



CITY OF ARVADA

STORMWATER UTILITY

2006 ANNUAL REPORT

TO THE PUBLIC



Produced by the City of Arvada Public Works Department

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I. INTRODUCTION

The 2006 Annual Report to the Public details the programs for which the Stormwater Utility revenue was used, including program expenditures and subsequent accomplishments. Residents and businesses in Arvada are charged a Stormwater Utility Fee based on the impervious area of each property. Revenues from the Stormwater Utility Fee funds flood control projects, storm system maintenance, and programs required under a federally mandated Stormwater Permit obtained by the City. Any questions concerning this material may be directed to the Stormwater Hotline at 720-898-7810 or send an e-mail to stormwater@arvada.org.

A. ARVADA'S STORMWATER UTILITY FEE

Development of Arvada's Stormwater Utility Fee began in August 2000. A nine-member Stormwater Utility Citizen Task Force, with the assistance of a consultant, reviewed the various stormwater utilities that had been implemented nationally, implementation options, equitability of those options, and cost. Analyzing a random selection of properties, the Task Force concluded and recommended to City Council that Arvada's Stormwater Utility Fee be based upon the amount of impervious area on each property. Impervious area includes surfaces such as rooftops, driveways, and parking lots. Because impervious area increases runoff, assessing each property's impervious area and applying a consistent rate throughout the City was deemed the most equitable, consistent, and accurate assessment method.

Beginning in February 2001, a significant public outreach effort began to let residents and businesses know about the proposed Stormwater Utility Fee. Specifically, materials and presentations addressed:

- The needs that the new fee would fund.
- The assessment methodology.
- The impact of the proposed rate on individual property owners / lessees.

After public notification and hearing, the Stormwater Utility Fee was unanimously passed by City Council in June, 2001. From a digitized aerial photograph, the impervious area for every property in the City was determined. Beginning in November, 2001, Arvada citizens and businesses received notification of the new Stormwater Utility Fee, including the square foot of impervious area associated with their property and the amount of the bimonthly fee. Those who disagreed with the impervious area determination were able to contact the City and have a field crew re-measure, and potentially, revise the charge.

Beginning in January 2002, the Stormwater Utility Fee was added to the bimonthly utility bill. For those within the City limits not receiving water and/or wastewater services and, thus, do not receive utility bills from the City of Arvada, a separate bimonthly bill is sent for stormwater.



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As new homes and commercial facilities are built, additions are permitted, or demolition occurs, the impervious area is updated and fees are adjusted appropriately. This way, impervious area data is maintained and remains current.

B. STORMWATER UTILITY RATE, REVENUE, AND EXPENDITURES

In 2006, all properties were charged at the same rate of \$0.00281 per square foot of impervious area per bimonthly bill. The 2006 revenue was just over \$3 million, with the average single-family home paying \$3.91 per month, or \$7.82 per bimonthly bill.

In 2007, the Stormwater Utility rate will be increased to \$0.00287 per square foot of impervious area per bimonthly bill. As in the past, all properties are charged at the same rate. Anticipated revenue for 2007 is expected to be approximately \$3.1 million.

C. 2006 ANNUAL REPORT TO THE PUBLIC

The 2006 Annual Report to the Public is divided into the following three sections:

Flood Control Projects - In 2006, \$4.4million was expended on City flood control projects, with approximately \$2.3 million financed by the Stormwater Utility fee. The City's flood control activities for 2006 are described in Section II of this report.

Stormwater Permit - In 2006, approximately \$525,000 was expended on the City's Stormwater Program in response to the City's Stormwater Permit, a regulatory mandate under the Clean Water Act that was acquired from the State on March 10, 2003. The City's activities under the permit are described in Section III of this report.

Local and Regional Stormwater Programs – In 2006, over \$38,000 was expended on Local and Regional Stormwater Programs. A summary of these programs is included in Section IV of this report, including the sampling conducted of the City's surface water bodies, pond dredging activities, and mosquito control. These activities are conducted to support and improve the overall health of streams, water bodies and ultimately the health of all Arvada citizens.



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II. FLOOD CONTROL PROJECTS

There are two categories of flood control projects: miscellaneous drainage projects and major drainage projects. Miscellaneous drainage projects are minor in cost and construction complexity, these may be conducted by City crews or by private contractors. Major drainage projects generally require extensive planning and are conducted by a contractor. These projects generally eliminate major drainage problem and are costly to complete.

A. MISCELLANEOUS DRAINAGE PROJECTS

The Stormwater Utility Fee funded over \$300,000 in miscellaneous drainage projects in 2006. Below is a list of projects completed:

Carr and W. 58th Avenue: Replaced storm sewer through the intersection and repaved.

Devinney and W 64th Place: Piping was installed to collect neighborhood sump drain discharge water that was constantly flowing down the gutter and divert it to the storm sewer system.

Wadsworth Bypass and W. 62nd Ave.: Install storm sewer to drain low spot in the street and avoid pooling of stormwater.

Hackberry Park: Regrade eastern edge of park to eliminate ponding and reduce possible flooding of adjacent properties.

Brooks Drive and Holland Street to Garland and W 62nd Avenue: Install storm sewer to improve drainage within neighborhood streets.

Miller Street and W 69th Avenue: Install storm improvements to collect spring water to prevent it from entering street, flowing in the gutter, contributing to algae growth and forming ice dams.

Lake Arbor Golf Course: Spillway improvement at the stormwater collection pond near the maintenance facility of the golf course.

Westwoods Golf Course maintenance facility: To ensure adequate collection of wastewater and to protect stormwater runoff from the facility, added a drain that collects wash water and sends it to the sanitary.

B. MAJOR DRAINAGE PROJECTS

In 2006, \$3.5 million in major flood control projects were contracted, with just over \$2 million being funded by the Stormwater Utility Fee. The City also incurred bond payments of \$930,000



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that were used to fund the largest flood control projects. Below is a list of projects completed or initiated in 2006:

Van Bibber Flood Control Project: Van Bibber Creek drains a 20-square mile basin that begins in the foothills west of Arvada, ending at its confluence with Ralston Creek. The Creek is normally a small trickling stream. Once or twice each decade, storm flows exceed the drainage capacity of the Creek, which actually flows underground across the Arvada Plaza at West 58th Avenue and Garrison Street before dumping into Ralston Creek. The project to expand the inadequate channel for Van Bibber Creek began in 2002, with the help of \$7.0 million in Federal dollars were earmarked for the project to supplement the \$5.0 million set aside by the City of Arvada and the Urban Drainage and Flood Control District. The project includes an open channel along the south side of West 58th Avenue beginning at Oak Street, through the Lutz Sports Complex, under Kipling Parkway, across the old Jefferson County shops site (currently a field on the south side of W. 58th Avenue and west of Independence Street), into two box culverts (each 8.5' x 14.5'), and then northeasterly underground, discharging into Ralston Creek upstream of Garrison Street.

Arvada Channel: The Arvada Channel conveyance system routed design flows of 1,020 cubic feet per second through a concrete box culvert that ranges from a 12 x 6 foot to a 14 x 6 foot inside opening along W. 51st Avenue from Four Acre Lake to Yarrow Street. This section of box culvert completes a drainage system from Miller Street to Clear Creek

Pomona Culvert Replacement: Regular flooding on Pomona Drive just west of Wadsworth Boulevard was corrected by installing additional storm drainage pipe under Wadsworth Boulevard along with a drainage collector box on the west side of Wadsworth.

Garrison Street Bridge: In 2006, completed the design for replacing the bridge across Ralston Creek and initiated right-of-way acquisition. Currently, the bridge would not adequately accept flood waters from Ralston Creek or the upstream Van Bibber Creek.

Hayes Lake Purchase: Hayes Lake was purchased and dredged in 2006. The purchase was funded from the flood control funds, and the dredging funded from miscellaneous drainage.

Yankee Doodle Gulch: The Master Plan for Yankee Doodle Gulch was completed and a refund was provided in the amount of \$5,466.

Stream Bank Stabilization: Stream bank stabilization occurred with the funding and technical assistance of Urban Drainage and Flood Control District for two projects. On Ralston Creek upstream of Quaker Street at the Westwoods Golf Course, the stream bank received needed attention as a cut bank on Ralston Creek was jeopardizing the banks of a detention pond just north of the Creek. The second bank stabilization project was conducted on Van Bibber Creek, both upstream and downstream of Ward Street, in conjunction with a trail being constructed under Ward to connect Van Bibber Park to the eastern system.



III. STORMWATER PERMIT

According to the United States Environmental Protection Agency (EPA), nearly 40% of surveyed water bodies do not meet standards, due, in a large part, to polluted stormwater runoff. To address this concern, the EPA, in 1990, required large municipalities, such as Denver and Aurora, to apply for and operate under a Phase I Stormwater Permit as outlined in the Clean Water Act. Starting in 2003, cities with populations between 50,000 and 100,000 people (based on the 1990 census) and densely populated unincorporated areas throughout the nation are required to apply for and operate under a Phase II Stormwater Permit. The Phase I and Phase II Stormwater Permits' provisions are designed to clean up stormwater runoff by implementing the programs outlined in the following pages.

The City submitted the Stormwater Permit Application to the Colorado Department of Public Health and Environment before the March 10, 2003 deadline. Negotiations resulted in a final permit application approval by the State on June 9, 2004. Arvada's Stormwater Permit Application can be viewed on the City's website at <http://www.arvada.org> and typing the keyword "stormwater" then click on the link, "Stormwater Management Plan."

The Permit commits Arvada to developing or continuing programs in the following areas:

1. Public Outreach / Education
2. Public Participation / Involvement
3. Construction Site Erosion Control
4. Illicit Discharge Detection and Elimination
5. Long-Term Maintenance of Stormwater Best Management Practices
6. Pollution Prevention and Good Housekeeping of Municipal Operations

The Apex Center, under North Jeffco Park and Recreation District, was designated by the State as needing a Stormwater Permit because of the number of people each day that it serves. For the purposes of leveraging resources, the City of Arvada's Stormwater Permit includes this facility. Essentially, the City's Permit includes all areas within the City limits except public school sites.

The following pages summarize Arvada's 2006 activities that satisfy permit requirements for each of the Minimum Control Measures, followed by a summary of activities anticipated for 2007.



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A. PUBLIC EDUCATION AND OUTREACH

1.0 General Summary

The City of Arvada conducts public outreach to educate and engage our residents and members of the business community in understanding how their actions affect the quality of stormwater runoff, and consequently, water quality in our streams.

In 2006, the City of Arvada expended just over \$21,400 in satisfying the Public Education and Outreach goals of the Stormwater Program. Below is a summary of the activities the Stormwater Program conducted.

2.0 Summary of Programs

2.1 Storm Drain Marking

Storm drains are the openings in the curb into which stormwater flows. To help residents understand that putting waste down the storm drains or gutters pollutes our streams, the City sponsors storm drain marking events. These events normally incorporate the help of elementary students or Eagle Scout candidates. In 2006, however, City staff conducted an infill project for areas that were previously marked with a “No Dumping, Drains to Creek” medallions, but for whatever reason, the medallions were no longer attached to the curb. City staff applied 123 medallions on November 7, 2006.



Arvada's Medallion

2.2 Adopt-a-Street / Park / Trail



Streets and Parks in Arvada may be adopted, which requires that trash and debris be picked up and disposed of properly two to four times a year. The Adopt-a-Street Program in 2006 had 39 routes covering over 33 miles. To adopt, please call Tara Kratzer at 720-898-7803. The Adopt-a-Trail Program is managed out of the Parks Department who has 8 schools participate in adopting a trail for a day where students also planted trees along their adopted route. Call

Tom Griffiths at 720-898-7416 for more information.

2.3 Fillup A. Can Day

Fillup A. Can Day is an annual city-wide litter cleanup and picnic named after Fillup A. Can, a large green googly-eyed trash can who encourages residents to always dispose of trash properly. The Stormwater Program actually had a costume made for Fillup so that he could attend public events. In fact, Fillup A. Can attended Kite Day, a popular event held just a few weeks the cleanup to ask residents to sign up to clean a route.



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On Fillup A. Can Day, May 6, 2006, over 500 people participated in cleaning up City streets, parks and waterways. The City distributed brochures on a variety of topics, including watershed protection, water conservation, and the Rooney Road Recycling Center, in packets given to all the Fillup A. Can Day volunteers. Litter was picked up from 17 trails, 22 streets and 8 parks. Volunteers were treated to a picnic for their efforts. The Clear Creek Optimist Club cooked hamburgers and hot dogs at the picnic. City employees and elected officials served food for the participants. At that same time, across the street from the picnic, was the City's Open House, so an additional hundred plus residents joined in the picnic.



2.4 Majestic View Nature Center and Two Ponds National Wildlife Refuge

The Majestic View Nature Center is a valuable partner to the Stormwater Program in so much as of the 13, 452 contacts their staff made in 2006, most of them were in the context of environmental education. In 2005, the Stormwater Program created the nonpoint source display at the Center. According to the Center's director, approximately 4,200 people visited the Center through educational programs or by simply walking through the displays.

A couple of specific community outreach activities were conducted by Majestic View Nature Center volunteers that helped get the word out about nonpoint source pollution, including:

- From August 29 through 31st, 2006, the Majestic View Nature Center and the Stormwater Program shared a booth at the Harvest Festival in Arvada, where over 2,052 people were contacted. Next to this booth was the Two Ponds Wildlife Refuge who also had a booth. A big draw to both of the booths was the animal skins and mounts used by both organizations to educate children about the animals living in and around Arvada.
- The Majestic View Nature Center also participated in the Two Ponds National Wildlife Refuge Open House during Open Trails Week. Trails Day encourages residents to get out and enjoy the many parks and trails that the City has to offer, and look at the streams within these parks.



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2.5 City of Arvada Website

The City's Website contains information on maintaining stormwater quality. Currently, basic recycling and proper disposal methods information is on the website.

2.6 Rooney Road Recycling Center

The City's Stormwater Program provides funding for the Rooney Road Recycling Center so that residents have a low cost means of properly disposing household chemicals. Residents can make an appointment to drop off their household chemicals at the Rooney Road Recycling Center for a small fee of \$13. The Stormwater Utility subsidizes the Center; the funding provided is outlined under the Illicit Discharge program described on page 12. The Stormwater Program distributes brochures describing the Rooney Road Recycling Center and the services it provides during presentations at the Harvest Festival Booth, through direct mailing, and as a follow-up to illicit discharges.

2.7 Annual Stormwater Utility Report

The report is available on the City's website and is sent to individuals upon request.

2.8 Outreach to Civic Organizations

- Civic Organizations make up a large percentage of the participation in the Adopt-A-Street / Park / Trail and Pride Day Programs.
- Optimist Clubs cooked hamburgers and hot dogs for those participating in trash cleanup for the May 6, 2006, Arvada Pride Day.



2.9 Improve and Distribute Brochures and Information

The City anticipates that through an iterative and cohesive public education and outreach program, a larger population will be exposed to information on nonpoint source pollution. The following brochures continue to be the focus of our public education program, including:

- "Clear Choices for Clean Water" brochures on landscaping and household chemicals.
- "Hidden Household Hazards" that describes the services provided to residents by the Rooney Road Recycling Center.



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- “City of Arvada A to Z Recycling Guide” that identifies the many places where residents in Arvada can recycle their waste products.
- City of Arvada’s Water Quality Report that describes the results of drinking water sampling over the previous year and also has a description of stormwater issues.

The City distributes these brochures at each event, such as at Fillup A. Can Day, the Harvest Festival, and whenever we present in schools or to scout groups. As every year, the City also shares its educational resources with the Apex Center for distribution to its patrons.

New in 2006, were two industry-specific brochures that were developed:

- A brochure was developed for and sent to 26 landscaping companies that operate within the City. The brochure emphasizes 1) keeping chemicals, dirt and grass clippings off of the pavement, 2) never applying chemicals during a rainstorm, and 3) always cleaning up spills from operations or equipment.
- A brochure was developed for the restaurant business and sent to 222 food service businesses within the City to notify them that good housekeeping extends to the outside of their building, especially inside used grease and trash containment areas.

2.10 Publications

The City of Arvada published articles throughout the year in its bimonthly newsletter, the Arvada Report, which is a City newsletter that is delivered to every household, apartment and business in the City, approximately 52,000 copies each edition, six times a year. Below is a list of articles produced in 2006:

- December 2005 / January 2006 edition: “Keeping Arvada Clean is Everyone’s Responsibility, City Crews Heavily Impacted by Excess Trash and Debris”
- April / May 2006 edition: “Day of City Pride and Education”, advertised Fillup A. Can Day, the annual City-wide litter cleanup, and the City’s Open House.
- June / July 2006 edition: “Foam Belongs In Lattes, Not Creeks” which identified detergents from over 100,000 people washing things outdoors as the primary source of foam in our creeks.
- A Stormwater Program message is included in Arvada’s Drinking Water Quality Report that is distributed in the Arvada Report to families and businesses each year and is also posted on the City’s website.



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2.11 Presentations

The following presentations were conducted in 2006:

- On April 14th, the Enviroscape¹ was presented to 80 Lucas Elementary students and 20 adults by the Majestic View Nature center volunteers.
- On April 20th, a water presentation was made to Cub Scout Pack # 540 at Vanderhoof Elementary to 29 adults and 32 children. The Enviroscape was also illustrated for the audience.
- On April 28th, 2006, the Enviroscape was presented to Peck Elementary students at their Career Day. Approximately 65 students were in attendance. All received informational brochures.

2.12 Pet Waste Program

The City of Arvada currently has an Ordinance that can levy fines from \$25 up to \$999 against persons who fail to pick up after their pet in public areas. Signs are posted at most parks that list the rules of the park, including the rule to clean up after your pet.



Arvada's Stormwater Program continues to build its Pet Waste Program in 2006 by adding pet waste bag dispensers. The following parks are equipped with dispensers:

- Memorial
- Majestic View
- Lady Bug
- Lake Arbor
- Davis Lane
- O'Kane Property
- Danny Kendrick West
- Allendale
- Off-leash Dog Park
- Robbie Ferrifino

All dispensers are filled by volunteers except for the dispensers at three of Arvada's parks, which go through 28,000 pet waste bags each year.

Also in 2006, a Master's student at Colorado State University, Brandon Marette, conducted surveys of visitors to Lake Arbor, asking them why they did not pick

¹ The Enviroscape is a model used to show how contaminants found in typical neighborhoods can be carried away during a rain event and discharged into nearby streams and ponds, polluting our waterways.



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up after their pet. His findings are documented in a report called, “Are Our Parks Wasting Away?” According to Mr. Marette’s findings, “The main improvement they (the public) would benefit the most from the City of Arvada would be the installation of dog poop bags” that would be used to pick up pet waste and dispose of it in the trash.

2.13 Leverage Existing Educational Resources

When possible, the City will work with other governments, organizations, and non-profits to leverage educational resources developed by others.

- Arvada continued to work with the Northern Colorado Alliance of Stormwater Coordinators, a group consisting of ten governments all operating under a Phase II Stormwater Permit.
- Arvada works with the Jefferson Conservation Service whenever possible.

3.0 Summary of Activities During the Next Reporting Cycle

The Stormwater Program must continue its Public Education and Outreach efforts on existing programs as outlined above. In addition, the following Public Education and Outreach goals were established in the Permit for 2007:

2007 Reporting Cycle Goals

- Fifty brochures / newsletters distributed to public and businesses.
- Review effectiveness of brochure / newsletter distribution.
- Insert on the utility bill or enclose with the utility bill, text concerning nonpoint source education – to be distributed to over 30,000 customers.
- Review effectiveness of Pet Waste Program.



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B. PUBLIC PARTICIPATION AND INVOLVEMENT

1.0 General Summary

The City of Arvada must comply with applicable State and local public notice requirements using an effective mechanism for reaching the public. Other programs may be implemented to facilitate public participation and involvement in the Phase II Stormwater Permit programs.

In 2006, the City of Arvada spent \$1,520 on implementing the Public Involvement Minimum Control Measure. Labor Overhead, which funds administrative costs in the City Clerk's Office, conducted the necessary public notice.

2.0 Summary of Programs

2.1 Local Public Notice Requirements

The City of Arvada published its legal notices on a Publication Board at City Hall and in the Legal Section of the local newspaper.

2.2 Ask Arvada

The City of Arvada provides several different methods for residents to submit comments or questions. This Program is called "Arvada Info2Go." Residents can call the main City number and listen to prerecorded information or leave a voicemail. Over the Internet, residents might submit an e-mail, or some residents may prefer to visit City Hall and fill out a comment card. The system is designed to coordinate all these sources of information and communication avenues, with the website containing the same information as the prerecorded telephone information, and as the response to a comment card or question. The address for "Arvada Info2Go" is: http://www.tele-works.com/htbin/webware/default.asp?agency=arvada_city.

3.0 Summary of Activities During the Next Reporting Cycle

The Stormwater Program will continue its Public Participation and Involvement efforts on existing programs as outlined above. Because the current program is fully compliant, no new activities were targeted for 2007.



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C. ILLICIT DISCHARGE DETECTION AND ELIMINATION

1.0 General Summary

Under the Illicit Discharge Detection and Elimination (IDDE) Program, the City of Arvada must develop procedures to protect receiving water quality from pollutant levels that degrade and threaten aquatic life, wildlife, and human health. The IDDE Program attempts to reduce intermittent, storm-driven pollution carried into the storm sewers and illicit discharges.

In 2006, the City of Arvada expended \$139,400 on the IDDE Program in labor, contract support, and supplies. The City of Arvada IDDE Program efforts included inspection of stream outfalls, determination of sources of pollutant discharges to gutters or drains and their toxicity, funding cleanups of spills where the responsible party could not be determined, disposal of abandoned materials, and mapping the City's stormwater infrastructure.

2.0 Summary of Programs

2.1 Develop a Stormwater Control Ordinance

In 1992, the City of Arvada developed an ordinance that prohibits any discharges into the storm sewer system except stormwater and other specified exceptions.

2.2 Develop the Storm Sewer System Map

The City of Arvada Engineering Mapping Section maps stormwater conveyances, including inlets, manholes, and outfalls. In 2006, the City of Arvada completed the necessary updates to the storm sewer system maps. Field verification will now occur to assure that the current storm sewer maps are accurate.

2.3 Develop a Plan to Detect and Address Discharges

In 2004, the Illicit Discharge Detection and Elimination Plan was developed to comply with the Permit requirements. The plan is designed to identify, locate and correct untreated discharges that contribute pollutants. The Plan also addresses compliance and enforcement, relying on our ordinance that prohibits any discharges into the storm sewer system except stormwater.

Each year, the Stormwater program responds to reports of illicit discharges that vary in extent from minor locally isolated releases to major spills. Most discharges or spills were handled immediately. The party responsible for the release is generally required to clean up the spill and the City confirms that the spill was cleaned up appropriately. In some cases, however, the Stormwater Utility must fund a cleanup if no responsible



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party is known. All citizen-initiated calls were investigated and recorded on a complaint form.

In 2006, the City's Stormwater Program responded to 43 complaints from citizens and from others within the municipal organization about oil, concrete/cement, grease, chemical waste dumped in the gutter, and equipment washout in the gutter, including:

- 15 oil, gas, or hydraulic fluid spills
- 5 grease
- 5 concrete washouts
- 2 cleaners/detergents
- 3 paint
- 3 sewage
- 9 other types of discharges

There were eight warning notices served, including five to businesses. Two enforcement actions were taken to have cleanup occur. 1) The Shift Shop, a transmission repair business, was very cooperative and conducted a thorough cleanup. Mr. Automotive, a portable automotive repair service, received a judgment from local courts.

2.4 Minimizing Illicit Discharges

The City must minimize illicit discharges to the maximum extent practicable. Arvada's implements the following management practices:

Dry Weather Screenings:

The City conducted 109 dry weather screenings of outfalls on Van Bibber and Little Dry Creeks in 2006. An outfall is the point at which the City pipe discharges storm flows into the streams that are considered Waters of the State. By inspecting outfalls during dry weather, an inspector can tell whether there is a constant flow coming out of the pipe and whether it appears to be contaminated. If there are issues with the flow, then follow-up occurs. In 2006, the City inspector found one discharge with slight discoloration and three outfalls that appeared to have a lot of trash.

Stormwater Hotline:

The Stormwater Hotline was established that uses the following number: 720-898-7810. This number has not been very effective at receiving calls, so the message was updated to provide the caller with additional options to find a person right away if necessary. There were seven calls to the Stormwater Hotline in 2006, including one for a spill, one was a drinking water inquiry, one concerned the Stormwater Utility charge, and four did not leave a message. After hours, if the caller deems it an emergency, the call is routed to Police Dispatch or the Water Treatment Plant.



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Rooney Road Recycling Center:

The City's Stormwater Program funds the Rooney Road Recycling Center \$37,590 annually so that residents have a low cost means of properly disposing household chemicals. If residents did not have an appropriate disposal mechanism, it is possible that these household chemicals could become an illicit discharge. Residents can either make an appointment to drop off household chemicals at the Center, or call to have them picked up. Of the total 2,866 Jefferson County residents using the facility, 17.5% were Arvada residents that made an appointment to drop off household chemicals, and 30% were Arvada residents who made an appointment to have their household chemicals picked up. In 2006, a total of 248,075 pounds of materials were disposed of in a proper and legal manner due to the Rooney Road Recycling Center.

3.0 Summary of Activities During the Next Reporting Cycle

The Stormwater Program must continue its Illicit Discharge Detection and Elimination efforts on existing programs as outlined above. In addition, the following Illicit Discharge Detection and Elimination goals were established in the Permit for 2007:

2007 Reporting Cycle Goals

- Complete the Storm Sewer Map
- Document number of calls received on the hot line
- Document number of dry weather inspections performed
- Document number of illicit discharges detected and eliminated
- Document number of staff trained on the IDDE plan
- Document number of Compliance and Enforcement Actions



D. CONSTRUCTION SITE EROSION CONTROL

1.0 General Summary

Under the Construction Site Erosion Control Program, the City of Arvada must reduce pollutants in stormwater runoff to the City's waterways from construction activities that result in land disturbance of one or more acres, or construction activity that is less than one acre but part of a larger common plan of development or sale.

In 2006, the City of Arvada expended over \$92,000 maintaining the construction site erosion control inspection program and follow-up enforcement.

2.0 Summary of Programs

2.1 Erosion and Sediment Control Ordinance

The City of Arvada enforced the Erosion and Sediment Control Ordinance which requires owners and operators to "undertake all reasonable efforts to prevent, mitigate, and control accelerated erosion resulting or arising from such earth disturbing activities."

2.2 Plan Review Process

The City of Arvada reviewed development plans of proposed industrial, commercial, multiple single-family-lot residential, and multi-family residential projects. The Erosion Control Plan was also reviewed as a part of the overall plan review process. In 2006, the City's Engineering Division reviewed 17 Minor Subdivision Plats, 7 Final Plats², 11 Site Plans, and 20 Final Development Plans for the City. Stormwater inspections began incorporating the site plans to a greater degree to ensure that developments implemented the approved plans.

2.3 Construction Site Inspection and Enforcement Program

The City of Arvada conducted 666 construction-site runoff control inspections of 58 construction sites throughout 2006. A form was used on-site to document the results of inspections performed. An Access database called SILTS allows for electronic tracking of inspection findings and scheduling of future inspections. The City continues to communicate potential Best Management Practices (BMP) issues by faxing inspection reports to on-site management. If the site manager or designee requires clarification of a finding, the City discusses the issue with them.

² Plats are used to subdivide an area through the Jefferson County Assessor's Office.



Ten Warning Letters, three No Permit letters, four Notices of Violation, one Court Summons, three Violation follow-ups, 2 written extensions, and two Compliance Notices were sent. The City discontinued issuing building permits once in 2006 at 1 construction site due to noncompliance. Because violations consisted of many sites that were not requesting building permits at the time, other avenues were used, such as issuing a Summons and considering referral to State enforcement.

2.4. Construction Site Materials Handling – Spill Prevention

Areas of fueling, concrete washout, and stockpiles were part of all routine inspections. Notes were added to an inspection report if problems were found.

2.5 Training and Education for Construction Site Owners and Operators

The Stormwater Program provides opportunities for development owners, operators, and contractors, and City staff to attend informational sessions, including the following:

- City promotes the “CDOT Erosion Control Supervisor Stormwater Management During Construction Training Program.” One City employee attended this training on February 7, 2006 at the CDOT Winter Conference.
- City Parks Planners were trained on construction site erosion and sediment control requirements on March 16, 2006, including how to obtain a State permit, what must be included in a stormwater management plan (SWMP) and how to conduct inspections.
- On May 18, 2006, the City Stormwater Coordinator presented Arvada’s erosion and sediment control program at the 6th Annual Stormwater Exposition.
- On July 20, 2006 the City sponsored an EPA web-based seminar, “Controlling Construction Site Runoff – A Proactive Approach to NPDES Compliance” for 33 construction site superintendents and City staff.
- On October 16, 2006, the City produced a new brochure to help educate small site developers that was entitled, “Small Site Erosion and Sediment Control Guidelines.”



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- The City helped coordinate training by Altitude Training Associates in Adams County on October 26 and 27, 2006 for 15 jurisdictions entitled, “Conducting Stormwater Compliance Inspections for Construction Activities.”
- When a workshop or training is advertised, the City places flyers on the Building and on the Planning Departments’ counters so visitors are aware of the event. The following events were advertised on the City’s front counters:
 - “Action Steps for SWPPP Compliance” being held at the Wyndham Hotel on March 15, 2006.
 - “Sediment and Erosion Control Seminar” presented by Jehn Engineering on April 19, 2006.
 - 6th Annual Stormwater Exposition on May 18, 2006 in Castle Rock.
 - Home Builder’s Association (HBA) 2006 Sediment and Erosion Control Conference at DIA Holiday Inn on December 12 – 14, 2006.
- On December 27, 2006, the Stormwater Program faxed out a notice to all construction sites to warn them about offsite tracking of mud due to the melting snow. It was unknown at the time that the City would continue to see significant snow every week for the next 6 weeks.
- The City keeps copies of the brochure entitled “Clear Choices for Clean Water, Managing Your Construction Site” on the City’s front counters.

2.6 Response to Public Concerns

The City of Arvada provided a Stormwater Hotline, 720-898-7810, for residents to call in complaints about construction sites. In 2006, the City received seven complaints about construction sites from the Stormwater Hotline, e-mail, phone or through the Streets or Engineering Divisions. Complaints were documented and followed up.

3.0 Summary of Activities during the Next Reporting Cycle

The Stormwater Program must continue its Construction Site Erosion Control efforts on existing programs as outlined above. The following Construction Site Erosion Control goals, which were identical to the goals established in 2005, must be reported for Permit compliance in 2007:



2007 Reporting Cycle Goals

- Document number of construction site inspections performed.
- Document number of compliance and enforcement actions taken.
- Document number of staff inspectors, site owners/operators/landscapers trained.
- Document number of resident calls to the Hot Line.



E. POST-CONSTRUCTION STORMWATER MANAGEMENT

1.0 General Summary

Under the Post-Construction Stormwater Management Program, the City of Arvada must prevent or minimize impacts to stormwater from new development or redevelopment. The City of Arvada must inventory stormwater Best Management Practices (BMPs) that were installed in new developments or in redevelopments since March 2003, when the permit period began. BMPs include detention ponds, trickle channels, grassy swales, or any other structural facility constructed to control stormwater runoff and improve water quality. BMPs must be inspected and the City must ensure that long-term maintenance is conducted through a control mechanism such as an ordinance, or by conducting the maintenance with City staff.

In 2006, the Stormwater Program expended \$15,700 in maintaining and monitoring post-construction BMPs.

2.0 Summary of Programs

2.1 Long-Term Maintenance Ordinance

An Ordinance has been in place to hold the owner or developer liable for the long-term maintenance of BMPs that they are required to install (Ordinance 3209, 8-25-95, removed and codified in the Land Development Code by Ordinance 3639, 8-28-00). The Arvada Land Development Code requires that site plans, submitted for review and possible construction in the City of Arvada, address drainage facilities that are compliant with the Urban Storm Drainage Criteria Manual, Volume 3: Best Management Practices manual, developed by Urban Drainage and Flood Control District. The Code requires that the owner or developer of land to be improved maintain such facilities after construction.

2.2 Establish Procedures to Identify BMPs

The Plan Review Process was used to identify and inventory BMPs proposed for new development and redevelopment. The inventory of long-term BMPs that were built after March 2003 was improved with more sites added, especially smaller sites that may not have had a State Stormwater Permit.



The City has been working to gain additional information on the specific requirements under this portion of the MS4 Permit. To this end, on March 8, 2006, the Stormwater Program viewed the EPA web-based seminar entitled “Post-Construction Overview and Introduction to Smart Growth and Low Impact Development.”

2.3 Implement an Inspection Procedure

In 2006, there were 37 sites containing 62 BMPs that were inspected under the permit conditions to ensure that long-term operation and maintenance of structural BMPs occurs. The City developed a communication tool that provides a list of issues with a cross reference to the attached pictures. A cover letter was developed for the inspection results. This package was sent to the homeowner’s association (HOA) or management company contracted to conduct maintenance. The City requested that once the work is done, they complete the form and send it back to us. A total of forty packets were sent to HOAs and management companies in the third quarter providing the HOA with 6 months to respond letters were sent (three were built prior to March 2003).

As development and redevelopment construction activities finalize, inspections will be conducted annually to identify maintenance issues.

3.0 Summary of Activities during the Next Reporting Cycle

The Stormwater Program must continue its Post-Construction Stormwater Management efforts on existing programs as outlined above. In addition, the following Post-Construction Stormwater Management goals were established in the permit for 2007:

2007 Reporting Cycle Goals

- Document number of inspections performed.
- Document the number of BMPs maintained.
- Document number of compliance and enforcement actions taken.



F. POLLUTION PREVENTION / GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

1.0 General Summary

The City of Arvada must develop a municipal operation's Pollution Prevention / Good Housekeeping Program by drafting guidelines and procedures in the form of Runoff Control Plans. Arvada's stormwater management programs will initiate discussions and training with City staff about how their work impacts stormwater quality. Contractors for the City must be trained so that they are aware of the impact their operations have on stormwater quality.

In 2006, the City of Arvada expended \$252,000 in labor, contract and supply costs for Pollution Prevention / Good Housekeeping. Major efforts included street sweeping, storm drain maintenance, and improvement of City facilities and wash pads.

2.0 Summary of Programs

2.1 SPCC Plans Maintenance

Every five years, the City must update the Spill Prevention Control and Countermeasure (SPCC) Plans for City facilities. Training must be provided to supervisors on what is contained in the SPCC Plan. SPCC plans were developed in 2004 and training conducted in 2005 for the following facilities.

- Indiana Service Center
- Wadsworth City Shops
- Lake Arbor Golf Course
- West Woods Golf Course

In 2006, supervisors and assigned staff were required to review the plan summary and sign a roster to show that they were provided the training update.

2.2 Storm Sewer Maintenance

The Wastewater Section maintained the underground storm sewer lines. Maintenance and responses to complaints were conducted as-needed. According to the Wastewater Section's Annual report, staff jetted 24 manholes and 1,800 feet of line. The Wastewater Division also cleaned 58 inlets and 9,760 feet of pipe totaling over 400 manhours. Field crews concentrated on updating the storm sewer maps to ensure its accuracy. To that end, 2,063 inlets were inspected and 2,512 manhours were spent field verifying the system. When problems were found, maintenance was conducted with replacement of 150 storm lids and repair of 11 inlets.



The Streets Section maintains the surface stormwater infrastructure, such as gutters, streams and ditches. In 2006, sediment and debris under the Van Bibber Creek bridges at Kipling Parkway and W 58th Street were cleaned. The Streets Section conducts routine cleaning of roadside ditches, and may be called out to clean areas during rain storms to assure proper drainage. Streets also responded to two citizen complaints concerning drainage in 2006.

2.3 Conduct Street Sweeping

The streets of Arvada were swept multiple times in 2006. The Apex Center, which is covered under the City's Permit, conducted sweeping of the parking **lot four** times in 2006.

2.4 Development of Runoff Control Plans

In 2004, Runoff Control Plans (RCP), which are designed to help reduce any impacts to stormwater from City operations, were developed for the following facilities:

- Indiana Service Center
- Wadsworth City Shops
- Lake Arbor Golf Course
- West Woods Golf Course
- Ralston Water Treatment Plant
- Arvada Water Treatment Plant
- Ron Culbertson Building (Wastewater Collection)
- Arvada Center

A group plan was developed for the following types of facilities:

- City Administration (City offices, parking lots and public parking)
- Parks

The Apex Center also developed a Runoff Control Plan in 2004.

Training was conducted in 2005, and a refresher summary was distributed for employees at these facilities in 2006. Employees were required to sign a roster verifying that they had read and understand the summary.

The Stormwater Program conducts biannual inspections at all facilities, and annual inspections are performed at the grouped facilities. Inspections identify where a facility might change a process or where a modification of a portion of a facility might improve stormwater quality. Findings from the inspections are reported to facility management who are then expected to make the changes. Occasionally, a modification is significant enough whereas the Stormwater Program requests assistance from Engineering and the work is contracted.



2.5 Pollution Prevention Evaluation

In some ways, the Runoff Control Plan operates as a Pollution Prevention Plan and the inspections conducted function as a routine reevaluation of the facility's stormwater management. In addition to the work conducted under the Runoff Control Plans, the following City facilities/operations were evaluated for pollution prevention methods:

1. In 2006, the Stormwater Program in conjunction with Water Transmission and Distribution began researching the operations that could be implemented to control inherent siltation caused by repair of water main line breaks.
2. The Engineering Code for Standards and Specifications was revised to include erosion and sediment control plan notes required for public improvement work.
3. Urban Drainage and Flood Control District, in cooperation with the City of Arvada, stabilized the banks of Ralston Creek at the West woods Golf Course.
4. On December 6, 2006, the Stormwater Program staff viewed the USEPA Webcast entitled, "Killing Two Birds With One Stone: Building a Local Program to Maintain Your Stormwater Practices and Prevention from Municipal Operations."
5. During the winter months, salt and sand are used on City streets in order to keep them safe for motorists. Monitoring of Ralston Creek was conducted to show how chloride concentrations change as the stream travels through different areas of the City. Based on sampling from 12 sampling events, the data showed that the sampling location which contained a mixture of salt/sand had a slightly higher chloride concentration compared to the area that had salt alone. This result shows how dilution reduces the chloride concentration as the area where salt is used is downstream.

The following facility changes were made in 2006:

1. Installed lawnmower washout at the Lake Arbor Golf Course.
2. Expanded the lawnmower washout area at the Westwoods Golf Course.



3.0 Summary of Activities During the Next Reporting Cycle

The Stormwater Program must continue its Pollution Prevention/Good Housekeeping for Municipal Operations efforts on existing programs as outlined above and in the permit. In addition, the following Pollution Prevention/Good Housekeeping for Municipal Operations goals were established in the permit for 2007:

2007 Reporting Cycle Goals

- Document number of City staff trained on the Runoff Control Plans.
- Document number of facilities with a Pollution Prevention Evaluation conducted.
- Document the number of procedures reviewed and modified to address good housekeeping.
- Document the number of City contracts evaluated for spill prevention requirements.
- Document the number of parks/golf courses evaluated for grounds keeping.



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IV. LOCAL AND REGIONAL STORMWATER PROGRAMS

The following programs are conducted to promote healthy environments in our streams and to promote the health of our citizens. These programs are not specifically required under the Stormwater Permit with the State, nor are they flood control projects. They are stormwater related activities and are funded through the Stormwater Utility. These programs include Stream Standards, Pond Dredging, and Mosquito Control.

A. STREAM STANDARDS

The City of Arvada must be active in regulatory compliance with stream standards in the state-classified streams located within the City. State-classified streams include Ralston, Van Bibber, Leyden, and Little Dry Creeks. The City maintains an active role in the rulemaking process and works collectively with surrounding jurisdictions to protect water quality. In 2006, the City expended \$16,400 in conducting these efforts in labor, supplies, and laboratory costs.

Activities conducted under this effort include the following:

- Monitoring and sampling the streams
- Monitoring and sampling the three major canals
- Monitoring and sampling Clear Creek (one of the City's drinking water sources) with neighboring cities
- Attending the Colorado Water Quality Control Commission meetings and commenting on potential rulemaking
- The City actively participates in coordinated efforts with other metro cities in enhancing stream water quality.
- Member of the Upper Clear Creek Watershed/Standley Lake Agreement, involving cooperative Monitoring.



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B. POND DREDGING

The City of Arvada dredges (sediment removal) from area ponds to restore and maintain the health of the pond and to allow for water to flow through as designed. Despite efforts to eliminate sediment in our stormwater there is a certain amount of silt that makes it into our waterways and is trapped in ponds. Over the years as the sediment builds up, the shallower water depth allows the pond to heat up, thereby contributing to increased algal growth. The shallower pond also allows for more aquatic weeds and plants to grow along the edge which reduces the water flow during high runoff events. In 2006, the City expended \$241,700 in conducting these efforts in contracted labor costs. Ponds dredged include:

- Hayes Lake
- Sedimentation pond upstream from Lake Arbor
- Davis Lane Park

Large amounts of sedimentation were removed from these areas, making a significant positive impact to water quality in Arvada.

C. MOSQUITO CONTROL

The mosquito control program expended close to \$21,700 in labor and materials to implement mosquito prevention programs for the West Nile Virus through treatment of standing water, testing for increases in mosquito populations, and responding to public concerns. In 2006, West Nile Virus reported in Colorado included 345 reported cases, with 8 being in Jefferson County and 11 in Adams County. Seven people died from West Nile Virus in Colorado, with one being from Jefferson County.

In 2006, the City entered into an Intergovernmental Agreement (IGA) with Jefferson and Adams Counties to monitor and reduce the potential for mosquito breeding within the City, especially breeding of the species of mosquitoes that carry West Nile Virus. Jefferson County contracts with Ottertail Environmental, whereas Adams County contracts with Colorado Mosquito Control. Many areas throughout the City that had a history of retaining stormwater required routine larval surveillance and treatment.