FAYETTE COUNTY STORMWATER INFRASTRUCTURE IMPROVEMENTS
DRAFT FOR PUBLIC REVIEW AND COMMENT

Fayette County owns and maintains miles of storm drainage pipe and associated drainage infrastructure for managing stormwater running under Fayette County Roads. This is comprehensively referred to as the Municipal Separate Storm Sewer System and includes items such as: storm drainage pipes; box culverts; gutters; ditches, swales, catch basins and inlets.

A portion of the county's storm drainage infrastructure needs repairs or replacement due to deterioration of corrugated metal pipe that is approaching or exceeding its expected useful life. Deteriorated, damaged, poorly maintained, and/or undersized pipes and structures can result in potentially serious safety, infrastructure, flooding and environmental problems.

The drainage system improvements identified provides repair and replacement of drainage systems under and adjacent to roadways that have deteriorated to the point where they no longer function as intended.

Category I **TOTAL** **$6,451,659**

Flooding and Safety: Replacement or rehabilitation of Stormwater Drainage Systems where failure or improper operation may result in loss of property or probable loss of human life. This includes drainage systems that were damaged during the 2015 Christmas Floods (FEMA Disaster Declaration 4259-DR) and dams classified by the Georgia Safe Dams program that are within Fayette County right-of-way. All projects listed in this category are in need of immediate replacement or have been replaced.

Category II **TOTAL** **$14,145,522**

Stormwater Infrastructure Preservation Projects Greater than $25,000: Deformation or damage of system may affect the drainage capacity or overall function of the structure. These projects have been subcategorized into Tier 1 and Tier 2.

Tier 1 projects are in need of immediate attention. **$3,705,373**
Tier 2 projects are projects that need replacement soon. **$10,440,149**

Category III **TOTAL** **$1,651,211**

Stormwater Infrastructure Preservation Projects Less than $25,000: Deformation or damage of system may affect the drainage capacity or overall function of the structure.

Category IV **TOTAL** **$1,493,249**

Stormwater Improvement Projects: Stormwater drainage systems functional improvements.

SPLOST 2017 ***TOTAL*** ***$23,741,641***

Tetra Tech General Assumptions

1) Preliminary culvert designs are based on modeling scenario outputs from the HY-8 culvert hydraulic analysis program. A culvert was considered to perform adequately if 100% of flow resulting from a 25-year storm event passes through the culvert without overtopping the road surface. 25-year storm event flows were obtained for each site using the USGS StreamStats Program, which estimates event flows based on a given point's drainage area and relative proximity to existing USGS stream and rainfall gages.

2) Utility types, locations, and dimensions at each project site are based on street level visual inspections. No research, subsurface utility engineering (SUE) equipment or contact with utility owners was conducted. Utility relocation costs are based on previous Fayette County SPLOST planning level estimates of common sizes for each utility.

3) Easement cost estimates are based on the analysis of a collection of 2014 property sales in the Fayetteville, Georgia area using prices and lot sizes available on the Fayette County Tax Assessors' Office website and the Fayette County GIS portal. A conservative cost of $4/SF has been applied to the land that is presumed to lie outside of the County's right of way (ROW) for each project's limit of disturbance. This value should account for potential market appreciation over the life of a SPLOST program and the planning level nature of the estimates. Full property appraisal at each location will be required once detailed plans are available.

4) Road classifications were obtained from the Fayette County GIS portal. No distinction was made regarding street design standards and specifications. For costing purposes, an asphaltic concrete paving profile was used consisting of a 6" stone base, 3" binder course, and 3" of topping.

5) Construction line item costs were assembled from two sources: GDOT's 2015 Item Mean Summary, and the RS Means CostWorks software program using 2015 Cost Data for Atlanta area zipcodes beginning with 302. Unit prices from both sources were increased by 20% to account for small project size, mobilization/demobilization of construction equipment, hauling and disposal costs, and the overall planning level nature of the estimates. Any other construction cost assumptions are noted on individual project sheets.

6) Traffic control cost percentage estimates are based on street classification, roadway closure possibility, and the need for public awareness/involvement during construction. Detailed analysis of staging schemes regarding the public use of roads during construction will be required for each site.

7) The applied design cost for each site consists of a combination of 10% of the estimated construction cost, an assumption usually reserved for larger projects, and a cost for surveying requirements. Surveying cost estimates stem from previous surveying efforts for culvert construction in Fayette County. A baseline surveying cost of $5,000 was applied to each site. For project sites designed to handle higher flows and/or those inside FEMA Zone AE (floodway) and Zone A special flood hazard areas, a surveying cost of $12,500 was applied.

8) Environmental efforts are anticipated to be minimal due to the nature of the projects (perpendicular crossing/maintenance project classification) and include wetland delineation, compliance with stream buffers, and minimal permitting. Projects are assumed to be exempt from the Georgia EPD stream buffer variances on the basis of a drainage structure exemption. In addition, projects are assumed to fall under a Nationwide Permit 3A (Maintenance Activity). No ecological investigations were completed for this planning level effort and will be required at the time of the projects to assess actual environmental impacts and costs.

   It is assumed that floodplain modeling will be required for all crossings in FEMA-designated Zone AE (floodway) and Zone A special flood hazard areas, but that the crossings will be designed to comply with FEMA requirements for no-rise scenarios. No map revision submittals to FEMA are included in the cost estimates. The FEMA studies are included in the cost estimates. The FEMA studies are included in the environmental cost for each project to which this is anticipated to be required.

   Cost levels of Environmental Analysis/Permitting:
   $10,000: minimal environmental efforts as described above.
   $15,000: minimal environmental efforts, FEMA Zone A study required, culvert
   $18,000: minimal environmental efforts, FEMA Zone AE study required, culvert
   $20,000: minimal environmental efforts, FEMA Zone A/AE study required, bridge

9) Pipe condition assessment categories:

   5: Severe structural damage; >10% loss of flow area; function of structure compromised and failure imminent
   4: Significant signs of exterior and structural deterioration; some loss of flow area
   3: Signs of exterior deterioration but structurally functioning
   2: Minor signs of deterioration; primary flow area in tact and functioning
   1: System performing as designed and in good condition