Corpus Christi Bay
Cole Park and a Tale of Cups

ASBPA TEXAS CHAPTER 2016 SYMPOSIUM
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Background –
City of Corpus Christi

* Population: 316,381
* Large MS4 Permit Holder
* Negotiating New Permit
* Discharges to:
  * Oso Bay
  * Corpus Christi Bay
Corpus Christi Bay

- Receives most of the discharges from the City
- Impaired water body: Bacteria
- TMDL and I-Plan under development
Floatables Issue

* [https://www.youtube.com/watch?v=LhlBSOITYdQ](https://www.youtube.com/watch?v=LhlBSOITYdQ)
Action Plan

* Engage LAN to work with City
* Delineate watershed & floatables sources
* Develop a floatables control strategy
* Investigate potential bacteria concerns
Delineate Watershed - Baldwin-Louisiana Sub- Basin

Cole Park

2 - 12’x12’ Box Culverts

Outfall into Corpus Christi Bay
- Increased street sweeping (MS4 Permit)
  - Conduct rainfall analysis
- Site reconnaissance
  - Desktop survey
  - Field visits
- Evaluation of City inlet screen pilot programs
- Evaluation of commercially available devices
Rainfall Analysis

- Daily rainfall data from 1/1/1999 and 12/2/2014 at Corpus Christi International Airport
- Hydrologic Simulation Program-Fortran (HSPF) models developed by LAN for San Antonio area
- 9.35 times more accumulated sediment on the ground can be expected at end of 12.3 days
Suggested that suitable street sweeping frequency of roughly 7 – 12 days
Site Reconnaissance
Site Reconnaissance - Del Mar College

Del Mar College has dedicated maintenance program; lots found to be in very good condition.
Inlet Screen Pilot Study

- 2 inlet screen prototypes already installed
- Prototype locations:
  - Prototype 1: United Storm Water Wing-Gate ARS
  - Prototype 2: Inlet Protection Company Curb Companion
Inlet Screen Pilot Study -

- **Prototype Recommendation** -
  - Curb Companion

- Non-retracting
  - Works well with increased street sweeping
- Less expensive
  - Inlet screens seen as interim solution by City
- Already has successful retrofit in sub-basin at Del Mar College
Commercially Available Products

* **Three categories**
  * Upstream
    * At inlet level to keep floatables out of storm sewer system
  * Midstream
    * Within existing storm sewer system to capture floatables
  * Downstream
    * At the outfall to capture floatables exiting storm sewer system
Upstream Devices

- **Additional Inlet Screens**
  - Non-retracting AND stainless steel

- **Inlet Baskets**
  - Floatables collected in basket
  - Overflow bypass

- **Connector Pipe Screens**
  - Floatables collected inside catch basin
  - Overflow bypass opening
Midstream Devices

- **Baffle boxes**
  - Hinged trash screens at top
  - Floatables capture cage

- **Hydrodynamic Separators**
  - Separate floatables chamber
  - Vortex flow of water helps clean screen
Downstream Devices

* **Gross Solids Removal Devices**
  * Floatables collected in cages

* **Pipe Netting**
  * Floatables collected in nylon mesh nets
  * Nets are single use

* **Containment Booms**
  * Floatables collected by filtration curtains
Preliminary Recommendations – Non-structural

- Public education and outreach
- Increased street sweeping
- Increased number of trash cans
- Increased littering penalties
Preliminary Recommendations – Structural

* Inlet screens
  * Least expensive and fastest to implement
* Baffle boxes, if feasible
  * Medium capital investment
  * Medium maintenance
* Hydrodynamic separators, if feasible
  * High capital investment
  * Relatively low maintenance
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