



Engineers, Environmental Scientists, and Geologists

1425 NW 6th Street • Gainesville, FL 32601

November 6, 2003

Tom Fischer
1104 N Westover Blvd, Unit 9
Albany, GA 31707-6625

RE: Cherry Creek Wetland Mitigation Bank (CCWMB)
USACOE Permit Number 990010930
CES Project Number 99041-16-01

Dear Tom:

This letter and corresponding figures and tables is intended to amend the Cherry Creek Mitigation Bank Banking Instrument. This amendment is a compilation of previous amendments and submittals in October 2002, January 2003, March 2003, and May 2003. The revised Credit Release Schedules, Net Benefit Analysis, Credits Sold/Available tables, and revised or new figures are attached. The amendments are as follows.

Stream Restoration

An amendment to the Banking Instrument to modify the scope of work for the proposed stream restoration was submitted in October with subsequent revisions in January 2003. The proposed construction consists of restoring 1,810 linear feet of severely incised stream channel west of the existing dam on Cherry Lake. The proposed restoration activity consists of construction of 2:1 (H:V) side slopes reinforced with geo-synthetic material and rock, vegetative armoring, installation of a diversion structure, and the construction of a by-pass channel for routing a portion of the peak flow to the relic channel of Cherry Creek. See Revised Figure 6-1B. The ultimate goal of the work is to restore the natural hydrology of the relic channel and the adjacent wetlands.

The diversion structure, to be placed within Cherry Creek just downstream from the spillway on Lake Cleve, will convey peak flows from Cherry Creek's main channel into a 700-foot man-made diversion or by-pass channel connecting to Cherry Creek's relic channel. The diversion structure is intended to prevent severe erosion and unwanted sediment deposition. This structure consists of an inline weir, designed to dampen the peak flows generated in the drainage basin. See attached By-Pass Channel Cross-Section Figure.

The new by-pass channel will serve three purposes: First, the channel will allow water to be diverted from the main channel of Cherry Creek during construction. Secondly, the constructed by-pass channel will result in approximately 700 linear feet of new stream channel and riparian buffer. Thirdly, the diverted flow will re-establish stream flow in the relic channel and secondary channels, adding an additional 2,300 linear feet of stream channel restoration to the project.

Riparian Buffers

Originating from discussions between the MBRT and CES/EAA in May 2003, the relic channel and Cherry Creek Riparian buffers were altered. See Revised Figures 6-1B and 6-8. The relic channel buffer initially varied from 50 to 150 feet. Due to discussions between CES/EAA and the MBRT, it was decided to increase the buffer to 200 feet on all sides and to plant a minimum of 200 trees per acre. See Relic Channel Cross-Section Figure. This justified an increase in the net benefit factor from 1.6 to 1.9. This is reflected in Table 1.

CES/EAA and the MBRT also decided to increase the Cherry Creek Riparian buffers from 50-200 feet to 200 feet on all sides and to plant them to a minimum of 200 trees per acre. This solution merits the recalculation of the credit value by increasing the net benefit factor from 1.7 to 1.9. This is reflected in Table 1. The planting plan and plant selection for both the relic channel buffer and the Cherry Creek Riparian buffer will be the same as in the original banking instrument.

Stream and Riparian Restoration and Preservation Credits

The location factor for stream and riparian restoration and preservation credits was changed because the initial factor was a variable of between 0.01-0.1. Subsequent to the October 2002 submittal the MBRT agreed to use a non-variable number (0.5). See Table 1.

Net Benefit Analysis

The Net Benefit Analysis for stream credits was revised in March 2003. These revisions were made to address comments made by Bob Lord of the EPA. The majority of the revisions were made to address buffer width and associated issues. The revised Net Benefit Analysis is attached.

Credit Release Schedules

The credit release schedules have been revised to illustrate the new schedule for the restoration and preservation of Cherry Creek Mitigation Bank. The wetland credit release schedule has been revised due to comments made by Bob Lord of the EPA concerning the final credit release. The final credit release has been increased to 15% with all other releases subsequently revised. See attached Table 2. The stream credit release schedule was revised to reflect changes in construction dates, final credit release, monitoring dates, etc. See Table 3.

Service Area Map

In January 2003, CES/EAA submitted a new service area map based on the new service area policy. This map is attached.

Credits Sold/Available

The wetland and stream credits sold/available tables are attached as Table 4 (stream) and Table 5 (wetland). These are current and reflect all credits sold/available to date.

I hope that this letter and corresponding attachments clarifies the chain of events concerning the CCWMB amendments to the Banking Instrument. CCWMB respectfully requests a letter from USACOE that concurs with this amendment. If you have any questions or require anything further, please contact me.

Sincerely,



Carl Salaffio
Vice President

Pc: Murray Gaskins, EAA
Larry Lee, Cherry Creek Properties
Bob Lord, USEPA
Kathy Chapman, USFWS
Keith Parsons, GA DNR

Table 1

Stream and Riparian Restoration Credits

Factor	Cherry Creek Main Channel	Cherry Creek Riparian Buffer	Bypass Channel	Bypass Channel Riparian Buffer	Relic Channel
Area	4	1	6	2	5
Net Benefit	2.25	1.9	2.5	1.5	1.9
Monitoring/Contingency	0.3	0.3	0.3	0.3	0.3
Priority Area	0.15	0.15	0.15	0.15	0.15
Location	0.5	0.5	0.5	0.5	0.5
Control	0.05	0.05	0.05	0.05	0.05
Kind	0.1	0.1	0.1	0.1	0.1
Credits	0.08	0.08	0.08	0.08	0.08
Sum of m Factors	3.43	3.08	3.68	2.68	3.08
Linear Feet	1810	1810	700	700	2300
M X A	6,208.3	5,474.8	2,576	1,876	7,084

Stream and Riparian Preservation Credits

Factor	Cherry Creek (lower reaches)	Withlacoochee River
Net Benefit	0.6	0.5
Monitoring/Contingency	0.05	0.05
Priority Area	0.1	0.1
Location	0.05	0.05
Control	0.02	0.02
Kind	0.05	0.05
Threat	0.05	0.05
Sum of m Factors	0.92	0.82
Linear Feet	1,970	11,895.2
M X A	1,812.4	9,754.00

Total Available Stream Credits

Stream Restoration	13,292.3
Riparian Restoration	7,350.8
Stream Preservation	11,566.4
Subtotal:	32,209.5
By-Pass Channel	2,576.0
Total expected credits:	34,785.5

TABLE 2 CREDIT RELEASE SCHEDULE FOR WETLAND CREDITS

	MONTH/YEAR	CREDITS RELEASED	PERCENT RELEASED	TOTAL RELEASED
Establishment of Baseline Vegetative Transects	Completed			
Install Piezometers	Completed			
Banking Instrument Approval/Restrictive Covenant Recorded	Completed	15% Wetland Credits	15%	92.38
Hydro Modifications Completed	Completed	10% Wetland Credits	25%	153.97
Establish Growing Season Base Line Vegetation	Completed			
Implementation Progress Report	Completed			
ID Planting Zones	Completed			
Supplemental Tree Planting	Not Required	5% Wetland Credits	30%	184.76
Vegetative Monitoring	Completed 10-01			
Reestablish Hydro Modification	Oct-01			
Year 1 Monitoring Report	Completed 12-01	5% Wetland Credits	35%	215.55
Vegetative Monitoring	Completed 11-02			
End Year 2 Hydro Monitoring	Completed 11-02			
Addition Tree Plantings	N/A			
Year 2 Monitoring Report	Completed 12-02			
MBRT Finds Monitoring report Acceptable		10% of Wetland Credits	45%	277.14
Year 3 Vegetative Monitoring	Jun-03			
End Year 3 Hydro Monitoring	Nov-03			
Year 3 Monitoring Report	Dec-03			
MBRT Finds Monitoring report Acceptable		10% of Wetland Credits	55%	338.72
Year 4 Vegetative Monitoring	Jun-04			
End Year 4 Hydro Monitoring	Nov-04			
Year 4 Monitoring Report	Dec-04			
MBRT Finds Monitoring report Acceptable		10% of Wetland Credits	65%	400.31
Year 5 Vegetative Monitoring	Jun-05			
End Year 5 Hydro Monitoring	Nov-05			
Year 5 Monitoring Report	Dec-05			
MBRT Finds Monitoring report Acceptable		10% of Wetland Credits	75%	461.90
Year 6 Vegetative Monitoring	Jun-06			
End Year 6 Hydro Monitoring	Nov-06			
Year 6 Monitoring Report	Dec-06			
MBRT Finds Monitoring report Acceptable		10% of Wetland Credits	85%	523.48
Year 7 Vegetative Monitoring	Jun-07			
End Year 7 Hydro Monitoring	Nov-07			
Year 7 Monitoring Report	Dec-07			
MBRT Finds Monitoring report Acceptable		15% of Wetland Credits	100%	615.86

TABLE 3 CREDIT RELEASE SCHEDULE FOR STREAM CREDITS

	MONTH/YEAR	CREDITS RELEASED	PERCENT % RELEASED	TOTAL RELEASED
Establishment of Baseline Vegetative Transects	Completed			
Establish Macroinvertebrate sampling points	Completed			
Banking Instrument Approval/Restrictive Covenant Recorded	Completed	4,831	15%	4,831
Cherry Creek Restoration				
Commencement of Construction	Nov-03	2,577	8%	7,408
Completion of Construction	Jan-04	2,255	7%	9,663
Implementation Progress Report	Jan-04			
Completion of riparian planting buffer--attain 200 trees/ac min.	Mar-04			
Year 1 Macroinvertebrate Monitoring	Jun-04			
Year 1 Stream Bank Monitoring	Jun-04			
Year 1 Vegetative Monitoring	Jun-04			
END Year 1 Hydro Monitoring	Jan-05			
Year 1 Monitoring Report	Feb-05			
MBRT Finds Monitoring report Acceptable	Mar-04	3,221	10%	12,884
Year 2 Macroinvertebrate Monitoring	Jun-05			
Year 2 Stream Bank Monitoring	Jun-05			
Year 2 Vegetative Monitoring	Jun-05			
End Year 2 Hydro Monitoring	Jan-06			
Additional Tree Plantings, if necessary	Feb-06			
Year 2 Monitoring Report	Mar-06			
MBRT Finds Monitoring report Acceptable		2,899	9%	15,783
Year 3 Macroinvertebrate Monitoring	Jun-06			
Year 3 Stream Bank Monitoring	Jun-06			
Year 3 Vegetative Monitoring	Jun-06			
End Year 3 Hydro Monitoring	Jan-07			
Year 3 Monitoring Report	Feb-07			
MBRT Finds Monitoring report Acceptable	Mar-07	2,899	9%	18,682
Year 4 Macroinvertebrate Monitoring	Jun-07			
Year 4 Stream Bank Monitoring	Jun-07			
Year 4 Vegetative Monitoring	Jun-07			
End Year 4 Hydro Monitoring	Jan-08			
Year 4 Monitoring Report	Feb-08			
MBRT Finds Monitoring report Acceptable	Mar-08	2,899	9%	21,580
Year 5 Macroinvertebrate Monitoring	Jun-08			
Year 5 Stream Bank Monitoring	Jun-08			
Year 5 Vegetative Monitoring	Jun-08			
End Year 5 Hydro Monitoring	Jan-09			
Year 5 Monitoring Report	Feb-09			
MBRT Finds Monitoring report Acceptable	Mar-09	2,899	9%	24,479
Year 6 Macroinvertebrate Monitoring	Jun-09			
Year 6 Stream Bank Monitoring	Jun-09			
Year 6 Vegetative Monitoring	Jun-09			
End Year 6 Hydro Monitoring	Jan-10			
Year 6 Monitoring Report	Feb-10			
MBRT Finds Monitoring report Acceptable	Mar-10	2,899	9%	27,378
Year 7 Macroinvertebrate Monitoring	Jun-10			
Year 7 Stream Bank Monitoring	Jun-10			
Year 7 Vegetative Monitoring	Jun-10			
End Year 7 Hydro Monitoring	Jan-11			
Year 7 Monitoring Report	Feb-11			
MBRT Finds Monitoring report Acceptable	Mar-11	4831.43	15%	32209.5
TOTAL		32,209.50	100%	32209.5

*Does not include 2,576 credits for construction of by-pass channel.

*Note: Upon construction and one year monitoring of the by-pass channel, an additional 2,576 credits will be released pending approval from the MBRT.

STREAM CREDITS SOLD / AVAILABLE (Based Upon Approval of Proposed Amendment)

Customer	Permit Number	Quantity
Valdosta		120
GDOT	200117760	1,000
City of Thomasville	200213660	1,660.50

Original Number of Credits*	32,209.5
Percent of Credits Released to Date	15%
Number of Credits Released	4,831.40
Number of Credits Sold	2780.5
Number of Released Credits Available	2050.9

*Does not include 2,576 for by-pass channel

TABLE 5 WETLAND CREDITS

Cherry Creek Wetland Mitigation Bank

OCTOBER 2003

WETLAND CREDITS SOLD / AVAILABLE		
Customer	Permit Number	Quantity
Walmart	200100240	1
Valdosta	200016230	3
Berrien County	200011390	6
Berrien County	200017920	6.89
Berrien County	200017580	5
Berrien County	200017590	0.5
Berrien County	200200740	0.7
Berrien County	banked	11.19
Brooks County	200002120	9
Valdosta	200111790	2
Valdosta	banked	48
Russell Lee	200200710	1
Statewide Engineering	200213970	1.6
Statewide Engineering	200215070	1.54
City of Thomasville	200213660	1.1

CREDITS TRANSLATED TO ACRES		
# credits	*(0.575)	# acres
1	equals	0.575
3	equals	1.725
6	equals	3.45
6.89	equals	3.961
5	equals	2.875
0.5	equals	0.2875
0.7	equals	0.4025
11.19	equals	6.43425
9	equals	5.175
2	equals	1.15
48	equals	27.6
1	equals	0.575
1.6	equals	0.92
1.54	equals	0.89
1.1	equals	0.63

Original Number of Credits*	615.86
Percent of Credits Released to Date	35%
Number of Credits Released	215.55
Number of Credits Sold	98.52
Number of Released Credits Available	117.03

Cherry Creek Wetland Mitigation Bank Amendment to Banking Instrument Net Benefit Analysis

Area 1 – Cherry Creek Riparian Buffer. Restore approximately 1,810 linear feet of natural Riparian Buffer, 200' on the north side and 200' on the south side of the Cherry Creek main channel. Propose a Net Benefit Factor of 1.9.

Justification:

- o Restore buffer by allowing bank full discharge to inundate the Riparian Buffer.
- o Buffer areas will be maintained for long-term restoration by allowing natural recruitment of desirable vegetative species and by control of invasive and aggressive species, if necessary. Maintenance activities may include harvesting or selective herbicide treatment of invasive and aggressive species and selective harvesting of pines, if deemed appropriate. The results of the November 2002 monitoring event document that the dominant species established and naturally recruiting within the buffer areas are sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), titi (*Cyrilla racemiflora*), St. Johns wort (*Hypericum* spp.), blackberry (*Rubus* spp.), dog fennel (*Eupatorium* spp.), and broomsedge (*Andropogon* spp.). As the hydrologic regime is restored through the buffer areas, and the wetland tree species naturally recruit and mature, they will dominate the community, and out-compete the pioneer species that established when the timber was removed. The target composition for the mature buffer areas is 60-85% canopy coverage by desirable tree species, 20-30% coverage of shrub/sub-canopy layer and 5-10% coverage by desirable herbaceous vegetation.
- o According to the SOP "Definition of Factors", the preservation and restoration of a Riparian Buffer greater than 3x the minimum width on both sides of the channel is necessary for "excellent preservation" and use of the 1.9 factor.

Area 2 – Bypass Channel Riparian Buffer. Restore approximately 700 linear feet of Riparian Buffer on both sides of the Bypass Channel. Propose a Net Benefit Factor of 1.5.

Justification:

- o Buffer areas will be maintained for long-term restoration by allowing natural recruitment of desirable vegetative species and by control of invasive and aggressive species, if necessary. Maintenance activities may include harvesting or selective herbicide treatment of invasive and aggressive species and selective harvesting of pines, if deemed appropriate.

The results of the November 2002 monitoring event document that the dominant species established and naturally recruiting within the buffer areas are sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), titi (*Cyrilla racemiflora*), St. Johns wort (*Hypericum* spp.), blackberry (*Rubus* spp.), dog fennel (*Eupatorium* spp.), and broomsedge (*Andropogon* spp.). As the hydrologic regime is restored through the buffer areas, and the wetland tree species naturally recruit and mature, they will dominate the community, and out-compete the pioneer species that established when the timber was removed. The target composition for the mature buffer areas is 60-85% canopy coverage by desirable tree species, 20-30% coverage of shrub/sub-canopy layer and 5-10% coverage by desirable herbaceous vegetation.

- o Restore a Riparian Buffer at least 3x minimum width (150') on west side and minimum width (50') on east side.

Area 3 – Not Used.

Area 4 – Cherry Creek Main Channel. Restore approximately 1,810 linear feet of channel. Propose a Net Benefit Factor of 2.25 for recalculation of credit value.

Justification:

- o Regrade and stabilize incised stream banks.
- o Install non-rigid material for bank stabilization, ie: Geotextile socks/matting, and native plants/trees.
- o Construct flood plain that is appropriate for the anticipated bank full discharge based on 1.2-year storm event.
- o Install a concrete diversion structure just downstream of the existing spillway on Cherry Creek. Structure will divert peak flows into Bypass Channel.

Area 5 – Relic Channel. Restore approximately 2,300 linear feet of Relic Channel. Increased buffer width from 30' to 200' on both sides of channel where not completely encompassed by adjacent wetlands. Propose a Net Benefit Factor of 1.9.

Justification:

- o Restore hydrology by routing water from Cherry Creek through bypass channel.
- o Maintain Riparian Buffer of 200' feet on both of the Relic Channel in areas not adjacent to wetlands.

- o Buffer areas will be maintained for long-term restoration by allowing natural recruitment of desirable vegetative species and by control of invasive and aggressive species, if necessary. Maintenance activities may include harvesting or selective herbicide treatment of invasive and aggressive species and selective harvesting of pines, if deemed appropriate. The results of the November 2002 monitoring event document that the dominant species established and naturally recruiting within the buffer areas are sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), titi (*Cyrilla racemiflora*), St. Johns wort (*Hypericum* spp.), blackberry (*Rubus* spp.), dog fennel (*Eupatorium* spp.), and broomsedge (*Andropogon* spp.). As the hydrologic regime is restored through the buffer areas, and the wetland tree species naturally recruit and mature, they will dominate the community, and out-compete the pioneer species that established when the timber was removed. The target composition for the mature buffer areas is 60-85% canopy coverage by desirable tree species, 20-30% coverage of shrub/sub-canopy layer and 5-10% coverage by desirable herbaceous vegetation.

Area 6 – Bypass Channel. Create approximately 700 linear feet of new channel. Propose a Net Benefit Factor of 2.5.

Justification:

- o Construct Bypass Channel (700' linear feet) south of the Cherry Creek Main Channel.
- o Restore hydrology to Relic Channel by conveying water from Cherry Creek during low flow periods.
- o Install plants and trees within channel to control erosion.
- o Create 150' of Riparian Buffer on west side of channel and 50' of Riparian Buffer on the east side of channel.
- o Agreed to install water level monitoring stations at north and south sides of Relic Channel to record flow conditions.
- o Submit monitoring reports to the MBRT documenting the hydrological conditions of the by-pass channel. Pending approval from the MBRT, an additional 2,576 credits will be released. Approval will be based on frequency of inundation (i.e. channel conveys water during a significant part of the year).