

REFINEMENT OPTIONS FOR AUTHORIZED CSO REMEDIAL MEASURES PLAN

Authorized CSO Remedial Measures Plan (27% Separation + 100% Tunnel/Treatment – See Figure 1)

- Construct West tunnel (199 MG) and new CSO pump station and treatment (100 MGD) at RM Clayton site
- Construct East tunnel (115 MG) and expand Intrenchment Creek pump station and treatment (60 MGD)
- Separate 27% of the combined sewer area, but none of the basins are fully separated
- Achieve total 90% separation of the City's total service area
- Reduces CSOs to average of 4 per year at 6 existing facilities

Refinement Option No. 1 (27% Separation + 73% Tunnel/Treatment – See Figure 2)

- Separate Greensferry basin in West; separate McDaniel basin and Stockade sub-basin in East
- Eliminate 2 CSO facilities and 1 CSO regulator
- West tunnel – eliminate Greensferry leg and reduce storage volume to 177 MG
- West pump station and treatment facility -- reduce capacity to 85 MGD
- East tunnel – construct as 1-mile extension of existing tunnel; reduce volume to 52.5 MG
- East pump station and treatment facility -- reduce expanded capacity to 25 MGD

Refinement Option No. 2 (40% Separation + 60% Tunnel/Treatment – See Figure 3)

- Separate entire East area (McDaniel and Custer basins)
- Eliminate 2 existing CSO facilities and 2 regulators
- West tunnel – construct same as authorized plan
- West pump station and treatment facility – construct same as authorized plan
- East tunnel – eliminate
- East pump station and treatment facility -- eliminate

Refinement Option No. 3 (50% Separation + 50% Tunnel/Treatment – See Figure 4)

- Separate entire East area (McDaniel and Custer) and separate Greensferry basin in West area
- Eliminates 3 existing CSO facilities and 2 regulators
- West tunnel – eliminate Greensferry leg and reduce storage volume to 177 MG
- West pump station and treatment facility -- reduce capacity to 85 MGD
- East tunnel – eliminate
- East pump station and treatment facility -- eliminate

Refinement Option No. 4 (80% Separation + 20% Tunnel/Treatment – See Figure 5 & 6)

- Separate all basins within the existing combined sewer area, excluding the urban core – separate entire East area (McDaniel and Custer); separate the Greensferry basin in West area; partially separate North Avenue, Tanyard, and Clear Creek basins in West area (excluding the urban core), and route the Lloyd and North Avenue urban core flow to the Tanyard CSO
- Eliminates 4 existing CSO facilities and 2 regulators
- West tunnel – eliminate Greensferry and North Avenue legs; requires micro-tunnels to convey the combined sewage flow from urban core to the deep tunnel at 2 remaining CSOs; reduce storage volume to 95 MG
- West pump station and treatment facility – reduce capacity to 50 MGD
- East tunnel – eliminate
- East pump station and treatment facility -- eliminate