

Watershed Protection Department FY10 Annual Report

The primary functions of the Watershed Protection Department (WPD) are to protect lives, property, and the environment of the community by reducing the impact of flooding, erosion, and water pollution. This fiscal year the department has had successes in many areas while also improving its effectiveness and facing challenges posed by the economic climate. Below is a summary review of the department's performance and accomplishments this year.

Financial Summary

Watershed protection activities are largely funded by the assessment of a drainage fee on both residential and non-residential properties. In FY10, the monthly drainage fee was increased by 8.4%. Revenue from the fee represented 97% of all revenue collected in the Drainage Utility Fund (DUF). The utility collected \$58.7 million in total revenue, which was \$1.1 million more than budget. This variance was due to a conservative estimate of the financial impact of an advertisement of the commercial pond discount to all utility customers. Response to the advertisement was limited, resulting in a zero impact to revenue collected. Total expenditures of \$34.5 million were \$2.3 million (6%) less than budget. Most of the savings came from contractual savings in various department programs. The department achieved 139% of its FY10 CIP spending plan goal of \$26.4 million for a total of \$36.7 million. The spending plan included many of the projects discussed in the accomplishments and performance measure highlights section below.

FY10 Accomplishments and Performance Measure Highlights

Field Operations Division (Infrastructure and Waterway Management Program)

The Field Operations Division is responsible for maintaining the storm water conveyance system, which consists of creeks and waterways, pipelines and structural controls. There are three main sections within the division: Open Waterways and Erosion, Construction and Concrete, and Residential Ponds and Lady Bird Lake.

- Both erosion repair crews were fully operational with the required equipment. The intent was to have one supervisor for each crew. However, budget constraints prohibited the approval of a new supervisor, so the two crews were managed by one supervisor. Even with this limitation, the two crews completed six projects and stabilized 1,210 feet of stream channel embankments exceeding the goals of six projects and 1,000 feet.
- The Open Waterway Maintenance crews cleared 6.04 miles of creeks and channels exceeding the goal of 6.00 miles. These crews also responded to all the requests from the FEWS Engineering Group to manually oversee the operation of the low water road crossing gates during storm events both during and after scheduled working hours. The Open Waterway crews have now assumed the responsibility of cutting the excess vegetation on 19 City-owned lots. The number of lots requiring this service is expected to continue to increase as more buyout properties are assigned to the Field Operations Division by the Engineering Division.
- The Pond Maintenance crews are now performing the heavy duty maintenance on all of the General Fund City-owned ponds that were the responsibility of other City departments. The increase in the number of ponds from annexations and new developments raised the pond inventory from 786 to 800, representing an increase of two percent. The three pond crews spent a considerable amount of manpower assisting the Lady Bird Lake Cleanup crew, because it was extremely short handed. As a result, the goal of maintaining 90% of the ponds in satisfactory operating condition was not met.

However, the three pond crews were still able to ensure that 83 percent were operating satisfactorily at year's end. However, the ultimate goal of 100% will not be reached without another crew.

- The Lady Bird Lake Cleanup activity, which removes floating litter and debris from the lake, spent over 10,000 man-hours removing the litter and debris entering the lake from major storm events between Tom Miller and Longhorn Dams to meet community expectations for the visual and water quality conditions of this waterway. The cleanup crew, with assistance from the Pond Maintenance crews, removed 374 tons versus a goal of 200 tons. This goal was significantly exceeded because of assistance from all three Pond Maintenance crews in September when major flooding occurred in Austin. A total of 198 tons was removed in one month as a result of this flood event. Based on a team of trained observers who conduct quarterly surveys on the lake, the aesthetic quality rating averaged 1.4 with scores on a scale of 1.0 to 5.0 with 1.0 being the best score. This was well below the maximum goal limit of 2.00.
- The Storm Drain Cleaning crews are responsible for cleaning 400 miles or approximately 2,000,000 feet of pipelines that serve as the City's underground storm water collection system. Five percent or 100,000 feet is the long term annual cleaning goal. The crews cleaned 51,627 feet falling short of the annual goal of 75,000 feet. This result was mainly due to Fleet Services' decision to not repair one of the four Vactor trucks and that a new unit needs to be purchased by WPD. In addition, Fleet spent excessive time repairing the other three Vactor trucks limiting the amount of time they were in service. The crews cleaned 3,933 inlets falling short of the goal of 4,500 due to the Vactor truck maintenance delays. To reach the targeted 100,000 feet of cleaning per year, another crew and Vactor truck are needed. In addition, the crews responded to 703 "311 Telephone System" calls during storm events.
- The Storm Drain Rehabilitation crews installed 3,934 feet of storm drain pipe almost meeting the yearly goal of 4,000 feet and repaired 193 concrete drainage structures exceeding the yearly goal of 180 structures. This work was accomplished with two construction crews and three concrete crews. Two more construction crews are needed to achieve the long term goal of installing 10,000 feet and to be able to initiate a preventative maintenance program.

Watershed Master Planning Program

The purpose of the Watershed Master Planning Program is to coordinate the integration of flood, erosion and water quality activities for City staff and policy makers so they have the information to design, prioritize and implement cost effective integrated solutions that include Capital Projects, Watershed Programs and Regulations.

- Significant progress was made in FY10 on updating the Watershed Protection Master Plan. New methodology is under development to allow staff to provide problem score updates for the localized flood mission.

Data Management

The Data Management section provides departmental information technology (IT) support. It is primarily responsible for coordinating and implementing technology across the department through IT planning services, IT systems analysis, project management and GIS and database support. Its work is guided by an Information Management Plan which was completed in October 2006 and received executive team sign-off and CTM concurrence. The implementation of the Maximo Computerized Maintenance Management System (CMMS), continuance of the Drainage Infrastructure GIS (DIG) project as well as other significant projects such as the Floodplain Info System project currently account for the majority of staff time.

- The Maximo CMMS project finally began implementation mid-year after a number of years of preparation. Phase 1 of this project is expected to near completion in April 2011 with "go live" in Field Operations. The Pollution Prevention group will be the next to "go live".

- The DIG project has completed the entry of approximately 29% of construction plans identified to contain stormwater infrastructure. DIG also spent 96% of the estimated spending plan goal for FY10.
- The Data Management section exceeded by over 20% its major performance measure that measures the percent change from the baseline IT assessment. The baseline IT assessment is an objective assessment of the department's progress in increasing its IT capabilities from the baseline established in the 2006 Information Management Plan. Since 2006, the Data Management section has increased its capabilities a net 36%.

Value Engineering

The purpose of the Value Engineering (VE) activity is to enhance the value of WPD projects using a systematic and function-based evaluation approach. The effort is to maximize project product functions and services and minimize project cost and adverse impact.

- **Blarwood Storm Drain Improvements Project:** Original cost estimates assumed 100% utility conflicts with full and total replacement of all water and wastewater mains in the project area, including excavation and replacement of all streets. The VE Team recommended that the consultant team coordinate with Austin Water Utility (AWU) to determine the locations and depths of water and wastewater mains along the streets and to evaluate strategies to avoid damages to the water and wastewater mains and full replacement of the streets. Preliminary dialogue with AWU staff indicated they disagreed with the assumption of total replacement of water and wastewater utilities in the area. Potential cost savings is estimated between \$2.4 million and \$4 million.
- **Barton Creek Bypass Tunnel Repair Project:** The project team had been working on this project for about one and a half years with eight repair options identified before the VE Team joined in. The recommended solution had a cost estimate of \$3.2 million. The VE team reviewed the project and disagreed with the design engineer's existing-condition stability calculation assumptions and repair solutions. The repair solution would have increased the tunnel top slab by 10" and would have reduced the by-pass capacity by 17%, along with other changes. AECOM was then hired to provide a third-party assessment. AECOM engineer's final recommended repair solution appears to be easier for construction, less in cost, and friendlier to swimmers and endangered species. Potential cost savings is estimated between \$0.7 million and \$1.2 million.
- **MLK Storm Drain Improvement:** Prior to the VE Team being formed, WPD participated with Capital Metro to install 57 feet of 7' X 5' box culvert underneath the Red Line commuter rail where it crosses MLK Blvd. The City's cost was \$137,000. By participating with Capital Metro, the City will have the beginning of its storm drain line already in place when the remaining storm drain improvements are connected to it. This interlocal agreement avoided future construction costs, consisting of construction by boring and jacking the concrete box in place. Thus a big risk of shutting down the rail line while boring and jacking was avoided. In addition, very complicated traffic control planning and detours for longer periods of time were also eliminated. Instead the open cut installation of the line was done over a four-day period over a weekend to minimize impacts to traffic on MLK. Since this project is within the MLK Transit-Oriented Development (TOD) area, cost savings have been leveraged into the future storm drain system planning using flexible CIP funds dedicated for TOD projects. Potential cost savings is estimated at about \$0.6 million.
- **Waller Creek Tunnel Project:** This is one of the department's largest capital improvement projects in history. The project will divert up to the 100-year flood flow from upstream of 12th Street to Lady Bird Lake through an underground tunnel. The VE Team reviewed the project designs, recognizing not all information and data of the master plan and tunnel component designs is yet available. The VE Team discussed its main comments with project management team members on the \$7.15 million side inlet to be constructed upstream of 8th Street, the bypass flow of 45 cfs at the 12th Street dam, and the approach using post-tunnel project data to remodel the creek's 100-year floodplain for evaluating creek trail. In an earlier master plan model review, the basic design criterion of 4 feet (later changed to five feet) of creek water depth was also raised. These basic issues will continue to be discussed and evaluated as the project progresses.

Watershed Engineering Division (Flood Hazard Mitigation Program)

The Watershed Engineering Division's (WED) mission is to reduce existing flood hazards to protect lives and property. WED also maintains regulatory code and design criteria pertaining to new developments in order to protect lives and property from potential future flood hazard increases.

Field Engineering Services

Field Engineering Services (FES) researches citizens' flooding complaints and provides a response to the citizen as well as locating storm drain infrastructure, utility coordination, and small project construction management services to protect lives and property from flood hazards.

- The Field Engineering Services group responded to utility location requests, Austin Utility Location Coordination Committee requests, requests from the Field Operations Division for assistance, and 498 flooding complaints.
- The FES met performance goals including marking 4.7% of utility location requests and investigating 498 drainage concerns.

Localized Flood Hazard Mitigation

The purpose of the Localized Flood Hazard Mitigation (LFHM) activity is to reduce local flooding conditions to protect lives and property. Improvement projects are planned, designed and constructed to reduce local flood hazards for houses, commercial buildings and roadways due to the inadequacy or lack of local (street) storm drain systems. The section also prepares and negotiates engineering services contracts with consultants to evaluate local storm drain systems and design improvements where existing systems are found to be deficient; oversees the work of consultants in evaluating and designing local storm drain systems; coordinates projects with residents who may be impacted by proposed storm drain improvements; coordinates with property owners and the Real Estate division in property rights needed to implement local storm drain improvements. The LFHM program:

- Negotiated preliminary engineering services for the MLK-TOD storm drain improvements project and a design contract for the Blarwood storm drain improvements project.
- Initiated construction of 4th Street\Pedernales, Oaklawn and Long Bow capital improvement projects.
- Prepared designs using in-house resources for storm drain improvements for Rickey Drive, Prince Valiant, and Ashland Circle.
- Provided 66 reviews and comments for street reconstruction projects regarding storm drain improvements.
- Reviewed and commented on 11 proposed annexation areas regarding the need for storm drain system improvements.

Creek Flood Hazard Mitigation

The Creek Flood Hazard Mitigation activity plans and executes projects to reduce creek flood hazard conditions and to protect lives and property. In addition, this section updates creek flood scores as new information becomes available to help identify those areas in Austin at the greatest risk of flooding. Improvement projects are planned, designed and constructed to reduce flood hazards for houses, commercial buildings and roadway crossings due to out-of-bank creek-overflows during extreme storm events. Project types include regional detention basins, flood walls/levees, bridges and culverts, buyout of floodplain properties and stream channel enlargement. This activity also provides review of drainage easement releases and license agreements.

- Completed the construction of the Lakewood Drive low water crossing upgrade. This was the most frequently flooded low water crossing in Austin. In addition, cars no longer have to drive through the creek which reduces pollutants being discharged to Bull Creek.

- Achieved the scheduled goals for the design process on the multiple construction packages for the Waller Creek Tunnel project. Bids were advertised for the boat house, pedestrian bridge and the tunnel and 4th Street inlet components in FY10.
- Received a FEMA Hazard Mitigation Grant of \$3.8 million for the voluntary buyout of up to 25 flood prone properties on Williamson Creek in the Bayton Loop area.
- Completed the in-house preliminary engineering and alternatives analysis for the upgrade of the David Moore low water crossing.
- Revised the creek flood scoring methodology and updated the creek flood scores using the newly updated FEMA and City of Austin floodplain models.
- Completed or coordinated 120 reviews for easement releases, license agreements, and right of way vacations.

Stormwater Pond Safety

The purpose of the Stormwater Pond Safety (SPS) group is to manage the risk of dam, floodwall and levee failures by assuring that these structures meet or exceed state safety criteria. This section is also responsible for the safety inspection of these facilities, coordinating that adequate maintenance is performed and prioritizing and implementing needed upgrades or repairs to these facilities.

- Completed the construction of the Great Northern and Maui dam modernization projects.
- Completed the design of the South Metric, Mearns Meadow and Tech Ridge dam modernization projects.
- Completed four Emergency Action Plans (EAPs) and streamlined the development of future EAPs by consolidating all plans into one EAP notebook with a standard emergency procedure for all dams.
- Worked diligently with Field Operations to ensure the follow up maintenance of dams that had been inspected.

Regional Stormwater Management Program

The purpose of the Regional Stormwater Management Program (RSMP) is to provide opportunities for private/public partnership funding for regional drainage improvements as an alternative to private development providing on-site detention to mitigate flood hazard increase. The jointly funded projects reduce existing flood hazards and provide mitigation for new development. In addition, RSMP funding can be used for CIP projects that provide a regional detention or conveyance benefit within the watershed that funds are collected such as the upgrade of the Los Indios low water crossing.

- Collected \$1.2 million in RSMP fees and completed the Southpark Plaza (SP-2009-0120DT) participation project.

Floodplain Management

The purpose of the Floodplain Management activity is to protect lives and property from flood hazards by promoting sound floodplain management to citizens, the development community, and City staff. This is accomplished by creating and maintaining floodplain engineering models and maps, coordinating the City's participation in the National Flood Insurance Program and Community Rating System, providing floodplain information to the public, reviewing floodplain development applications, and processing floodplain variance requests.

- Completed the Dry Creek East floodplain study and the Carson Creek Tributary 4 study to increase the studied stream length in the City by 46 miles.
- Received a \$1.1 million grant from FEMA for updated flood studies.

- Filled the vacant group leader position for floodplain modeling and mapping and completed the H&H rotation list selection process.
- Communicated with the public regarding floodplain information by responding to more than 1,200 requests.
- Decreased the cost of flood insurance in the City by improving the City's rating in FEMA's Community Rating System.

Flood Early Warning System

The purpose of the Flood Early Warning System is to provide warning of flood hazards to the Office of Emergency Management and to the public to protect lives and property from flood hazards.

- The entire FEWS telemetry is now in the MODBUS protocol. This is a major accomplishment that improves efficiency and effectiveness in transmitting data to FEWS software.
- Completed the creation and data transfer for the FEWS WISKI database. This will greatly enhance the group's ability to share historic gauge information with other City entities and the public.
- Responded to tropical storm Hermine, which brought the most rainfall into the area in ten years.

Watershed Policy Program

The Watershed Policy Program provides direction and oversight of Citywide environmental compliance for programs, policies, initiatives and regulatory standards. It directly responds to Council resolutions and City Manager's office requests and coordinates City Code and Drainage and Environmental Criteria to support all three departmental missions. The group has a special focus on growth management with respect to watershed and environmental protection. Its activities include coordination of department policies and programs with other city departments, other governmental and institutional entities, and the public. The overall goal of the program is to advise senior officials, make recommendations that help shape significant City policies, and represent the City in strategic arenas.

- Provided City Council with research supporting an ordinance requiring innovative designs to direct rainfall runoff to landscaped areas; Council responded with a resolution asking staff to draft an ordinance. Staff from the Watershed Protection Department and Water Utility worked collaboratively with the Environmental Board and stakeholders to develop an ordinance that is recommended for Council approval.
- Worked with a subcommittee of the Environmental Board to review current codes and criteria for the eastern, "suburban" watersheds and investigated new, improved approaches to protect watersheds and streams in this significant area of town (comprising over 50% of Austin's jurisdiction and likely at the center of the growth predicted by the Imagine Austin Plan). This work led to the Environmental Board's support for a new Desired Development Zone Initiative to better serve these watersheds.
- Improved commercial pond inspection process, including coordinated intake of new data, organization of field inspections, and progress tracking.
- Developed a Priority Woodlands GIS coverage (improving identification and protection of this key environmental resource).
- Initiated a comprehensive GIS coverage of Critical Environmental Features (e.g., springs, wetlands, and karst features).
- Council approval of Whisper Valley and Indian Hills Development Agreements, Public Improvement Districts, Annexation and Planned Unit Development.

- Council approval of Heritage Tree Ordinance, providing additional protection for Austin's largest, most significant trees.
- Improved and standardized inter-departmental rules process and tracking.
- Conducted the initial Land Development Academy presentation.
- Conducted an Annual Environmental Board Retreat that led to improvements and efficiency of Environmental Board and Sub-committee meetings.

Environmental Resource Management Division (Water Quality Protection Program)

Pollution, Prevention and Reduction

The Pollution, Prevention and Reduction (PPR) group responds to pollution incidents, evaluates and permits businesses and specific non-stormwater discharges, and provides technical environmental regulatory/remediation advice for City departments, policy makers, the community and regulatory agencies to reduce pollution in our creeks, lakes and aquifers and, for compliance with City, State, and Federal stormwater regulations.

- Contaminated Groundwater Review Process: In March 2008, Council requested a study related to quantity and quality of groundwater discharged from underground structures. The resolution included identifying potential areas of documented groundwater contamination that may impact existing or proposed developments with underground structures. PPR staff conducted extensive research and produced a routinely updated data tracking system. A map was created for use by Planning and Development Review (PDR) staff to help them determine when to refer sites with potential groundwater issues for our review. In FY10, nine sites with proposed underground structures/groundwater issues were referred to PPR for evaluation. In all nine cases, PPR found the groundwater would not likely impact the sites and no action would be required by the developer.
- City Facility Compliance: 74 Stormwater Discharge inspections of City Facilities were conducted (i.e., PARD pools, service centers, 812 landfill, transfer stations, yards, HHW, plants, airport operations) to verify compliance with stormwater regulations. Corrective actions were identified and most were promptly addressed. PARD pool facility corrective actions will be addressed in a PARD Pool Report prior to next operating season. PPR is working to eliminate pool discharges to creeks from pool drainage and backwashing activities that create elevated levels of chlorides and solids.
- Coal Tar Ban Enforcement: Inspectors evaluated 62 freshly sealed lots for compliance with the City's Coal Tar Ban, one of which was found to be in violation of the ban. Legal charges were filed on the out of town applicator after both the applicator and landowner were interviewed. Remedial measures for this apartment complex will ultimately require pavement sealant removal. A letter was sent out to 180 listed asphalt and sealcoat companies on July 1 to remind them of the ban and mention concern about blends. PPR also developed sealcoat tips and remediation options guidance documents.
- Rosewood Avenue Cleanup Project: The remediation consultant worked on the Site Remediation Workplan which was approved by the TCEQ. Geo-tech drilling was conducted with approval from private property owners. The 30% and 60% design plans were completed by the consultant with input from City staff. PPR worked with Law and Real Estate Services on right of entry issues and easements; surveying/field note requirements; and fence/outbuilding issues for several residential properties associated with the planned removal of waste materials from the site. At the request of the Environmental Board, staff conducted a presentation with project updates.

Water Quality Education

The Water Quality Education group provides educational materials and outreach to the community about pollution and erosion prevention strategies.

- Launched anti-litter campaign, *Let's Can It, Austin!*
- Developed outreach through Grow Green for Austin Water on earthwise gardening and native plants.
- Administered a grant with TCEQ on pesticide reduction.
- Distributed 162,000 Grow Green Fact Sheets and 61,000 plant guides.
- Reached all AISD fifth graders (6,574 students) through Earth Camp and Earth School.

Water Resources Evaluation

The Water Resource Evaluation (WRE) activity conducts water quality monitoring and assessment for the departmental master plan; targeted, data-driven environmental studies; TPDES permit compliance monitoring; cooperative monitoring with LCRA for the Texas Clean Rivers Program; and aquatic habitat and riparian restoration partnered with Stream Restoration program. The group also performs critical environmental feature site plan reviews and provides environmental technical assistance for major CIP projects. WRE reviews TCEQ, TPDES and TLAP permits with potential impact on Austin water quality. The section provides U.S. Fish and Wildlife Service permit compliance monitoring and management of wild and captive populations of the Barton Springs (*Eurycea sosorum*), and the Austin Blind (*E. waterlooensis*) Salamanders, and population monitoring and management of the Jollyville Plateau (*E. tonkawae*) Salamander.

- Worked collaboratively with LCRA and other agencies on TCEQ permitting, including a continuation of the wastewater discharge ban in the Highland Lakes and protesting the City of Burnet's wastewater discharge.
- Completed calibration and verification of the Bear Creek WASP model for Belterra assessment; Cooperated with the USGS and five regional partners to complete a study of nitrogen isotopes and wastewater indicators in the Contributing Zone.
- Completed a unique riparian restoration project in the Boggy Creek watershed, in cooperation with Stream Restoration staff that can be used as a template for future water quality driven restoration efforts.
- Worked with area groundwater districts to show for the first time that the Blanco River contributes recharge to the Barton Springs segment of the Edwards Aquifer under low flow conditions.
- Partnered with Pollution Prevention and Reduction staff to identify and eliminate chronic sewage and drinking water leaks that were degrading multiple watersheds.
- Investigated and made staff recommendations regarding a code change on vertical bulkheads on Lake Austin.
- Collaborated with Texas A&M and Stream Restoration staff on a publication in "Ecological Restoration" that showed our channel projects improve stream stability and ecological health.
- Completed a detailed comprehensive review of 17 years of Barton Springs and Austin Blind Salamander monitoring data, providing evidence of improvement in status of the Barton Springs Salamander since City implementation of U.S. Fish and Wildlife Service mandated protection. This report resulted in federal approval to proceed with flood debris removal from Barton Springs Pool.

Stormwater Quality Evaluation

Stormwater Quality Evaluation (SQE) provides support for various other sections of WPD including education, planning and stormwater treatment by monitoring the quality and quantity of runoff from different land use types, evaluating the performance of different water quality controls and developing watershed scale water quality models to evaluate different development scenarios.

- Completed Phase 1 watershed models and automated data management system, increasing productivity and efficiency.
- Monitored 1,317 events a 97% success rate and 93% success rate on water quality sampling.

Austin Brownfields Revitalization Office

The Austin Brownfields Revitalization Office provides resources, incentives, and outreach to the community about recycling land.

- Leveraged \$126,629 from TCEQ and US EPA for assistance on brownfields properties.
- Provided 15 environmental site assessment studies for eight brownfields property owners.
- Administered a grant with US EPA for brownfields assessments and cleanup.
- Received America Revitalization Reinvestment Act funds and assessed Abandoned Historical Underground Storage Tanks.

Stormwater Treatment and Stream Restoration

The purpose of the Stormwater Treatment Program is to reduce pollution in stormwater runoff and maintain or enhance baseflow in Austin streams. The Stream Restoration Program's objective is to create a stable stream system that decreases property loss from erosion and increases the beneficial uses of our waterways.

- Construction Projects Completed: Ben White I35 Extended Detention Biofiltration Pond (WMS), Warehouse Row Biofiltration Pond (BLN), Central Market Wet pond Rehab (WLR), Amli Riverside Wet Pond (LBL- 1st major Cost Participation), Brodie Lane Biofiltration (substantially complete, but final delayed by TCEQ).
- Completed design and real estate acquisitions for Tillery Street Stabilization. Anticipate construction start during the third quarter of FY11.
- Completed 10 property acquisitions for Fort Branch 6 and 7 channel improvement project.
- Completed Eastern Watersheds Erosion Assessment.

Support Services

Human Resources / Safety Office

The Human Resources group provides support to the department in the areas of employee relations, workers' compensation, family medical leave, compensation, payroll, ADA, occupational safety and health, training and employment. Additionally, staff provides advice and counsel to employees and management in adherence to City policies and procedures, State, Federal and local laws governing human resources, safety and occupational health activities.

In FY10, WPD HR achieved the following:

- Created and implemented Monthly Brown Bag sessions for WPD and PDR managers and supervisors. Maximum registration was met for all sessions. Held additional classes for managers/supervisors who were on waiting lists.
- Mentored two high school students from the Work-Based Learning /Summer Youth Employment Program. The Program is a joint venture of the City of Austin and Travis County that targets youth between the ages of 14 and 17.

- Partnered with corporate HR Department Employment Services and other City departments to develop and implement a formal Internship Program between COA and Prairieview A & M University.

In FY10, the WPD Safety Office achieved the following:

- Worked with Environmental Resource Management Group to develop and integrate a safety component into the Maximo work order management system. This is currently in place.
- Put in place and managed the risk management components and safety of ERM employees and contractors during the Barton Springs bypass tunnel anchor project. Coordinated confined space entries during drilling procedures and responsible for managed overall site safety during the project. No injuries or incidents were recorded during the project.
- Coordinated and provided all entry permits and support for a major month long engineering survey conducted in the Shoal Creek storm drain as part of the initial phase for the projected partial relocation and expansion of the infrastructure necessary for the planned building expansion in the Nueces Street area of Austin.

Public Information Office

Public Information (PIO) ensures that media and citizens receive accurate information in a timely manner about the Watershed Protection Department's flood and erosion control and water quality programs and initiatives. PIO also educates and encourages our external and internal customers to participate effectively in these programs through a variety of communications strategies and tools. These strategies and tools include working with the media to inform the public, the development and maintenance of internet and intranet sites, brochures, advertising, facilitating public meetings, etc. Watershed PIO also responds to Customer Assistance Forms (CAFs), Public Information Requests (PIRs), and handles Records Management.

During the fiscal year, PIO had 733 media contacts for an advertising equivalency of \$988,755. Customer response rates are 100% for media, and had 499 Public Information Requests, and prepared 32 Customer Assistance Forms. The Flood Awareness Campaign incorporated media events throughout the year, including a Flood Awareness Week media campaign, new educational radio advertising and emergency ads during storms, and ribbon cuttings for Stacy Park Rain Garden and Great Northern Dam. Additional activities included monthly intranet features and updates, and development and implementation of media training for the department. The group also continued to provide assistance with November 2006 Bond storm drain projects and Watershed Engineering initiatives, as well as facilitated public meetings, CityWorks Academy, and the presentation for the department Directors' meeting. The Records Management initiative has been recognized by the City Clerk's Office as a model for other City departments.

Conclusion

During FY10, department managers and coordinators worked collaboratively during the year to improve the department's efficiencies, services and overall performance. Staff will continue to collaborate internally and with other City departments and external agencies to meet its goals of flood control, erosion control and water quality protection and in the most efficient manner possible.

Looking Ahead

As part of the department's FY12 business planning process, executive management identified four horizon issues that the department is facing. Horizon issues are long-term factors that will potentially impact service delivery during the next three to five years. These issues are detailed in the following pages.

Horizon Issues Facing the Watershed Protection Department

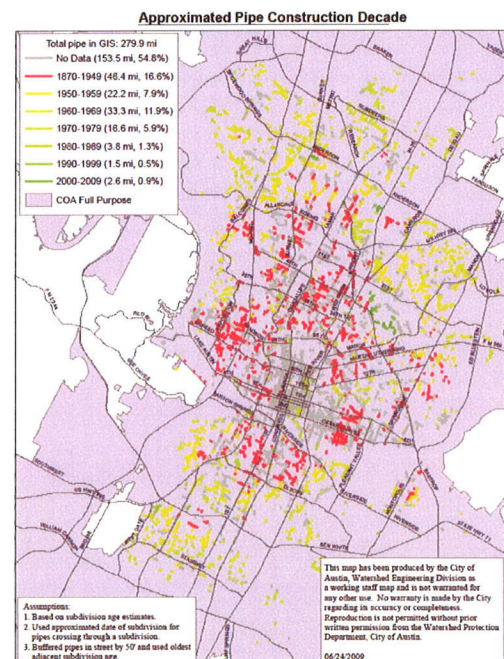
Horizon Issues

Watershed Protection has identified the following four horizon issues that will impact its abilities to deliver its key services effectively and cost efficiently during the next 1-5 years:

Issue 1: Funding for continued implementation of asset management program for Austin's vast aging and expanding stormwater infrastructure.

Austin's storm water infrastructure is comprised of approximately 960 miles of storm sewer lines, 6,000 commercial ponds, and over 800 residential and City-maintained ponds. These assets help the department achieve its mission of protecting lives, property and the environment by reducing the impact of flooding, erosion and water pollution.

The Watershed Engineering Division estimates that more than 140 miles (15%) of the approximately 960 miles of the City's storm drain infrastructure is more than 60 years old. Existing storm water lines in the urban core are a particular source of problems as pipe failures often lead to streets collapsing. The pipelines have become outdated through changes in design criteria, have exceeded their anticipated service life and/or become structurally compromised. These lines are also located in Austin's central core and subject to more intense pressure for urban infill development, which compounds problems associated with the existing lack of capacity. Failure of the structural integrity or function of storm water system in any part of the City poses the risk of flooding in the affected area. The Watershed Protection Department currently replaces between one and two miles of storm drain infrastructure per year through in-house and Capital Improvement Program (CIP) activities. At that rate, it will take at least 70 to 140 years to repair/replace approximately 15% of our existing storm drain system as the remaining system falls into disrepair.



Over the past several years, the department identified over 2,000 additional commercial ponds as a result of a multi-year investment in data collection and GIS technology. These additional ponds are now included in the department's inventory of commercial ponds that require inspection and enforcement. In FY09, the Field Operations Division's Pond Maintenance crews took over the heavy duty maintenance of a significant number of City-owned ponds that were previously the responsibility of other City departments, as a means to ensure they functioned properly and provided the expected water quality protection. As a result of this action and the assumption of maintenance responsibilities for ponds acquired through annexations and as required by City code and criteria, the residential and City-maintained pond inventory has risen from 635 to over 800, an increase of 26%. Although this increase has been accommodated by existing staff, an increase in staffing levels is necessary to continue to provide the level of service necessary to ensure the continued functionality of these facilities.

New erosion problems are arising continuously at the rate of 500 feet per year in addition to the existing miles of eroded stream banks that require stabilization. Moreover, the City has annexed over 10,000 acres in the past five years and identified just under 1,000 miles of storm water infrastructure that must be effectively inspected, cleaned and maintained. The department must provide operations and maintenance services to these areas and incorporate their stormwater capital improvement needs into its Capital Improvements Program (CIP) project integration process.

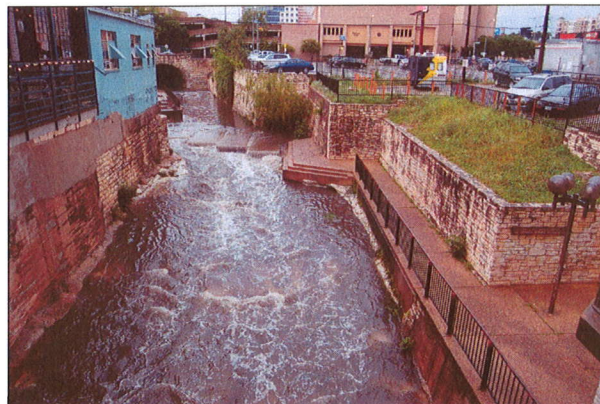
In an effort to increase the impact of its CIP dollars, WPD created a new activity, Value Engineering (VE), in the Master Planning program. Staff in this activity review Watershed CIP Projects and evaluate alternative design plans, solutions and/or methods, in an organized fashion. The goal of the VE activity is to offer alternatives that may produce direct CIP budget cost savings, cost avoidance (e.g., design changes to decrease life cycle operation and maintenance costs), and improvement to processes such that the products and functions of the department's missions are achieved. Further measures will be taken to coordinate the processes established for Value Engineering with the existing CIP project integration process (between Watershed missions of erosion, flood and water quality) and the yearly CIP appropriation process to better address Watershed problems and to continue to meet the goals and objectives identified in the Watershed Master Plan.

Additionally, the department is in the process of developing a CIP Cost Reduction Plan that will continue implementation in FY12. The VE activity is a key component of this plan. The plan also includes making better use of strategic partnerships, looking closely at how CIP projects are packaged (including opportunities for phases), developing

stricter cost estimating procedures and invoice review protocols, developing additional methodologies for the prioritization of projects (particularly those in the localized flood activity), and implementing post project performance reviews to ensure projects are performing as intended and provide guidance for future projects via lessons learned information.

Issue 2: Integrating Department mission needs with City-wide priorities.

The Watershed Protection Department is challenged with integrating city-wide priorities with department mission needs especially given the limited CIP resources available for yearly appropriation. The Watershed Master Plan has set the department priorities for the flood, erosion and water quality missions based on problem scores that assess the condition of Austin's watersheds. The 2001 Master Plan set a policy of addressing the worst problem areas first and established a dollar figure of approximately \$1.2 billion to address these high priority needs over a 40 year planning horizon. However, this figure only addresses a portion of the City's infrastructure (Phase 1 and a limited part of the Phase 2 watersheds) that is in need of upgrade or replacement.



A City-wide effort has been initiated to prioritize capital project needs that span multiple departments, with the goal of using our funding wisely and minimizing disruption of services to the public. City-wide priorities such as Transit Oriented Development, urban rail, the Austin downtown plan, the Waller Creek district, implementation of neighborhood plans, and street resurfacing are examples of Citywide projects that all include drainage infrastructure needs that might not align with high priority watershed needs, but still represent legitimate City needs. The Watershed Protection Department will be challenged to integrate and provide adequate funding for high priority flood, erosion and water quality problems as well as City-wide priorities.

Issue 3: Water quality impacts resulting from State issued permits for effluent discharges to waterways.

In recent years, the Texas Commission on Environmental Quality (TCEQ) has issued draft discharge permits that WPD predicts will impact receiving waterways. For the first time, a draft permit was issued that will allow the direct discharge of treated effluent into a stream in the Barton Springs Zone. The City's modeling predicted increases in nutrients and algae growth, and decreases in dissolved oxygen and clarity for miles downstream all the way to the recharge zone. Although the City and many regional partners contested the permit and improved the permit conditions significantly through negotiations and through an administrative court proceeding, impacts are still predicted. More importantly, the door is now open to more permits and more discharges.

Last year, the City and others petitioned the State for rule changes which would prohibit future discharges. A lengthy and arduous stakeholder process ensued but the petition was ultimately denied and the State countered with a rule change that would allow the discharges under certain conditions. The formal process for consideration of the State's proposed rule will take place next year. The City and others also had support from area legislators who sponsored bills in the House and in the Senate that would have banned direct discharges of effluent to the streams in the Barton Springs Zone. Those efforts also failed.

If additional permits are issued in the Barton Springs Zone, Bear Creek, Little Bear Creek, Slaughter, Onion, and Barton Creek are all vulnerable to impacts from effluent discharges as well as the aquifer, local drinking water wells, Barton Springs and the endangered Barton Springs Salamander.

WPD staff in the monitoring and modeling sections will conduct baseline monitoring and post-discharge monitoring in streams where permits have been issued so that impacts of discharges can be determined. Significant impacts can result in remedies as per the legal agreements and improved permit conditions that were negotiated. Future expected permits will be contested on a case-by-case basis. Vacancies in the modeling team that had been held open for vacancy savings will be open and filled in preparation for this.

The same staff will also participate actively in the formal State stakeholder process for their proposed new rule with the goal of improving the rule. Regional partnerships that were galvanized over last year's permit protest and rulemaking petition will be fostered. Staff will work with our legislative liaison to keep alive the potential for

future work in the next legislative session with supportive State senators and representatives.

Issue 4: Prevention of future watershed problems and associated public costs in a rapidly developing city.

Prevention of future watershed problems and associated public costs in a rapidly developing city is necessary step in managing the drainage infrastructure. The City cannot afford to allow development that perpetuates problems of the past, such as allowing development to continue to be located in erosion hazard zones. This results in a long term cost to the City of millions of dollars when infrastructure has to be relocated or homes have to be purchased because of threats to lives and property. To ensure healthy growth, the City of Austin must find a way to allow development in the desired development zone while developing regulations that help prevent future problems and minimize public costs.