



July-August-September 2011

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GEOGRAPHIC INFORMATION SYSTEMS

The Infrastructure Division uses Geographic Information Systems (GIS) technology as a key part of the Division's business operations. The Infrastructure GIS Department support includes, but is not limited to, geographical positioning system field data collection, spatial analysis, training, tools for custom maps and application development.

Most of Infrastructure's data integrates with GIS. Through GIS, geography is a way to organize information. Applications incorporated into the GIS include the Instrument database, Vegetation Management System, Development and Coordination Inspection, Project Master (also known as Project Tracking System), Property Agreement, and Report a Problem just to name a few. GIS increases the utility of data for sharing content, planning, and performing analytical functions.



Map and picture inset of gabion location.

Outfield is a field data collection program that enables the District to accurately monitor the condition of stormwater drainage facilities and to plan more efficiently for maintenance of District infrastructure.

During the third quarter of this year, the outfield field data collectors continued work on Round 2 in the Cedar Bayou watershed. The next watersheds scheduled for data collection are San Jacinto and Galveston Bay. Approximately 9,000 features have been addressed during the third quarter bringing the total number of features in outfield data to 122,582.

Outfield is designed to inventory, photograph, and attach location coordinates (latitude and longitude) of District infrastructure. During the third quarter, new inventory was added to the Outfield Program including gabion channels, articulating concrete blocks, and flex pipe outfalls.

The Infrastructure Division uses outfield data to provide department managers with tools for locating projects, establishing current conditions, and determining the rate of decline on channels. Outfield data assists the Infrastructure Division in being pro-active by identifying and planning for long-range maintenance projects and budget estimates.

GEOGRAPHIC INFORMATION SYSTEMS *(continued from page 1)*



Selective Clearing Program.

Outfield Data Processing

In the office, multiple layers of manual Global Positioning System (GPS) data processing are now replaced with a new outfield data processing application

that was developed by the District's I.S. Department. This application provides a seamless workflow between GPS data collected in the field and the GIS database.

Selective Clearing

GIS and the Property Management Department (PRM) are working together identifying and mapping channels for selective clearing. The selective clearing sites are identified by evaluating densely

vegetated natural channels that have no scheduled maintenance activity. These locations are obtained by using the vegetation management and land use GIS data layers.

Property Management developed a selective clearing program that is separated into eight phases. Phase I started in October 2010 and ended in March 2011. Phase I work occurred on Greens Bayou and the lateral channels from Mount Houston to Wood Forest.

Phase II is in progress and is scheduled to end in March 2012. Phase II locations include channels for Addicks and Buffalo Bayou watersheds.

The selective clearing program information is available in GIS via the add layer tool in the category of facility maintenance.

FACILITIES MAINTENANCE



Selective clearing in progress downstream of Fairbanks N. Houston.

Like everyone else, the District has been dealing with the historic drought conditions and the resulting tree loss. The Facilities Maintenance Department (FMT) reports that a normal tree loss rate for new trees is 10 percent.

During the drought, the tree loss rate increased to 30 percent. When the District plants trees, it does so anticipating a certain number of losses and 30 percent is within a reasonable limit for the District.

The District maintains all the trees it plants for the first two years of the tree's life. The majority of the trees that have died from the drought have been mature trees in natural forested areas. During the past quarter, FMT began using the new All Terrain Vehicles (ATV) as part of the herbicide program.

The ATV usage is being tested on various channels that are difficult to access with other types of large equipment to identify Johnson grass locations for herbicide treatment. Eighteen employees completed the ATV training class, became certified and will be allowed to operate the new ATVs. The District is researching other equipment that may be helpful with the herbicide program, including additional tractors and other ATV-like equipment.

The District will begin selective clearing activities in October. Selective clearing is the removal of invasive trees and brush on natural channels without clear-cutting the area. The selective clearing process is a hand removal method and includes removal of downed trees that could impede flow, removal of invasive species and removal of standing hazardous trees. The majority of the selective clearing will be performed on Buffalo Bayou, Langham Creek, Hunting Bayou, White Oak Bayou and parts of Greens Bayou.

MAINTENANCE ENGINEERING



Erosion along the channel bend of Cypress Creek at Klein Fire Station.

Routine maintenance is continuing along the federal reaches of Vince Bayou, Little Vince Bayou, and White Oak Bayou. A general repair project is currently under construction along White Oak Bayou. Another project was recently advertised for bid along Vince and Little Vince Bayous. Both projects will be completed by mid-year 2012. Cyclical maintenance, which includes sediment removal, repairs of pipe outfalls and repairs of concrete paving, ensures these streams can continue to convey stormwater.

Design is progressing on a channel conveyance restoration project along Buffalo Bayou at Buffalo Bayou Park. This project will restore the Bayou's bed and banks to a more natural and stable cross section using natural channel design principles. The

project has required extensive communication and coordination with local organizations and public agencies. Environmental permitting is also ongoing. Construction is expected to begin in Spring of 2012.

The Prestonwood Forest Utility District donated a public drainage and access easement to the District in order to complete a repair project on Cypress Creek. Severe erosion exists along a sharp channel bend and is threatening the parking lot of the Cypress Creek Volunteer Fire Station No. 23. Construction is expected to commence by the end of the year.

The Maintenance Construction Group (MCG) installed "no trespassing" signs at the A200-00-00 Clear Creek Second Outlet Channel and Gated Structure. The sign installation was coordinated with the City of Seabrook and the United States Coast Guard. The signage warns boaters to stay away from the structure. Vessels moored adjacent to the gates present a hazard by potentially drifting into the structure and causing damage to the operation of the gates.

COMPLIANCE



Crew member safely using a chain saw to remove debris.

Training for field personnel continued during the past quarter. A two-day chainsaw training class was offered and a total of 20 employees (10 from each service center location) were certified on the usage, maintenance, and safety features of a chainsaw. Each participant had to complete a five-step process and pass a practical application exam before receiving their certifications. Other trainings that occurred this past quarter are: Forklift Operator Training - 17 employees were certified; Alternate Terrain Vehicle (ATV) Training - 18 employees were

certified; and Human Resources Policy Training - for Field Supervisors and Senior Inspectors.

The District had six personal injuries and three vehicle-related accidents during the third quarter. The majority of the personal injuries were categorized as slips, trips and falls. This is a decrease from the same time last year when the District had 13 personal injuries. Vehicle accidents, however, were up from last year when the District had only one accident. Even with experiencing triple digit temperatures this past quarter, the District did not report any heat-related personal injuries. This accomplishment is attributed to the team effort approach the District has been emphasizing. Employees are trained to watch out for each other, and are reminded to hydrate regularly and take frequent breaks.

FLEET MANAGEMENT



North Service Center Fleet Maintenance Shop Area.

The Fleet Management Department maintains approximately 172 District vehicles, administers a comprehensive preventative maintenance program and, when necessary, manages vehicle repairs. According to Lowell Jacobs, the

Fleet Management Department manager, no money was budgeted for new vehicles in the District's 2011 budget.

The vehicle accident rate for the District has improved over the past two years. In 2008, the District had 32 vehicular accidents. In 2009, the

District had 26 accidents and in 2010, the District only had 16 accidents. The decrease in vehicle accidents is possibly due to increased monitoring of vehicle activity and driving habits after the installation of vehicle GPS tracking devices in 2009.

As mentioned in the previous newsletter, the District has a new logo. In keeping with the District's budget conscious mindset, old logos on existing vehicles will not be replaced except on an as-needed basis (i.e., door replacement or repairs and new vehicle purchases).

In August 2011, the annual testing of the fuel system was completed by an outside contractor. The Stage II Vapor Recovery Systems are operating properly. The underground pipes, from the fuel tanks to the pumps, were also tested for leaks and are in good operating order.

PROPERTY MANAGEMENT



Desnag project along Unit L100-00-00 (Little Cypress Creek).

During the past quarter, Asset Management has been identifying points of access for the District's de-snagging operations along natural channels. Debris removal and de-snag operations are critical components for

keeping the channel system operating at an efficient capacity. Nine major natural channels are included in the de-snagging operation beginning in fiscal year 2013.

Asset Management evaluated and selected 20 sites for the District's tree planting program. Establishing and promoting trees along the county's channel system provides numerous, long-term benefits. Tree-planting is a long-term solution that will reduce maintenance requirements along channels and within detention basins. Approximately 18,000 trees are scheduled for planting beginning the first week in November.

A total of 68 projects were identified and submitted from the five-year System Repair Program for fiscal year 2012. Forty-three projects for fiscal year 2013 have been identified and are being prepared for submittal to the Maintenance Engineering Department.

Projects for fiscal years 2014, 2015 and 2016 are currently being reviewed and evaluated.

The Development Coordination and Inspection Section (DCIS) continued to monitor Harris County Public Infrastructure Department (PID) roadway projects during the past quarter. The majority of the PID projects consisted of detention basin construction, which is intended to be accepted for maintenance by the District. DCIS has been working closely with the District's Watershed Coordination Department regarding the design phase of developer projects, which includes analyzing developer plans during the review process before approval. DCIS is currently monitoring 226 developer projects.

The Community Services Section (CSS) completed outreach notifications for the District's selective clearing project on Buffalo Bayou and for this season's tree planting activities, which will begin in November. CSS also contacted homeowner's in the Braeburn Glen, Castlewood, Meyerland and Greenbranch neighborhoods regarding various multi-use options available on District owned property in their areas.

The Citizen Service Center (CSC) handles citizen-related calls regarding District infrastructure. During the past quarter, the CSC logged a total of 301 contacts. This number is down from the same time last year when the District had 343 contacts. Of the 301 contacts, the CSC completed 284 service requests during the third quarter of 2011.