



**Centennial Clean Water Fund Grant
#G0000172
"Cooperative Approach to CSO Reduction"**

**Final Report
July 2003**

Final Report to Department of Ecology

Ecology Grant Financial Manager: Shara M. Stelling

Ecology Project Manager: David Pater

City Project Manager: Kathleen Cahall

City Project Coordinator: Chance Berthiaume

EXECUTIVE SUMMARY

The City of Bremerton requested assistance to separate private property stormwater systems from the sanitary sewer system through a Centennial Clean Water Fund (CCWF) Grant. This grant funded the City's "Cooperative Approach to Combined Sewer Overflow (CSO) Reduction" program from 2000 to 2002. This is the final report and summary for the program.

The Cooperative Approach to CSO Reduction program was designed to accomplish two tasks:

- Educate citizens, elected officials, business and property owners about CSOs and point source pollution
- Facilitate separation of private property stormwater from the sanitary sewer system

I.) Education was accomplished by providing:

- Personalized assistance to property owners
- Brochures
- Video about the CSO program and how to complete your own downspout separation
- Internet web site that includes:
 - Animations of how CSOs occur in the sewer system
 - All brochure materials and related document summaries
- Workshops that provided hands on demonstration and instruction on:
 - How to work with downspouts and splash blocks
 - Why control of stormwater is so important to the property

II.) Private property separation was facilitated by providing:

- Free site assessments to determine the property's needs for separation
- Free personalized assistance to property owners prior to, during and post separation
- Grant funds, from the City's Wastewater Utility, to help pay for separation projects on residential properties only (amount of reimbursement was based on site assessment findings and City resolution)
- Standardized drawings for separation
- Letter of agreement/contract between the City and property owner

All deliverables and tasks for the grant funded project have been completed or are included in this report. The program will continue in its current capacity for the next few years and then be absorbed into the Wastewater and Engineering divisions plan and development review processes to ensure properties comply with City ordinance and Bremerton Municipal Code requirements for separating stormwater from the sanitary sewer system.

The City feels very fortunate to have been selected to receive funding to work with its citizens in an effort to reduce CSOs and increase public awareness about point source pollution prevention.



Background

The City of Bremerton was incorporated in 1901, with a majority of residential and commercial properties being built before the 1960's. The City's sewer system was originally built as a combined wastewater and stormwater system (one pipe) that discharged directly to Puget Sound which was an accepted practice for wastewater disposal at the time.

In the mid 1940's Bremerton started construction and finished its first wastewater treatment plant. The second plant was completed in the 1950's and was located where the current plant is now. The City had completed its first major upgrade and was now treating base flow wastewater but, combined sewer overflows (CSOs) would occur when it rained because stormwater was still conveyed in the same pipe. Over the next 35 years, Bremerton continued to install new stormwater systems and, when possible, diverted stormwater runoff away from the sanitary sewer, which reduced CSOs and provided more sanitary sewer system capacity.

The City completed several major upgrades to its wastewater and stormwater collection and treatment facilities in the 1980's. The two older treatment plants were replaced with one secondary wastewater treatment plant that was put on-line in 1984. This \$36 million upgrade included:

- Trunk mains
- New primary wastewater lift-stations for the collection system
- Upgraded older lift-stations
- Several stormwater separation projects

Bremerton's wastewater service area has approximately 9,500 services for a population of about 38,000. City ordinance now prohibits stormwater systems from being connected to the sanitary sewer system which helps reduce CSOs and preserves system capacity for new sewer customers and city growth.

In 1987, state law requiring CSO reduction was enacted. A comprehensive evaluation of Bremerton's storm and sanitary sewer systems identified many sources of stormwater to be removed from the system to help reduce CSOs. Current storm and sanitary sewer system upgrades are being completed to comply with this regulation. By removing sources of stormwater from the sanitary sewer system it is possible to reduce or even eliminate CSOs.

The 1992 CSO reduction plan focused on engineered solutions to CSO reduction, but estimated data used in the report was based on application of the rational method and not real system flow data. In 1994 the City installed a flow monitoring system to measure CSO volume at each overflow site. The new system identified CSO volumes that were much greater than estimated in the plan. This made it very clear that many of the engineered solutions were not significant enough to address the whole problem. As a result, private property stormwater connections to the sanitary sewer system had to be addressed as well, if the program was to reduce CSO events.



Engineered solutions to reduce Bremerton's CSOs include:

- Separating stormwater runoff from the right-of-way by installing new stormwater infrastructure
- Constructing online/inline storage
- Building new wastewater pump stations and increased capacity of older stations
- Building a wet weather treatment plant to increase treatment capacities

Roof and parking lot drainage from residential, commercial and public properties proved to be a significant contributor to the CSO problem. Roof drainage from one building alone can deliver 1,500 gallons of rainwater to the combined sewer system from 1" of rain. This has a very significant impact on the combined sewer system. When evaluating an individual drainage basin, stormwater runoff from 10 or 20 businesses and houses can easily exceed the design capacity of that sewer system and cause a CSO event.

The City smoke and dye tested the sanitary sewer system to document both private and municipal stormwater connections to the sanitary sewer system. Identified connections are typical of old systems and include:

- Roof, driveway, foundation and yard drains
- Street and parking lot storm drainage systems from larger areas

The City needed assistance to separate private property stormwater systems from the sanitary sewer system and a Centennial Clean Water Fund (CCWF) Grant was received in 2000 to fund the "Cooperative Approach to CSO Reduction" program.

The City appreciates being selected to receive funding to work with its citizens in an effort to reduce CSOs and increase public awareness about point source pollution prevention. This is the final report and summary for the program which covers the time period from February 2000 to December 2002. The program is still actively working with property owners, with funds for personnel and general operations being provided by the City's Wastewater Utility.

Cooperative Approach to CSO Reduction Program Organization

Funding Sources

Funding for the program was provided by a grant from the Washington State Department of Ecology (Ecology) Centennial Clean Water Fund (CCWF) (\$150,000) and matching funds from the City's Wastewater Utility (\$50,000). Grant funds cannot be used to pay for work on private property, so the City's Wastewater and Stormwater Utilities provided an additional \$70,000 to fund an incentive program to help pay for residential property owner separation costs.

Personnel Requirements

A minimum of four staff was needed for the program (one manager and three technicians -



rotating one in office while two out in field). Total personnel cost was approximately \$121,431 for 34 for months. Administrative work was handled by other city staff and charged to the program. Utilization of existing staff is essential to control costs and streamline productivity. The program started out with two field staff that also doubled as office staff, which proved to be inefficient. As a result, a third person was hired to update and maintain the database, schedule appointments, answer general questions about the program and coordinate with the field crew as needed. Customers also made it very clear that they liked to talk to a real person when they called with questions or concerns and a third person on staff addressed this concern and improve customer service. This provided a level of credibility to the Program and customers appreciated the quicker response to their needs.

Computer and Presentation Equipment

Computers are needed for database development and management, improved customer service, presentation development and presentations. Three desktops are needed, one for management, two for staff, that are connected to a network for ease of file access and sharing of resources. The grant paid for one desktop computer, a Boxlight projector and screen. A notebook computer was needed for the Boxlight projector, which is used for presentations and workshops, which the City purchased. Software included Microsoft Office Professional 97 ® suite, a video editing application for video development and an application for web site development and management.

Public Education

Workshops were provided using a multimedia approach and held in public buildings to minimize costs. They included a program overview on why CSOs need to be reduced, what the City has done and is continuing to do and what the individual property owner needs to do and what assistance is available. Power Point ® presentations and the program video were projected to a screen with a box light unit in each presentation. The size of the image made it easy for attendants to see all aspects of the presentation. There were hands on piece fitting of downspouts and splash blocks and a brochure with complete instructions on how property owners could perform a simple downspout separation on their own. Contractors, who were licensed to operate within the City of Bremerton, were invited to the workshops to educate as well as qualify them for inclusion on a list provided to City property owners after a site assessment was completed. This helped to ensure that work performed would meet City standards and program requirements.

Customer Reimbursement

The City's Wastewater and Stormwater Utilities provided an additional \$70,000 to fund an incentive program that helped pay for residential property owner separation costs. Many of Bremerton's property owners have low or fixed incomes and would have found it difficult to complete separation projects without this funding. A site assessment determined the dollar amount available for each property based on the type and amount of work needed to complete the job (\$25 to \$500 per residential property). Commercial properties were excluded from this funding source. The assistance was well received by most property owners and improved the success of the program by offering real assistance to those in need. On several occasions the



Program coordinator provided assistance to property owners who could not complete or arrange

to have their separations completed. This service was provided to property owners who were senior citizens and those in poor health who needed to complete separation but were not capable. The City Council-approved resolution that authorized the funds and the payment schedule are attached in the appendices.

Accomplishments of the Program by Task:

The tasks listed below were required by the Centennial Fund Contract between Ecology and the City:

Task 1: Project Administration/Management

In March 2002, funds from the grant were expended. The Program has continued with full support staff and funding from the City's wastewater and stormwater utilities. The Microsoft Access ® database management tool provide to be a real asset for keeping track of all correspondence, site assessments, phone conversations and appointments.

Management of the program included budget, staff and accounting concerns as well as the development of support mechanisms such as ordinances, resolutions, database (for tracking all activity) and documents such as site assessment, and general contract forms. A descriptive summary of the database and its functions is included in the appendices.

Task 2: Public Education and Outreach

The Cooperative Approach to CSO Reduction Program developed brochures, an internet web site, a program video, and provided personalized assistance to all of Bremerton's property owners. The goal of these materials was to simplify a very complex sewer system problem, and invite interested property owners to participate in the Program. In support of this Program City Council passed ordinance 4684 and 4685, which requires the separation of all stormwater connections to the sanitary sewer system unless deemed not cost effective by a site assessment. This was completed prior to the development of the Program and most of Bremerton's property owners did not know they were required to separate their stormwater runoff from the sanitary sewer system.

Participation in the Program was voluntary and the City budgeted \$70,000 through City Resolution 2779, to offer property owners an incentive to separate their systems and help offset costs associated with this new requirement. Workshops were used to educate interested property owners on how they could complete their own separation projects. Local community access TV was also used to cablecast the Program video so owners who could not participate in workshops could find out more information about the Program if interested.

Task 2 - 1. Provide a minimum of 12 multimedia workshops for the citizens of Bremerton.

Task Completed: Workshops were provided using a multimedia approach and held in public



buildings to minimize costs. Presentations consisted of a summary overview on why CSOs need to be reduced and what part a property owner played in the solution. It also provided hands on instruction on how to complete simple downspout separations on their own. Workshops were used to educate property owners and contractors who wished to be on a list that is provided with a site assessment. This helped to ensure the work performed would meet City standards and Program requirements. Workshop attendance was very low, 1 to 12 persons, with total attendance of 45 persons and an average of 4.5 persons per workshop. Due to the low turnout at these workshops, a request to substitute a public access TV segment about the Program was submitted and approved by Ecology. The segment covered Program goals, defined what support the City was offering to residential and commercial property owners and accomplishments made as of December 2002.

Task 2 - 2. Logo development for the Program.

Task completed: The logo, located in the upper right hand corner of the cover page for this report, was developed in March 2000

Task 2 - 3. Develop an animated video with CSO footage.

Task completed: The Program video and Public Service Announcements (PSAs) were completed in January 2001 and have been distributed prior to site assessments and as requested. The complete animations that were used in the video can be seen on the web site at <http://www.cityofbremerton.com>.

The video provides an easy to understand visual demonstration of how a sewer system operates including the goal of the Program to reduce CSOs. It allows easy access to Program information for property owners who are not local residents and owners who cannot take time to attend a workshop as their schedule permits.

The video has been used as an introduction to the Program at presentations, cablecast on public access TV and provided to City property owners when requested. Animations show how rainfall, drains, and pump stations work together, and how a CSO occurs. The video also includes a segment of “how to” disconnect a downspout that is easy to understand. This segment of the video was going to be a separate tape, but after reconsidering production cost and distribution concerns it was obviously more cost effective to combine the two segments into one tape. Video production included development of script, story boarding, pre-production, post-production, and staff time. Videos are provided prior to or after a site assessment, available at the Utility Billing office, workshops, and as customers call in with questions about the Program.

Task 2 - 4. Develop and maintain an Internet web site for the duration of the project.

Task completed: The Internet site was completed and on-line August 4, 2000. The site, www.cityofbremerton.com, is an excellent tool for distributing Program information to the citizens and property owners of Bremerton, as well as many public organizations. It has been well-received by the public as well as City officials and staff. The Program website receives



between 2,000 and 3,500 visits per month from all over the world, as many property owners are either not local residents or are in the military and on foreign duty stations. Content of the website was increased to include other programs in the City's Water Resources Division, which increased Program visibility by developing a larger user base. These programs include drinking water, conservation, stormwater, wastewater and a rain barrel program. The rain barrel program was used as part of the Cooperative Approach to CSO reduction Program to provide a simple example of how much water can come off of a section of roof, encourage water conservation and was expanded to a county wide effort supported by other local agencies during the most recent drought. Over 1,500 rain barrels were sold county wide.

Website development included acquiring URL, hosting services, a web site designer and graphic arts studio. A core idea of the website was the creation of animations to show how sewer systems work under various conditions. It also explains the City's need to be in compliance with state and federal regulations by reducing CSOs. Site content was developed at the same time as animations, brochures, graphics, and Program video to ensure a consistent message, look, and to keep the cost of development as low as possible. Close coordination between the Program and associated developers created a uniform message and cost savings by streamlining these activities. The website has been managed and updated by City staff since it went online in August 2000. The City anticipates maintaining this specialized website through April 2004 when its components will be integrated into the regular City site.

Task 2 - 5. Develop and print 30,000 self-help brochures on how to separate roof drain leaders.

Task completed: Two brochures were developed and printed. One defines what the Program goals and the City's separation requirements are and is called "Be Part of the Solution." The brochure explains the need to separate stormwater from the sanitary sewer system and summarizes the development of Bremerton's sewer system over the last 80 years. Over 15,000, of the 20,000 that were printed, have been distributed and are still being sent out as needed. The second brochure "How to Separate Your Downspouts" is a self-help guide for a simple downspout disconnection and provides some good rules to help property owners protect their buildings and structures from stormwater damage. Over 7,000, of the 15,000 that were printed, have been distributed and they will continue to be distributed as needed.

Original contract included a total print number of 30,000. A total of 35,000 were printed, between the two brochures, (20,000 Program brochures and 15,000 self-help brochures). Per authorization letter, dated May 14, 2001 from David Pater, DOE Project Manager, this task is complete.

Task 2 - 6. Develop and print 30,000 self-help brochures on how to separate other rain leaders from the sanitary sewer system.

Task completed: Due to the complexity of potential system configurations the City requested to change the requirements of this deliverable. Per letter dated May 14, 2001 from David Pater, DOE Project Manager, the City developed standard drawings for rain leaders going to the storm sewer system or to a curb and gutter. They present typical system



configurations that can be applied to driveway drains or similar systems. Hand outs were provided as needed after a site assessment was completed and include: drain fields, through sidewalk drain pipes, and roof scupper installations. These are attached in the appendices.

Task 2 - 7. Create and distribute 1,000 self-help videos showing how to separate rain leaders from the sewer system.

Task completed: The Program video and Public Service Announcements (PSAs) have been completed. See Task 2 - 3. The video is a single unit totaling 21 minutes in length and covers why we need effective wastewater management and what it means to public health. The primary focus of the video presents what CSOs are and what is being done to eliminate them in the City of Bremerton and how property owners can be part of the solution. Part of the video shows how to separate downspouts in a step by step process and points. Two 30-second PSAs are included with the video and they have been broadcast on our local public access channel.

Task 2 - 8. Advertisements on buses, BKAT, billboard, newspaper advertisements, and local flyer distribution and posting.

Task Completed: Advertising was completed through public access channel cablecasts of the video and two PSAs, newspapers (paid advertisements and press releases), billboards, direct mail, notices in utility bills, and presentations at council district meetings. Billboards seemed to be one of the most economical advertising mediums when compared to paid advertisements in the local newspaper. This is based on the activity received from each method used. The Program received 4 inquiries as a result of paid Program advertisements, placed in the local newspaper, at a cost of \$923 for one week and over 40 inquiries from billboards, the first week they were up, at a cost of \$210 for 4 sites for one week. Over 11,000 direct mail notifications, about the downspout separation Program, were sent and provided the bulk of responses from property owners. The City has continued to notify property owners and residents through direct mail and will continue this effort until the Program ends. Brochures are located throughout the City in public areas such as City Hall, Engineering, Public Works and Utility locations, public libraries, Senior Center, Customer Service and Billing, and various Parks Department and other city locations.

Task 2 - 9. Simplified right-of-way permit process for homeowner to complete CSO improvement-work.

Task completed: The City has eliminated fees associated with homeowner-performed separation work that is not completed in the right-of-way. Work to be completed in the right-of-way will be coordinated by the City and performed by City staff or contractor. Work in the right-of-way is also being incorporated into the remaining capital improvement projects to support the needs of property owners where possible.



Task 3 CSO Separation

An ordinance passed in December of 1999 requires the separation of all “improper stormwater connections” to the sanitary sewer system by January 2005, where practicable. The ordinance included provisions that allowed the City Wastewater and Stormwater Utilities to reimburse residential property owners for material they use to separate their properties. Funding for this was provided from City funds that are in addition to those provided by the grant. On October 18th, 2000 the City Council passed “Resolution 2779,” which sets reimbursement rates per an associated schedule and approved \$70,000 for the incentive program. This incentive encouraged participation and provided additional Program support.

Free site assessments and technical assistance for property owners in Bremerton have been provided since November of 2000. Site assessment forms were created and used to document what activity was needed, if any, for the property in question. A drawing was created that outlined the general work needed to separate the property from the sanitary sewer system, and a contract was signed by the property owner and Program staff, that included a hold harmless agreement. Copies of these are included in the appendices as well. Site assessments defined the amount of work needed for each property, how much property owners would be reimbursed from the City's Wastewater grant/incentive fund, and if right-of-way work was required. The Program completed right-of-way work, if needed, to make the separation easier for the property owner.

The City waived building and inspection fees for all property owners participating in this Program, and improved interdepartmental coordination in an effort to simplify the right-of-way work permit process. This allows home owners to complete downspout disconnection improvements with minimal assistance from City staff.

The City has completed over 2,848 site assessments and notified all Bremerton property owners about the Program through a direct mail effort. The Program coordinated its efforts with requirements of City Planning and Community Development, Wastewater, Stormwater, Engineering and Street Departments and helped to streamline processes. The Program is aligned with the main CSO reduction effort so that if a new stormwater system is being installed and a property in the area of this work needs a stormwater service lateral, one is included in that project. This effort saves the property owner and City money by reducing the impact of disturbing the local community and traffic.

Task completed: The Program completed 44 separations in the right-of-way, completed 2,848 site assessment and technical help visits, and a total of 358 separations. As a result of these separations an estimated 260,000 gallons of stormwater runoff has been removed from the system and a total of 417,212 ft² of impervious surface was separated. The Program developed a Microsoft Access ® database that has tracked Program activities and continues to evolve into a very effective tool for managing day to day progress towards the Program goal. The database allows the Program to inventory private property connections and monitor Program performance by tracking a wide variety of activities for the Program.



Program Results

The Program has removed approximately 260,000 gallons of stormwater, per inch of rain, from the sanitary sewer system to date. Total Program cost has been approximately \$270,000 up to and including December 2002. These funds designed, implemented and operated the Program 34 months and established the needed structure to continue the Program as part of regular utility activities.

Estimated cost per gallon of rain water removed from the sanitary sewer system is \$1.04 per inch of rain. The estimate is based on total Program cost and total square footage of impervious surface runoff removed from the sanitary sewer system. On a dollar for dollar basis there is significant cost savings benefit provided by this Program when compared to the City's capital improvement projects. Capital projects range in price from \$5 to \$10 per gallon of water removed or treated, as outlined in the CSO Reduction Plan. Capital improvement projects include: installation of new or increased capacity wastewater pump stations and collection systems, wet-weather treatment facility, and miles of storm sewer. Many of these projects provided new stormwater system infrastructure needed to collect and convey stormwater runoff from newly separated properties.

City of Bremerton properties are 60% rental residential/commercial and 40% private residences. As a result, many property owners live outside of the City or Washington state. A pre-program survey, conducted in the spring of 2000, found that local and distant property owners, as well as residents, knew very little about the City's efforts to eliminate CSOs. To bridge this knowledge gap, an internet web site, brochures, standardized drawings, and personalized assistance were developed and provided as part of the Cooperative Approach to CSO Reduction Program. Information distribution provided awareness of the problems associated with CSOs and let City property owners know what they needed to do to be part of the solution to CSO reduction. The City also provided cash incentive to property owners who wanted to participate in separation efforts on a voluntary basis. Budget for this part of the Program came from the Wastewater and Stormwater Utilities and showed a true commitment from the City to partner with its property owners to meet this challenge.

The City has over 9,500 properties connected to the sanitary sewer system. Of these approximately 2,900 have had site assessments that found 467 properties (16%) connected to the sanitary sewer with their stormwater runoff. As of December 2002, 358 of these had completed their separation projects with 109 pending. A Microsoft Access® Database was developed and used to track various aspects of the Program such as property address, owner, whether the property was compliant with City ordinance or not, notifications sent, phone logs, and much more. There is a complete breakdown of what the database contains in the appendices of this report.

Several methods were used to identify the number of properties with their stormwater runoff going into the sanitary sewer. The primary focus of the Program was defined by the combined sewer system drainage basin boundaries shown in the CSO reduction program. Areas outside of these basins were secondary to the Program objectives and have few if any improper storm water connections to the sanitary sewer system. City crews completed a thorough smoke test of all



CSO drainage basins and developed a list of connected properties based on their results. Historical records identified many properties that diverted stormwater to the sanitary sewer system, but did not show a positive connection during smoke testing. These data were from sewer inspection and field reports and went as far back as the 1930's. The Program found that approximately 49% were identified by smoke testing and the remaining 51% were found by performing site assessments and verifying the connection with a dye test.

Program Results

Summary of Program accomplishments	
Notifications sent	10,983
Workshops completed	12
Phone calls	4,517
Site assessments completed	2,848
Separations completed	358
Separations that are pending	109
Area removed from the sanitary sewer system	417,212 ft ²
Estimated amount of water per inch of rain	260,062 gallons
Pending impervious surface to be removed	200,000 ft ²
Right-of-way separations paid for by the grant	44
Residential separation re-imbursements paid for by City utilities	307

The Program has achieved a 38% response to direct mail notifications, 22% of inspected properties were connected and 59% of those have completed separation work.

The City of Bremerton appreciates the support of the Department of Ecology to fund this successful Program. It has been an effective element of the City's overall CSO reduction effort.



Appendices

Cooperative Approach to CSO Reduction Accomplishments

CSO Survey questions

CSO Survey Results

Downspout Disconnection Program costs

Cooperative Approach to CSO Reduction Database description

Sample site assessment forms and contract

Site survey for driveway separation project

City of Bremerton Ordinance 4684, Requiring separation of sources of stormwater from the sanitary sewer system

City of Bremerton Ordinance 4685, Establishing rates for inappropriate stormwater inflow to the wastewater system

Resolution 2779, authorization to expend utility funds for private property separation

Standard drawings for private stormwater systems

News articles and program announcements

CSOs

9. What causes the Bremerton sewer system to overflow into local bays? Check all that apply
- Lack of properly constructed stormwater systems
 - Poor operation of the wastewater treatment plant
 - Poor operation of the sewage collection system
 - Carelessness for the environment by the City of Bremerton
 - Historical construction of sewer systems which collect both storm and sewage water in the same pipes
 - Stormwater from the roofs, driveways and yard drains of homes and businesses that are connected to the sewer system
 - Cracks in the sewer pipes which let the groundwater flow into the system
 - I don't know
10. Do you recall having seen or heard any information in the last 6 months about Bremerton's Combined sewer overflows, also known as CSOs?
- Yes
 - No
 - I don't know
11. Where did you see or hear information about Bremerton's CSOs? Check all that apply:
- TV
 - Radio
 - Brochure in water/sewer bill
 - City Council Meeting
 - Website
 - Newspaper
 - Brochure
 - Bus billboard
 - District Council Meeting
 - Other, please specify
12. When it rains, the extra rain water runs off from your roof, driveway and yard drains. Do you know where this excess water should go?
- Yes, the stormwater pipes
 - Yes, a nearby ditch
 - Yes, the sewer pipes
 - No, I don't know
13. The stormwater entering the sewer pipes must be removed and put in the correct place so that there is enough room for the sewage only. Putting stormwater in it's proper place will result in no sewage overflows into the bay. What would be your preferred method to accomplish this? You may check more than one answer, since a combination of methods may be used to solve the problem.
- Higher sewer rates to pay for construction projects
 - Higher stormwater fees to pay for construction projects
 - The City pursue low interest loans and grants to pay for construction projects
 - Citizens removing stormwater connecting pipes to the sewer system and redirecting to a local stormwater system
 - Do nothing and violate state and federal regulations
14. Let's say that your home or business was identified to be connected so that the rainwater runoff from roof, driveway and yard drains are piped directly into the City's sewer pipes. What would be the best way to encourage you to fix your system so that this runoff was redirected to the storm pipes? Check all that apply
- Technical assistance from City staff
 - The City provides materials for me to do the work
 - Assistance from a local community group to do the work
 - Low-interest loan so I can afford to do the work
 - I would not disconnect from the sewer system no matter what
 - Other
15. Do you feel that your sewer bills are
- Too high, for the service provided
 - About right, for the service provided
 - Relatively or somewhat low, for the service provided
 - No opinion

Public Information Sources

16. Which newspaper do you read on a regular (at least 5 days a week) basis?

- | | |
|---|--|
| <input type="checkbox"/> Bremerton SUN | <input type="checkbox"/> Bremerton Patriot |
| <input type="checkbox"/> Port Orchard Independent | <input type="checkbox"/> Central Kitsap Reporter |
| <input type="checkbox"/> North Kitsap Herald | <input type="checkbox"/> Seattle PI |
| <input type="checkbox"/> Tacoma News Tribune | <input type="checkbox"/> None |
| <input type="checkbox"/> Other (please specify) | |

17. Do you have access to the Internet?

- Yes No(skip to Question 19)

18. About how many hours a week do you use it?

- 1-5 6-10 11-15 greater than 15

19. When I receive a brochure or newsletter in the water/sewer bill, I

- | | |
|---|--|
| <input type="checkbox"/> always read it | <input type="checkbox"/> sometimes read it |
| <input type="checkbox"/> rarely read it | <input type="checkbox"/> never read it |

20. The best time of the day for me to attend a neighborhood meeting is

- | | |
|--|--|
| <input type="checkbox"/> Weekday morning | <input type="checkbox"/> Weekday evening |
| <input type="checkbox"/> Weekend morning | <input type="checkbox"/> Weekend evening |

21. The best hour for me to attend a neighborhood meeting is (you may choose more than one)

- 9am 10am 11am 12pm 1pm 2pm 3pm 4pm 5pm
6pm 7pm 8pm

Finally, for our analysis of this survey, would you give us information about yourself? All of your answers will be confidential.

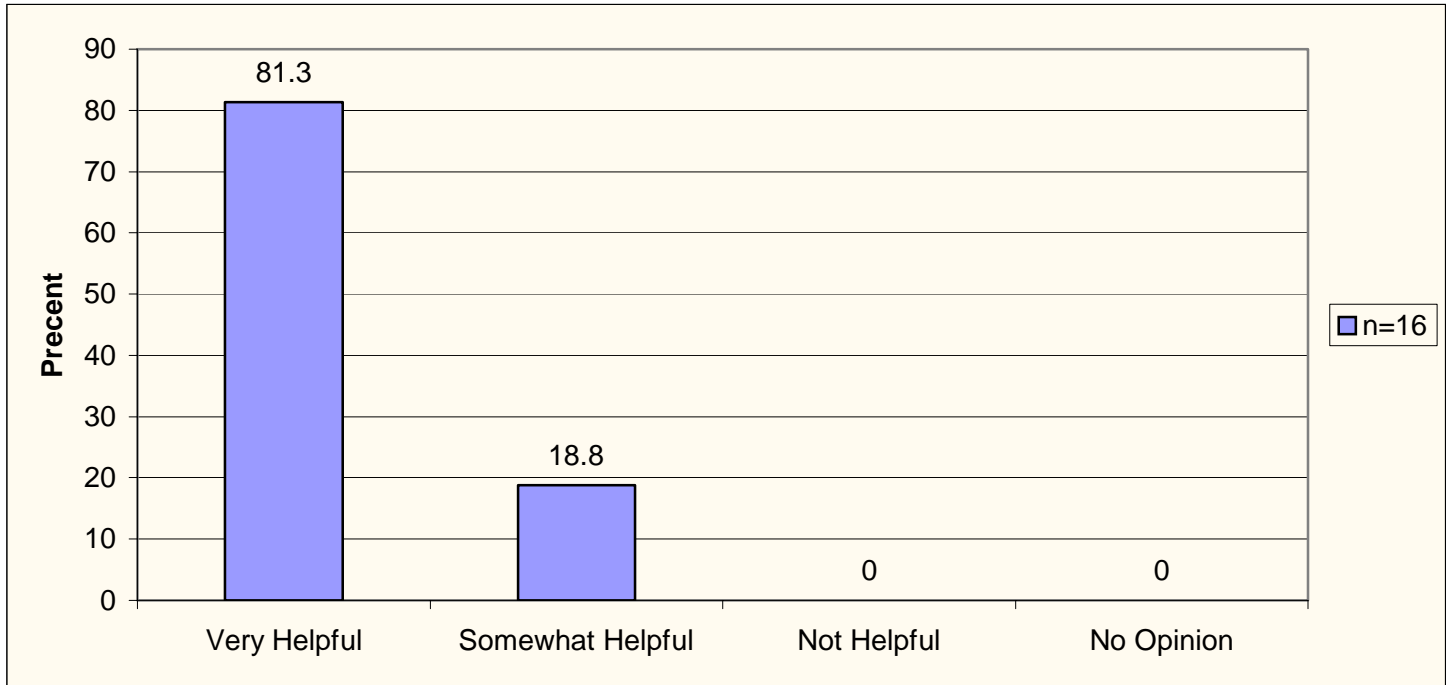
- I own the home at this sewer billing address
I rent the home at this sewer billing address
I own the home and rent to someone else at this sewer billing address

For about how many years have you lived in the City of Bremerton?

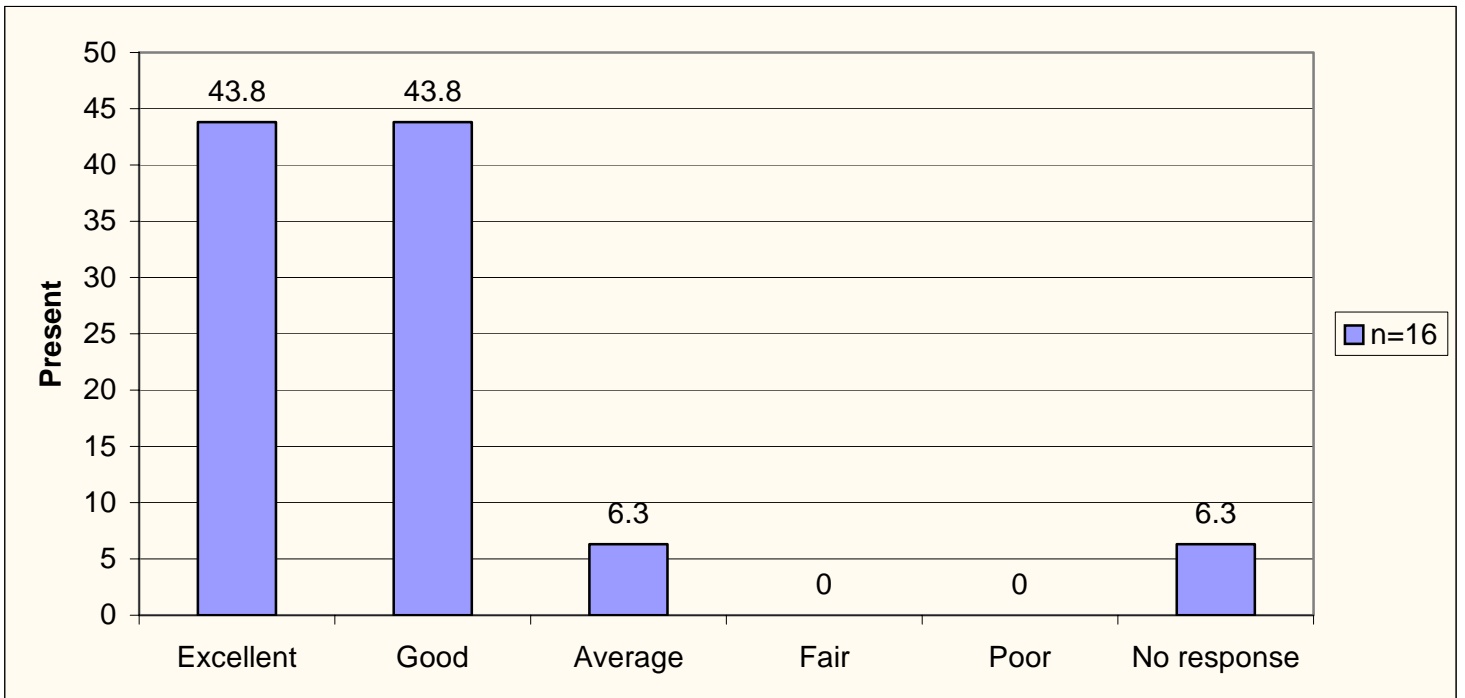
- 0-2 years 3-5 years 6-10 years 11 years or longer I do not live in the City

SURVEY RESULTS

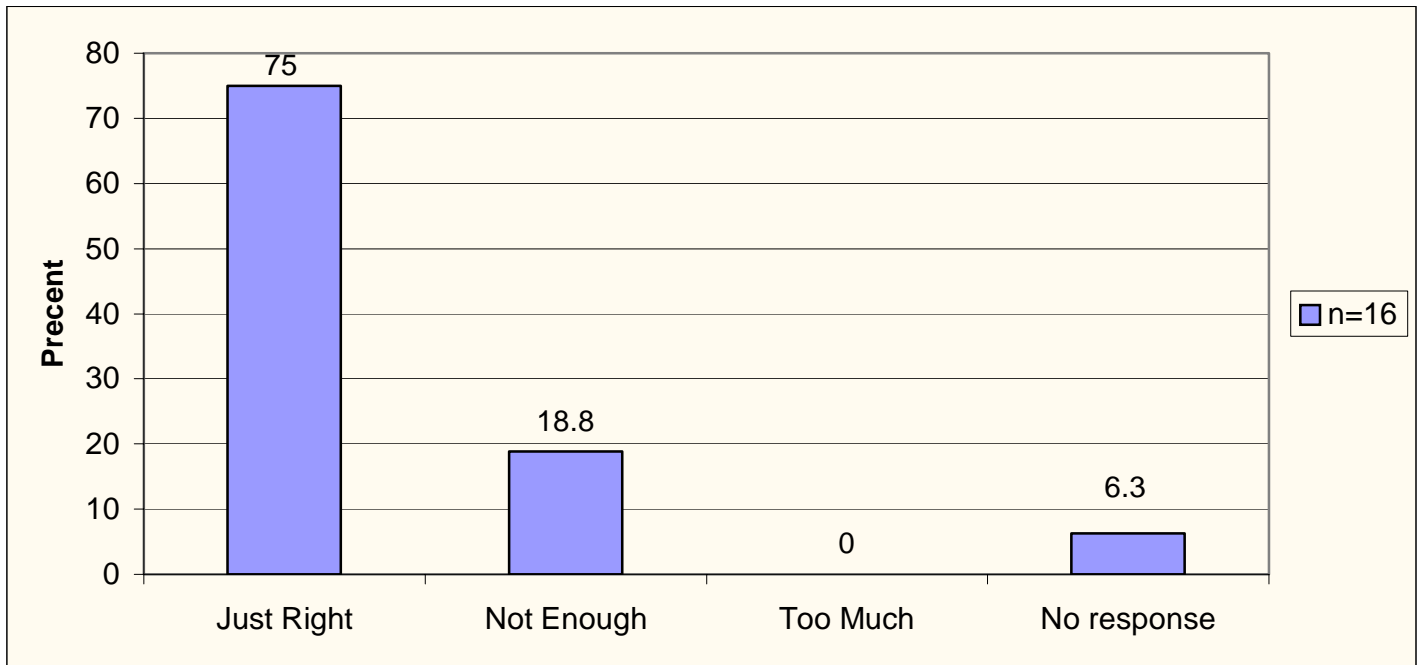
Q1. I found the video



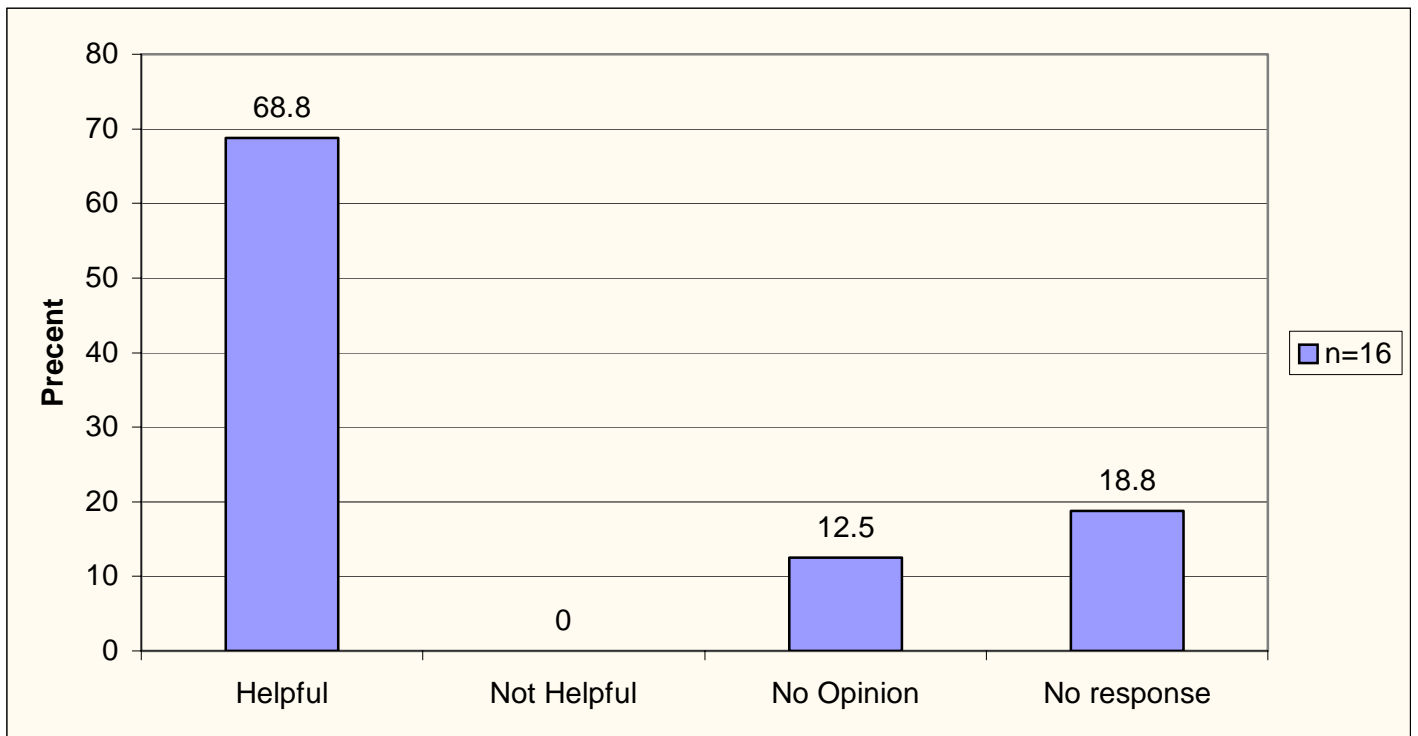
Q2. How would you rate the quality of this video?



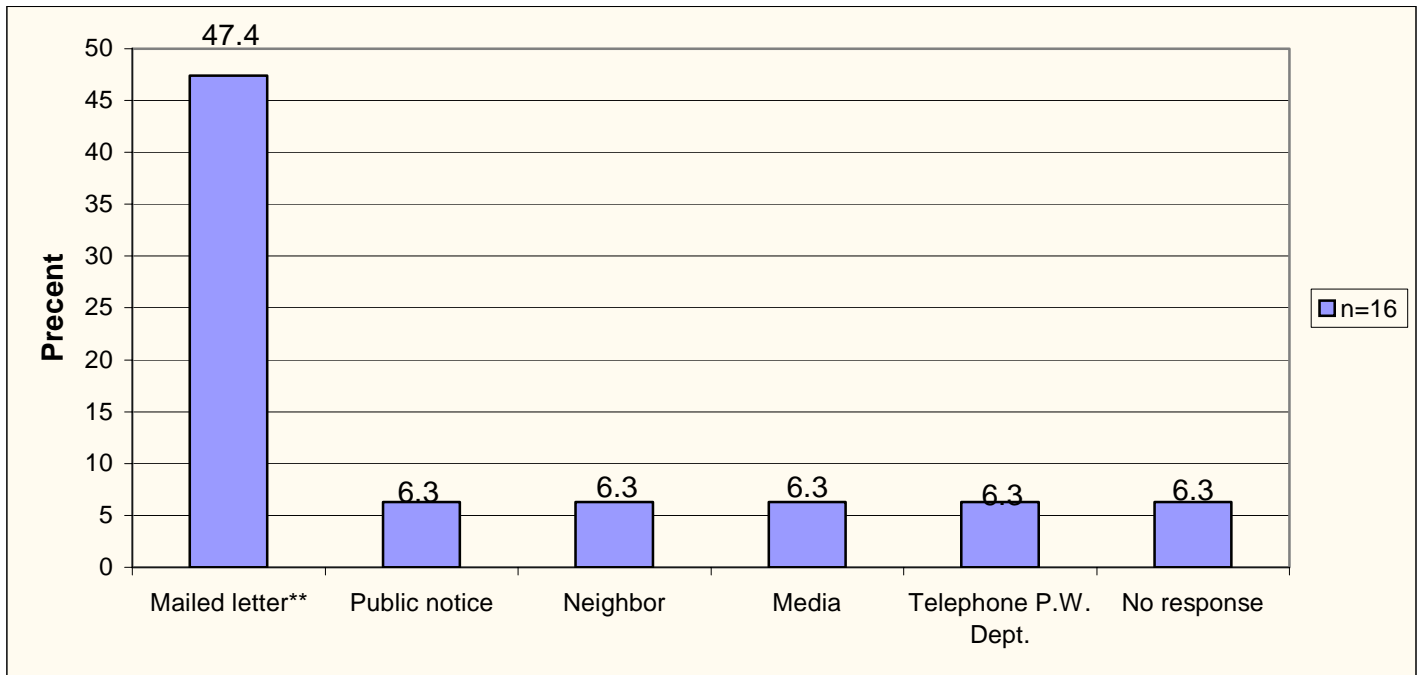
Q3. The amount of information was



Q4. City staff that helped with my roof drain disconnection were

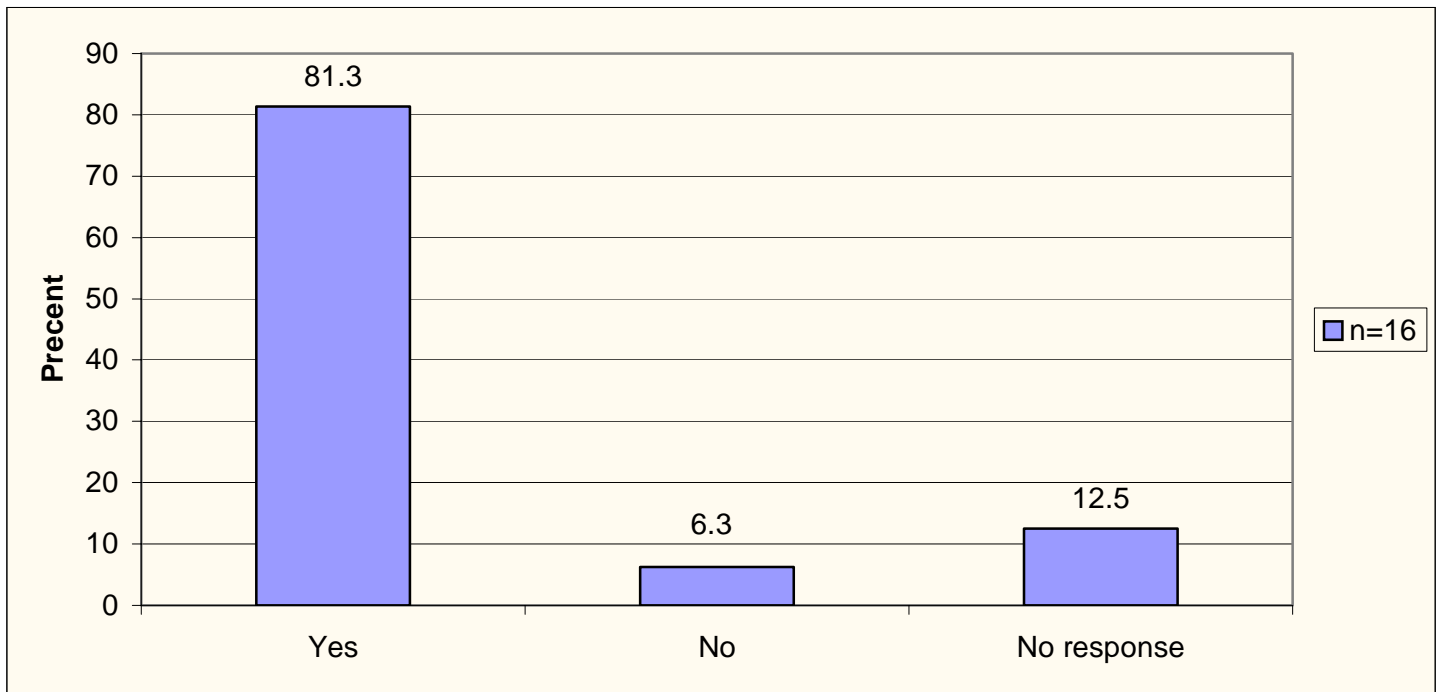


Q5. How did you find out about the roof drain disconnection program?

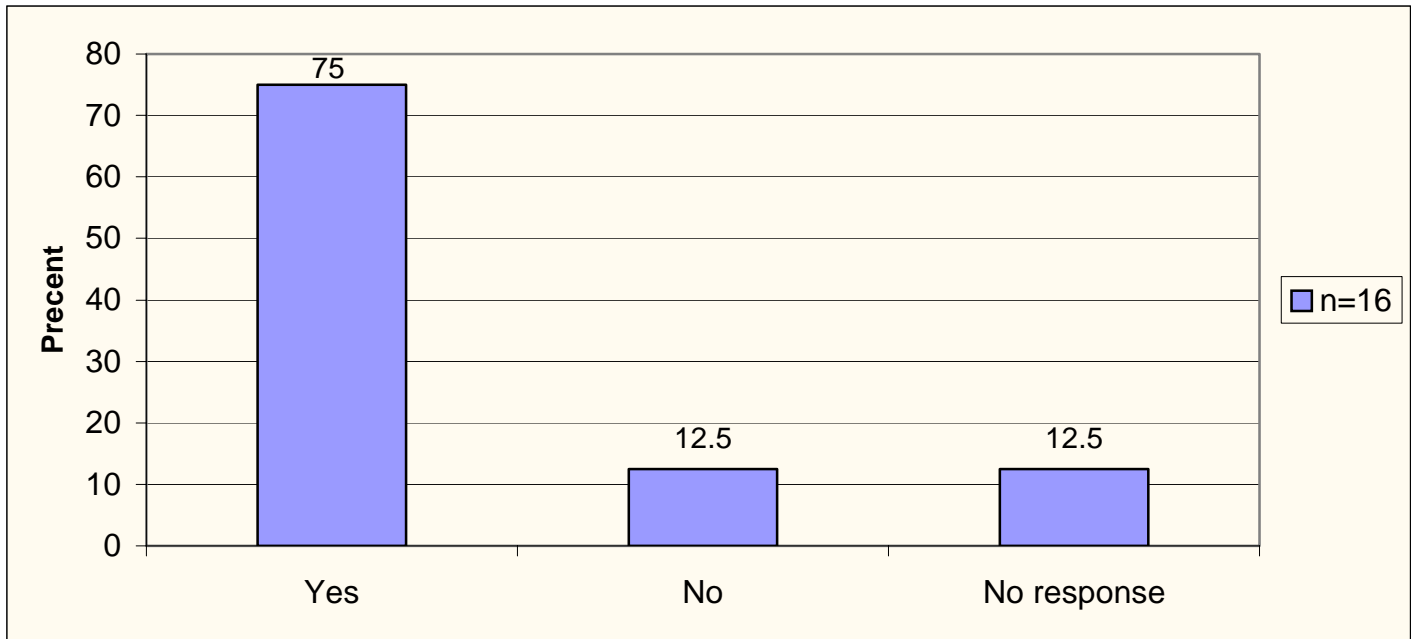


** Includes: Mailing information, mailed letter, letter from Chance, notice through mail and letter from City.

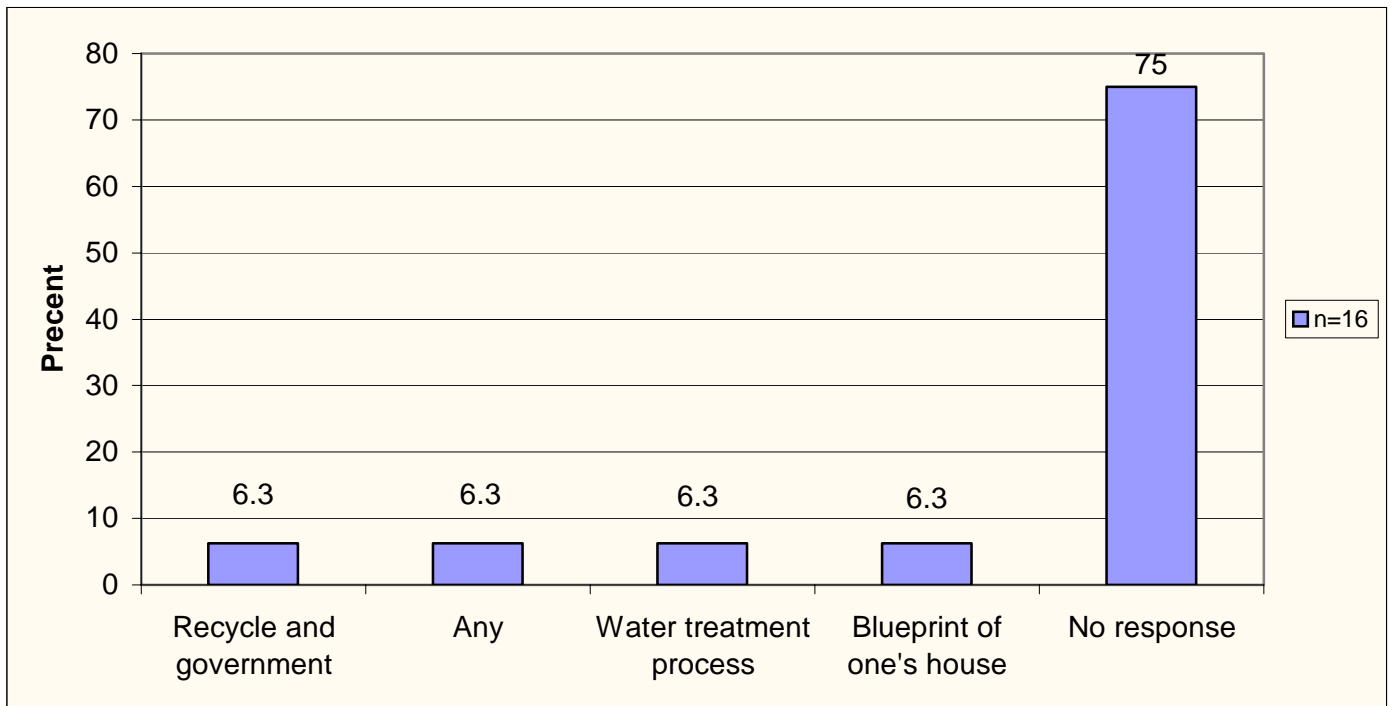
Q6. Do you think this information is beneficial to the property owners of Bremerton?



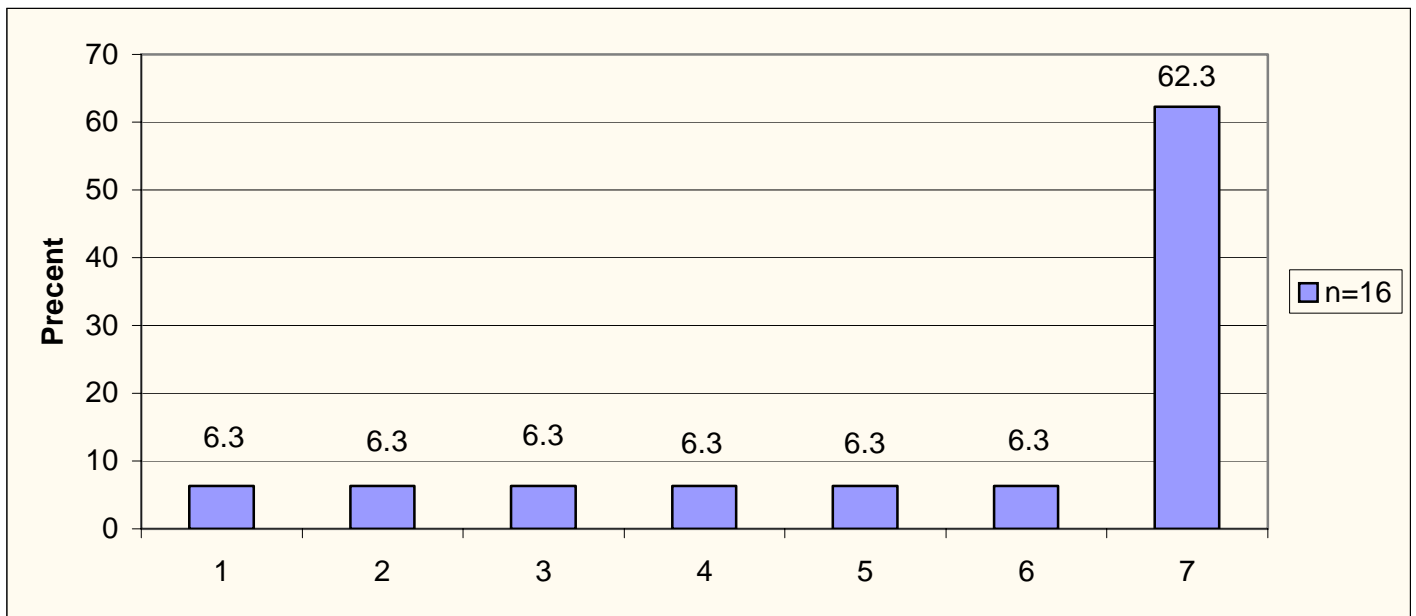
Q7. Would you like to learn about other programs in the City through a video?



Q8. If so, what topics would you like to see covered?



Q9. Please feel free to make other comments about this program or The City of Bremerton's wastewater, stormwater or water utilities.



1. Thank your for making it.
2. The VCR needs a "Please rewind" sticker on the case.
3. None.
4. Waste water treatment far too expensive due to delays by City and County!
5. I would be happy to disconnect and I qualify for the maximum \$500 reimbursement, but this will not cover the amount of work I'll have to have done. I'll probably wind up just paying the fines.
6. A segment showing a typical trench with flexible corrugated pipe to carry water to a lower alley or street would be helpful in the video.
7. No response

DOWNSPOUT DISCONNECTION PROGRAM COSTS

(From February 2000 to December 2002)

Program summary from development to current status. Total 34 months.

MANAGEMENT						
General administration	<i>Staff</i> \$20,000	<i>ordinance</i> \$1,500	<i>database set-up</i> \$4,000	<i>Grant accounting</i> \$2,500		\$28,000
Total cost for program management						\$28,000

PUBLIC EDUCATION							
Workshops	<i>Staff</i> \$2,800	<i>Used Public buildings and Community theater</i>			<i>workshops</i> 12		\$3,050
		<i>per workshop</i> \$25					
Logo	<i>Staff</i> \$375	<i>graphic design</i> \$300					\$675
Computer	<i>Staff</i> \$400	<i>3 desktops</i> \$6,000	<i>1 laptop</i> \$2,400	<i>boxlight projector</i> \$5,775	<i>Miscellaneous</i> \$150		\$14,325
Software	<i>Staff</i> \$300	<i>Video editing</i> \$660	<i>GIF Animation</i> \$300				\$960
Video	<i>Staff</i> \$6,500	<i>production</i> \$9,000	<i>development</i> \$1,400	<i>1000 copies</i> \$3,135			\$20,035
Website	<i>Staff</i> \$5,400	<i>development includes animations</i> \$6,840	<i>internet hosting \$20 per mo</i> \$480	<i>domain name registration 4 yrs</i> \$133			\$12,853
Brochures	<i>Staff</i> \$2,800	<i>develop</i> \$4,800	<i>printing</i> \$6,177				\$13,777
Advertising	<i>Staff</i> \$400	<i>billboards</i> \$1,160	<i>newspaper ad</i> \$198	<i>1 wk newspaper</i> \$923			\$2,681
Staff and Postage for direct mail notification	<i>Staff</i> \$4,800	<i>11,000 notifications from in-house</i> \$4,000			<i>Miscellaneous postage</i> \$1,200		\$10,000
Total cost for public education						\$78,356	

SEPARATION						
Staff/Field Time	<i>Staff</i> \$77,656					\$77,656
Printing/Forms	<i>Site assessments</i> \$800	<i>Stormwater Runoff</i> \$803	<i>Doorhangers</i> \$438	<i>inspection forms</i> \$1,100		\$3,141
Right-of-Way Work	<i>Contractor</i> \$11,950	<i>City staff street dept.</i> \$7,402				\$19,352
Cell Phone	<i>\$34 per month</i> \$1,156					\$1,156
Vehicle	<i>Maintenance</i>	<i>monthly costs</i>	<i>total months</i>			

	\$1,500	\$300	34		\$11,700
Materials	<i>dye-30 gal.</i> \$532				\$532

Total Cost for Downspout Disconnection Separation \$113,537

CUSTOMER REIMBURSEMENT

Grant funds to property owners	\$49,260				\$49,260
	\$121,431	Total for all staffing (this amount is approximate and may vary from DOE claims for re-imbusement)			

MANAGEMENT	Grant funds			\$28,000
PUBLIC EDUCATION	(\$150K + \$50K match) and approx \$20,000 in excess of grant funds from Bremerton's wastewater utility funds			\$78,356
SEPARATION				\$113,537
CUSTOMER REIMBURSEMENT		Bremerton's Wastewater and Stormwater Utility funds		
Project Total				\$269,153

Cooperative Approach to CSO Reduction Program Database summary description

The screenshot shows a Microsoft Access form titled "Wastewater Account Information" in Design View. The form is a switchboard with a grid layout. At the top, it says "Detail". Below that, the title "Wastewater Account Information" is centered. The form is divided into two main sections: "Data Input / Review" on the left and "Reports" on the right. Under "Data Input / Review", there are buttons for "Input / Review", "Meetings", "Gen. Notification", and "Today's Appointments". Under "Reports", there are buttons for "Activity Summaries", "Mailing Labels", "Connection Sum.", and "Program Info". In the bottom right corner, there are two input fields: "Enter User Name:" and "Enter Password:", both with "Unbound" as the data source. At the bottom center, it says "AEC: August 2000". The status bar at the bottom left says "Design View" and the bottom right says "NUM".

Purpose of Form: Switch board to access other Forms.

Buttons

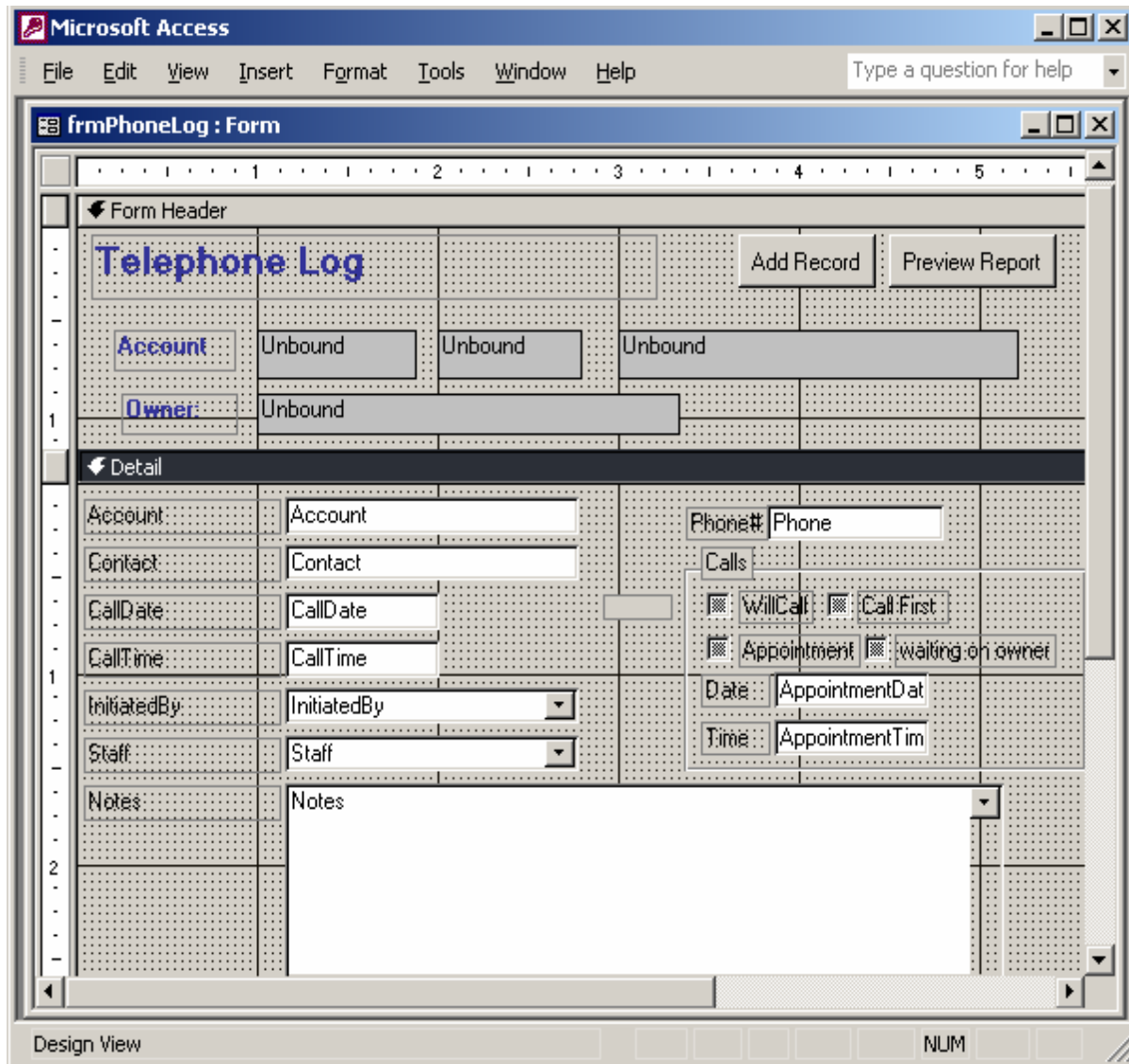
- Input/ Review: Opens *frmAccountsByStreet* form, See Page 2.
- Meetings: Opens *frmMeetings* Form used to log Work Shops provided.
- Gen. Notification: Opens Form *frmGenNote*. This form logs city area notifications.
- Today's Appointments: Prints a report of current day's appointment, appointment date are entered on the phone log form.
- Update Billing: Opens *UpDateBilling* Form the data base provides a list of properties that have connections that have not been removed. The user then selects the properties to charge the inappropriate Storm Water fee.
- Who to Call: Open the *WhoToCall* form lists properties that need appointments scheduled, or properties that have promised to complete separation which have been pending for over two months.
- Activity Summaries: Opens a report by date of program progress.
- Mailing Labels: Opens form to generate mailing list.
- Connection Sum: Opens form to generate connections reports by drainage basin, city council district, or street address.
- Program Info: Opens program info menu.

This form has read only text boxes which prevent changes while searching for the property.

Purpose of Form: Search for property, and as a switch board to sub-Forms.

Buttons:

- General Search: This Button allows the user to search for properties by any of the fields.
- Connections: Opens connections form. Keeps record of all known connections for the property. See page 8.
- Projects: Projects form is used to track city provided right-of-way work for a property. See page 6.
- Inspections: Opens Inspection form, used to log on-site inspections. See page 4
- Phone Log: Phone log form is used to log all phone calls for property. See page 3.
- Mail: Log of all mail sent to property owner. See page 7.
- Meetings: Used to log owner attendance at workshop.
- Site Notification: Logs notification left at the property. Door knockers.
- General Notice: Records general notices sent to property.
- Tech Notes: Allows notes to be made about property.
- Refresh Addresses: Refreshes form data.



Purpose of Form: Record including all phone calls and E-mail regarding property.

Form Header: Property information linked to AccountsByStreet form. User can enter Phone logs for property selected on AccountsByStreet form.

Buttons:

Add Record: Add new row to phone log table, and inserts account number to link the phone to property.

Report: Creates Report of phone log to print.

Calls Option Group: Used to update property status.

Will Call Check box: Sets property status as “Will Call” and adds property to will call list.

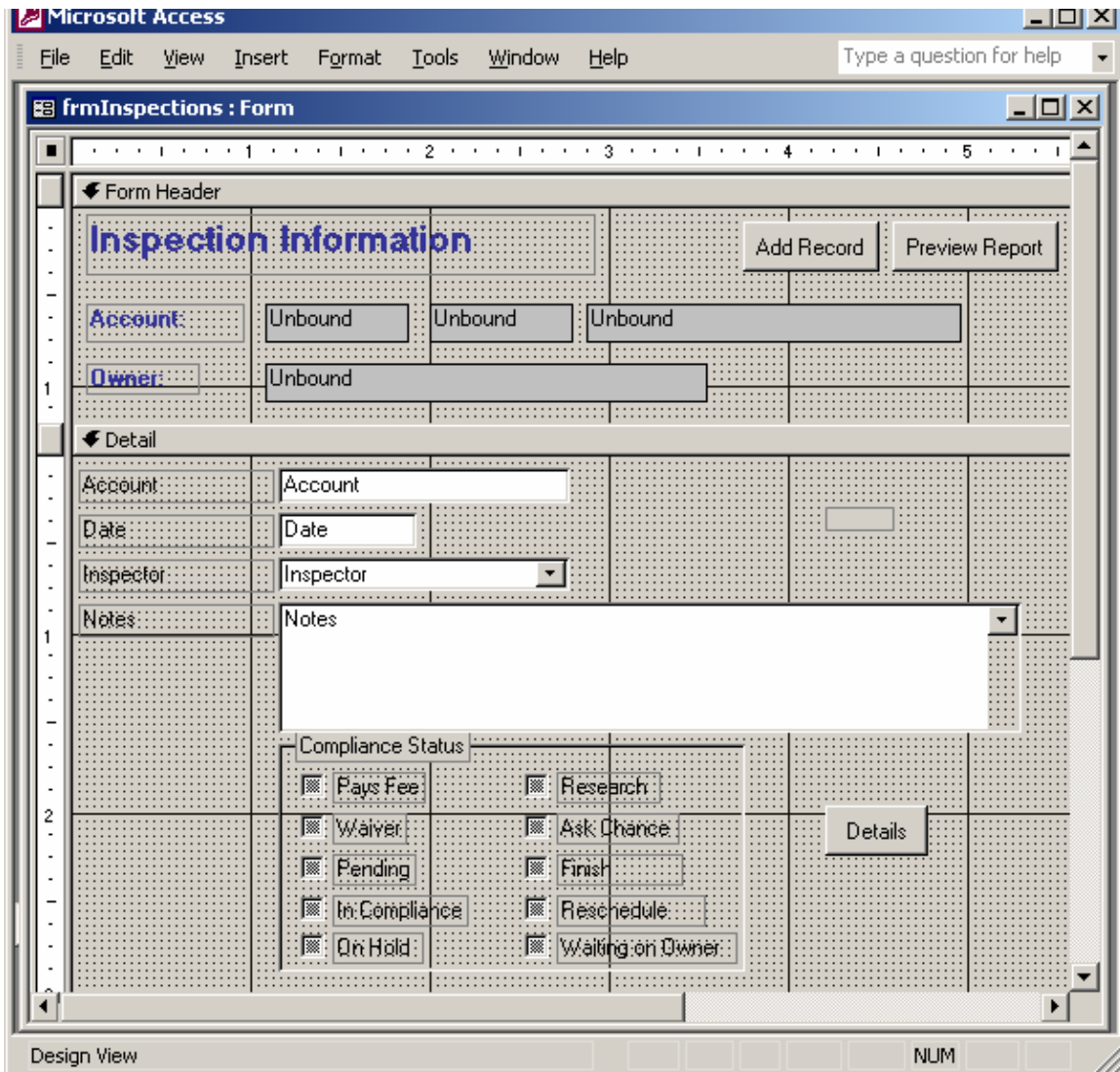
Call First Check box: Sets property status as “Call First” and adds property to call first list.

Waiting on owner Check: Sets property status as “Waiting on Owner”. Used for owners who called for info but do not want site inspection at this time.

Appointment Check box: Set property status as appointment.

Date: Set appointment date for property.

Time: Set appointment time for property.



Purpose of Form: Maintain site inspection information.

Form Header: Property information linked to AccountsByStreet form. User can only enter Inspections for property selected on AccountsByStreet form.

Buttons:

Add Record: Adds new row to Inspection table and inserts account number to link inspection to property.

Report: Creates Report of the Inspection for printing.

Details: Opens Pending Form. See page 5.

Compliance Status Option Group:

Pays Fee: The Property has connections to the sanitary sewer system, which is not practical to remove. Owner must pay ISF fee.

Waiver: Property was constructed with a storm lateral but was connected to sanitary sewer system due to lack of city storm sewer in area.

Pending: Property has work for the property owner to complete.

Incompliance: Property is incompliance with the City ordinance.

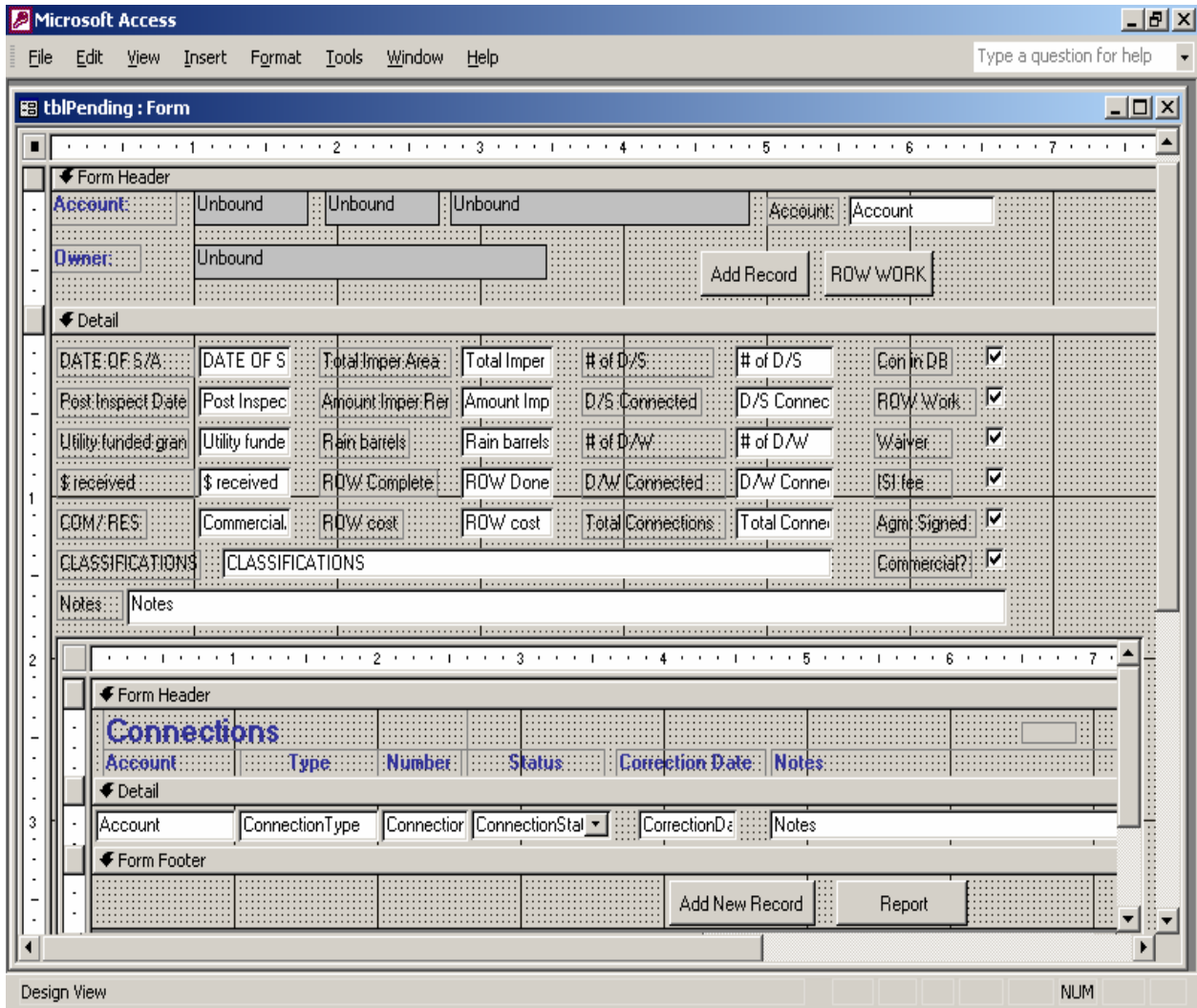
On Hold: Property can not be separated at this time, because the City needs to finish ROW.

Research: Need to look up records for the property.

Ask Chance: Property needs to be looked at by program manager.

Finish: Inspection not finished yet.

Reschedule: Need to setup new appointment with the owner.



Purpose of Form: Input separation information.

Form Header: Property information linked to AccountsByStreet form. User can only enter pending information for property selected on AccountsByStreet form.

Buttons:

Add Record: Adds new row to Pending table and inserts account number to link the information to property.

ROW Work: Opens Project Form. Used to record City provided right-of-way work. See page 5.

Connection Sub Form: See Connection form on page 7.

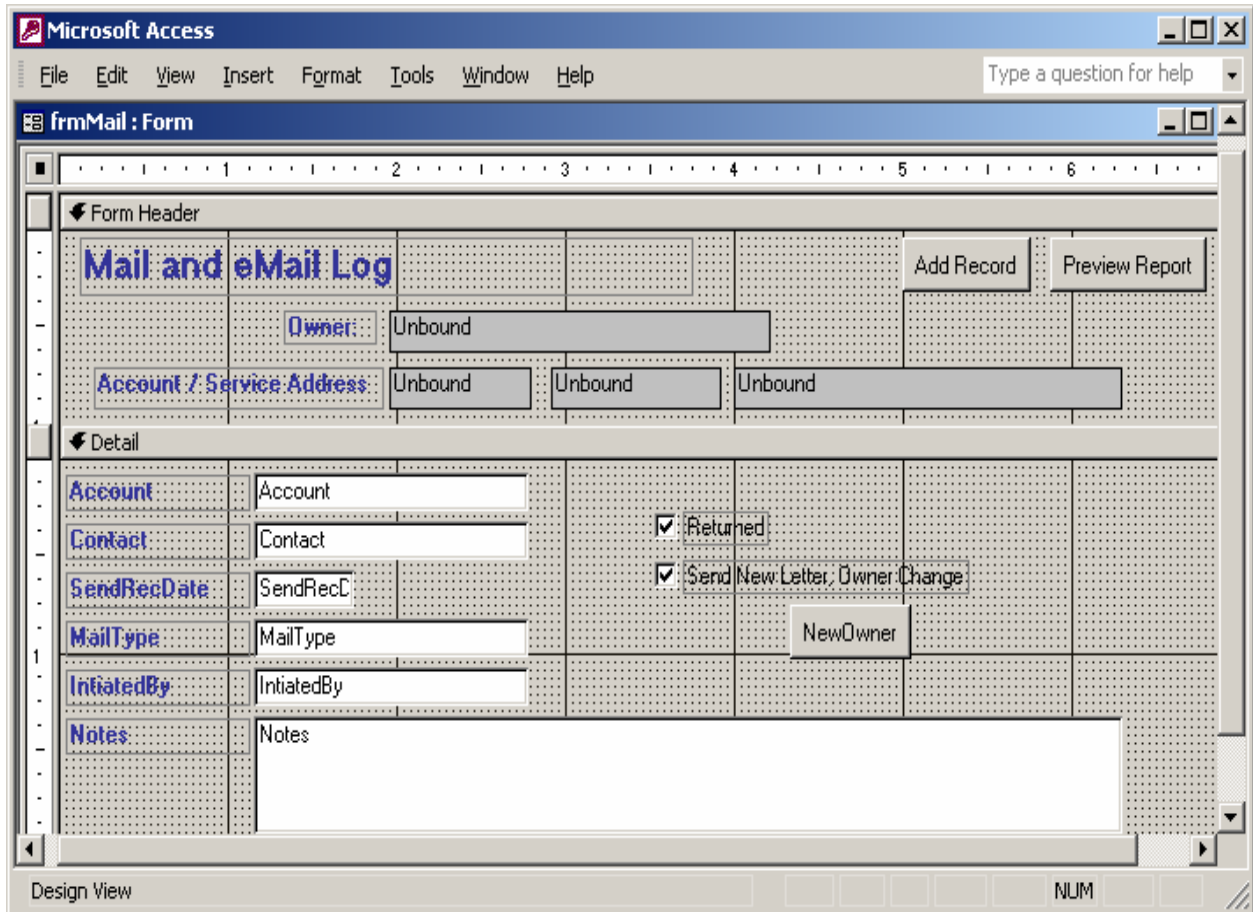
The screenshot shows the Microsoft Access Design View for a form titled 'frmProjects'. The form is organized into three main sections: Form Header, Detail, and Form Footer. The Form Header section includes a title 'Project Information' and two labels, 'Account:' and 'Owner:', each followed by an unbound text box. The Detail section contains several labels and text boxes: 'Account', 'Contact', 'Type Of Work' (with a dropdown menu), 'Work Status' (with a dropdown menu), 'By Whom' (with a dropdown menu), 'Sent to Chance Date' (with a text box), 'Requested Date' (with a text box), 'Completion Date' (with a text box), and 'Cost' (with a text box). The Form Footer section contains two buttons: 'Add Record' and 'Preview Report'. The status bar at the bottom of the window indicates 'Design View' and 'NUM'.

Purpose of Form: Maintains Records of right-of-way work needed for property

Form Header: Property information linked to AccountsByStreet form. User can only enter Projects for property selected on AccountsByStreet form.

Add Record: Add new row to Project Table and inserts account number to link project to property.

Preview Report: Creates report of the Project to print.



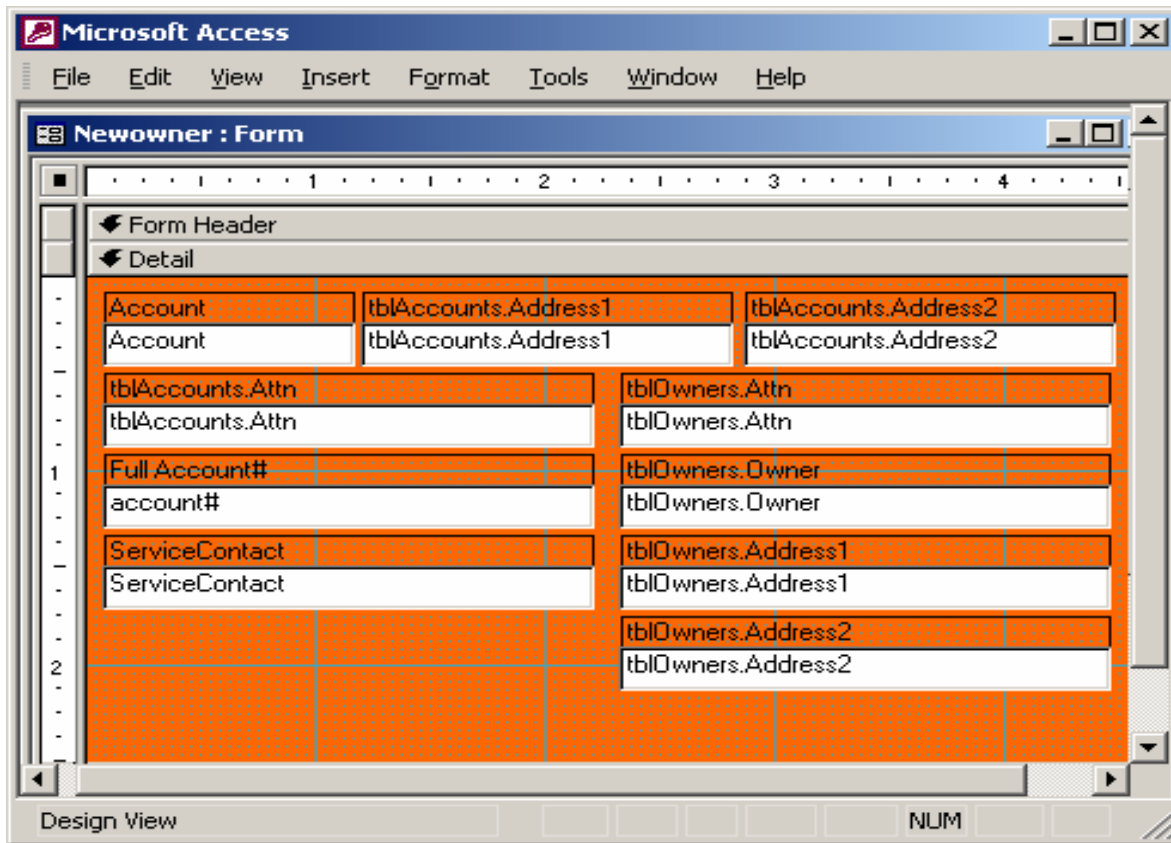
Purpose of Form: Maintain Records of all mail for selected property.

Form Header: Property information linked to AccountsByStreet form. User can only enter Mail for property selected on AccountsByStreet form.

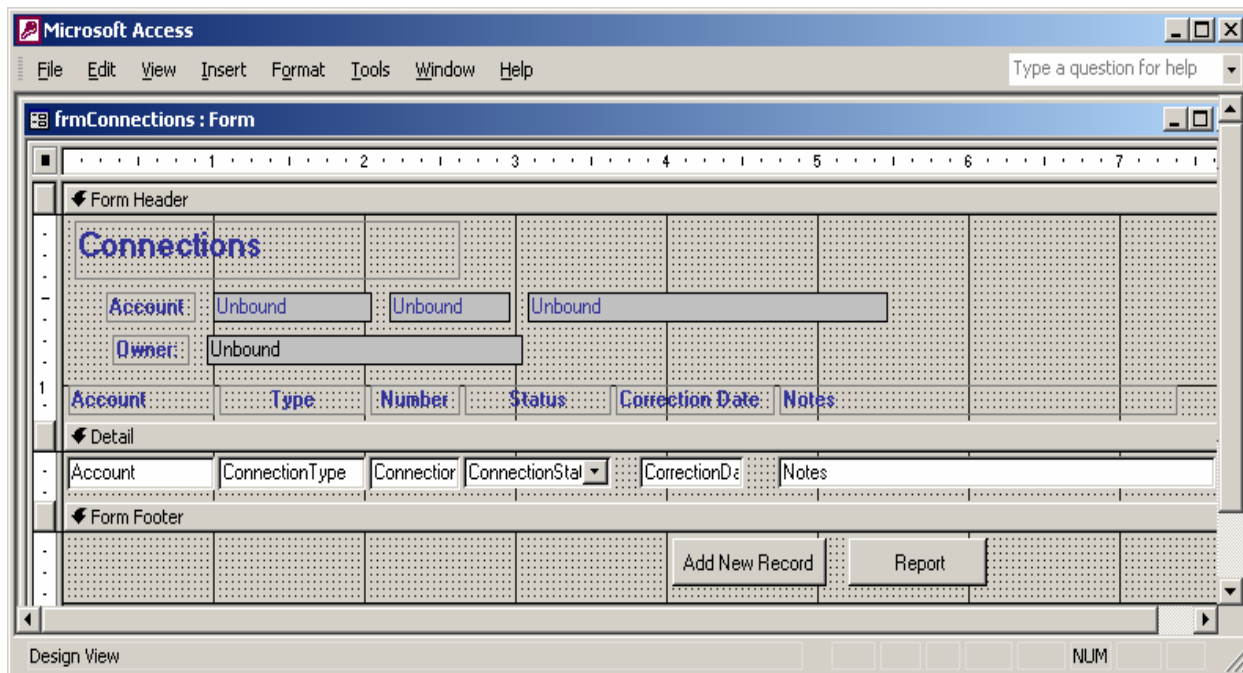
Add Record: Add new row to Mail Table and inserts account number to link project to property.

Preview Report: Creates report of the Mail to print.

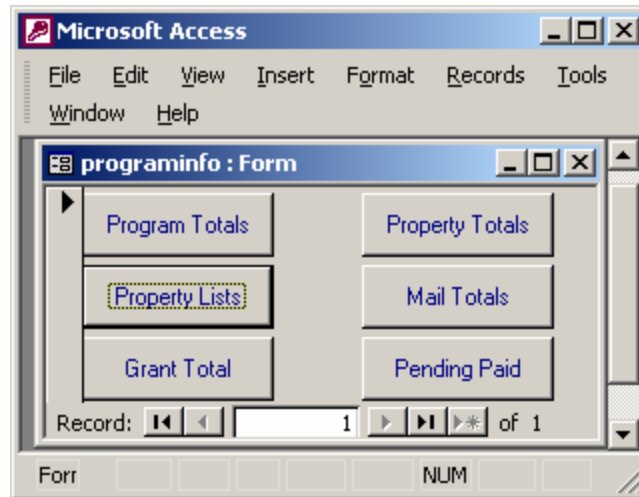
New Owner: Opens new owner form. Allows changes to owner info for returned mail. See Page 8.



Purpose of Form: Allow Changes to owners Information.



Purpose of Form: Maintain Records of connection to sanitary sewer system.



Purpose of form: Selects report to run.

Buttons:

Program Totals: Opens monthly program report. See next form.

Property Lists: Opens property list form. See page 9.

Property Totals: Opens property totals form. See page 9

Mail Totals: Runs Mail totals report. See page 10.

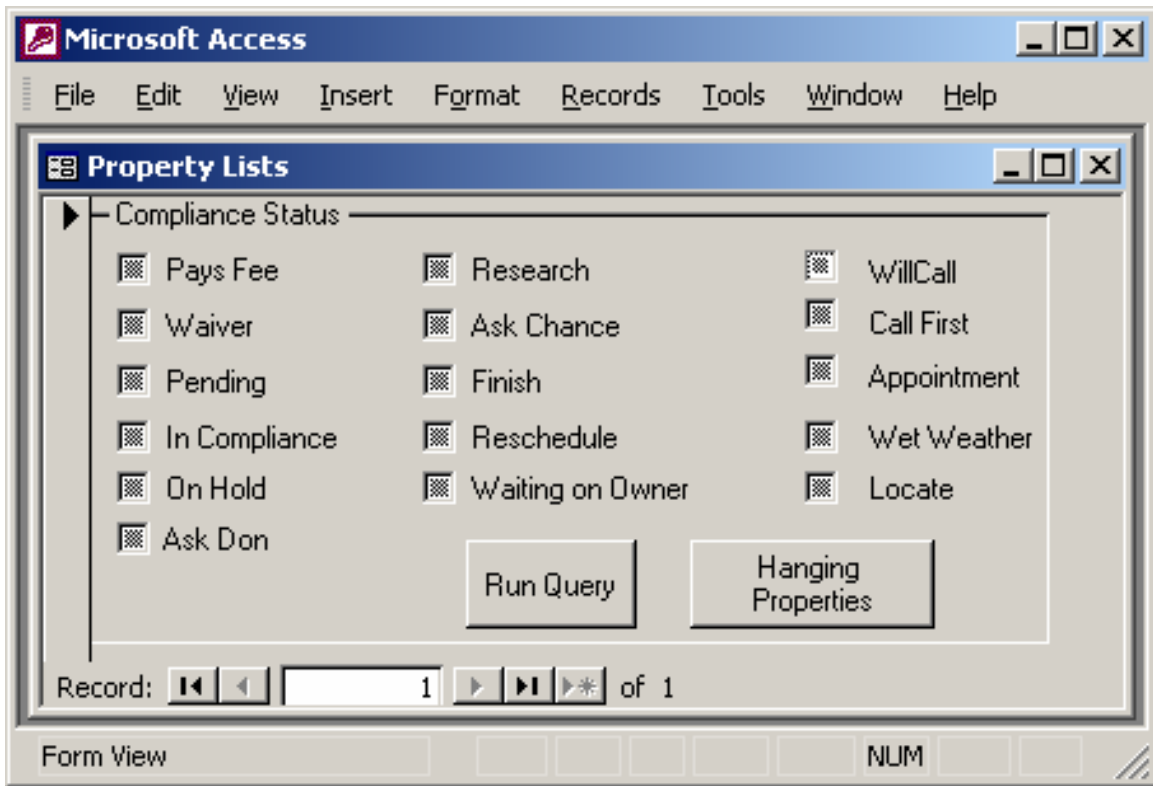
Pending Paid: Displays the pending paid report.

Date	Mail Sent	Phone	Appointments	Site Assessments	Pending	\$ promised	#Residential complete	\$ Paid	Area Removed	Gallons Removed	Commercial Complete
10 1999		1									
11 2000		4									
12 2000	1239	75		45	23	\$2,410					
1 2001	9	43		32	16	\$3,480					
2 2001		39		7	2	\$800	4	\$180	2100	1309	0
3 2001	1981	4		1			1	\$500	4400	2743	0
4 2001		61	2	83	15	\$2,880	1	\$100	3500	2182	0
5 2001	22	46		54	15	\$1,065	4	\$905	4850	3023	0
6 2001	429	179	5	84	32	\$2,625	3	\$355	20935	13049	2
7 2001		52	6	65	25	\$1,535	16	\$1,685	8700	5423	0
8 2001	584	174	28	76	16	\$2,805	10	\$2,185	11425	7122	0
9 2001	429	174	50	121	24	\$3,365	15	\$3,600	15700	9786	0
10 2001	947	121	10	68	13	\$1,245	10	\$865	6950	4332	0
11 2001	1194	349	102	160	22	\$2,450	20	\$2,045	18275	11391	2
12 2001	240	409	103	130	10	\$1,555	11	\$1,210	8300	5174	0
1 2002	192	362	151	154	55	\$9,085	17	\$2,490	20250	12623	1
2 2002		229	123	150	49	\$9,095	21	\$2,170	12400	7729	0
3 2002		177	110	176	18	\$2,260	23	\$4,325	20850	12997	0
4 2002		88	14	154	17	\$1,910	10	\$2,330	8550	5330	0
5 2002		173	19	110	16	\$2,105	33	\$4,830	26602	16582	1
6 2002		155	21	116	15	\$1,540	21	\$2,885	27950	17422	2
7 2002	934	164	24	68	11	\$1,455	9	\$1,185	12200	7605	2
8 2002	783	372	159	206	17	\$2,290	11	\$1,770	10500	6545	0
9 2002	782	254	79	193	16	\$1,790	17	\$2,355	28575	17812	4
10 2002		296	121	223	20	\$3,270	48	\$7,235	50550	31510	1
11 2002	756	235	75	155	9	\$1,160	16	\$2,885	20250	12623	1
12 2002	461	182	54	133	3	\$130	5	\$1,170	6100	3802	0
1 2002	1	16	13	22	1	\$55	4	\$790	4900	3054	0
TOTALS	10983	4434	1269	2786	460	\$62,360	330	\$50,050	354812	221166	16

Pending Area: 274515 Pending Gallons: 171114

Record: 1 of 28

Purpose of Form: Displays current totals for program by month.



Purpose of form:

Allows user to display all properties with certain Compliance Status.

Buttons:

Run Query:

Opens query, will display a list of all properties which match the compliance status checked on form.

Hanging Properties:

Displays list of all properties that have a phone log, but do not have a compliance status. Also shows all properties that had a scheduled appointment that have not been updated since the appointment.

Microsoft Access

File Edit View Insert Format Records Tools
Window Help

propertytotals

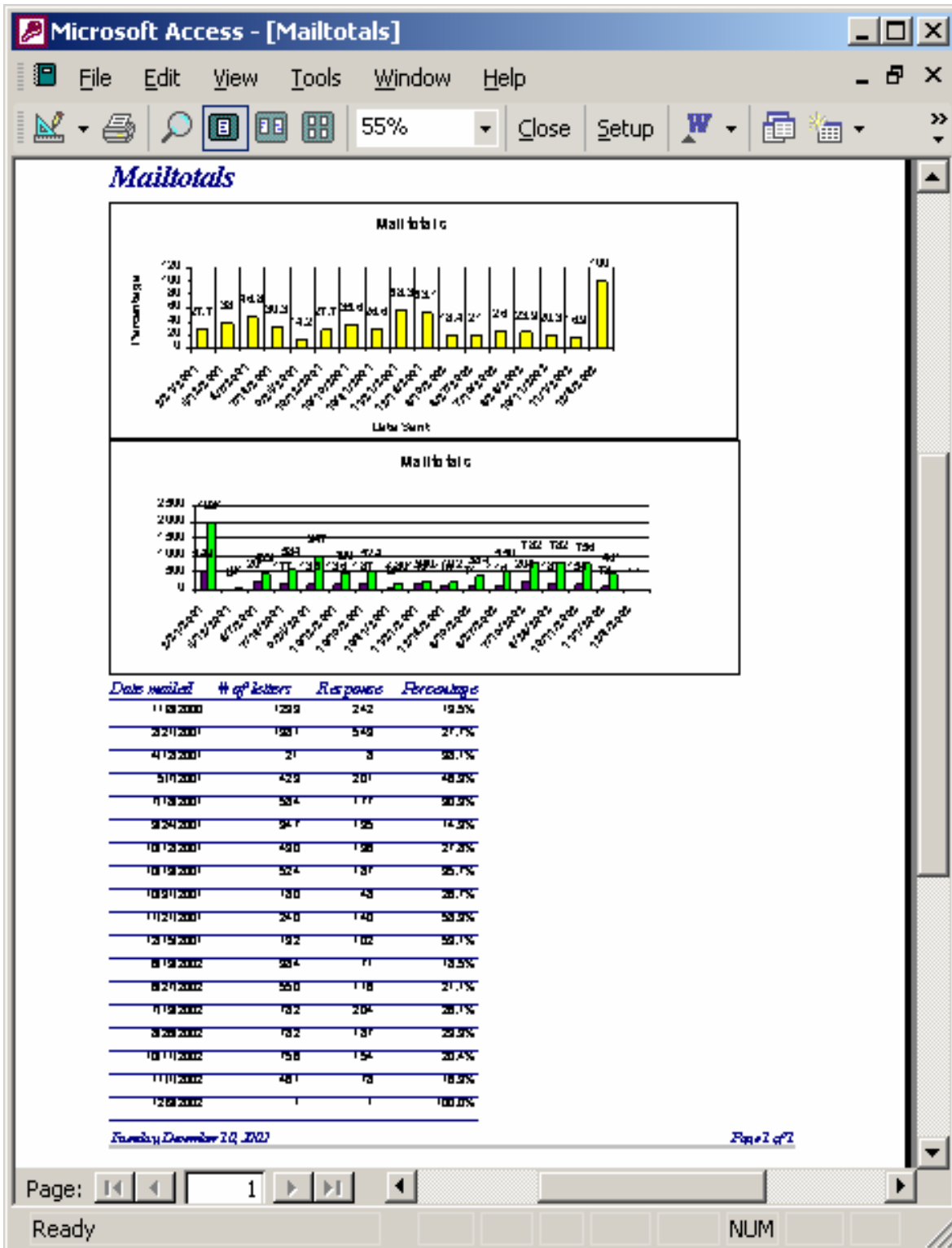
InComplianceType	CountOfAccount
Pays Fee	172
Waiver	79
Pending	84
In compliance	1996
Will Call	35
Appointments	14
Call First	3
On Hold	21
Waiting on Owner	56
Research	22
Ask Chance	13
Finish	17
Reschedule	14
Rain	8
Locate	2
In compliance Without Site Asses	551
Ask Don	8
New Owner	11
Commercial	12

Record: 1 of 19

Fc NUM

Purpose of form:

Shows total numbers of properties in each compliance status.



Purpose of Form:

This report gives us percentages of direct mail Response.

DOWNSPOUT DISCONNECTION INSPECTION FORM

Call us at 473-2300

COMMERCIAL

Basin _____

1. Service address _____ Phone _____

2. Contact name and address (if different) _____
_____ Zip Code _____
3. Contact is- OWNER RENTER OTHER _____
4. Total number of downspouts _____
5. Are the downspouts connected to the sanitary sewer system? YES NO Total connected _____
6. Approximate area of roof top _____ sq. ft. Area connected _____ sq. ft.
7. Number of parking lot drains _____ ABOVE or BELOW street level
8. Is/are the parking lot drain/s connected to the sanitary sewer system? YES NO
9. Approximate area of parking lot _____ sq. ft. Surface type _____
10. Any other drains (stairwell, window well, etc.) _____
11. Does the property have any considerable slope? _____

12. Does the property have a retaining wall? YES NO If Yes, give details

13. What other concerns exist?

14. Work that needs to be done

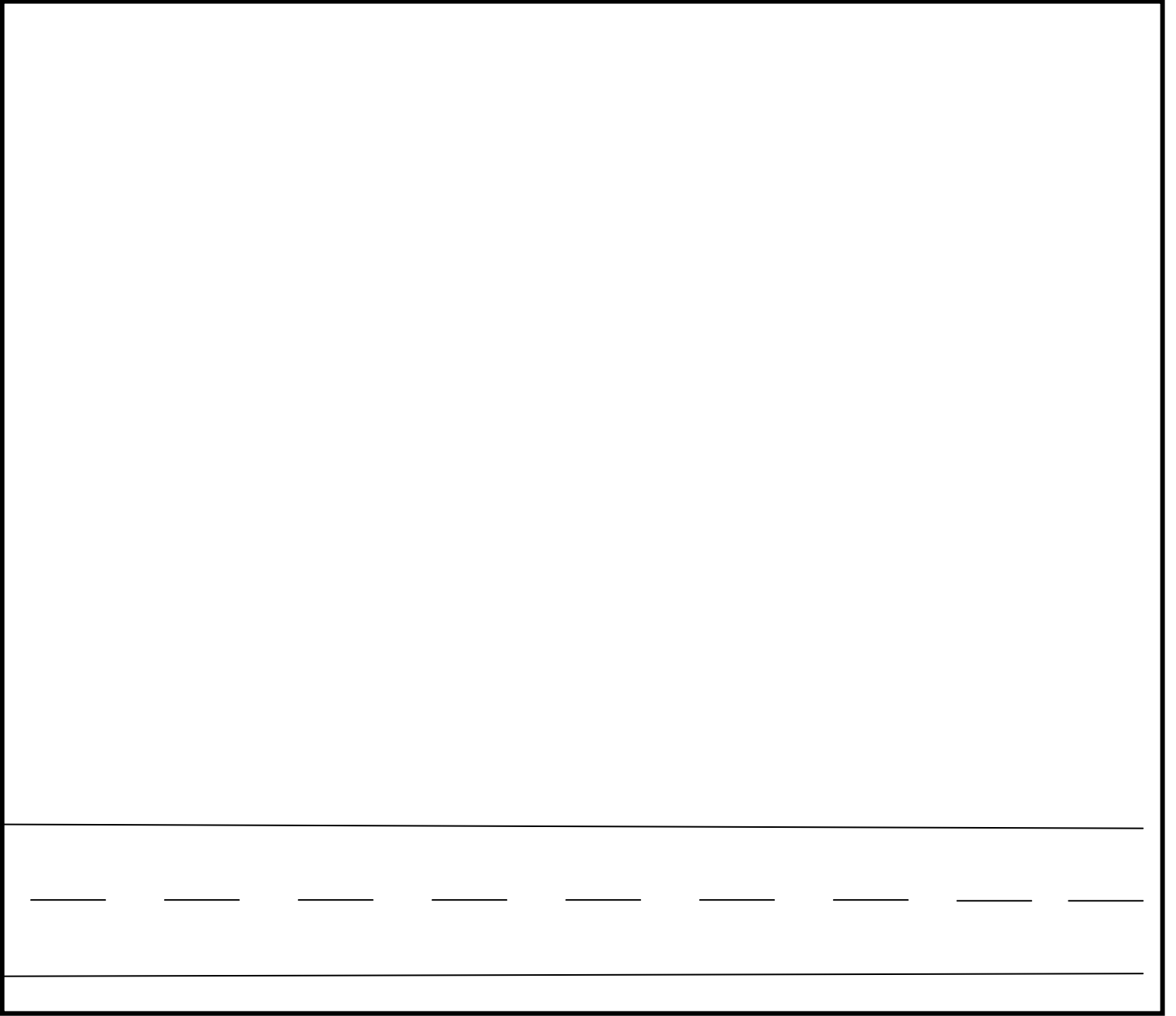
16. Right-of-way work needed? YES NO If Yes, what? _____
17. How did participant hear about the program? _____ Newspaper _____ Billboard _____ Workshop _____ TV
_____ Neighbor _____ Mail _____ Brochure _____ Internet _____ Other _____

Meets Wavier Criteria	
YES	NO

Owner Signature _____
Date

I commit to helping improve Bremerton's environment and to reducing CSO's by disconnecting my downspouts and other drains from the sanitary sewer system. All work must be completed within 30 days of site assessment, unless otherwise documented and agreed. Property may be subject to stormwater surcharge fee, as defined by City of Bremerton Ordinance 4684 & 4685, until separation work is complete and documented per post inspection. Separation work must be completed as outlined above and on the attached / associated site plan.

Pre-Inspection Completed by Date Post-Inspection Completed by Date



N/P – needs to be plugged
D/W – driveway drain

N/C – not connected
T/L – tight line

C – connected
PER – perforated pipe

D/S – downspout
– slope

Notes
