

Stormwater Program 5-Year Update

Public Works and
Facilities Department

February 2017



PENSACOLA

Introduction

- **Stormwater Management Strategies adopted by City Council in October 2000 to set long-term goals for successful stormwater management program by the City were primarily focused on enhancing Water Quality of area waterways.**
- **Stormwater Utility Fee adopted in 2001 to provide an established funding mechanism to support the stormwater management program is based upon a property's impervious areas.**
- **Update is centered around activities over past 5 years due to the significant volume of projects that have taken place and comprised of Budgeted Capital, Grant Funded Improvement and Grant Emergency Repair projects.**
- **Three (3) Main Project Categories: Budgeted Capital, Grant Improvement and Grant Emergency Repair totaling approximately \$31,019,745 over the past 5 years.**

Budgeted Capital Projects

- **Stormwater projects that are primarily funded from the Stormwater Utility Fee and approved by City Council via 5-year revolving plan as part of the annual budget process.**
- **Stormwater Utility Fee generates approximately \$2.5M/year and can be increased by City Council incrementally.**
- **Projects are generally identified to address both water “Quality” (treatment) and “Quantity” (flooding) where the need is most prevalent and feasible to perform projects within allocated budgets.**
- **Professional Engineering studies are utilized as a “guide” for developing and prioritizing project lists for the 5-year revolving plan, especially in sensitive drainage basins that directly impact Pensacola Bay, Carpenter Creek, Bayou Texar and Bayou Chico.**

Budgeted Capital Projects

| | |
|---|--------------------|
| • Admiral Mason Park Stormwater Pond | \$1,523,630 |
| • Hewitt Street Stormwater Enhancement | \$ 754,390 |
| • Cypress Street Stormwater Enhancement | \$1,666,164 |
| • Birnham Woods Stormwater Enhancement | \$ 250,922 |
| • Baywoods Gully Erosion Stabilization | \$ 315,553 |
| • 12 th Ave. @ Bayou Texar Stormwater Enhancement | \$1,047,455 |
| • Desoto Street @ Bayou Texar Stormwater Enhancement | \$ 373,666 |
| • Northmoor Court Stormwater Enhancement | \$ 62,288 |
| • 'B' and Main Street Stormwater Enhancement | \$ 171,131 |
| • Davis Hwy @ Valley Drive Stormwater Enhancement | \$ 375,505 |
| • Manolete Drive Stormwater Enhancement | \$ 304,889 |
| • Carpenter Creek at Bayou Blvd Stormwater Enhancement | \$ 293,763 |
| • Bayou Drive @ Bayou Chico Stormwater Enhancement | \$ 257,745 |
| • Bayou Blvd at Tyler Stormwater Enhancement | \$ 793,780 |
| • Carpenter Creek @ 9 th Avenue Stormwater Enhancement | \$ 343,609 |
| • Gaberonne Swamp Stormwater Improvements | \$1,246,381 |
| • Total | \$9,741,312 |

Budgeted Capital Projects 5-Yr Plan (pg. 87)

| CITY OF PENSACOLA STORMWATER CAPITAL IMPROVEMENT PLAN FY 2017 - FY 2021 | | | | | |
|--|------------------|------------------|------------------|------------------|------------------|
| PROJECT | 2017 | 2018 | 2019 | 2020 | 2021 |
| 1 Clubbs Street Outfall to Pensacola Bay | | | | | 850,000 |
| 2 Woodcliff Drive at Livingston Outfall to Esc. Bay | | 75,000 | 505,300 | | |
| 3 Land Acquisition for Stormwater Pond Sites | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| 4 9th Avenue Outfall to Pensacola Bay | | | | | 125,000 |
| 5 19th Ave. and Blackshear Outfall at Bayou Texar | 500,000 | | | | |
| 6 Bayou Chico Stormwater Outfall Retrofits | 335,000 | 256,300 | | | |
| 7 E. Cross Street and Yates Outfall at Bayou Texar | | 82,600 | 350,000 | 67,200 | |
| 8 Clematis Street at Carpenter's Creek | 637,700 | | | | |
| 9 Scenic Heights Discharge (Langley into Escambia bay) | 50,000 | 50,000 | 50,000 | | |
| 10 Stormwater Vaults Citywide | 225,000 | 225,000 | 250,000 | 250,000 | 275,000 |
| 11 Davis Hwy @ Carpenter's Creek (north side) | | 100,000 | 387,400 | | |
| 12 Stormwater Capital Maintenance | 325,000 | 350,000 | 350,000 | 375,000 | 375,000 |
| 13 NPDES Permit Monitoring | 100,000 | 115,000 | 115,000 | 125,000 | 125,000 |
| 14 Alcaniz Street Outfall to Pensacola Bay | | | 82,600 | 963,100 | |
| 15 South 'E' and 'F' Street Outfalls to Pensacola Bay | | | | | 590,300 |
| 16 Bayou Chico Channel Dredging (Eastern Branch) | | 687,400 | 250,000 | | |
| 17 Fisher Street and 11th Avenue Pond Rehab | 67,600 | 425,000 | | | |
| 18 Cordova Square Pond Rehab | | | | 560,000 | |
| 19 Stormwater Master Plan Update | 100,000 | | | | |
| 20 Grant Match Funding | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| TOTAL FOR STORMWATER PROJECTS | 2,530,300 | 2,556,300 | 2,530,300 | 2,530,300 | 2,530,300 |

Spanish Trail Stormwater Pond (Site 1)



Cypress Street Stormwater Enhancement



9th Ave. and Texar Stormwater Project



Davis Hwy @ Valley Drive Stormwater Proj.



Carpenter Creek at Bayou Blvd Project



Grant Improvement Projects

| | |
|---|---------------------|
| • Gaberonne Swamp Stormwater Improvements EPA 319 | \$1,784,118 |
| • PNS Airport Stormwater Pond FDOT | \$3,249,384 |
| • Government Street @ Corinne Jones Park NFWF | \$2,106,500 |
| • BP Settlement Funds | \$1,212,099 |
| • Bill Gregory Park Stormwater Project NFWF | \$1,723,565 |
| • 'R' Street @ Maggie's Ditch Stormwater Project NFWF | \$ 597,719 |
| • 4190 Rommitch Lane Demolition HMGP | \$ 166,073 |
| • 12 th and Cross Street Stormwater Project HMGP* | \$1,307,982 |
| • 'L' Street and Zaragossa Stormwater Project HMGP* | \$ 756,123 |
| • Lee Street Stormwater Project HMGP* | \$ 742,221 |
| • Drainage Improvements for Localized Flooding BP Settlement funds | \$ 415,746 |
| • Total | \$14,061,530 |

* denotes pending final funding approval from DEM

PNS Airport Regional Stormwater Facility



Gaberonne Swamp –Langley Pond Retrofit



Grant Emergency Repair Projects

- **Stormwater projects that are primarily funded from federal and state sources FEMA, NRCS, FHWA and FDEM.**
- **Projects are typically derived from catastrophic occurrences and primarily include atypical rainfall events and tropical system events.**
- **The April 29, 2014 rainfall event statistically rated between a 500 and 1000 year occurrence with over 25” of rainfall within a 72 hour period causing significant devastation to stormwater infrastructure.**
- **Project scopes normally address direct repair/replacement of damaged infrastructure and certain grants allow for improvements and/or “mitigation” to harden and provide improved resiliency.**

Grant Emergency Repair Projects

| | |
|---|--------------------|
| • Baywoods Gully Slope Stabilization FEMA | \$ 79,224 |
| • Piedmont Road Repair FEMA | \$2,164,206 |
| • Spanish Trail Pond Repair FEMA | \$1,165,709 |
| • DeSoto Street Repair FAMA | \$ 94,966 |
| • Seville Drive Stormwater Outfall FEMA | \$ 60,530 |
| • Long Hollow Pond Berm Repair FEMA | \$ 159,004 |
| • Scott Street Repair FEMA | \$ 59,254 |
| • Main Street Repair FHWA | \$ 65,215 |
| • Southern Bulkhead Mitigation Site FEMA | \$ 57,225 |
| • Maxwell Street Repair FEMA | \$ 132,105 |
| • Wright Street Repairs FEMA | \$ 11,706 |
| • Coyle Street Repair FEMA | \$1,433,174 |
| • L Street Stormwater Repair FEMA | \$ 188,894 |
| • 12 th Avenue Repair FEMA | \$ 190,341 |
| • Bayou Texar Dredging FEMA | \$ 654,619 |
| • Various Smaller Repair Sites FEMA | \$ 700,731 |
| | |
| • Total | \$7,216,903 |

Piedmont Road @ Hallmark Road Repairs



20th Ave and Lloyd Street Repairs



12th Ave and Euclid Street Repairs



Main Street @ Coyle Street Repairs



Stormwater Quantity and Quality

- **Stormwater Management Strategies typically focus on addressing water Quality (treatment) and/or water Quantity (flooding) aspects.**
- **Focus is primarily on addressing Stormwater Quality due to ready availability of technology and resources.**
- **Stormwater Quantity or Flooding is also addressed on every project where feasible and possible to do so.**
- **Projects are identified through both professional Engineering studies and public input based upon actual field observations/occurrences.**
- **Proposed projects are programmed into the 5-year revolving capital plan and grant funding opportunities are also pursued.**
- **Stormwater improvement projects are often incorporated into other types of capital projects to maximize public benefit.**

Quantity -facts

- **Stormwater quantity or flooding issues are most challenging due to high cost and limited resources available to make a significant difference or improvement.**
- **Most flood-prone areas of the City are located near water bodies (Pensacola Bay) where tidal influence is a significant factor/challenge.**
- **Significant Flood-prone areas also occur where upstream contributions cannot be controlled by the City (Long Hollow).**
- **Most existing stormwater infrastructure has been in place for decades and has very limited capacity to convey stormwater during significant rainfall events.**
- **Efforts are made on every project to upgrade stormwater infrastructure to current standards and address localized flooding issues to the greatest extent possible.**

Quantity -accomplishments

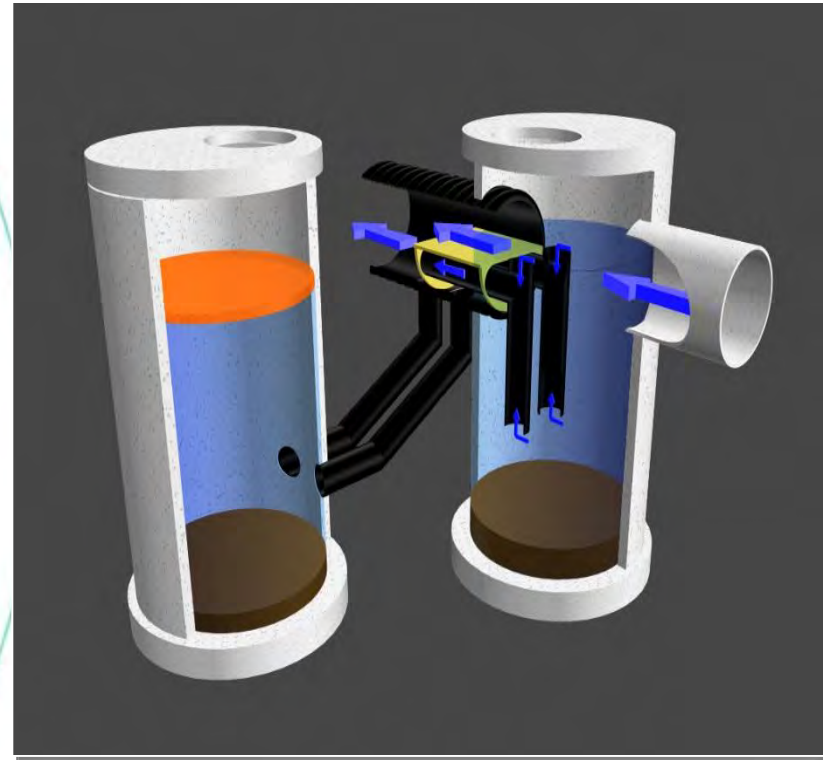
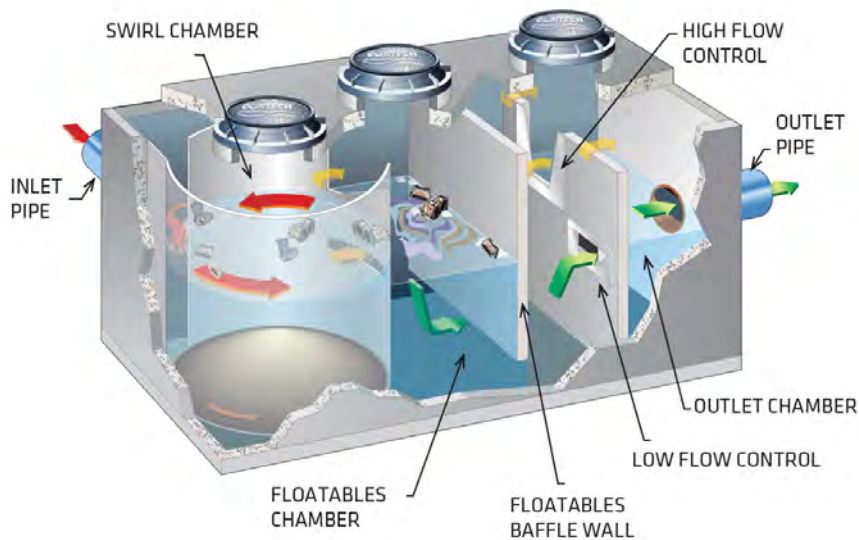
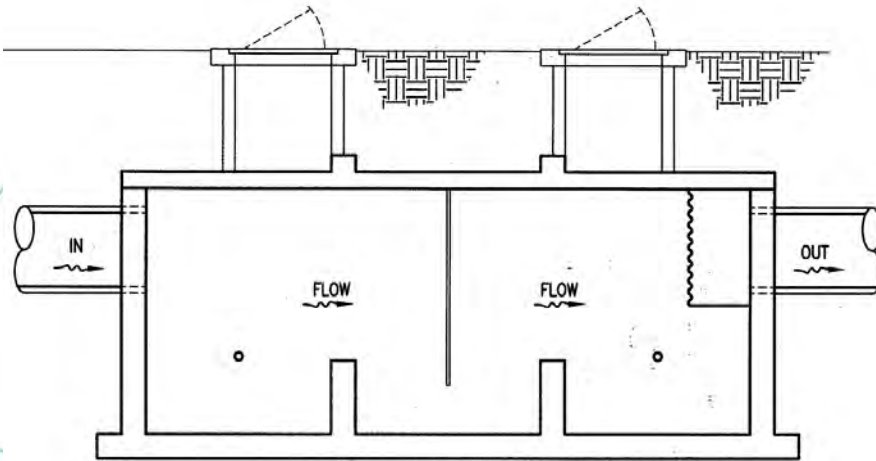
- **City has successfully conducted in-depth stormwater studies in the areas of most significant flooding in order to identify specific causes and proposed solutions. Study areas include Long Hollow, Aragon, Downtown and Piedmont Road. Total approx. cost was \$355,000 for the studies.**
- **City has recently revised the Land Development Code stormwater attenuation requirements from the 25 to the 100 yr. event for new development projects. Change will significantly help with current flood-prone areas when new projects are developed.**
- **City is currently updating the Stormwater Master/Management Plan. It will be completed in FY 2018. Comprehensive plan will provide, identify and prioritize City-wide flooding infrastructure needs going forward. Updated plan will also allow City to be more attractive in the receipt of grants for new projects and will also potentially lower our CRS status.**

Quality -facts

- **Stormwater quality projects typically have a design target pollutant removal efficiency of 70-80% total suspended solids (TSS).**
- **Projects primarily include underground treatment systems or “Proprietary Units” and stormwater ponds, swales and ditches.**
- **Due to the very limited availability of open land for the construction of stormwater ponds, proprietary units are most commonly used in treatment projects.**
- **The City currently has 49 stormwater ponds and 83 proprietary units in-place.**
- **Proprietary units are typically placed near outfall locations at water bodies in order to provide for the most effective pollutant removal.**
- **Pollutants removed typically consist of floating trash/debris, hydrocarbons (oil, greases, etc.), heavy metals and nutrients.**

Quality -facts

Typical Proprietary Units



Quality -accomplishments



Quality -accomplishments

- **Stormwater retro-fit program is very aggressive in comparison to other communities throughout the state of similar size and function.**
- **Program continues to be very effective in the removal of pollutants to prevent them from entering area waterways and has removed approximately 5900 cubic yards or 15.9M lbs (8000 tons) over the past five years.**
- **This removal would equate to approximately 330 dump-truck loads of polluted material removal that would have otherwise been discharged to area waterways.**
- **Overall noticeable improvement in water quality for local area waterways and adopted goals are being met.**

Summary –moving forward

- **Much progress has been made in both the areas of stormwater Quality and Quantity due to established priorities/commitments and availability of funding from local, state and federal sources (key).**
- **Continued aggressive efforts by the Mayor's office and City Council will provide both long and short term benefits to the stormwater program and ensure future progress.**
- **Program is making a positive difference in the community with less flooding impacts during routine/nominal rainfall events (311).**
- **Numerous significant stormwater projects scheduled to begin in near future include Bill Gregory Park, 'R' Street, Lee Street and Fisher Street Ponds.**
- **More significant funding opportunities coming online with stormwater projects being considered like Hollice T. Williams Park and Sander's Beach Community Center locations.**
- **Full speed ahead.....**