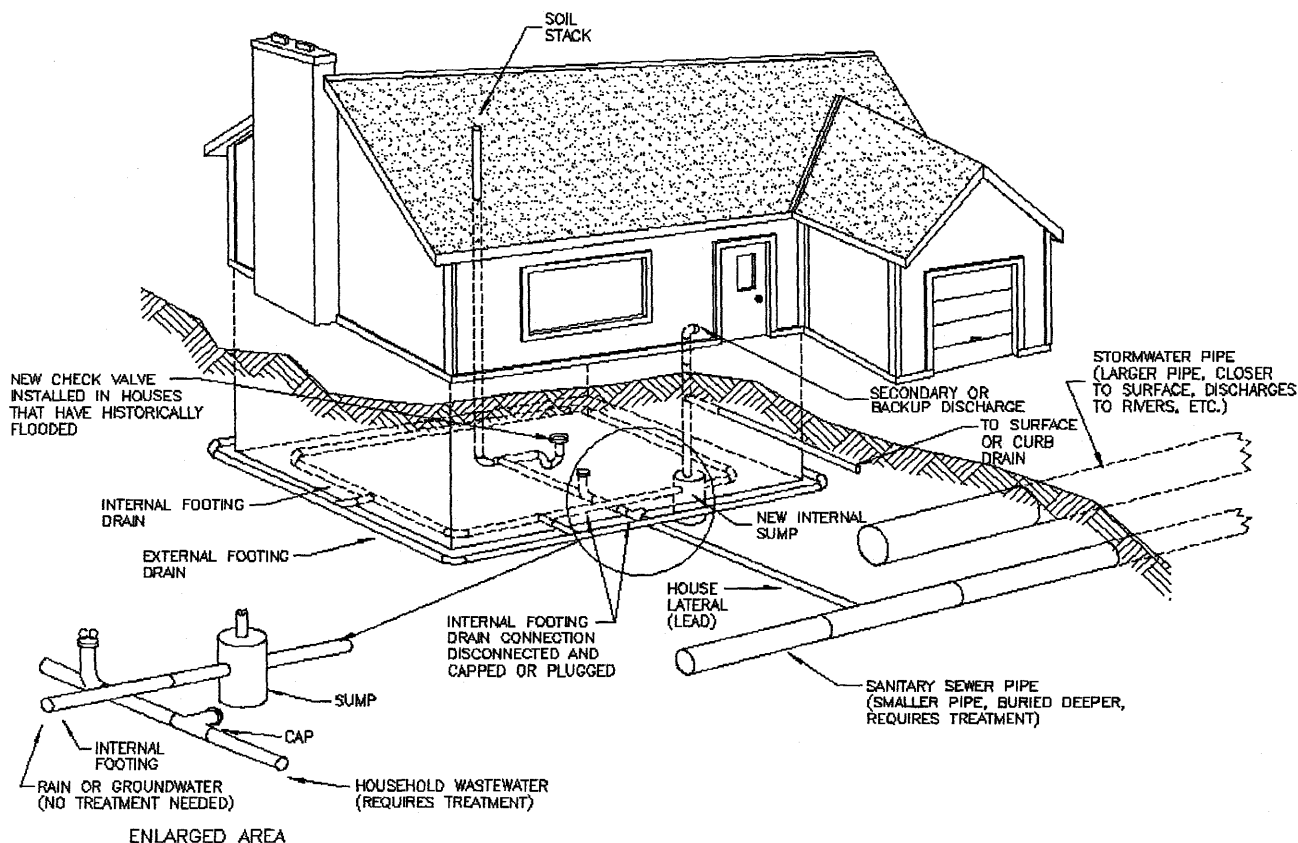


**Figure 1 – Pre-construction Conditions**

Footing drain disconnection is performed to remove the rainwater flows from the sanitary sewer system. This is done by disconnecting the footing drains from the house sanitary lead and installing a sump pump to move water from the footing drains into the storm water system. There may be some alternatives to sending the flow into the storm water system in some neighborhoods or homes. The creation of rain gardens or use of low areas in backyards are possibilities. A priority is placed on safe disposal of the storm water. For the vast majority of

homes the connection to the sanitary house lead is inside the basement, and the sump is installed in the basement as shown in Figure 2 below.

In homes that have experienced basement backups or are at risk for basement backup, the city can provide funding to install check valves to keep water from flowing back into the home from the sanitary sewer system.



**Figure 2 – Basement Sump Construction**

## WHY DISCONNECT FOOTING DRAINS?

The purpose of disconnecting footing drains is to keep rainwater out of the sanitary sewer system. During dry weather, the sanitary system has plenty of capacity to carry wastewater. In neighborhoods where footing drains are connected to the sanitary system, however, rainwater can overflow the sanitary system during heavy storms resulting in the rainwater/wastewater mix backing up into basements. Keeping rainwater out of the house 'lead' greatly reduces the amount of rainwater getting into the sanitary system, which protects downstream residents and reduces costs at the wastewater treatment plant. It also frees the house connection to carry wastewater to the sanitary system.

All homes built in the City of Ann Arbor since January of 1982 have disconnected downspouts and footing drains with sump pumps in the basements or with gravity discharge leads to a storm



water system. Surface discharge of downspouts allows more rainwater from roofs to be absorbed by the ground and reduces the amount of water being treated and released into the Huron River.

Footing drain disconnection has the following advantages:

- Protects homeowners who have had sanitary backups during severe storm events.
- Takes rainwater out of the sanitary system, reducing problems for downstream residents and eliminating treatment costs for the rainwater.
- Preserves natural features and protects watershed by minimizing undesirable discharges to the Huron River.
- Provides short-term and long-term protection for those at risk.
- Provides the lowest rate impact of all the possible solutions.

## WHAT WILL HAPPEN AT MY HOME?

After you receive this homeowner information packet, you should contact the FDD Construction Manager (see page 8 for contact information) to arrange for the initial assessment at your home. This will be an excellent opportunity to ask specific questions about your home, and to learn more about the steps of the program. Next, you will choose from a list of pre-qualified contractors, obtain estimates and arrange a contract. (See page 8 for a list of the contractors) The actual construction work should take from 1 to 3 days of in-home construction. Construction photos are available on the project website [www.a2fdd.com](http://www.a2fdd.com).

**Curb drain installation work** has most likely already been performed by a city hired contractor in the lawn extension area between the curb and sidewalk. The contractor installed a 6-inch diameter pipe with individual connections for each house that will collect the flows from sump pumps in individual homes and direct it to the storm sewer. Lastly the area that was disturbed was restored with new grass seeding and occasionally sidewalk or driveway aprons were replaced.

**Initial Assessment** will be conducted by the FDD Construction Manager with the homeowner and will include actions to:

- Determine if your footing drains are connected
- Identify possible locations for sump pump installation
- Assess site drainage options, including identification of any needed changes in downspout connections.
- Assess options for installation of sump discharge lead (piping) to an approved discharge location.

**Inside work** will be confined to the basement and will include:

- Removal of a section of the basement floor to access pipes and to install the sump.
- Disconnection of the footing drains from the house lead and routing of new discharge lines.
- Installation of a new electrical circuit.
- Installation of the sump and sump pump. The sump is typically 24 inches in diameter and 30 inches deep. The cover is sealed and level with the basement floor.



- Repairs to the work area (i.e., replacing concrete, tiles, etc.)
- For homes that have previously experienced basement backup or those deemed to be at-risk for basement backup, installation of check valves on all plumbing fixtures located in the basement or a single check valve to protect all facilities in the basement.
- Clean up of the work area.

#### **Work in the yard includes:**

- Installation of a small pipe to carry footing drain water from the sump pump to the previously installed curb drain or an approved alternative.
- Cleanup and restoration of any areas impacted by the installation.

### **WHAT WILL IT COST? HOW IS IT FUNDED?**

The City will provide funding for the 'core' work. A typical household should cost \$4,100 to disconnect. Exceptional circumstances within a household may warrant payment beyond the \$4,100. Prior to signing a contract, a homeowner may request additional city support which will require competitive estimates from 2 different contractors. This request will be reviewed and may be approved by the City Project Manager and, if necessary, the City Administrator. Financing for this project comes from sewer use fees. Items funded include:

- Parts and labor for standard sump and pump installation
- Parts and labor for discharge pipes
- Parts and labor for electrical work
- Basic restoration of interior and exterior work areas including lawn reseeding and if necessary restoring the floor, ceiling surface or drywall patching.

#### **The Homeowner will be responsible for the following costs where applicable:**

- Additional features or restoration beyond what is required for basic installation and items classified as home improvements or exceed building code requirements (e.g. replacement of inadequate electrical service panel, construction of new enclosure for sump, etc.)
- Backup Sump Pump - In the event of a power failure, the primary sump pump will not function. This can result in groundwater collecting around the outside of your basement walls and floor where it can seep through cracks in the concrete or through the sump lid. The plumbing contractors can install, at the homeowner's expense, either battery or water-powered backup pumps that will operate during an electrical failure or if your primary pump fails. You need to assess your desire for this additional level of protection as only you can understand the impacts moisture would have on your belongings in your basement, and the frequency of power failures in your neighborhood. Based on our experience with power failures during storm events, homeowners are advised to strongly consider the need for a backup system. (See questions 20-23 in the Frequently Asked Questions section for additional information)
- Maintenance
- **Homeowner pays all costs plus a monthly surcharge if the work is not completed within 90 days after receiving the 90-day notice to disconnect (see required timing below)**



## WHAT DO I NEED TO DO?

As a homeowner please review and complete the steps below to aid in a reliable and trouble free disconnection.

1. Become informed by reviewing the supplied materials in this packet and attending the scheduled neighborhood meeting.
2. Arrange an in-home assessment with a Construction Manager to determine the need for a disconnection, discuss your options for getting the work done and get all your questions answered. We ask that during the in-home assessment/pre-inspection, to please kindly put them away until after the assessment has been completed.
3. Review the list of pre-qualified contractors (page 8) and make an appointment with one or more to receive an estimate of costs for the work to be done in your home.
4. Review costs that are funded by the City and identify any additional options you may want or need to contract for at your personal expense.
5. Submit the necessary forms to secure funding pre-approval to the Construction Manager.
  - Form 1 –Reaffirms that you understand that the contractor you hire is responsible for the work done at your property not the city of Ann Arbor. This is required of every homeowner.
  - Form 2 – This is only needed if the estimated cost exceeds the limit of \$4,100. Two estimates will be needed from different contractors for funding pre-approval above the \$4,100.  
*When funding has been pre-approved the construction management staff will notify you by phone.*
6. Ensure that the footing drain disconnection work gets completed properly:
  - Arrange a contract to get the work done with your selected contractor.
  - Discuss scheduling and basement preparation with the contractor.
  - Clear the work area so that the contractor can perform the work. (Contractor will provide specifics). If desired, add additional dust protection to exposed areas.
  - Monitor the work underway to ensure it meets your contract agreements. Consult the Construction Manager if help is needed. The contractor will arrange for city building inspections to occur during the work.
  - Review finished work with the contractor to ensure you understand maintenance and operations of your system.
7. Host a final walkthrough/post-inspection with the Construction Manager to ensure that all work has been completed according to code and according to your contract. If all work has been completed as contracted, the city will issue payment to the contractor for the pre-approved amount.
8. Provide written feedback on the contractor and the overall project to the City.

## WHEN DO I NEED TO COMPLETE THIS WORK?

The City and the construction management team work actively with property owners to ensure that all requirements of this program are understood and that construction occurs in timely manner. This packet is the first outreach to homeowners. Within the next two months, any homeowners who have not initiated a contract to disconnect will receive a courtesy reminder. If no action is taken following that reminder, property owners will then receive a certified letter from the city. By city ordinance, property owners are mandated to complete the disconnection of their footing drains within 90 days of receiving a certified letter entitled "90-Day Notice" from the City. If the disconnection is not completed by the end of the 90-days the homeowners risk losing city funding for the work and possibly a surcharge on their sewer bill of \$100 per month for unmetered sewage entering the system. If adjustments need to be made to the mandated



timing for completion, please communicate directly with the Construction Manager to review the unique circumstances in your home.

## CONTACT NAMES AND NUMBERS

### Construction Management Staff:

- Construction Managers
  - Justin Woods ..... [734.794.2780]
  - Karen Duff ..... [734.794.2780]
- CDM Project Manager – Jay Zawacki ..... [734.794.2780]

### City of Ann Arbor Staff:

- Project Manager – Anne Warrow ..... [734.794.6410 ext. 43639]
- Interim Public Services Director – Craig Hupy ..... [734.794.6310]

## PRE-QUALIFIED CONTRACTORS

### Hutzel Plumbing

Contact: Nancy Cummins  
 2311 S. Industrial Highway  
 Ann Arbor, MI 48104  
 Phone: (734) 665-9111  
 Fax: (734) 665-9238

### RDC Residential Services

Contact: Richard Connors  
 Plymouth, MI 48170-5823  
 Phone: (734) 564-2801  
 Fax: (734) 414-0729

### Bidigare Contractors

Contact: John Bidigare  
 P.O. Box 700464  
 Plymouth, MI 48170  
 Phone: (248) 735-1113  
 Fax: (248) 735-1114

### Perimeter

Contact: Steve Rojeck  
 8385 Jackson Road  
 Ann Arbor, MI 48103  
 Phone: (734) 424-9280  
 Fax: (734) 424-2037



## FREQUENTLY ASKED QUESTIONS

### Background Questions: Reasons for Back Ups, Alternative Solutions

**1. Are there alternatives to managing the water other than Footing Drain Disconnection? Why was this option chosen?**

The SSO Task Force studied the issue of basement backups in 2000 to 2001 and identified three viable alternatives to solving these problems; footing drain disconnection, installing larger sewer pipes and building storage basins. This work found that footing drain disconnection (FDD) addressed the root cause of the basement backups, which was stormwater entering the sewer system during rain events. On average, every home with a connected footing drain adds 3,500 to 10,500 gallons per year of clean water that must be conveyed to the Wastewater Treatment Plant and treated before release to the Huron River. FDD was cheaper overall and, very importantly, reduced the chance of exceeding the Wastewater Treatment Plant capacity. FDD also provides the greatest security of the solutions as its capability to work effectively is not limited to certain size rainstorms.

**2. Can I avoid the need for footing drain disconnection if I take actions such as redirecting my downspouts, sloping soil away from the foundation or installing low flow fixtures?**

While those are excellent approaches to reduce some causes of wet basements and to reduce the volume of water that goes to the Wastewater Treatment Plant, this will not prevent enough water from entering the sewer system inappropriately. Footing drains still collect much of the rainfall that enters the ground. To protect your own and your neighbors' basements, the large volume of water entering the sewer system from rain storms must not enter the sewer system and FDD is the practical means identified to do this.

**3. Why do I need to have this done and not my neighbors?**

All buildings that have connected footing drains are scheduled for FDD work over the coming years. The schedule was established on a priority basis to disconnect the homes identified as needing protection from future basement backups and to accommodate a cost efficient installation process within a neighborhood.

**4. I get water in my basement now. Will this solve that problem or make it worse?**

This work will only address basement water problems that are caused by heavy rain events resulting in basement backups through floor drains. It will not improve or worsen other causes of wet basements such as leaks through cracks in basement walls or floors due to poor site drainage and/or poor or blocked footing drainage pipes.

**5. What is the role of development in this problem? These basement backups have happened since our neighborhood has grown.**

In tracking the source of the heavy flows that entered the system during rain storms in the year 2000, a Task Force of engineering professionals and community members identified that footing drains contributed 70-90% of the total volume of flow in the sewer system making this source the major cause of basement backups.

The existing sanitary sewer system without footing drain flow is more than adequate to handle recent and future development as planned for in existing treatment plant designs. New developments do not have footing drains connected to the sanitary system and will not add wet weather flows to the collection system.



## **Installation Process: Costs, Homeowner Choices, Restoration**

### **6. Do I have to use a particular contractor (low bidder)?**

Homeowners choose which pre-qualified contractor they want to provide them a bid. Homeowners only need to arrange one bid if the work can be accomplished within the \$4,100 average estimate. If costs exceed \$4,100, two estimates are needed. The homeowner may select either of the contractors, but must pay the differential between the lowest bid and the higher bid if the more costly contractor is selected.

### **7. Can I use another contractor who is not pre-qualified?**

No. The City of Ann Arbor has developed a process for pre-qualifying contractors so that it is clear that they understand the methods and materials needed for a complete installation. Using other contractors would be more expensive for Ann Arbor to manage and would reduce the ability to support quality construction. With several contractors already pre-qualified, there is adequate choice for homeowners to make a selection. Exceptions to using the pre-qualified contractors may be allowed but the homeowner may not receive full reimbursement for all costs not pre-approved for work using pre-qualified contractors. Homeowners are encouraged to seek information/guidelines for reimbursement from FDD project staff before beginning work eligible for FDD funding. Contractors willing to do this type of work are encouraged to contact the city to seek pre-qualification status.

### **8. Can I perform the disconnection work myself?**

Yes. Homeowners can perform the work. In this case, the homeowner would need to apply for all of the necessary permits, would have to comply with the construction specifications and materials of construction, and would be reimbursed for materials only. This reimbursement would only be made after the Construction Manager had completed the final walkthrough/post-inspection of the work.

### **9. What will this cost me as a homeowner?**

The City will cover the costs necessary to complete an installation of the sump and basic restoration. Homeowners may choose to pay for additional items to meet their desires for more security and enhanced restoration. Some homeowners choose to purchase a backup pump or do additional landscaping work.

### **10. What does basic restoration mean?**

Basic restoration inside the home means returning the home to the level of finish it had previous to the work. Concrete is replaced and smoothed, tiles are replaced with a closest match of available tile and the work site is cleared and cleaned. Outside the home, holes are filled in and grass seed is sown.

### **11. How do I know the contractor is installing quality components?**

All work done by the pre-qualified contractors is in compliance with a very specific set of specifications for both the components to be used and the process for disconnection.

### **12. What will happen to my yard?**

Every effort is made to minimize the amount of excavation and disruption in the yard. The least amount of yard disruption would be a small hole near the foundation wall where the discharge line exits your home. For more difficult installations due to the topography, type of soil or location of the discharge line, a trench across the lawn may be needed.



**13. How long does construction last? How dusty is it? How disruptive?**

Construction lasts for 2-3 days. Contractors protect flooring and hang protective plastic to minimize the mess. There will be concrete removed and this can generate dust and is noisy. See homeowners' surveys for rating on contractor cleanliness and courtesy.

**14. How will this affect the radon levels in my basement?**

Everything that is installed in the basement will be sealed, protecting the home from any additional radon exposure. If you do chose to get a water powered back-up, the lid may not be fully sealed.

**15. Will my floor drain still work?**

Yes. Footing drain disconnection does not affect the functioning of the floor drains. If there is a floor drain that goes to your footing drains it must be abandoned by plumbing code.

**Maintenance and Operations**

**16. Who owns/maintains the sump, pump and additional plumbing lines?**

Once installed, the sump pump and lines are owned and maintained by the homeowner.

**17. What happens when my sump pump doesn't work? What if the check valves (sewage backflow prevention devices) fail?**

If your sump pump stops working, water from the footing drains will not be pumped out to your discharge lines and this water can collect in your basement. As with any primary appliance, it is critical that homeowners keep sump pumps in good repair. The design life of pumps is usually five years, but most sumps pumps will operate for 10 to 15 years before needing replacement. Check valves need to be tested and maintained regularly or they could fail to operate and allow a basement backup to occur.

**18. Is there a warranty?**

Yes, the work and the sump pump have warrantees through your contractor. The sump pump warranty is normally 1 year. Warranty for installation work will be outlined in your contract with the contractor.

**19. Why is the City mandating a system that has potential to fail when I have never had a problem related to this before?**

Any system like this does have the potential to fail, typically because of a loss of power or because the sump pump fails to operate. However, the alternative is that your home or the home of your neighbor could experience a basement backup when footing drain flows overwhelm the sewer system and the Wastewater Treatment Plant in times of heavy storms. Building code in Ann Arbor and in most other communities changed in 1982 to require that footing drains use sump pumps or similar systems to direct footing drain flows to the stormwater system or to an alternative onsite system like a rain garden or detention basin.

**20. What is a backup sump pump and why would I need one?**

A backup sump pump is a secondary pump that will operate if the primary sump pump fails due to a power outage or mechanical failure. Under normal conditions, the primary sump will start running when the water in the sump reaches a certain level. If a power failure occurs during a period of heavy rain, the water level will continue to rise past that level without the primary pump operating, and the water can build up in the footing drains and in the soil around the basement. Basement wetness can result from water pressure building up around the outside of the



basement walls, where it can seep through cracks in the concrete walls or floor. Water may also seep through the sump lid.

The decision to purchase a backup system is dependent upon each homeowner's individual needs. The factors that should be considered are the level of finish of the basement, the frequency of power outages, past wetness problems, and home elevation relative to surrounding areas. Power outages frequently occur during storm events and it is advisable to have a backup system installed if you are concerned about basement wetness.

**21. What if I have a floor drain near the sump, wont the ground water seeping into the basement flow out through the floor drain near the sump?**

Not necessarily. If the pump fails to pump out the ground water from your sump the water can build up in the footing drains and in the soil around the basement. Basement wetness can result from water pressure building up around the outside of the basement walls, where it can seep through cracks in the concrete walls or floor. The location that the water seeps through the basement walls or floor may not be near a floor drain and in that case the water may not drain out. Water may also seep through the sump lid into the basement and if there is a floor drain nearby the ground water may drain out through the floor drain without dispersing across the entire basement floor.

Please note that relying on draining the ground water out through the floor drain to the sanitary sewer system during a power outage or pump failure is counteractive to the goals of the footing drain disconnection program and it is not a reliable long term solution because it allows the water to enter the basement before it drains out, potentially causing damage.

**22. What are the options for a backup system?**

Backup sump pump systems are homeowner options and must be paid for by the homeowner. These backup systems exceed building code requirements and are considered a home improvement that is not fundable by City project dollars. The battery backup system is the most commonly chosen back up system by homeowners. For a short list of advantages and disadvantages of the different back-up sump pump systems please continue reading below. For further information regarding these back-up options please speak with a contractor or look up manufacturer information.

A battery back-up sump pump is an emergency backup pump that draws its power from an industry standard deep-cycle marine battery and pumps the water out of the sump during the loss of electricity or failure of the primary sump pump at half the capacity of the primary system. The pump is installed in the sump and the battery pack is on the floor nearby. Battery based systems are usually fully automatic and maintain a full charge while the power is on and switch over automatically when the power turns off (indicated by an alarm).

Advantages

- Low maintenance requirements other than replacing the battery and checking the distilled water level in battery.
- Low up front cost
- Easy to install
- Works if primary pump fails

Disadvantages

- Limited amount of energy in battery to power pump. Time varies by manufacturer of battery and backup pump, generally 7-24 hrs.
- Cost of battery replacement





A water powered back-up system is an emergency backup pump that uses the pressurized fresh water supply in the house to create suction that draws the water from the sump up through the discharge pipe to the outside of the house. It will require installing copper pipes from the nearest water supply pipe to the sump area. The pump starts automatically if the power turns off or if the primary pump fails.

#### Advantages

- Power provided by city water pressure. As long as there is water pressure in your house the backup pump will work.
- Works if primary pump fails

#### Disadvantages

- Uses about 2 gallons of pressurized fresh water to pump out 1 gallon of sump water. Water usage will show up on the water bill.
- More expensive installation cost than battery backup
- Every 3 years, a licensed certified plumber has to verify that sump water is not mixing with the pressurized potable water
- Additional water supply pipes around sump area
- Sump cover may not be radon sealed

A manual start portable gasoline generator could also be used to provide power to the primary pump. These can be found at hardware stores and can vary in price from a few hundred to several thousand dollars. It will require that an extension cord is run from generator outside the house to the sump pump. Before purchase you would also need to verify that the generator will meet your power needs including the sump pump.

#### Advantages

- May cost less than battery back-up pump
- Portable generator has multiple uses

#### Disadvantages

- Have to be home to start the generator
- May have to refuel generator often
- No second backup pump

An automatic standby generator can be used to power select circuits in the house such as the sump pump, furnace, refrigerator and other appliances during power outages. The generator would start automatically when the power goes off and can be installed to be powered by natural gas, propane or gasoline. Usually it has to be professionally installed.

#### Advantages

- Power selected circuits or entire house for longer periods of time
- Starts automatically

#### Disadvantages

- Installation and maintenance costs
- No second backup pump

### **23. If my sump pump fails to operate, isn't this as bad as having a basement backup?**

No. If your sump pump fails, the water that comes out of your sump is clean water from the ground around your basement. Normally this would drain to the nearest floor drain. On the other hand, if there was a basement backup caused by a surcharged sanitary sewer system, there is the potential that much more flow would enter your basement. This water would contain sanitary sewage, which is a more significant problem to manage.



**24. How will this effect local surface water issues? (We already have street/yard trouble)**

The water that currently flows through the footing drains will be routed to the stormwater system or to an alternative discharge site like a rain garden for homes that can accommodate that within their yard. In very large storms when basement backups can take place, the stormwater drainage system is designed to pond these excess flows in the streets until the downstream drainage system can accommodate these flows. The FDD generated flows are a small portion of these flows and would normally result in less than an inch of additional standing water for short periods of time. A storm water system which holds back or delays a portion of the large volume of flow, caused by heavy rains, helps preserve the natural ecosystem of the Huron River.

**25. I was told check valves were not allowed due to the potential to heave the basement floor. Is that true?**

If footing drains are disconnected from the sanitary plumbing as part of a check valve installation, this problem will not occur. However, using check valves can result in heaving the basement floor IF installed when footing drains are still connected to the sewer system and if that sewer surcharges. The FDD program disconnects the footing drains from the sewer system and pumps the water out to discharge lines leading to the stormwater system to prevent this potential problem. The backflow prevention (check) valves that are installed on floor drains and other basement facilities as part of the FDD process are able to contain the pressure generated by the surcharged sewers in the basement plumbing.

**26. How noisy is the pump? How often will it run?**

The pump sounds much like a refrigerator motor. How often the pump runs depends on the amount of water being removed from your footing drains. In homes completed to date, this has been quite variable.

**27. What happens if the discharge line freezes in the winter or is broken?**

It is possible for the discharge lines to freeze as they are installed above the frost line. Normally, the water discharged from the sump pump is warm enough to flow without freezing to the storm drainage system. Additionally it is a cyclic flow which means it flows very fast while the pump is operating and hardly at all when not. This means that if the lines placed with the proper grade they should not contain water for an extended period of time therefore minimizing possible freezing. If it does freeze, there is an emergency air gap near the home that allows water to be pumped outside the house. Also, homeowner construction of fences and lawn watering systems could break the discharge line. In these cases, the emergency discharge would put the sump water next to the house until the homeowner can repair the line. The winter of 2002/2003 proved to be a good test for the potential of freezing discharge lines with several periods of extremely cold weather and a considerable frost depth. None of the 75+ installed discharge lines had any reported freezing problems.

**28. How much will it cost to run my sump pump?**

It has been estimated that the average property owner will pay less than a dollar a year for electricity to run the sump pump. Of course, some will be higher and some lower depending on the amount of water that is pumped.

**29. If I have to replace the sump pump, what are the costs for doing this?**

Sump pumps can be purchased from local home improvement and hardware stores for less than \$150. Often the property owner can install these units, but it not, estimates to replace the



sump pump can be obtained from local plumbers. A common rule of thumb is that installation costs are equal to the equipment being replaced.

## Legal Requirements

### 30. May I choose not to participate in the program? What are the consequences of that?

Participation in this program is mandated by city ordinance. The FDD program offers homeowners the opportunity to have the City pay for installation if the work is completed within the schedule of the program. If the homeowner does not comply with the notices to arrange disconnection, a surcharge of \$100 per month will be charged to the homeowner for the additional costs associated with handling un-metered footing drains flows into the sewer system. Disconnection is still required and if done after the 90 day notice expires, the disconnection work would no longer be paid for by the city.

## GLOSSARY OF TERMS

- *Check Valve* - pipe fitting or valve which allows flow in one direction only e.g., prevents flow from coming into the house but allows flow to leave the house when a backup condition does not exist
- *Computer Modeling* – Computer program used to simulate the behavior of the collection system.
- *Downspout* – This is the pipe that takes water from the roof gutters in most houses. This should discharge onto the lawn.
- *Flow Meters* – Used to measure flows in the sewer system.
- *Footing Drain* – A drainage pipe (or tile) that is installed around the foundation of most basements of houses. This drain makes sure that water in the ground does not make the basement damp. This is connected to the sanitary sewer, to a sump pump, or directly to the storm sewer.
- *House Leads* - sewer pipe connecting an individual house to the City sewer
- *Infiltration* – This is rainwater flow that enters the sanitary sewer system through underground cracks in sewers.
- *Infiltration Device* - underground chamber that handles flow discharged from the sump pump, this chamber allows water to infiltrate into ground rather than discharge to storm sewer (limited to sandy soils or other soils that drain well)
- *Inflow* – This is a direct connection from surface drainage into the sanitary sewer.
- *Manhole* – This is the access structure that allows field crews to inspect sewers.
- *Rain Gage* – Used to measure the amount of rain from storm events.
- *Sanitary Sewer* – Sewer pipe that conveys wastewater to the Ann Arbor Wastewater Treatment Plant.
- *Storm Sewer* – A different pipe that takes rainwater collected in catch basins located in the street and conveys these flows to a creek or river.
- *Sump Pump* - pumps footing drain flows from lowest drainage point (sump) to the City storm sewer
- *Surface Drainage* – Rainwater that flows down the street or yard to a storm drain or into a creek or river.
- *Wastewater* – The used water that flows down drains in your home.



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Public Services Area

## CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Avenue, P.O. Box 8647, Ann Arbor, Michigan 48107-8647  
<http://www.ci.ann-arbor.mi.us>

Footings Drain Disconnection Program  
[www.a2fdd.com](http://www.a2fdd.com)

# Sump & Sump Pump Maintenance Document

**Save This Information!**

**Please keep this and any equipment manufacturer's documents in immediate vicinity of your sump pump for convenient reference.**

Last Updated February 9, 2012

## **Maintenance of the Sump and Sump Pump System**

The sump pump installed in your basement needs to be inspected and tested regularly to ensure that it is operating properly. It is recommended that the homeowner follow all manufacturer recommendations for inspections, inspection intervals, testing, and replacement of parts for all components in the system. Like all mechanical devices, components of the system may wear out and this periodic attention gives the opportunity to identify any problems and have them repaired before they cause problems.

To help ensure that the sump pump is in top operating condition before the spring thaw and rainy season take place, the following steps should be followed as part of routine maintenance. If you have an emergency or urgent problem and you are not sure what needs to be done or how to diagnose the problem, it is recommended that you contact a licensed plumber or licensed contractor.

*These recommendations are not intended to replace your manufacturer recommendations. Please refer to your owner's manual for specific information regarding your installed components. If you are not comfortable completing any of the following steps described, you may wish to contact a contractor to perform these steps.*

*Also the recommendations in this booklet are mainly for homes that had sump pumps installed as part of the City of Ann Arbor Footing Drain Disconnection Program. Therefore the instructions that follow are for submersible sump pumps within a sealed sump. The steps and sump pump system setup differ significantly for pedestal pumps that generally sit above the basement floor.*

## **SUMP and PUMP Maintenance Steps:**

- 1) Make sure that you are familiar and comfortable with your sump and sump pump system setup. Please consult Appendix A on page 7 for pictures of different system setups.
- 2) **BEFORE INSPECTING AND/OR SERVICING PUMP, MAKE SURE IT IS UNPLUGGED.**
- 3) **Remove the cover of the sump:** There are 3 common types of lids, each requiring slightly different removal methods.
  - a) **One-piece cover:** Remove sump lid by unscrewing the bolts that hold the cover down. When loosened adequately, slide the lid up the pipes and cords that pass through it. This should allow for enough room to complete the following steps. If more space is needed the lid can also be rotated around the discharge pipe to one side to provide more room.
  - b) **Two-piece cover:** This type of cover has two sections that are either separate or joined with a hinge joint. One section usually has the discharge pipe from the pump exiting through it. The other section usually has a white round cap plugged into a hole. Unscrew the bolts that hold down the section that DOESN'T have the discharge pipe through it. Carefully fold open or remove the section where the bolts were loosened. This should allow for enough room to perform maintenance. Keep the section of the lid with the discharge pipe attached to the sump. If more space is required then loosen the section with the pipe through it as described in step 1(a) above.
  - c) **Plexi-glass (clear) Cover:** This is a see-through plexi-glass cover that is usually rectangular and sealed to the basement floor, rather than the sump frame. It also requires additional steps to re-seal once opened. The clear lid may or may not be attached with screws that tap into the concrete foundation. If there are screws they will have to be loosened and removed from the lid and put in a place where they won't be lost. Grab an edge or corner of the lid, and carefully lift it upwards until the sealant or caulk around that edge has loosened from the floor. Put the lid down and lift another area of the cover where the caulk or sealant is still attached to the floor. Repeat lifting action until the entire seal between the lid and floor is loose. Now slide the lid upwards allowing the pipes to pass through it. This should allow for enough room to perform maintenance, otherwise try rotating the lid around the PVC discharge pipe to allow for more room.
- 4) **Visual Inspection:** Perform a visual inspection of the sump and pump for defects. You will probably need a bright flashlight see down to the bottom of the sump.
  - a) Inspect the sump for debris that may obstruct the on/off float switch or pump intake. Debris could include rocks, mud, concrete or pieces of the plastic or tile pipe. If you attempt to remove debris from the sump, be sure to unplug the

sump pump first to avoid electrocution or harm from the pump. Keep in mind at all times that pumps have moving parts so do not attempt to handle during operation.

Inspect the sump for evidence of sediment entering the sump from the incoming foundation (footing) drain(s). If there is a layer of sand around the sides of the sump and/or at the bottom this may be evidence that sediment is entering the sump from the footing drains. While a small amount of sediment or sand at the bottom of the sump is normal, excessive amounts are problematic. If there is evidence that an excessive amount of sediment is entering the sump it is recommended that you contact a qualified contractor to determine if additional action is needed. Usually the trail of fine sand or sediment can be tracked to the incoming foundation drains that are typically located about six to twelve inches below the top of the sump.

Visually inspect the pipes, check valves and electrical cords for any loose connections or damage.

- b) **IF YOU HAVE UNPLUGGED THE SUMP PUMP, MAKE SURE TO PLUG THE SUMP PUMP IN AGAIN AFTER THE VISUAL INSPECTION!** Check that the circuit breaker is in the ON position.

5) **Test the pump:**

- a) Add water to the sump until the sump pump starts. On average 3-4 gallons of water will be needed to activate the pump but it could be more or less depending on the system configuration. While in operation a small stream/spray of water should be visible from the discharge pipe near the pump or from the pump itself. This is a weep hole installed to prevent the pump from air locking. If you cannot see this discharge, you will need to clean the discharge pipe and top of pump to clear the discharge hole. **Before attempting to clean the discharge pipe be sure to unplug the sump pump first to avoid electrocution or harm from the pump. Keep in mind at all times that pumps have moving parts so do not attempt to handle during operation. IF YOU HAVE UNPLUGGED THE SUMP PUMP, MAKE SURE TO PLUG THE SUMP PUMP IN AGAIN AFTER THIS STEP!** Check that the circuit breaker is in the ON position.
- b) If the pump doesn't activate after pouring in water to several inches above the submersible sump pump then:
  - i. Visually verify that the float switch is not obstructed, and that it is fully extended up towards the water surface.
  - ii. Verify that the sump pump is plugged into the electrical outlet properly.
  - iii. Verify that the circuit breaker is in the ON position.
  - iv. Lastly verify that the electrical outlet has power, possibly by temporarily plugging in another appliance to that outlet. If the wall



outlet is not working properly you may need to contact an electrician to diagnose and fix the problem.

**c) If Equipped With a BATTERY Back Up Pump:**

- i. Check the distilled water level in the battery (unless the battery is a maintenance free type). Consult the manufacturer maintenance manual for detailed instructions.
- ii. Inspect the sump for debris that may obstruct the On/Off float switch or pump intake at the bottom of the pump. Before attempting to remove debris shut off the power source to the primary and back up pump. Keep in mind at all times pumps have moving parts so do not attempt to handle during operation.
- iii. Unplug the primary sump pump (if not already done) and add water until the back up pump operates (note: this pump may not have a weep hole). **IF YOU HAVE UNPLUGGED THE SUMP PUMP, MAKE SURE TO PLUG PUMP IN AGAIN AFTER THIS STEP!**
- iv. During step iii) observe the alarm associated with this system. Reset if necessary.

**d) If Equipped With a WATER Powered Back Up Pump:**

- i. Check to make sure that the water supply valve is in the ON position. For a handle-operated ball valve the handle is parallel to the pipe when open (on) and perpendicular to the pipe when closed (off).
- ii. Inspect the sump for debris that may obstruct the on/off float. Before attempting to remove any debris shut off the water supply valve and unplug the primary pump from the electrical wall outlet. Keep in mind at all times that sump pumps have moving parts so do not attempt to handle during operation.
- iii. Unplug the primary sump pump (if not already) and make sure that the water supply valve is in the on position. Add water until the back up pump operates (note: this pump may not have a weep hole). **IF YOU HAVE UNPLUGGED THE SUMP PUMP, MAKE SURE TO PLUG PUMP IN AGAIN AFTER THIS STEP!**
- iv. Have the backflow preventers inspected by a licensed certified plumber every 3 years.

- 6) Replace the sump cover, reconnect all pump electrical plugs back into the wall sockets and check that all power sources for the primary and backup system are in the "ON" position to be sure the entire system is operational. If the sump has a clear plexi-glass cover make sure that the cover is sealed to the basement floor with new sealant (and concrete screws if needed) to prevent radon from entering the basement through the footing drains and unsealed sump.

**OTHER:**

- 1) Visually inspect all alarm mechanisms (if applicable), exposed metal parts and connections to evaluate if corrosion is present. It may be appropriate to apply a silicone water repellant spray to deter corrosion. Refer to manufacturer usage instructions to apply silicone spray.
- 2) **On the outside of your house**
  - a. If your sump discharges to the ground surface of your yard, check the discharge point to ensure that debris has not collected at that point thereby obstructing the flow from the pipe. Clean the area to be sure flow is not inhibited if necessary.
  - b. If the sump pump discharges to an underground pipe that connects to the storm sewer system or an infiltrator check the air gap and cleanout assembly at the exterior wall of house. The discharge pipe needs to be clear of obstructions. Make sure that the air gap by the house wall where the smaller 2-inch pipe drops into the larger 4-inch diameter cleanout assembly is free of natural debris such as twigs, leaves, mulch, gravel or topsoil. Next open up the cleanout cap of the assembly with a large adjustable wrench or a pipe wrench and check the interior of the cleanout assembly for the same items mentioned. Once done put the cleanout cap back on.
- 3) **Other resources**
  - a. Sump and Sewage Pump Manufacturers Association has an excellent free troubleshooting guide at <http://www.sspma.org/trouble/index.html> and other related material available by purchase.
  - b. Your pump manufacturer's owner's guide. If you no longer have the original copy, a replacement can usually be found at your pump manufacturer's website, refer to list below or use a search engine.
    - i. Flotec Pumps - <http://www.flotecpump.com/>
    - ii. Hydromatic Pumps - <http://www.hydromatic.com/>
    - iii. Zoeller Pumps - <http://www.zoeller.com/zcopump/zcohome.htm>

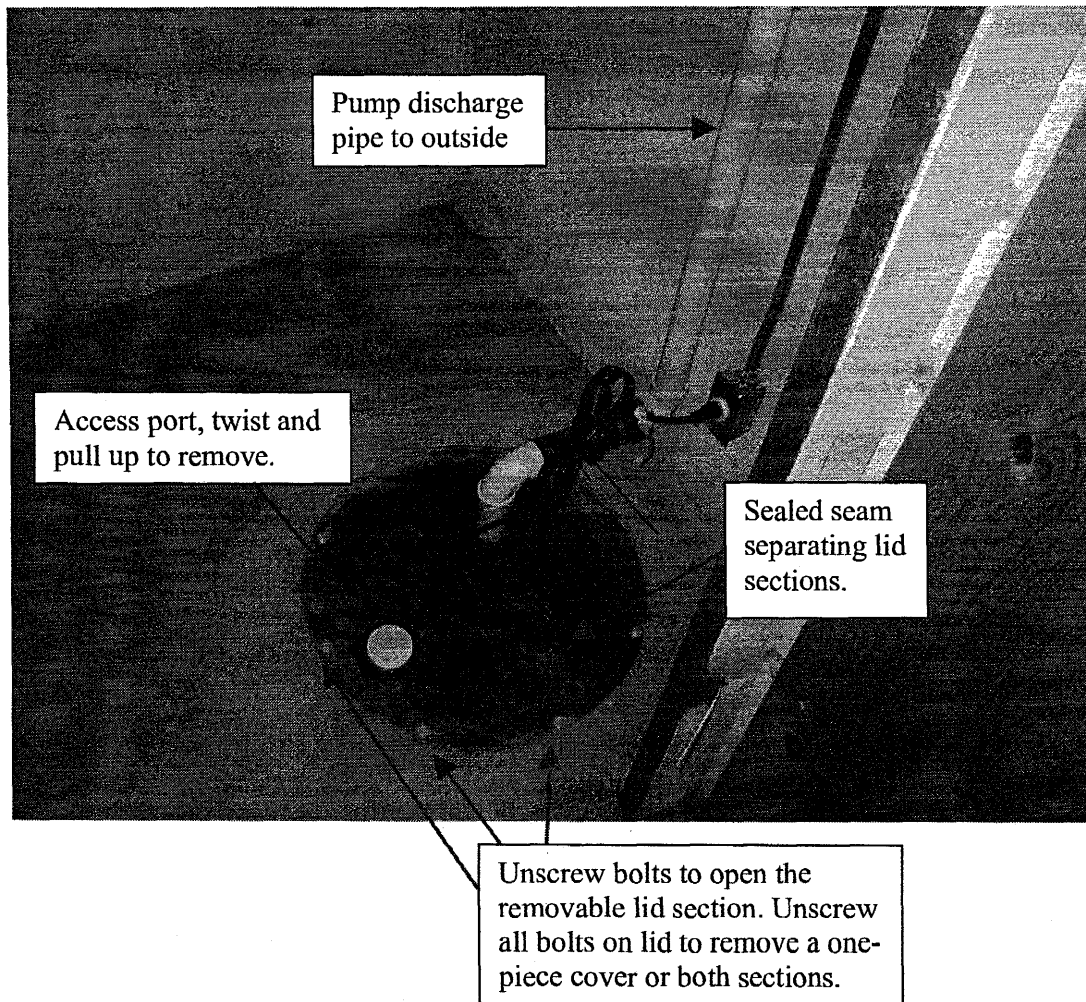
***\*If you do not feel comfortable completing any of these steps it is strongly recommended you have a contractor inspect these features to ensure the components work properly.***

# APPENDIX A

## Maintenance Graphics

### Sump with Two-Piece Cover

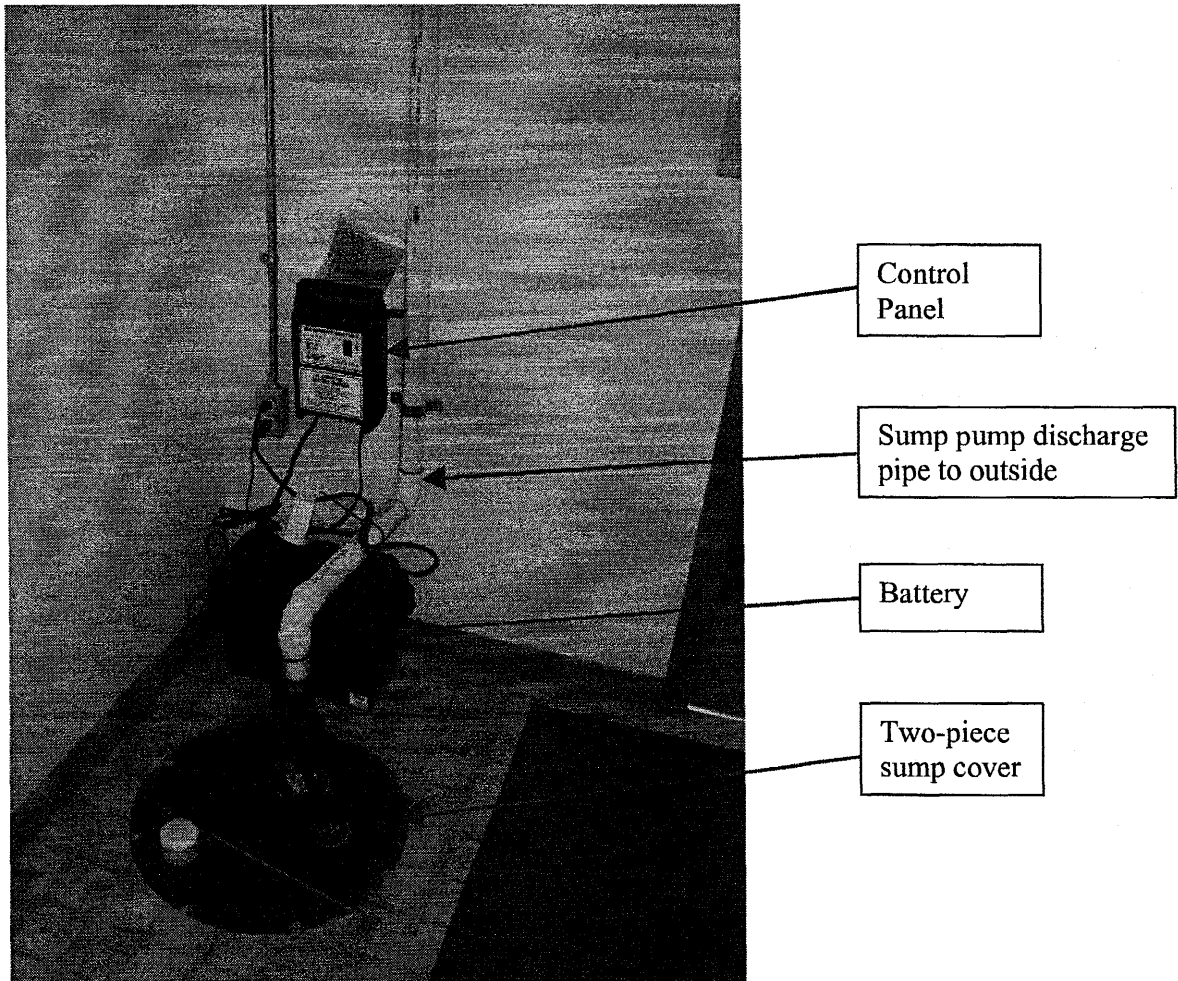
(One-piece lid has similar look without the visible seam)





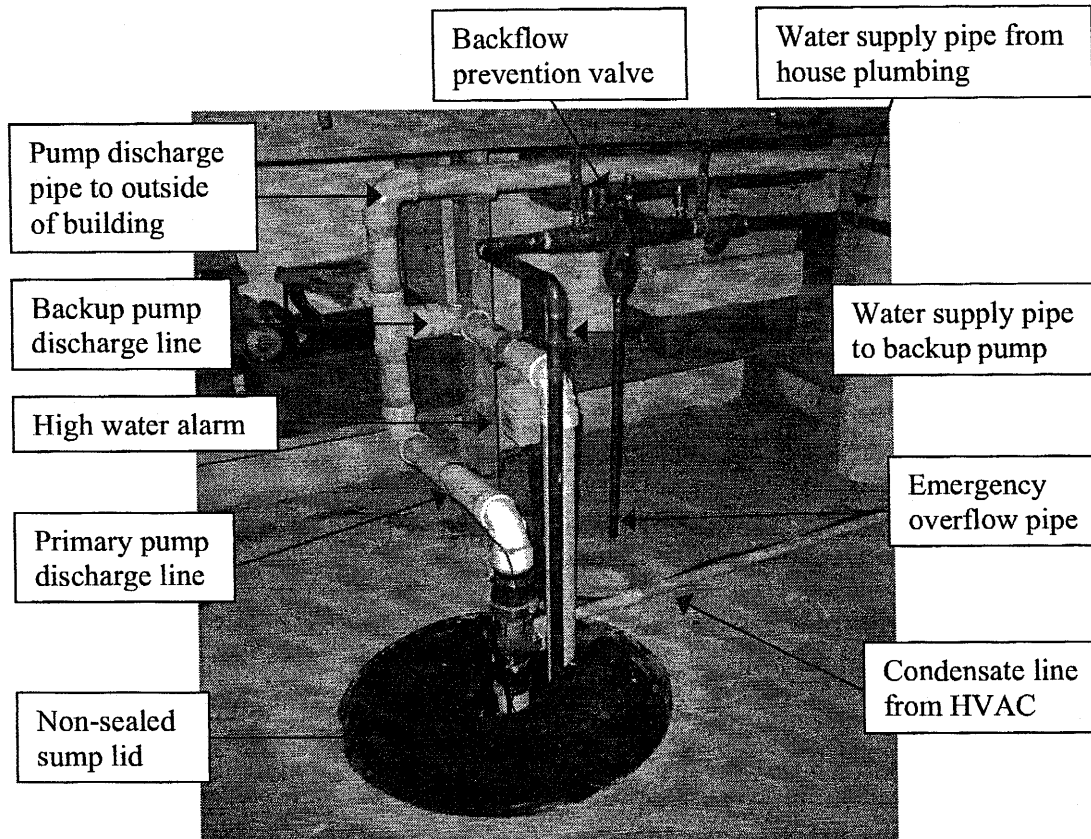
## Battery Powered Backup Pump System

(Consult the manufacturer manual for maintenance recommendations and instructions)

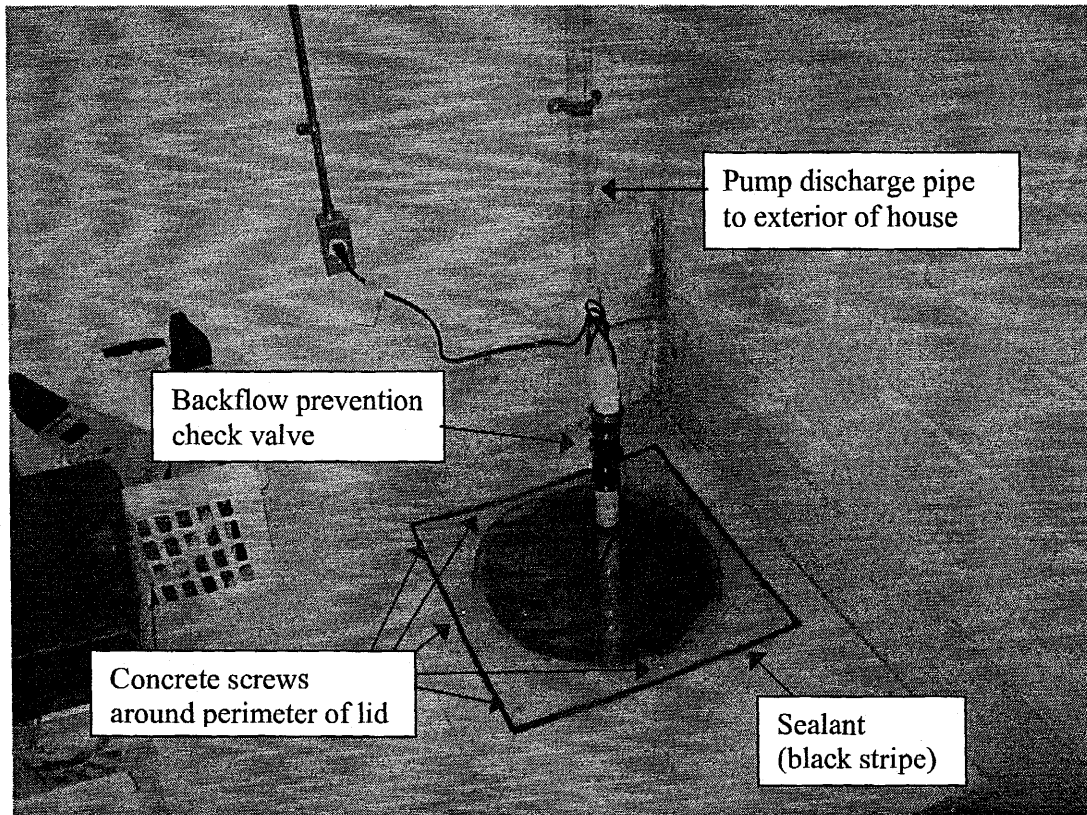


## Water Powered Backup Pump System

(Consult the manufacturer manual for maintenance recommendations and instructions)



## Sump with Clear Lid



[illegible]