| EN | GINEER'S OPINION OF PROBABLE CO Project: Highland Lake - Brasher Creek Bay and Sand Creek Bay Dredging | ST OF [| Proj. No. | 100-ATL-T34 | 1225 | |
|----------|----------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------|---------------------------|-------------------------|----------------------------|
| | Preliminary Estimate - 30 % Stage | | Est By: Date: | R. Czlapinsk 14-Aug-15 | 1 | |
| | | | Date. | 14-Aug-10 | | Totals \$U\$ |
| Not | es for Option M-1: Dredging of both bays and open water disposal in deep water lake areas | | A) Addition | nal Costs | | 111,998 |
| 1) | Approximately 12,400 cy of material to be mechanically dredge from Brasher Creek and Sand Creek Bays | ed | Mobilization Bonds | | 7.0% 1.00% | 13,51 ⁻ 1,93 |
| 2) | Clean dredged material can be disposed of in deep open wate sections of Highland Lake adjacent to each of the dredging are | | Contingency A General Conc Fee | | 25.0% 15.0% 10.0% | 48,27 28,96 19,31 |
| 3) | 25% contingency allowance for 30% design development stag | | Taxes | nal Owner Cos | 0.0% | |
| 3) 4) | Cost per cubic yard of sediment dredged | \$27.74 | | | | |
| -+) | Cost per cubic yard of sediment dredged | <i>φ</i> 27.74 | Total (A + B) Item Total Fro | | | 111,998 231,755 |
| | | | Grand | Total (rou | inded) | \$344,000 |
| | Budget Items & Descriptions | | Unit Cos | 1 | | otals \$US |
| | | No. Units | Units Meas. | Per Unit | Item Totals | Sub-Totals |
| Fiel | d Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,000 |
| Rec | gulatory requirements | | | | | 10,15 |
| | Permit Applications | | | | | |
| | Pre-application Meeting | 1 | ea | \$2,500.0 | \$2,500 | |
| | US Army Corps of Engineers | 1 | ea | \$6,000.0 | \$6,000 | |
| | Alabama Dept of Environmental Protection | 1 | ea | \$500.0 | \$500 | |
| | Construction General Permit | I | ea | \$1,155.0 | \$1,155 | |
| | Permit Compliance Monitoring Pre-costruction | 0 | ea | \$0.0 | \$0 | |
| | Turbidity, Env. Compliance | 0 | ea | \$0.0 | \$0 \$0 | |
| Eng | jineering Design | | | | | 24,500 |
| | Design Final design and specifications | 1 | ea | \$10,000.0 | \$10,000 | |
| | Construction Support | | | | | |
| | Bidding | 1 | ea | \$3,000.0 | \$3,000 | |
| | Construction Observations Certification | 1 | ea ea | \$10,000.0 \$1,500.0 | \$10,000 \$1,500 | |
| Cor | nstruction | | | | | 193,10 |
| | Project Organization and Control | | 1- | #F 000 0 | #F 000 | |
| | Environmental protection plan Project layout survey | 1 | ls Is | \$5,000.0 \$2,000.0 | \$5,000 \$4,000 | |
| | Project layout survey Progress surveys | 3 | ls Is | \$2,000.0 \$2,000.0 | \$4,000 \$6,000 | |
| | As-built survey | 2 | | \$2,000.0 | \$4,000 | |
| | Project schedule | 3 | | \$1,000.0 | \$3,000 | |
| | Dredging Operations Staging Area | | | | | |
| | Site preparation | 1 | ls | \$2,000.0 | \$2,000 | |
| | Site restoration Site security | 1 50 | ls day | \$4,000.0 \$200.0 | \$4,000 \$10,000 | |
| | Dredging and Dewatering | | | | | |
| | Dredging | 12,400 | су | \$11.0 | \$136,400 | |
| | | | | | | |
| | Debris removal and disposal Turbidity curtains | 1 | ton Is | \$8,700.0 \$5,000.0 | \$8,700 \$10,000 | |

| EN | IGINEER'S OPINION OF PROBABLE CO Project: Highland Lake - Brasher Creek Bay and Sand Creek Bay Dredging Preliminary Estimate - 30 % Stage | OST OF I | DESIGN/C Proj. No. Est By: Date: | CONSTRUC 100-ATL-T34 R. Czlapinsk 14-Aug-15 | 1225 | TŁ |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------|------------------------------------------------------|-------------------------|-------------------------|
| | | | | | | Totals \$US |
| Not | tes for Option M-2: Dredging of both bays and open water disposal in deep water lake areas in two phases | | A) Addition | nal Costs | | 121,278 |
| 1) | Approximately 12,400 cy of material to be mechanically dredge from Brasher Creek and Sand Creek Bays in 2 phases | ed | Mobilization Bonds | | 7.0% 1.00% | 14,63 2,09 |
| 2) | Clean dredged material can be disposed of in deep open wate sections of Highland Lake adjacent to each of the dredging are | | Contingency A General Cond Fee | | 25.0% 15.0% 10.0% | 52,27 31,36 20,91 |
| 3) | 25% contingency allowance for 30% design development stag | e | Taxes B) Addition Second Mobil | nal Owner Cos | 0.0% Sts | 14,63 14,63 |
| 4) | Cost per cubic yard of sediment dredged | \$30.97 | | | | 135,91 |
| | | | | Total (rou | unded) | \$384,000 |
| | Budget Items & Descriptions | | Unit Cos | sts | T | otals \$US |
| | Budget items & Descriptions | No. Units | Units Meas. | Per Unit | Item Totals | Sub-Totals |
| Fiel | ld Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,00 |
| Red | gulatory requirements | | | | | 10,15 |
| | Permit Applications | | | | | , |
| | Pre-application Meeting | 1 | ea | \$2,500.0 | \$2,500 | |
| | US Army Corps of Engineers | 1 | ea | \$6,000.0 | \$6,000 | |
| | Alabama Dept of Environmental Protection Construction General Permit | 1 | ea ea | \$500.0 \$1,155.0 | \$500 \$1,155 | |
| | Permit Compliance Monitoring | · · | ea | φ1,100.0 | φ1,100 | |
| | Pre-costruction | 0 | ea | \$0.0 | \$0 | |
| | Turbidity, Env. Compliance | 0 | ea | \$0.0 | \$0 | |
| Eng | gineering Design | | | | | 24,50 |
| | Design Final design and specifications | 1 | ea | \$10,000.0 | \$10,000 | |
| | Construction Support | | | | | |
| | Bidding | 1 | ea | \$3,000.0 | \$3,000 | |
| | Construction Observations | 1 | ea | \$10,000.0 \$1,500.0 | \$10,000 \$1,500 | |
| ~ | Certification | 1 | ea | \$1,500.0 | \$1,500 | |
| Cor | nstruction Project Organization and Control | | | | | 209,10 |
| | Environmental protection plan | 1 | ls | \$5,000.0 | \$5,000 | |
| | Project layout survey | 2 | ls | \$2,000.0 | \$4,000 | |
| | Progress surveys | 3 | | \$2,000.0 | \$6,000 | |
| | As-built survey | 2 | | \$2,000.0 | \$4,000 | |
| | Project schedule | 3 | ls | \$1,000.0 | \$3,000 | |
| | Dredging Operations Staging Area | | | | | |
| | Site preparation | 2 | | \$2,000.0 | \$4,000 | |
| | Site restoration Site security | 2 100 | | \$4,000.0 \$200.0 | \$8,000 \$20,000 | |
| | Dredging and Dewatering | | | | | |
| | Dredging | 12,400 | - | \$11.0 | \$136,400 | |
| | Debris removal and disposal | 1 | ton | \$8,700.0 | \$8,700 | |
| | Turbidity curtains | 2 | ls | \$5,000.0 | \$10,000 | |

| EN | GINEER'S OPINION OF PROBABLE CO Project: Highland Lake - Brasher Creek Bay and Sand Creek Bay Dredging Preliminary Estimate - 30 % Stage | DST OF I | DESIGN/C Proj. No. Est By: Date: | 20NSTRUC 100-ATL-T34 R. Czlapinsk 24-Sep-15 | 1225 | TŁ |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------|------------------------------------------------------|-------------------------|---------------------------------------|
| | Promininary Loundate - 00 % Clage | | Date | 2100010 | | Totals \$U\$ |
| Not | tes for Option M-3: Dredging of Brasher Creek Bay and open water disposal in deep water lake areas | | A) Addition | al Costs | | 71,398 |
| 1) | Approximately 6,400 cy of material to be mechanically dredge from Brasher Creek | ed | Mobilization Bonds | | 7.0% 1.00% | 8,61 1,23 |
| 2) | Clean dredged material can be disposed of in deep open wat sections of Highland Lake adjacent to each of the dredging a | | Contingency A General Cond Fee | | 25.0% 15.0% 10.0% | 30,77 18,46 12,31 |
| 3) | 25% contingency allowance for 30% design development sta | ge | Taxes B) Addition | al Owner Cos | 0.0% Sts | (|
| 4) | Cost per cubic yare of sediment dredged | | Total (A + B) Item Total Fro | om Below Total (rou | unded) | 71,390 161,759 \$234,000 |
| | | | | | 1 | |
| | Budget Items & Descriptions | No. Units | Unit Cos Units Meas. | Per Unit | Item Totals | otals \$US Sub-Totals |
| Fiel | d Data Collection Programs | | OTILS Weas. | i ei onit | item rotais | 4,000 |
| Fiel | d Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,000 |
| Reg | gulatory requirements | | | | | 10,155 |
| | Permit Applications | | | | | |
| | Pre-application Meeting | 1 | ea | \$2,500.0 | \$2,500 | |
| | US Army Corps of Engineers Alabama Dept of Environmental Protection | 1 | ea | \$6,000.0 \$500.0 | \$6,000 \$500 | |
| | Construction General Permit | 1 | ea ea | \$300.0 | \$300 \$1,155 | |
| | Permit Compliance Monitoring | | Cu | φ1,100.0 | ψ1,100 | |
| | Pre-costruction | 0 | ea | \$0.0 | \$0 | |
| | Turbidity, Env. Compliance | 0 | ea | \$0.0 | \$0 | |
| Eng | neering Design | | | | | 24,500 |
| | Design Final design and specifications | 1 | ea | \$10,000.0 | \$10,000 | |
| | Construction Support | | | | | |
| | Bidding | 1 | ea | \$3,000.0 | \$3,000 | |
| | Construction Observations | 1 | ea | \$10,000.0 | \$10,000 | |
| | Certification | 1 | ea | \$1,500.0 | \$1,500 | |
| Cor | nstruction | | | | | 123,10 |
| | Project Organization and Control | 1 | la | ¢5 000 0 | ¢E 000 | |
| | Environmental protection plan Project layout survey | 1 | ls Is | \$5,000.0 \$2,000.0 | \$5,000 \$2,000 | |
| | Progress surveys | 3 | | \$2,000.0 | \$2,000 \$6,000 | |
| | As-built survey | 1 | ls | \$2,000.0 | \$2,000 | |
| | Project schedule | 3 | ls | \$1,000.0 | \$3,000 | |
| | Dredging Operations Staging Area | | | | | |
| | Site preparation | 1 | ls | \$2,000.0 | \$2,000 | |
| | Site restoration Site security | 1 50 | ls day | \$4,000.0 \$200.0 | \$4,000 \$10,000 | |
| | Dredging and Dewatering | | | | | |
| | Dredging | 6,400 | су | \$11.0 | \$70,400 | |
| | 2.0039 | 0,.00 | -) | | ¥ =) = = | |
| | Debris removal and disposal Turbidity curtains | 1 | ton | \$8,700.0 \$5,000.0 | \$8,700 \$10,000 | |

| EN | GINEER'S OPINION OF PROBABLE CO | ST OF [| DESIGN/C | CONSTRUC | CTION | |
|-----|-------------------------------------------------------------------------------------------------------------|-------------|---------------------|------------------------|----------------------|-------------|
| | Project: Highland Lake - Brasher Creek Bay | | Proj. No. | 100-ATL-T34 | 4225 | |
| | and Sand Creek Bay Dredging | | Est By: | R. Czlapinsk | i | |
| | Preliminary Estimate - 30 % Stage | | Date: | 14-Aug-15 | | |
| | | | | 10 1 | | Totals \$US |
| Not | es for Option M-4: | | A) Addition | nal Costs | | 163,618 |
| | Dredging of both bays and upland disposal at Sand Creek site with diked containment | | | | | |
| 1) | Approximately 12,400 cy of material to be mechanically dredge | hd | Mobilization | | 7.0% | 19,747 |
| / | from Brasher Creek and Sand Creek Bays | | Bonds | | 1.00% | 2,82 |
| | | | Contingency / | | 25.0% | 70,52 |
| 2) | Clean dredged material can be disposed of in diked containme at the previously used site near Sand Creek | nt | General Conc Fee | ditions | 15.0% | 42,31 |
| | at the previously used site hear Sand Creek | | ree Taxes | | 10.0% 0.0% | 28,21 |
| 3) | 25% contingency allowance for 30% design development stage | Э | | nal Owner Cos | | (|
| 1) | Cost per cubic yard of sediment dredged | \$39.11 | | | | (|
| , | | ••••• | Total (A + B) | | | 163,618 |
| | | | Item Total Fro | | | 320,755 |
| | | | Grand | Total (roι | unded) | \$485,000 |
| | Budget Items & Descriptions | | Unit Cos | ts | T | otals \$US |
| | | No. Units | Units Meas. | Per Unit | Item Totals | Sub-Totals |
| iel | d Data Collection Programs | | | | | 4,000 |
| | Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | |
| leç | gulatory requirements | | | | | 10,155 |
| | Permit Applications | | | | • • • • • | |
| | Pre-application Meeting | 1 | ea | \$2,500.0 \$6,000.0 | \$2,500 | |
| | US Army Corps of Engineers Alabama Dept of Environmental Protection | 1 | ea ea | \$6,000.0 \$500.0 | \$6,000 \$500 | |
| | Construction General Permit | 1 | ea | \$1,155.0 | \$300 \$1,155 | |
| | Permit Compliance Monitoring | | | • , | • • • | |
| | Pre-costruction | 0 | ea | \$0.0 | \$0 | |
| | Turbidity, Env. Compliance | 0 | ea | \$0.0 | \$0 | |
| Inc | ineering Design | | | | | 24,500 |
| | Design | | | | | , |
| | Final design and specifications | 1 | ea | \$10,000.0 | \$10,000 | |
| | Construction Support | | | | | |
| | Bidding | 1 | ea | \$3,000.0 | \$3,000 | |
| | Construction Observations | 1 | ea | \$10,000.0 | \$10,000 | |
| | Certification | 1 | ea | \$1,500.0 | \$1,500 | |
| Cor | nstruction | | | | | 282,100 |
| _ | Project Organization and Control | | | 6 5 000 - | A = 0.55 | |
| | Environmental protection plan Project layout survey | 1 | | \$5,000.0 \$2,000.0 | \$5,000 \$4,000 | |
| | Project layout survey Progress surveys | 2 | ls Is | \$2,000.0 \$2,000.0 | \$4,000 \$6,000 | |
| | As-built survey | 2 | | \$2,000.0 | \$4,000 | |
| | Project schedule | 3 | | \$1,000.0 | \$3,000 | |
| | Dredging Operations Staging Area | | | | | |
| | Site preparation | 1 | ls | \$5,000.0 | \$5,000 | |
| | Site restoration | 1 | ls | \$15,000.0 | \$15,000 | |
| | Diking Site security | 1,500 50 | | \$50.0 \$200.0 | \$75,000 \$10,000 | |
| | · | | - | | | |
| | Dredging and Dewatering Dredging | 12,400 | су | \$11.0 | \$136,400 | |
| | Debris removal and disposal | 12,400 | | \$11.0 | \$130,400 | |
| | Turbidity curtains | 2 | | \$5,000.0 | \$10,000 | |
| | | | | | | |

| ENGINEER'S OPINION OF PROBABLE CO Project: Highland Lake - Sand Creek Bay Dredging with Upland Placement Preliminary Estimate - 30 % Stage | ST OF I | DESIGN/C Proj. No. Est By: Date: | CONSTRUC 100-ATL-T34 R. Czlapinsk 24-Sep-15 | 4225 | Totals \$US |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------|------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|
| Notes for Option M-5: Dredging of Sand Creek Bay and upland disposal at Sand Creek site with diked containment | | A) Addition | al Costs | | 120,466 |
| Approximately 6,000 cy of material to be mechanically dredged from Sand Creek Bays | I | Mobilization Bonds | | 7.0% 1.00% | 14,539 2,077 |
| Clean dredged material can be disposed of in diked containme at the previously used site near Sand Creek | nt | Contingency / General Conc Fee | | 25.0% 15.0% 10.0% | 51,925 31,155 20,770 |
| 25% contingency allowance for 30% design development stage | e | Taxes B) Addition | al Owner Co | 0.0% sts | C |
| Cost per cubic yard of sediment dredged | \$61.17 | Total (A + B) Item Total Fro | om Below Total (rou | unded) | 120,466 246,355 \$367,000 |
| Budget Items & Descriptions | | Unit Cos | ts | T | otals \$US |
| Budget items & Descriptions | No. Units | Units Meas. | Per Unit | Item Totals | Sub-Totals |
| Field Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,000 |
| Regulatory requirements Permit Applications Pre-application Meeting US Army Corps of Engineers Alabama Dept of Environmental Protection Construction General Permit Permit Compliance Monitoring Pre-costruction Turbidity, Env. Compliance | 1 1 1 1 1 0 0 | ea ea ea ea ea ea ea | \$2,500.0 \$6,000.0 \$500.0 \$1,155.0 \$0.0 \$0.0 | \$2,500 \$6,000 \$500 \$1,155 \$0 \$0 | 10,155 |
| Engineering Design | | | | | 24,500 |
| Design Final design and specifications | 1 | ea | \$10,000.0 | \$10,000 | |
| <i>Construction Support</i> Bidding Construction Observations Certification | 1 1 1 | ea ea ea | \$3,000.0 \$10,000.0 \$1,500.0 | \$3,000 \$10,000 \$1,500 | |
| Construction | | | | | 207,700 |
| Project Organization and Control Environmental protection plan Project layout survey Progress surveys As-built survey Project schedule | 1 1 3 1 3 | ls Is Is | \$5,000.0 \$2,000.0 \$2,000.0 \$2,000.0 \$1,000.0 | \$5,000 \$2,000 \$6,000 \$2,000 \$3,000 | |
| Dredging Operations Staging Area Site preparation Site restoration Diking Site security | 1 1 1,500 50 | | \$5,000.0 \$15,000.0 \$50.0 \$200.0 | \$5,000 \$15,000 \$75,000 \$10,000 | |
| Dredging and Dewatering Dredging Debris removal and disposal Turbidity curtains | 6,000 1 2 | ton | \$11.0 \$8,700.0 \$5,000.0 | \$66,000 \$8,700 \$10,000 | |

| ENGINEER'S OPINION OF PROBABLE CO | ST OF D | ESIGN/CO | ONSTRUC | TION | |
|--------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------------------|---------------------------|-----------------|
| Project: Highland Lake - Brasher Creek Bay | 01 01 0 | | 100-ATL-T34 | | |
| and Sand Creek Bay Dredging | | Est By: | R. Czlapinsk | | |
| Preliminary Estimate - 30 % Stage | | Date: | 17-Aug-15 | | |
| · · · · | | | | | Totals \$U\$ |
| Notes for Option H-1 | | A) Addition | al Costs | | 213,962 |
| Dredging of both bays and upland disposal at Sand Creek | | | | | |
| site with geotextile tubes | | | | | |
| Approximately 12,400 cy of material to be hydraulically dredge | - | Mobilization | | 7.00/ | 05.00 |
| Approximately 12,400 cy of material to be hydraulically dredged from Brasher Creek and Sand Creek Bays | u | Bonds | | 7.0% 1.00% | 25,823 3,689 |
| nom Brasher oreek and band oreek bays | | Contingency / | Allowance | 25.0% | 92,22 |
| 2) Dredged material to be treated with polymer and placed into | | General Cond | | 15.0% | 55,33 |
| geotextile tubes at Sand Creek | | Fee | | 10.0% | 36,89 |
| 0 | | Taxes | | 0.0% | |
| 25% contingency allowance for 30% design development stage | Э | B) Addition | al Owner Co | sts | (|
| Full site including apparent isolated wetland can be used | | | | | |
| +) Full site including apparent isolated wetland can be used | | Total (A + B) | | | 213,962 |
| 5) Cost per cubic yard of sediment dredged | \$51.53 | Item Total Fro | m Below | | 424,555 |
| | | Grand [•] | Total (rou | unded) | \$639,000 |
| | | Unit Cost | | / | otals \$US |
| Budget Items & Descriptions | No. Units | Units Meas. | S Per Unit | Item Totals | Sub-Totals |
| Field Data Collection Brograms | | | | | 4,000 |
| Field Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,000 |
| | · | eα | φ+,000.0 | φ4,000 | |
| Regulatory requirements | | | | | 9,655 |
| Permit Applications | 1 | | \$2,500.0 | \$2,500 | |
| US Army Corps of Engineers Alabama Dept of Environmental Protection | 1 | ea ea | \$2,500.0 \$6,000.0 | \$2,500 \$6,000 | |
| Construction General Permit | 1 | | \$1,155.0 | \$1,155 | |
| Permit compliance Monitoring | | | | | |
| Pre-costruction | 0 | | \$660.0 | \$0 | |
| Turbidity, Env. Compliance | 0 | ea | \$660.0 | \$0 | |
| Engineering Design | | | | | 42,000 |
| Design | | | • · - • • • • | • · - • • • | |
| Final design and specifications | 1 | ea | \$15,000.0 | \$15,000 | |
| Construction Support | | | | | |
| Bidding | 1 | ea | \$4.000.0 | \$4,000 | |
| Construction Observations | 1 | | \$20,000.0 | \$20,000 | |
| Certification | 1 | ea | \$3,000.0 | \$3,000 | |
| Construction | | | | | 368,900 |
| Project Organization and Control | | | | | 500,900 |
| Environmental protection plan | 1 | ls | \$5,000.0 | \$5,000 | |
| Project layout survey | 2 | ls | \$2,000.0 | \$4,000 | |
| Progress surveys | 3 | | \$2,000.0 | \$6,000 | |
| As-built survey Project schedule | 2 | | \$2,000.0 \$1,000.0 | \$4,000 \$3,000 | |
| Project schedule | 3 | 15 | \$1,000.0 | \$3,000 | |
| Dredging Operations Staging Area | | | | | |
| Site preparation | 1.4 | ac | \$4,000.0 | \$5,600 | |
| Site restoration | 1.4 | | \$4,000.0 | \$5,600 | |
| Site security | 60 | day | \$200.0 | \$12,000 | |
| Dredging and Dewatering | | | | | |
| Dredging | 12,400 | су | \$11.0 | \$136,400 | |
| Debris removal and disposal | 1 | ton | \$8,700.0 | \$8,700 | |
| Polymer additive | 12,400 | су | \$2.5 | \$31,000 | |
| Polymer emulsion feeder | 2 | mo | \$1,300.0 | \$2,600 | |
| Geotextile tubes (60 ft circumference) | 2,000 | | \$35.0 \$35.0 | \$70,000 \$70,000 | |
| Placing and filling geotextile tubes turbidity curtains | 2,000 1 | In It Is | \$35.0 \$5,000.0 | \$70,000 \$5,000 | |
| | | .0 | \$3,000.0 | ψ0,000 | |

| Er | IGINEER'S OPINION OF PROBABLE CO | ST OF DI | ESIGN/CO | ONSTRUCT | ΓΙΟΝ | |
|-----|------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|------------------------|----------------------|------------------------|
| | Project: Highland Lake - Brasher Creek Bay | | Proj. No. | 100-ATL-T3 | 4225 | |
| | and Sand Creek Bay Dredging | | Est By: | R. Czlapinsk | i | |
| | Preliminary Estimate - 30 % Stage | | Date: | 14-Aug-15 | | |
| No | tes for Option H-3 | | A) Addition | al Costs | | Totals \$US 339,961 |
| NU | Dredging of both bays and In lake land creation | | A) Addition | ai Cosis | | 559,90 |
| | (peninsula fill) | | | | | |
| 1) | Approximately 12,400 cy of material to be hydraulically dredge | d | Mobilization | | 7.0% | 41,03 |
| '' | from Brasher Creek and Sand Creek Bays | u | Bonds | | 1.00% | 5,86 |
| | | | Contingency / | | 25.0% | 146,53 |
| 2) | Dredged material to be treated with polymer and placed into geotextile tubes in Brasher Creek Bay to create a new peninsu | ula | General Conc Fee | litions | 15.0% 10.0% | 87,92 58,61 |
| | geolexile lubes in Diasiler Creek Day to create a new perints | ла | Taxes | | 0.0% | (|
| 3) | 25% contingency allowance for 30% design development stage | je | B) Addition | al Owner Cos | sts | (|
| 4) | Shoreline armored and fill on tubes for UV and wear protectio | n | | | | (|
| Ĺ | | | Total (A + B) | | | 339,961 |
| 5) | Cost per cubic yard of sediment dredged | \$79.19 | Item Total Fro | | (he als al) | 641,795 |
| | | | Grand | Total (roι | 1 | \$982,000 |
| | Budget Items & Descriptions | | Unit Cost | r | | otals \$US |
| | | No. Units | Units Meas. | Per Unit | Item Totals | Sub-Totals |
| Fie | ld Data Collection Programs Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | 4,000 |
| D - | | ' | ea | φ4,000.0 | \$4,000 | 0.055 |
| Re | gulatory requirements Permit Applications | | | | | 9,655 |
| | US Army Corps of Engineers | 1 | ea | \$2,500.0 | \$2,500 | |
| | Alabama Dept of Environmental Protection | 1 | ea | \$6,000.0 | \$6,000 | |
| | Construction General Permit | 1 | ea | \$1,155.0 | \$1,155 | |
| | Permit compliance Monitoring Pre-costruction | 0 | | \$660.0 | \$0 | |
| | Turbidity, Env. Compliance | 0 | | \$660.0 | \$0 \$0 | |
| Fn | gineering Design | | | | | 42,000 |
| ; | Design | | | | | 12,000 |
| | Final design and specifications | 1 | ea | \$15,000.0 | \$15,000 | |
| | Construction Support | | | | | |
| | Bidding | 1 | ea | \$4,000.0 | \$4,000 | |
| | Construction Observations | 1 | ea | \$20,000.0 | \$20,000 | |
| | Certification | 1 | ea | \$3,000.0 | \$3,000 | |
| Co | nstruction | | | | | 586,140 |
| | Project Organization and Control | . | 1. | #E 000 0 | * = 000 | |
| | Environmental protection plan Project layout survey | 1 | ls Is | \$5,000.0 \$2,000.0 | \$5,000 \$4,000 | |
| | Progress surveys | 3 | | \$2,000.0 | \$6,000 | |
| | As-built survey | 2 | | \$2,000.0 | \$4,000 | |
| | Project schedule | 3 | ls | \$1,000.0 | \$3,000 | |
| | Dredging Operations Staging Area | | | | | |
| | Site preparation | 1 | ac | \$2,000.0 | \$2,000 | |
| | Site restoration | 1 | | \$4,000.0 | \$4,000 | |
| | Site security | 60 | day | \$200.0 | \$12,000 | |
| | Dredging and Dewatering | | | | | |
| | Dredging | 12,400 | су | \$11.0 | \$136,400 | |
| | Debris removal and disposal | 1 | ton | \$8,700.0 | \$8,700 | |
| | Polymer additive | 12,400 | - | \$2.5 | \$31,000 | |
| | Polymer emulsion feeder Geotextile tubes (60 ft circumference) | 2,000 | mo lin ft | \$1,300.0 \$35.0 | \$2,600 \$70,000 | |
| | Placing and filling geotextile tubes | 2,000 | | \$35.0 \$50.0 | \$100,000 | |
| | turbidity curtains | 1 | ls | \$5,000.0 | \$5,000 | |
| | Shoreline Stabilization and Landscaping | | | | | |
| | | 1 | 1 | 1 | | |
| | | 12 400 | sa ft | \$5.6 | \$69 440 | |
| | Marine mattress (6 inch thick) Aquatic vegetative planting | 12,400 12,400 | | \$5.6 \$2.5 | \$69,440 \$31,000 | |
| | Marine mattress (6 inch thick) | | sq ft sq ft | | | |

| | IGINEER'S OPINION OF PROBABLE CO | | | ONSTRUC | | | |
|-----|------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------|---------------------------|------------------------|--------------------------|--|
| EN | | 51 OF D | | | | | |
| | Project: Highland Lake - Brasher Creek Bay and Sand Creek Bay Dredging | | Proj. No. Est By: | 100-ATL-T3 | | | |
| | Preliminary Estimate - 30 % Stage | | Date: | R. Czlapinsk 25-Sep-15 | 4 | | |
| | Freinninary Estimate - 30 % Stage | | Dale. | 25-Sep-15 | | Totals \$US | |
| No | tes for Option H-4: | | A) Addition | nal Costs | | 192,734 | |
| NO | Dredging of Brasher Creek Bay and in lake land | | A) Addition | 101 00313 | | 192,734 | |
| | creation (peninsula fill) | | | | | | |
| | | | | | | | |
| 1) | Approximately 6,400 cy of material to be hydraulically dredged | | Mobilization | | 7.0% | 23,261 | |
| | from Brasher Creek | | Bonds | | 1.00% | 3,323 | |
| 2) | Decide a sectorial to be treated with achiever and alcoard inte | | Contingency | | 25.0% | 83,075 | |
| 2) | Dredged material to be treated with polymer and placed into geotextile tubes in Brasher Creek Bay to create a new peninsu | la | General Cond Fee | litions | 15.0% 10.0% | 49,845 33,230 | |
| | | | Taxes | | 0.0% | (| |
| 3) | 25% contingency allowance for 30% design development stag | е | B) Addition | nal Owner Co | sts | (| |
| | | | | | | (| |
| 4) | Shoreline armored and fill on tubes for UV and wear protection | ו | Total (A + B) | | | 102 72 | |
| 5) | Cost per cubic yard of sediment dredged | \$90.78 | Total (A + B) Item Total Fro | om Below | | 192,734 387,955 | |
| -, | | | | Total (rou | inded) | \$581,000 | |
| | | | | | , | | |
| | Budget Items & Descriptions | No. Units | Unit Cost | : S Per Unit | I tem Totals | otals \$US Sub-Totals | |
| | | NO. UTILS | Units weas. | Per Unit | TIETT TOTAIS | | |
| Fie | d Data Collection Programs | | | ¢4.000.0 | ¢4.000 | 4,000 | |
| | Bathymetric Survey | 1 | ea | \$4,000.0 | \$4,000 | | |
| Re | gulatory requirements | | | | | 9,655 | |
| | Permit Applications | | | * 0 5 00 0 | * 0 5 00 | | |
| | US Army Corps of Engineers Alabama Dept of Environmental Protection | 1 | ea | \$2,500.0 \$6,000.0 | \$2,500 \$6,000 | | |
| | Construction General Permit | 1 | ea ea | \$1,155.0 | \$0,000 \$1,155 | | |
| | Permit compliance Monitoring | | ca | ψ1,100.0 | φ1,100 | | |
| | Pre-costruction | 0 | ea | \$660.0 | \$0 | | |
| | Turbidity, Env. Compliance | 0 | ea | \$660.0 | \$0 | | |
| End | gineering Design | | | | | 42,000 | |
| | Design | | | | | , | |
| | Final design and specifications | 1 | ea | \$15,000.0 | \$15,000 | | |
| | | | | | | | |
| | Construction Support Bidding | 1 | 00 | \$4,000.0 | \$4.000 | | |
| | Construction Observations | 1 | ea ea | \$20,000.0 | \$20,000 | | |
| | Certification | 1 | ea | \$3,000.0 | \$3,000 | | |
| 0 | | | | | • • | 000.000 | |
| | nstruction Project Organization and Control | | | | | 332,300 | |
| | Environmental protection plan | 1 | ls | \$5,000.0 | \$5.000 | | |
| | Project layout survey | 1 | | \$2,000.0 | \$2,000 | | |
| | Progress surveys | 3 | ls | \$2,000.0 | \$6,000 | | |
| | As-built survey | 1 | - | \$2,000.0 | \$2,000 | | |
| | Project schedule | 3 | ls | \$1,000.0 | \$3,000 | | |
| | Dredging Operations Staging Area | | | | | | |
| | Site preparation | 1 | ac | \$2,000.0 | \$2,000 | | |
| | Site restoration | 1 | | \$4,000.0 | \$4,000 | | |
| | Site security | 60 | day | \$200.0 | \$12,000 | | |
| | Dredging and Dewatering | | | | | | |
| | Dredging | 6,400 | су | \$11.0 | \$70,400 | | |
| | Debris removal and disposal | 1 | ton | \$8,700.0 | \$8,700 | | |
| | Polymer additive | 6,400 | | \$2.5 | \$16,000 | | |
| | Polymer emulsion feeder | 2 | mo | \$1,300.0 | \$2,600 | | |
| | Geotextile tubes (60 ft circumference) | 1,000 1,000 | | \$35.0 \$50.0 | \$35,000 \$50,000 | | |
| | Placing and filling geotextile tubes turbidity curtains | 1,000 | lin it Is | \$50.0 \$5,000.0 | \$5,000 \$5,000 | | |
| | | ' | 10 | \$3,000.0 | \$0,000 | | |
| | Shoreline Stabilization and Landscaping | | | | | | |
| | Marine mattress (6 inch thick) | 6,000 | | \$5.6 | \$33,600 | | |
| | Aquatic vegetative planting | 6,000 | | \$2.5 \$5.0 | \$15,000 \$20,000 | | |
| | Seeding/landscaping Water access/bulkhead | 6,000 100 | | \$5.0 \$300.0 | \$30,000 \$30,000 | | |
| | | .00 | | <i>\$</i> 300.0 | \$20,000 | | |