Centennial distribution replacement

2027 planning case PLAN-0J9U6PW | South Metro | Draft work order prepared

Advance a 3-segment, 2,835-foot (0.54-mile) critical replacement bundle for engineering validation. All three segments are unassigned and score 97/100. Shared municipality and region support preliminary bundling; corridor adjacency and hydraulic connectivity are unverified.

Scope and selection

Segment / existing pipe	Feet / score	Primary threat
SEG-D-0020 / 12-in modern PE (2003)	945 / 97	Construction defect indication
SEG-D-0092 / 4-in vintage plastic (1982)	945 / 97	Squeeze-off history
SEG-D-0164 / 8-in vintage plastic (1961)	945 / 97	Squeeze-off history

Screen found 28 unassigned high/critical distribution candidates: 11 critical and 17 high. Centennial has the strongest concentration of critical scores. Its $39k/year baseline ties the Colorado Springs critical trio (scores 100/86/86; 2,835 ft); Denver has two critical segments (97/97; 940 ft; $26k/year). This is a risk-priority selection, not a proven least-cost optimum.

Class 4 conceptual estimate | EST-0L5J44E

Construction	Design	Permits / env.	Traffic / restoration	Contingency	Total
$2,367,000	$284,000	$107,000	$426,000	$796,000	$3,980,000

25% contingency on $3.184m pre-contingency cost. Accuracy: -30% / +50%, or **$2.786m-$5.970m**. Synthetic 2026 unit-cost library. Returned escalation is $0 despite a stated 4% annual escalation basis; reconcile target-year pricing before budget approval. No bundling savings quantified.

Risk reduction and decision implications

$39k/year baseline → $5k/year residual; $34k/year reduction. Navigator assumes 88% replacement effectiveness (rounded outputs). Untreated 2031 risk: $52k/year. Twenty-year undiscounted reduction: $680k; risk-only benefit-cost ratio: **0.17**. This does not independently justify the investment economically.

Scores are relative ranks, separate from synthetic annualized loss. Each segment has modeled failure probability 0.000972/year and headline consequence $13.645m; annual loss sums threat-specific probability × consequence. Baseline uncertainty bounds sum to $25k-$63k/year (not a joint confidence interval). Input completeness: 98% / 85% / 72%; SEG-D-0092 uses a soil/environment default.

Prepared work order | draft, not released

Description: Centennial Critical Distribution Replacement Bundle. **Year:** 2027. **Planning value:** $3.98m. **Scope:** engineer and replace the three listed mains; verify service/tie-in quantities, final sizing and material; plan isolation, commissioning, abandonment and surface restoration. Construction method and dates remain to be designed.

Asset references: GAS-SM-00020 / EQ-D-710020; GAS-SM-00092 / EQ-D-710092; GAS-SM-00164 / EQ-D-710164. **Release gates:** validate route/connectivity, defect and squeeze-off evidence, field inputs, mitigation alternatives, permits, outages, estimate and funding. Assign responsible planner/engineer. Navigator reports no simulation blockers; no order was pushed to SAP or created in the simulator.

SOURCE / Navigator segment screen, risk explanation and planning case, retrieved 2026-09-03; assessment 2026-08-31, model 2026.3. All assets, SAP IDs, costs and risk outputs are synthetic POC data; no proprietary JANA model was executed. Companion candidate register lists all 28 screened segments.