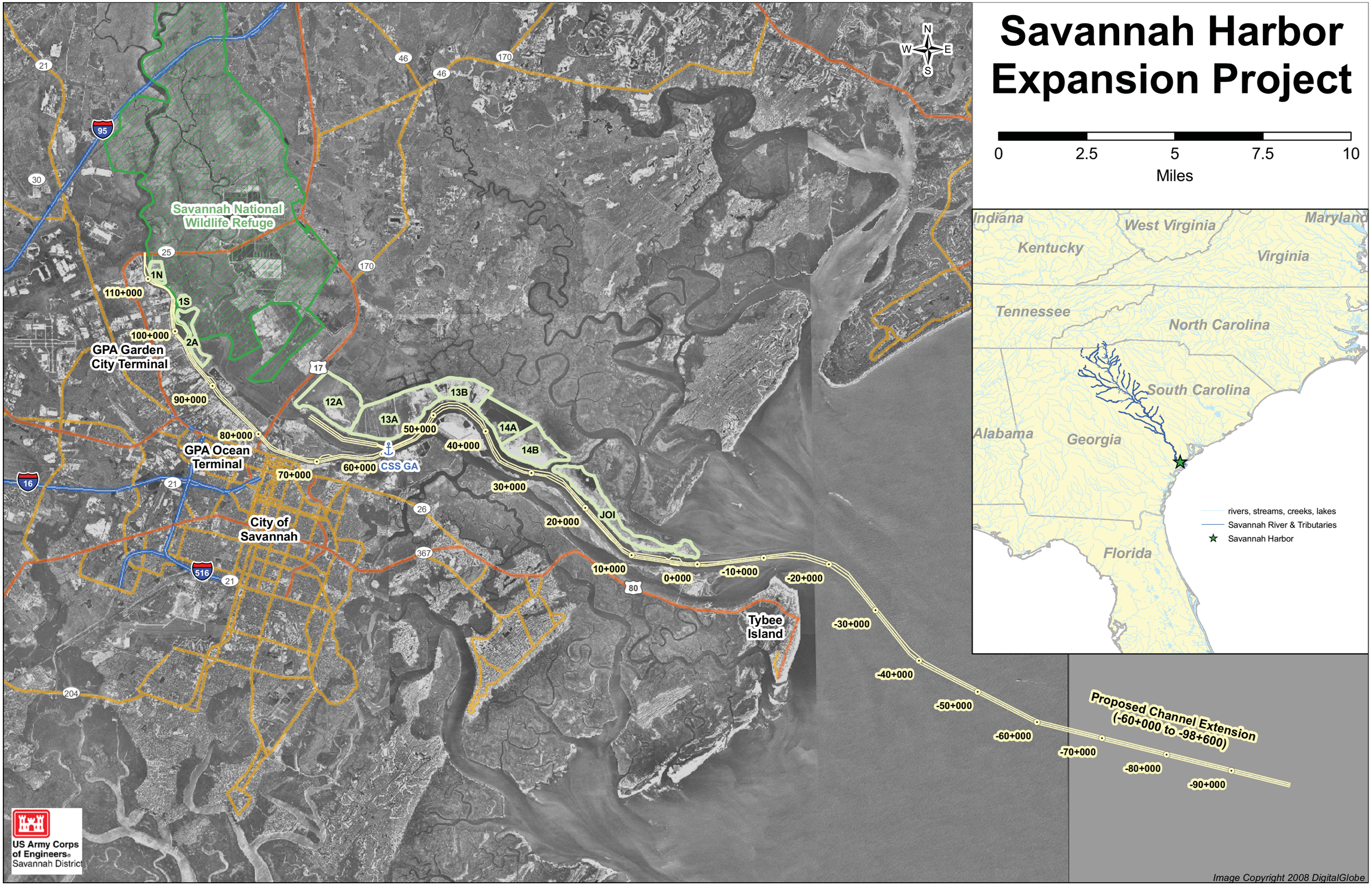
List of Tables

Table 1-1: Savannah Navigation Channel Dimensions 21
Table 1-2: Advance Maintenance Areas (feet below MLLW) 24
Table 1-3: Turning Basin Locations and Dimensions 25
Table 1-4: Savannah Harbor Navigation Project Dredged Material Containment Areas..... 31
Table 4-1: Controlling Depths at Major US East Coast Ports, the Panama Canal, and Major Foreign Trading Partner Ports 45
Table 4-2: Current World Container ship Fleet (13 Jul 10) 47
Table 4-3: World Container ship Orderbook by Scheduled Delivery Date 47
Table 4-4: 2013 World Container Ship Fleet (13 Jul 10)..... 48
Table 4-5: World Fleet Existing and Ordered Post-Panamax Vessels..... 49
(Number of vessels) 49
Table 4-6: Savannah Harbor Waterborne Freight Traffic: 1999 – 2008 (thousands of short tons) 50
Table 4-7: Garden City Terminal TEU Volumes and Annual Growth Rates (2005 – 2009) 53
Table 4-8: 2007 Savannah Harbor Container ship Arrival and Departure Drafts (Number of Calls) 55
Table 4-9: Savannah Harbor Economic Impact – 2006 (millions of 2006 dollars) 58
Table 5-1: Panama Canal Maximum Vessel Dimensions..... 68
Table 5-2: New, Planned, or Proposed Container Terminals U S East and Gulf Coasts 70
Table 5-3: Savannah Harbor Container Ship Services..... 72
Table 5-4: Baseline Containerized Imports (Metric Tons) 74
Table 5-5: Containerized Tons Exports (Metric Tons) 74
Table 5-6: Commodity Forecast Baseline - Three Year Weighted Average ... 75
Table 5-7: Global Insight's Savannah Harbor Containerized Trade Forecast – Imports (Metric Tons) 76
Table 5-8: Global Insight's Containerized Import Metric Tons - Rate of Change 76
Table 5-9: Global Insight Savannah Harbor Containerized Trade Forecast – Exports (Metric Tons) 77
Table 5-10: Global Insight Containerized Export Tons - Rate of Growth..... 77
Table 5-11: Import Containerized Tonnage, Rate of Change 2007-2008..... 78
Table 5-12: SHEP Containerized Trade Forecast - Import Metric Tons 78
Table 5-13: Export Containerized Tonnage, Rate of Change 2007-2008..... 79
Table 5-14: Savannah Harbor Containerized Trade Forecast - Export Metric Tons..... 79
Table 5-15: Container Box Weight by Service 80
Table 5-16: TEU Forecast for Selected Years 81
Table 5-17: MSI’s World Fleet Forecast 82
Table 5-18: Example Load Factor Analysis Capacity Allocation – 107,000 DWT Vessel 85
Table 5-19 – Projected Maximum Vessel Drafts: Savannah Harbor..... 86

Table 5-20: Estimated Vessel Unit Costs..... 87
Table 5-21 Projected FE (Panama) ECUS Vessel Calls: Garden City Terminal 88
Table 5-22 Projected ECUS MED Vessel Calls: Garden City Terminal..... 88
Table 5-23: Total Projected Vessel Calls: Garden City Terminal 89
Table 5-24: Local Area Population Projections..... 90
Table 5-25: Local Area Employment Projections..... 91
Table 5-26: Savannah Harbor Market Area Population Projections (2005 – 2030) 91
Table 6-1: Annual Waterborne Transportation Cost Savings and Landside Transportation Cost Increases..... 111
Table 6-2: Evaluation of Alternative Terminal Sites..... 114
Table 6-3: Facility Costs, Dredging & Mitigation Costs, and Total Costs Alternative Terminals 115
Table 6-4: Summary Assessment of Alternative Terminals..... 116
Table 6-5: Evaluation of Higher Ranked Alternative Terminal Sites..... 117
Table 6-6: Ship Simulation Results: Bend Widening 121
Table 7-1: Savannah Share of Voyage Cost 128
Table 7-2: AAE Transportation Cost Savings by Project Depth 129
Table 7-3: Incremental Transportation Cost Savings by Project Depth 129
Table 7-4 LNG Vessel Fleet (bcm) (2015-2030)..... 131
Table 7-5 General Cargo Fleet – Annual Vessel Calls (2015-2030) 132
Table 7-6: Meeting Area Average Annual Benefits 132
Table 7-7: Tide Delay Benefits..... 134
Table 7-8: Average Annual Benefits - Tide Delay Reduction..... 134
Table 7-9: Cumulative Benefits – Meeting Areas and Tide Delay Reduction 135
Table 7-10: Total Average Annual Equivalent Incremental Deepening Benefits 135
Table 8-1 Hydrodynamic and Water Quality Modeling Reports..... 144
Table 8-2: Summary of Hydrodynamic and Water Quality-Related Impacts (Without Mitigation)..... 145
Table 9-1: Preliminary Mitigation Measure Ranking..... 153
Table 9-2: Mitigation Planning Dual Approach: Measures and Combinations 153
Table 9-3: Preliminary Marsh Mitigation Evaluation: -48-foot Deepening Alternative..... 154
Table 9-4: Marsh Mitigation Plan Evaluation -48-foot Deepening Alternative 156
Table 9-5: Marsh Mitigation Plan Cost Effectiveness -48-foot Deepening Alternative..... 156
Table 9-6: Dissolved Oxygen System Requirements..... 157
Table 9-7: Wetland Preservation Calculations..... 160
Table 9-8: Summary of SOP Calculations 48-foot Alternative 160
Table 9-9: Impacted Wetland Characteristics..... 162
Table 9-10: Re-vegetation Rate for Created Marsh 163

Table 9-11: Striped Bass Weighted Average Impact 165
Table 9-12: Striped Bass Annual Mitigation Costs 165
Table 9-13: Striped Bass Lump Sum Compensation Value..... 166
Table 9-14: Chloride Mitigation Plan Alternatives..... 168
Table 9-15: Revised Chloride Mitigation Plan Alternatives..... 168
Table 10-1: Dredged Material Volume Estimates[1] : Meeting Areas (cubic yards)..... 172
Table 10-2: Dredged Material Volume Estimates:[1] Incremental Deepening Alternatives (cubic yards) 173
Table 10-3: Dredging Related Costs: Incremental Deepening Alternatives (October 2010 dollars) 178
Table 10-4: Mitigation-Related Costs: Incremental Deepening Alternatives (October 2010 dollars) 179
Table 10-5: Total Construction First Costs: Incremental Deepening Alternatives (October 2010 dollars)..... 180
Table 10-6: Total Construction Costs and Interest During Construction 180
Table 10-7: Total Annual O&M Costs: Incremental Deepening Alternatives (October 2009 dollars) 181
Table 10-8: Average Annual Equivalent (AAEQ) Project Costs: Incremental Channel Deepening Alternatives 182
Table 11-1: Economic Analysis of Alternative Deepening Plans..... 185
Table 11-2: Meeting Area Average Annual Equivalent Net Benefits 186
Table 11-3: Savannah Harbor Expansion – System of Accounts 188
Table 11-4: Existing and Maximum Authorized Project Widths (feet)..... 213
Table 11-5: Existing and maximum Authorized Project Depths (feet below MLLW) 214
Table 11-6: Potential Un-Mitigated Environmental Effects of the Maximum Authorized Plan..... 215
Table 11-7: Maximum Authorized Plan Mitigation Costs..... 217
Table 11-8: Maximum Authorized Plan Construction Schedule 219
Table 12-1: Jasper County Terminal Sensitivity Analysis -1 225
Table 12-2: Jasper County Terminal Sensitivity Analysis -2 225
Table 12-3: Jasper County Terminal Sensitivity Analysis -3 226
Table 12-4: Jasper County Terminal Sensitivity Analysis -4 226
Table 12-5: Transportation Cost Model Sensitivity Analyses AAEQ Cost Savings 227
Table 12-6: Meeting Area Sensitivity Analysis - Average Annual Benefits. 233
Table 12-7: Average Annual Benefits - Tide Delay 233
Table 12-8: Sensitivity Analysis Combined Meeting Area and Tide Delay Benefits 234
Table 12-9: Sensitivity Analysis Scenario 2 - Total Average Annual Equivalent Incremental Deepening Benefits..... 234
Table 13-1: SHEP Federal Funds Allocation..... 242
Table 13-2: SHEP Project Costs History 243
Table 13-3: SHEP Project Average Annual Costs and Benefits History..... 244

Table 13-4: SHEP Project Cost Comparison (1999 Authorized Plan and 2010 Tentative NED Plan) 246
Table 13-5: SHEP Project Cost Sharing Comparison (1999 Authorized Plan and 2010 Tentative NED Plan) 247
Table 13-6: Savannah Harbor Expansion Draft Initial Cost Allocation for NED -47' Alternative with Maximum Authorized Plan of -48' Alternative 253
Table 13-7: Cost Sharing Explanations..... 258

This Page Intentionally Blank

Savannah Harbor Expansion Project