

**Summary of Significant Changes, “HCFCD Policy, Criteria, and Procedure Manual for Approval and Acceptance of Infrastructure,” Update, December 2010  
December 21, 2010**

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**Section 1 – Policy**

- Two new policies are proposed:
  - Policy XI – Levees: New levee systems are strongly discouraged in Harris County.
  - Policy XII – Water Quality: Acknowledges and supports community goal of improving water quality.

**Section 2 – Review and Acceptance Procedures**

- Modified the U.S. Army Corps of Engineers Section 10 and 404 permit compliance procedure during the Construction Drawing and Construction stages to facilitate communication with HCFCD that the project is in compliance.
- Added the Upper Langham Creek impact fee utilization plan.
- Indicated where impact fees are not required.

**Section 3 – Hydrology**

- Changed all references from TSARP, HEC-1, and HEC-2 to the recently adopted HCFCD Hydrology and Hydraulics Guidance Manual, HEC-HMS, and HEC-RAS.
- Added a section to clarify where the Watershed Modeling Method may be used.
- Added the “Optional Project Routing Technique” that can be used for calculating detention volume and outflow size for small to moderate drainage areas, where appropriate.
- Added a “Watershed Diversion” section that includes criteria and considerations.

**Section 6 – Stormwater Detention Basins**

- Acknowledged trees and shrubs can be planted in HCFCD detention basins without accounting for their volume.
- Expanded on drain time criteria for detention basins.
- Added typical detention basin sections and maintenance access alternatives.
- For wet bottom detention basins, changed “maintenance shelf” to “bottom shelf,” changed “wetland” to “shallow pool,” and clarified the types of wet bottom features HCFCD will and will not maintain.
- Added criteria for swales that cross the bottom shelf carrying flow from an outfall pipe.
- Included where optional project routing technique may be used.
- Method 3 and the Watershed Modeling Method can be used for drainage areas between 300 and 640 acres, where complexity of the project justifies it.
- Added “Roadway Impacts and Mitigation” section that includes criteria and considerations.

### **Section 7 – Bridges**

- Relaxed the low chord elevation relative to the 1% water surface for new bridges on non-FEMA studied channels.

### **Section 8 – Culverts**

- For multi-barrel culverts, added criteria for accommodating the low flow channel by setting one of the barrels lower than the others.

### **Section 11 – Backslope Drainage Systems and Pipe Outfalls**

- Clarified backslope drainage system criteria and added exhibit to provide visual representation of criteria.
- Added criteria for submerged inflow pipes into detention basins.

### **Section 18 – Optional Environmental, Recreation, and Aesthetic Features**

- Added section to minimize damage/disturbance of existing environmental, recreation, and aesthetic features in a HCFCF maintained facility.

### **Section 19 – Report Requirements**

- Updated references to digital submittal requirements.

### **Exhibits**

- 5-3: Removed trees from exhibit and created new Exhibit 18-1 to show optional tree locations.
- 5-5: Removed trees from exhibit.
- 5-6: Simplified maintenance access area to 30' minimum.
- 6-1: Updated to match detention basin type definitions.
- 6-2: Improved depiction.
- 6-3: Improved depiction.
- 6-5: New exhibit showing grass-lined detention section alternatives.
- 11-1: New exhibit showing backslope swale design criteria.
- 13-1 & 13-2: Improved overflow swale criteria.
- 18-1: New exhibit showing optional tree locations on a benched channel.

## **Appendices**

- 48-Hour Pre-Construction form improved.
- Checklists and standard notes updated.
- Geotechnical Guidelines updated.
- Digital Submittal Guidelines added.
- Terminology updated and put in alphabetical order.
- References verified and updated.

## **Standard Detail Sheets**

- Storm Sewer and Riprap Detail Sheet, and Interceptor Detail Sheet
  - Added corrugated metal pipe sheet minimum thickness tables.
  - Clarified riprap is only for pipe 48” and larger.
  - Added note designating where to set outfall pipe flowline in a detention basin.
  - Added “Clean Water Clear Choice” logo.
  - Included HDPE option for storm sewer outfalls.
  - Other details improved.
- Concrete Channel Lining
  - Changed mid-slope concrete toe wall to be perpendicular to slope.