DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF

JANUARY 2 3 2013

Regulatory Division
SAS-2012-00804

PUBLIC NOTICE
Savannah District

The Savannah District has received a Mitigation Plan for restoration activities on the Applewood Wetland Mitigation Area through use of In-Lieu Fee funds from the Georgia Land Conservation Center, as follows:

Application Number: SAS-2012-00804

Applicant: Mr. Hans Neuhauser
Georgia Land Conservation Center
380 Meigs Street
Athens, Georgia 30601

Agent: Mr. Trey Evans
Mitigation Management
5665 New Northside Drive, Suite 260
Atlanta, Georgia 30328

This public notice does not imply, on the parts of the U.S. Army Corps of Engineers or other agencies, either favorable or unfavorable opinion of the work to be performed, but is issued to solicit comments regarding the factors on which final decisions will be based.

Location of Proposed Work: The project site is located in wetlands adjacent to the Etowah River, on a 13.2-acre tract adjacent to the approved Applewood Mitigation Bank in Lumpkin County, Georgia (Latitude 34.5237, Longitude -84.0649). Additionally, the project is located in the Etowah River Watershed, in USGS Hydrologic Unit 03150104.

Description of Mitigation Proposal: Concurrent with restoration activities for the Applewood Mitigation Bank (SAS-2007-01399), which is a stream mitigation bank, Mitigation Management plugged a drainage ditch adjacent to the bank in an attempt to restore wetland hydrology to an area historically used as a pumpkin farm. A delineation completed on this site as part of the Applewood Mitigation Bank baseline data collection efforts documented that there were hydric soils on the site, but no evidence of wetland hydrology. This suggests that there were historically wetland conditions on the site, but that the drainage ditches removed wetland hydrology. Work also included planting of bare-root hardwood seedlings. This work was completed in 2009, but

was not included in the mitigation bank proposal and no wetland mitigation credits have been generated by the completed activities.

Mitigation Management is now seeking funding for this restoration work and submitted a mitigation plan documenting the work completed along with baseline information and a monitoring proposal. Mitigation Management proposes to monitor the site for five years after documenting new baseline conditions, including size and abundance of planted hardwood species. The site, which includes approximately 12 acres of restored wetland and 1.2 acres of adjacent upland buffer, would be permanently protected through a restrictive covenant and conservation easement. The U.S. Army Corps of Engineers completed a site visit for this project on October 23, 2012, and documented wetland hydrology, hydric soils, and hydrophytic vegetation in the restoration area.

Geographic Service Area: The proposed restoration would provide mitigation for previously authorized unavoidable impacts to waters of the United States within the Etowah River Watershed under Section 404 of the Clean Water Act. The permits that are proposed to fund this project required 56.2 wetland credits to mitigate for unavoidable impacts to waters of the U.S. Based on mitigation ratios of approximately six to eight wetland credits per acre impacted, this equates to approximately 7.0 to 9.4 acres of impacts. Upon successful completion of the mitigation plan (including monitoring, meeting success criteria, and providing permanent protection), the proposed restoration and upland buffer preservation could generate approximately 56.38 wetland mitigation credits, and restore 12 acres of bottomland hardwood wetlands.

Oversight: Oversight of this In-Lieu Fee project will be by a group of Federal and State agency representatives collectively referred to as the Interagency Review Team (IRT). The IRT shall be chaired by the Corps and is comprised of representatives from the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Georgia Department of Natural Resources Environmental Protection Division. The applicant has proposed five years of vegetation and hydrology monitoring with no accompanying reference site. This represents minimum monitoring and contingency and is reflected in the amount of credit generation for the site. It will be the responsibility of Mitigation Management, and their environmental consultant, to assure that monitoring occurs and that wetland vegetation composition and abundance, along with wetland hydrology, are being maintained on the site.

Authority: A public notice regarding the proposed use of In-Lieu Fee funds for providing compensatory mitigation is required pursuant to 33 CFR parts 325 and 332 and 40 CFR part 230, "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule" published in the Federal Register on April 10, 2008.

Consideration of Public Comments: The Corps is soliciting comments from the public; federal, state, and local agencies and officials; Native American Tribes; and any other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to approve, modify, condition, or deny this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the overall public interest of the proposed activity.

Comment Period: Anyone wishing to comment on this proposal should submit comments in writing to the Commander, U.S. Army Corps of Engineers, Savannah District, Attention: Mr. William Rutlin, Regulatory Specialist, Coastal Branch, 100 West Oglethorpe Avenue, Savannah, Georgia 31401-3640, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Mr. William Rutlin, Regulatory Specialist, Coastal Branch at (912) 652-5893.

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1. Mitigation Plan for the Applewood Wetland Mitigation Area
2. Figure 1: Site Location
3. Figure 2: Service Area
4. Figure 4: Conceptual Plan
5. GWSTF Funds Available in Etowah and Upper Coosa (Proposed funding sources)
6. Mitigation Credit Calculation Worksheets
7. Applewood well data

Mitigation Plan

for the

Applewood Wetland Mitigation Area

Prepared for:

Mitigation Resource Group LLC

Prepared by:

Wetland & Ecological Consultants, LLC
Woodstock, Georgia

WEC Project No. 02-071007

January 4, 2013

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1.4 SITE OWNERSHIP

The AWMA is comprised of 13.97 acres owned by Mitigation Resource Group (MRG). The project site is located adjacent to the existing U.S. Army Corps of Engineers (USACE) approved Applewood Mitigation Bank (AMB) in Lumpkin County, Georgia (Figure 1).

2.0 OBJECTIVE

The AWMA is proposed to be a site specific mitigation area providing mitigation credits for previously approved projects with Section 404 permits that met mitigation requirements through in-lieu fees paid to the Georgia Land Conservation Center. The AWMA provides a large quality wetland adjacent to an existing conservation area and within a high priority watershed. The restored headwater wetlands within the AWMA will 1) restore natural hydrology within the Etowah River floodplain; 2) improve sediment retention in the Etowah River watershed by providing a wetland buffer to intercept and filtrate upland runoff; 3) enhance flood flow attenuation by blocking drainage ditches that previously directed runoff to the Etowah River channel; 4) increase groundwater recharge by raising the groundwater table; 5) increase biodiversity by providing more aquatic habitat types; and 6) reduce the abundance of invasive species (i.e., Chinese privet and kudzu).

2.1 SERVICE AREA

The AWMA service area is proposed as directed in the *Guidelines on the Establishment and Operation of Wetland Mitigation Banks in Georgia*. The site is located in the Etowah River watershed (Hydrologic Unit Code 03150104), which is the proposed primary service area. The adjacent Conasauga (HUC 03150101), Coosawattee (HUC 03150102), Oostanaula (HUC 03150103), Coosa (HUC 03150105), and Tallapoosa (HUC 03150108) watersheds are proposed as the secondary service areas (Figure 2).

2.2 WATERSHED APPROACH

The AWMA is located adjacent to an existing USACE approved mitigation bank adjacent to the Etowah River. The site is within a high priority watershed, a trout stream watershed, and within the historic range of the federally-protected Cherokee and Etowah darters. The AWMA is positioned on the landscape between the AMB stream restoration and privately owned uplands. Restoration and protection of the AWMA will enhance the protection of the AMB, which was created to offset permitted impacts to streams and buffers throughout the Etowah River basin. Further, the AWMA will help in providing cooler and cleaner tributary waters by filtering upland runoff. The cooler temperatures will help provide quality trout habitat in the Etowah River, and the sediment filtration will help benefit darter habitat within the AMB and Etowah River.

2.3 ENDANGERED AND THREATENED SPECIES

As mentioned above, the AWMA helps provide watershed protection and water quality improvement for the threatened Cherokee darter (*Etheostoma scotti*) and the endangered Etowah darter (*Etheostoma etowahae*). There are currently no known protected species located within the AWMA; however, the proposed restoration and protection will benefit the preferred habitats of the protected darters downstream.

2.4 GEORGIA SWAP

The proposed AWMA meets several of the goals established in the Georgia Wildlife Action Plan (Action Plan). Specifically, the AWMA results in private land protection, control of invasive species, and minimization of impacts from developments. The proposed AWMA will also provide further protection of the adjacent AMB.

The Action Plan identifies 16 high priority habitats for the Piedmont ecoregion; three of these habitats will be directly influenced by the AWMA to include: 1) beaver ponds and/or freshwater marsh; 2) bottomland hardwood forests; and 3) mesic hardwood forests.

3.0 SITE SELECTION

As described above, the AWMA is located adjacent to the approved AMB, which is located in a high priority watershed with suitable habitat for the Cherokee and Etowah darters. In addition, the Georgia Department of Natural Resources Wildlife Resources Division has designated the section of the Etowah River within the AMB as a "year-round" trout stream, meaning that it is open to trout fishing throughout the year. According to the Georgia Environmental Protection Division's Water Use Classifications and Water Quality Standards (391-3-6-.03), all streams within the Etowah River watershed from Highway 52 downstream to Castleberry Bridge (which includes the watershed within the AWMA) are designated as secondary trout streams. Secondary trout streams are defined as those with no evidence of trout reproduction, but are capable of supporting trout throughout the year.

The proposed AWMA compliments the approved AMB. A drainage ditch adjacent to the AMB was plugged during construction of the AMB, but was not included in the approved banking instrument (Appendices A-B). Since the AMB construction, this feature has been found to be a significant source of hydrology and the earthen plugs within the drainage ditch has resulted in a restored wetland system in the former agricultural field.

The major actions required to restore the wetlands within the AWMA were completed when the AMB was built in 2009 (Appendix C). In addition, the majority of the AWMA was planted in bareroot hardwood seedlings in 2009 during the planting activities within the AMB. Due to the observed hydrologic and vegetative changes within the AWMA, as well as the proximity to the restored streams and riparian areas within the AMB, the likelihood of the AWMA becoming an ecologically self-sustaining restored wetland system is high. Completion of the restoration activities within AWMA is expected to provide diverse aquatic and terrestrial habitats and provide improvements to water quality within the Etowah River Basin.

4.0 SITE PROTECTION INSTRUMENT

Currently, the land associated with the AWMA is owned by the Project Sponsor. Long-term stewardship of the AWMA will be provided by a mutually agreed upon private conservation organization following completion of mitigation. Regardless, the restored wetlands are anticipated to be fully stable at the end of the 5-year monitoring period and will not require maintenance.

The sponsor will be accountable for all project costs including administration, development, management, maintenance, long-term monitoring, and potential remedial measures. Further, the sponsor agrees to perform all necessary work to establish and maintain the aquatic areas comprising the AWMA until all credits have been released.

A restrictive covenant will provide the legally binding perpetual protection and preservation of the AWMA. The restrictive covenant will be noted as appropriate on the property deed and plat with stipulations governing use, credits, maintenance, etc., as determined by the Inter-Agency Review Team Chair.

The restrictive covenant will not allow the construction of structures, agriculture, timber harvest, or soil disturbance within the AWMA boundaries. Passive uses of the bank such as recreational hunting, fishing, and hiking will be allowed. In addition, the sponsor may conduct any other ecological service of a pecuniary nature, or otherwise, within the AWMA provided such services and related activities are not in conflict with the goals and objectives of the AWMA and this mitigation plan.

5.0 BASELINE INFORATION

Prior to the development of the AMB, the 150-acre parcel that contains the AWMA was used for the cultivation of pumpkins. Previous agricultural practices to facilitate crop production included the channelization of streams creation of drainage ditches to collect and drain most of the surface runoff and direct subsurface seepage to the Etowah River. The stream channelization and ditching had effectively drained the fields to enhance farming practices.

5.1 EXISTING AND HISTORIC VEGETATION

Prior to the creation of the AMB, the majority of the site including the AWMA consisted of former agricultural fields, which were used to cultivate pumpkins (*Cucurbia* sp.). Early successional species observed in the fallow fields include rough cocklebur (*Xanthium strumarium*), broomsedge (*Andropogon virginicus*), and goldenrod (*Solidago* sp.). The site also contained limited forested areas comprised of sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), American sycamore (*Platanus occidentalis*), and loblolly pine (*Pinus taedus*).

In 2009 the AWMA was replanted with swamp chestnut oak, cherry bark oak, willow oak, water oak, American sycamore, sugarberry, and river birch. Actual vegetation survival and densities are not known at this time; however, detailed vegetative baselines will be created upon IRT approval of the AWMA.

5.2 WILDLIFE

Evidence (tracks, scat, calls, visual observation, etc.) of the following wildlife species have been observed in the AWMA: red-winged blackbird (Agelaius phoeniceus); great blue heron (Ardea herodias); red-tailed hawk (Buteo jamaicensis); turkey vulture (Cathartes aura); American crow (Corvus brachyrhynchos); blue jay (Cyanocitta cristata); Eastern wild turkey (Meleagris gallopavo); Northern mockingbird (Mimus polyglottos); Eastern towhee (Pipilo erythrophthalmus); coyote (Canis latrans); beaver (Castor canadensis); whitetail deer (Odocoileus virginianus); raccoon (Procyon lotor); and Eastern cottontail (Sylvilagus floridanus).

5.3 PAST AND CURRENT LAND USE

Prior to the creation of the AMB, the site was historically used for agriculture (Appendix D). The surrounding properties are either undeveloped and forested or used for agriculture. Based on our review of 2006 aerial photographs, the 56+ square mile watershed is approximately 90% forested and 10% agricultural. Based on the rural location and growth projections for Lumpkin County, significant land-use changes in the watershed are not expected. Currently the AWMA is used for

recreational hunting. The only land disturbance currently ongoing within the AWMA is the occasional mowing of walking trails.

5.4 SOILS

Soils within the AWMA are primarily comprised of Cartecay complex (CaC) (Figure 3). Cartecay complex soils are considered hydric soils by the Natural Resources Conservation Service (NRCS).

5.5 JURISDICITONAL WATERS

A field delineation of jurisdictional waters was conducted on the entire land parcel owned by the sponsor on November 7, 2007. During the field delineation, some areas of hydric soils were identified within the AWMA area; however, no hydrologic indicators or wetland vegetation were observed. The delineation that included the AWMA was approved as a part of the AMB permitting process. Photographs and delineation data from the 2007 delineation are included (Appendix E).

6.0 DETERMINATION OF CREDITS

6.1 CREDITS GENERATED

The restoration activities conducted within the AWMA have resulted in full restoration of wetland hydrology and wetland vegetation, resulting in 54 wetland mitigation credits on 12 acres of wetlands (Appendix F). The 1.97 acre upland buffer will provide 2.38 wetland credits. Therefore, the AWMA will provide a total of 56.38 wetland mitigation credits. The following credit release schedule is proposed:

Action	Release	Wetland Credits
Mitigation Plan Approval and Recording of RC	15%	8.46
Baseline Report Submittal and Supplemental Planting	5%	2.82
IRT Approval of Year 1 Report	15%	8.46
IRT Approval of Year 2 Report	15%	8.46

IRT Approval of Year 3 Report	15%	8.45
IRT Approval of Year 4 Report	15%	8.45
IRT Approval of Year 5 Report	20%	11.28
Total	**100%**	**56.38**

6.2 NET IMPROVEMENT

6.2.1.1 Net Improvement Vegetation

As indicated by the baseline photographs, the AWMA was a former agricultural field. The area has been replanted with native trees and shrubs; therefore, a vegetation benefit factor of 1.4 was applied.

6.2.1.2 Net Improvement Hydrology

The baseline field delineation conducted in 2007 determined no hydrologic indicators were observed in the AWMA. As indicated in the attached groundwater well data (Appendix G), wetland hydrology has been restored; therefore, a maximum credit factor of 1.4 was assigned.

6.3 CREDIT SCHEDULE

The AWMA is not a mitigation bank, and mitigation was conducted prior to the initiation of the impacts; therefore, a credit factor of 0.4 was assigned.

6.4 KIND

Wetland restoration activities have restored forested floodplain ecosystems within the AWMA. According to the SOP, in-kind wetland mitigation is considered "Category 1", and therefore, we have assigned a credit value of 0.6 for all wetland mitigation with respect to "Kind".

6.5 MAINTENANCE

The soil plugs are permanent structures that have not required any maintenance since installation and are not expected to require long-term management. Therefore, we have assigned a maintenance value of 0.3 for the wetland restoration areas.

6.6 MONITORING & CONTINGENCY

The AWMA will have at least five years of monitoring which will consist of vegetation survival and growth, as well as groundwater hydrology monitoring. Since AWMA is not a mitigation bank and will have a five year monitoring period, we have assigned a "minimum" monitoring and contingency value of 0.1 for wetland restoration.

6.7 CONTROL

Upon approval, the sponsor of the AWMA will record a restrictive covenant (RC) and assign a conservation easement (CE) with a third party by year five, protecting the site in perpetuity. A control value of 0.3 for RC+CE was assigned in the SOP calculations.

7.0 MITIGATION WORK PLAN

The AMB was approved June 25, 2008. During the final design phase of the mitigation bank, it was determined that wetland mitigation may be obtainable near the southeastern portion of the mitigation bank. Without hydrologic studies to confirm the outcome of the work, the bank sponsor chose to construct earthen plugs in the drainage ditch outside of the mitigation bank. In addition, portions of the area outside of the mitigation bank were planted with bare-root hardwood tree seedlings. Finally, two groundwater monitoring wells were installed to determine if there would be a potential for wetland mitigation. The portion outside of the mitigation bank that responded hydrologically to the mitigation implementation is what is now referred to as the AWMA (Figure 4).

Upon approval of the AWMA, a vegetative survey will be conducted to determine actual tree species, heights, and densities. If any area within the AWMA contains less than 150 trees per acre, or if the area is dominated by an invasive species, then supplemental planting will be conducted with containerized tree seedlings similar to the species previously planted within the AWMA.

In addition to the vegetative survey, soil and hydrologic conditions will also be recorded throughout the AWMA. The results of this field determination will establish the success criteria discussed below.

8.0 MAINTENANCE PLAN

The AWMA is intended to be a maintenance free mitigation site. Regular maintenance will include invasive species control and groundwater well maintenance.

8.1 REPORTING SCHEDULE

Annual monitoring reports will be prepared by WEC and submitted to the IRT for approval. Annual monitoring will be conducted for five years, and a credit release will accompany each successful monitoring event.

9.0 PERFORMANCE STANDARDS

The five-year goal of the wetland hydrologic restoration is to establish either surface inundation or saturation in the upper 12 inches of soil for 14 consecutive days during the growing season. The goal of the wetland vegetative restoration is to achieve 50 percent survival of planted tree seedlings (150 trees per acre) and the dominance of natural regeneration being comprised of species classified as facultative, facultative wetland or obligate wetland species at the end of the monitoring period. Based on the vegetative conditions observed following the AWMA approval, WEC will establish specific performance standards for vegetative growth.

10.0 MONITORING REQUIREMENTS

Wetland mitigation monitoring will be performed for five years following approval of the AWMA to verify and document the mitigation success. The wetland restoration efforts will be monitored annually.

The restored hydrology of the wetland restoration areas will be measured using two Remote Data Systems, Inc. (RDS) Ecotone™ in-situ monitoring wells. The RDS Ecotone wells are continuous groundwater sampling units that will be set to record groundwater readings daily.

In addition to the hydrological monitoring, vegetative monitoring will be repeated annually at two vegetative monitoring plots to document performance standards in the wetland restoration areas. The planted tree seedlings will be evaluated in two permanently established 0.1-acre monitoring plots to determine survival and growth (i.e., height and girth) rates. A one-inch diameter PVC pipe will be used to make the center of each monitoring plot. Also, natural regeneration of bottomland hardwood tree species will be recorded to include individual numbers/species and growth over the five-year monitoring period.

11.0 LONG-TERM MANAGEMENT PLAN

Currently, the land associated with the AWMA is owned by the sponsor. Long-term stewardship of the AWMA will be provided by a mutually agreed upon private conservation organization following completion of mitigation. Regardless, the restored wetlands are anticipated to be fully stable at the end of the 5-year monitoring period and will not require maintenance.

12.0 ADAPTIVE MANAGEMENT PLAN

Adaptive management plans will be the responsibility of the sponsor and may include:

- Modification to or placement of additional earthen plugs within drainage ditches to restore wetland hydrology
- Planting of additional hardwood seedlings
- Removal of exotic and/or invasive species

If adaptive management plan implementation is considered significant by the IRT, additional monitoring may occur for an extended period of time beyond five years.

13.0 FINANCIAL ASSURANCES

The Project Sponsor acknowledges the need to ensure a high level of confidence that the compensatory mitigation plan will be successfully completed in accordance with applicable performance standards. Therefore, the Project Sponsor will work with the USACE to determine whether the standard credit release schedule system of financial assurances (FA) would be adequate to provide a high level of confidence of success, or if additional monetary FA would be required during the monitoring phase. Based on this determination, the final approved mitigation plan will contain additional details regarding FA in connection with the AWMA.

13.1 QUALIFICATIONS OF THE SPONSOR

The sponsor, MRG will be the real property owners. The co-sponsor is Mitigation Management, LLC (MM). MM founders, Matt Peevy and Trey Evans, have over 12 years

of combined experience in mitigation credit sales, restoration project management, and environmental market analysis.

13.2 SUCCESS WITH PAST MITIGATION PROJECTS

Mr. Evans and Mr. Peevy:

- Have co-developed 7 mitigation banks and 3 permittee-responsible mitigation projects in Georgia
- Act as the exclusive sales agent for 22 of the 70+ approved mitigation banks in Georgia
- Have overseen the permitting, design, and implementation of more than 10 miles of stream restoration and 500 acres of wetland protection.
- Track and analyze the supply and demand for environmental mitigation in Georgia and other Southeastern states

As partners in MRG, Mr. Evans and Mr. Peevy were responsible for the establishment and implementation of the following mitigation banks in Georgia:

Bank	Service Area	Approved	Last Release Type	Last Release Date
Hogansville	Mid Chatt	1-16-08	Year 4 Monitoring	7-5-12
Wehadkee Farms	Mid Chatt	5-1-08	Year 4 Monitoring	10-5-12
East Swift Creek	Upper Flint	6-6-08	Year 3 Monitoring	7-5-12
Applewood	Etowah	7-2-08	Year 4 Monitoring	11-20-12
Wauka Mountain	Upper Chatt	4-11-08	Year 5 Monitoring	12-7-12
Wauka Mountain II	Upper Chatt	12-22-09	Year 1 Monitoring	12-21-12
Wahachee Creek	Upper Savannah	12-22-09	Construction	3-7-12

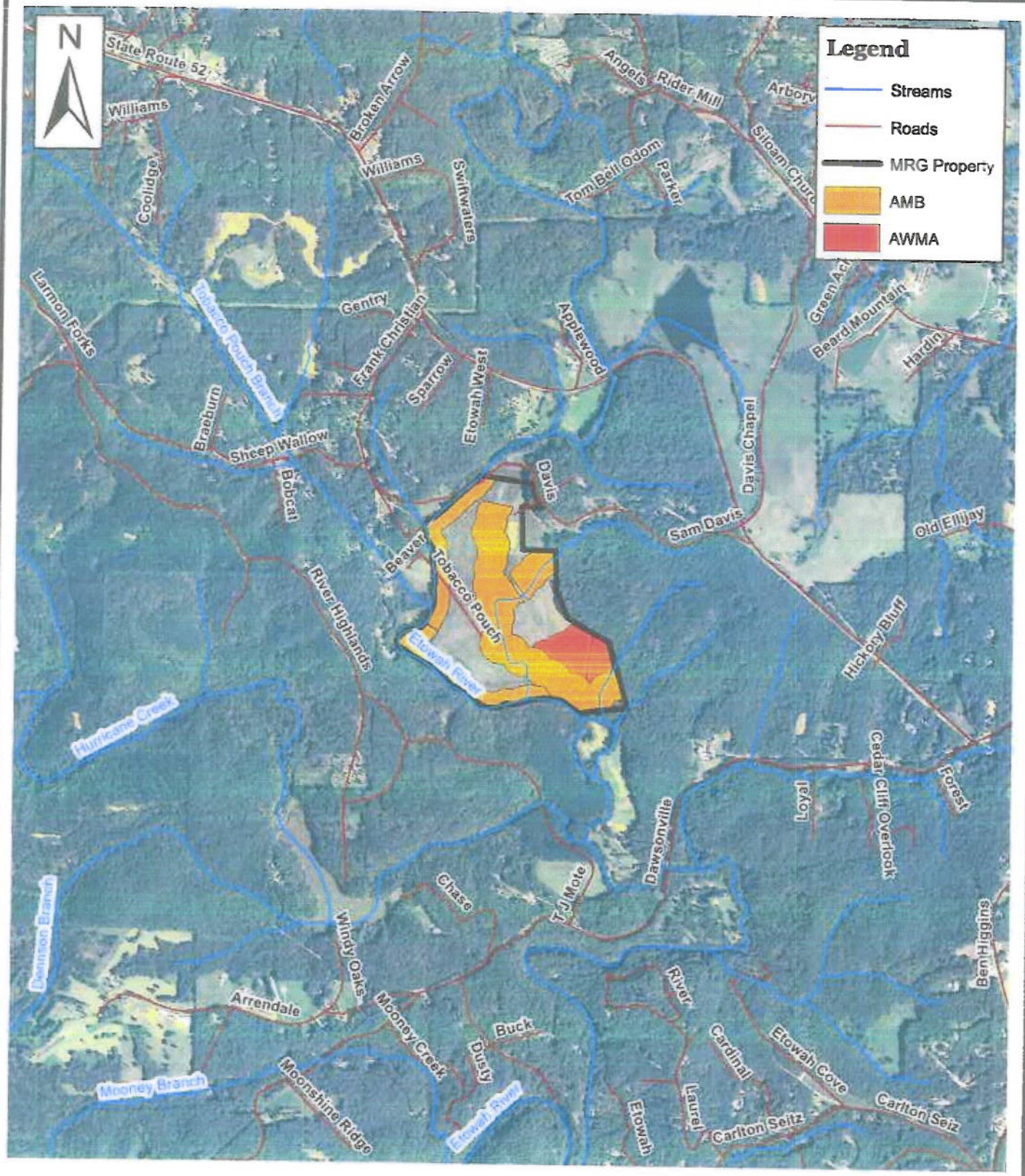
13.3 STATEMENT OF ADEQUATE FINANCING

The Project Co-Sponsor has a strong track record of arranging sufficient financing to accomplish the work proposed on mitigation bank sites. Specifically, all of the banks shown above have been constructed and planted as of the date of this submittal.

13.4 POTENTIAL FOR SITE SUCCESS

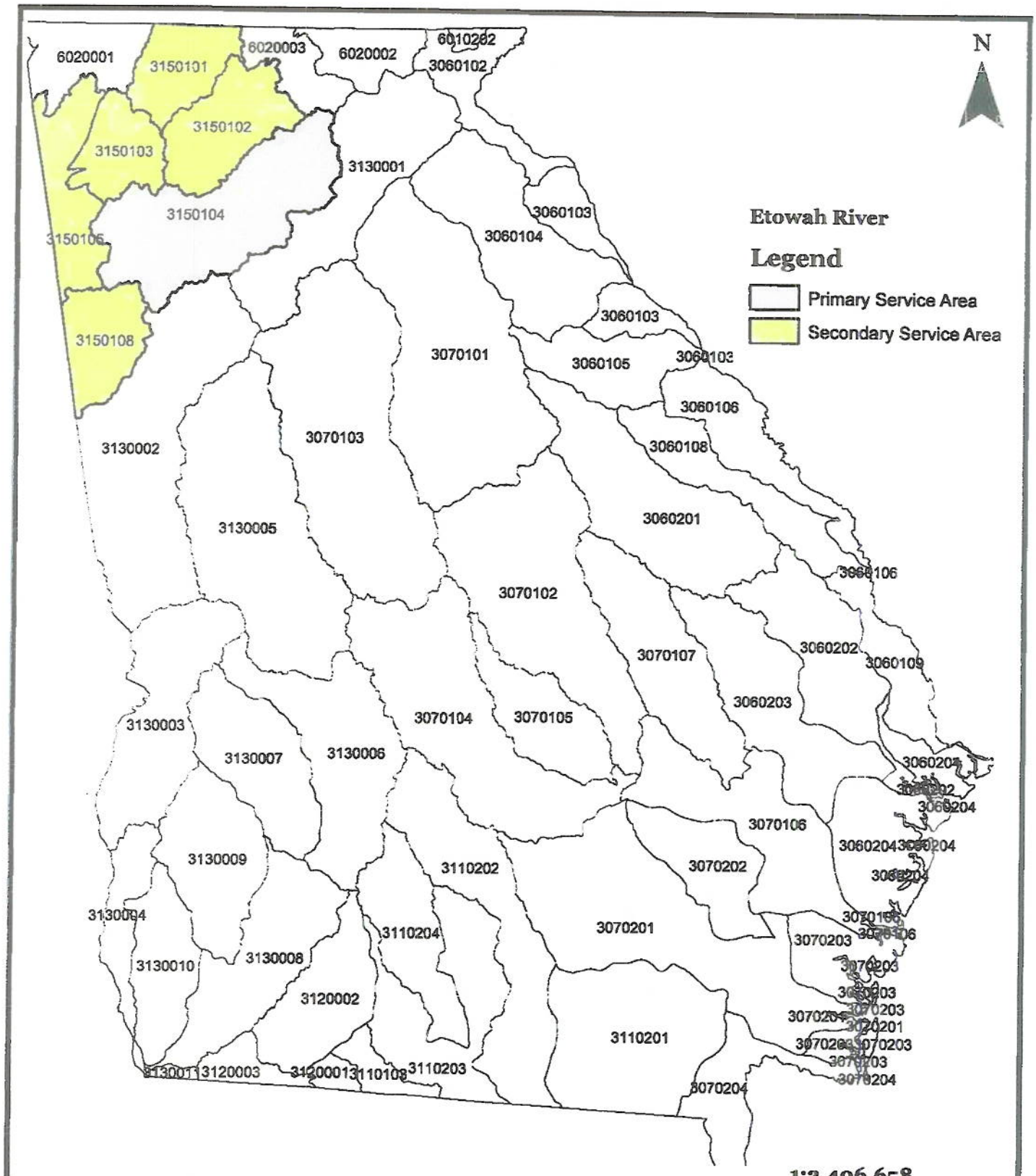
Based on the track record of the Project Co-Sponsor and the experience of WEC, the proposed AWMA would have an inherently high level of potential for success.

Additionally, based on the obvious sources of the hydrologic deficiencies on the bank site (man-made ditches) the proposed enhancement activities have an inherently low level of potential for problems or failure.

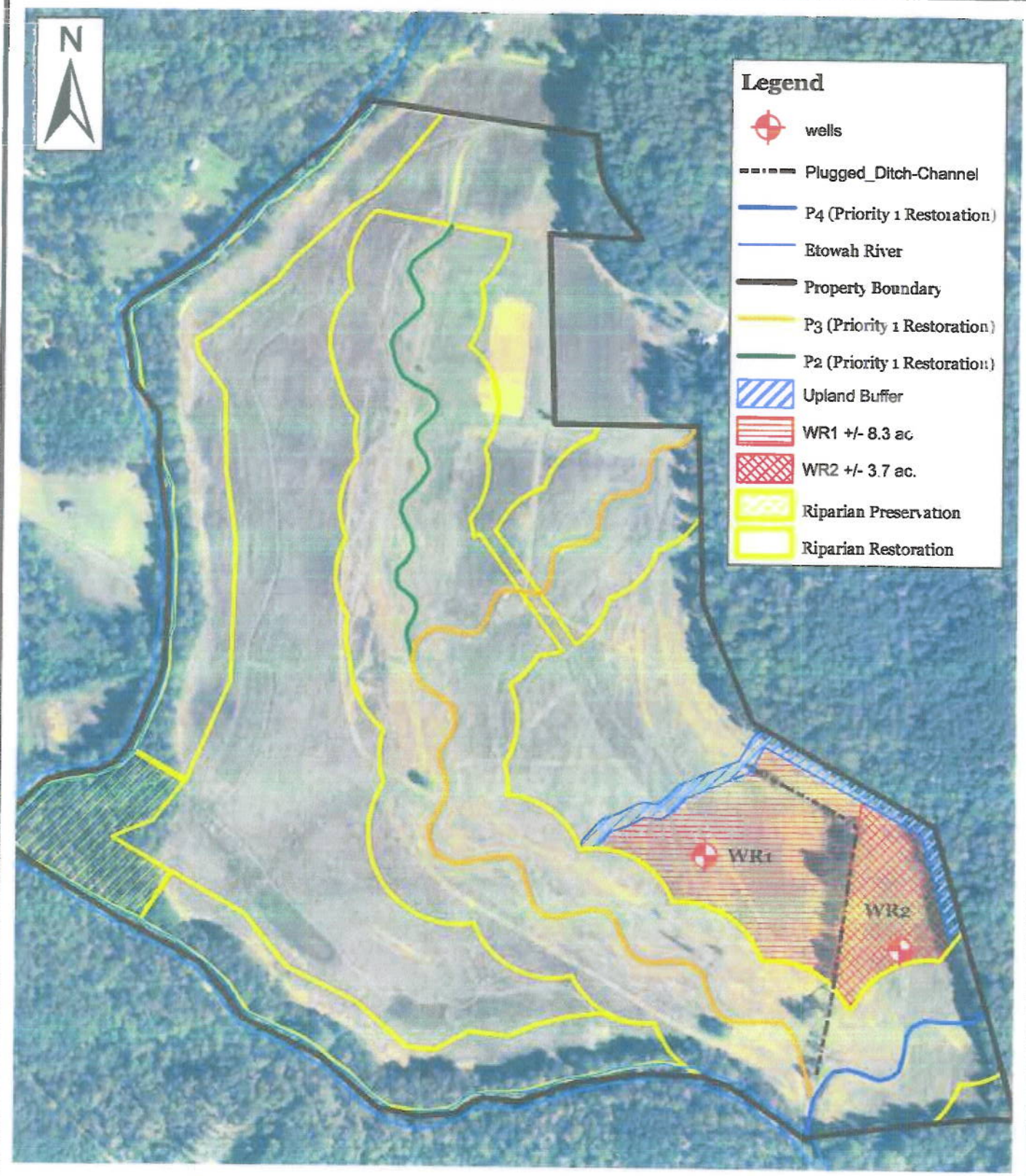


Base Map Source: USDA National Agriculture Imagery Program: Lumpkin County, Georgia 2009. 1:24,000

Applewood Wetland Mitigation Area Lumpkin County, Georgia	**WETLAND & ECOLOGICAL CONSULTANTS, LLC Woodstock, Georgia**	**Figure 1 Site Location WEC Project No. 02-071007**



Applewood Wetland Mitigation Area **Lumpkin County, Georgia**	**WETLAND & ECOLOGICAL CONSULTANTS, LLC** **Woodstock, Georgia**	**Figure 2** **Service Area** **WEC Project No. 02-071007**



Base Map Source: USDA National Agriculture Imagery Program: Lumpkin County, Georgia 2007.

1:5,500

Applewood Wetland Mitigation Area Lumpkin County, Georgia	WETLAND & ECOLOGICAL CONSULTANTS, LLC Woodstock, Georgia	Figure 4 Conceptual Plan WEC Project No. 02-071007

GWSTF FUNDS AVAILABLE IN ETOWAH AND UPPER COOSA

Mitigation was Completed on 7/10/2009

Proposed permits are highlighted in yellow.

County	Project	Basin	USACE	Payment Date	Mitigation Completed Prior to Impacts (Before/After)*	Required Credits		Funds
Floyd	Rome Veterans Parkway	Upper Coosa	SAS-1999-04420	8/22/07	After	21	$	97,245.58
		Upper Coosa	SAS-1999-04420	8/22/07	After		$	65,573.22
Walker	Barwick-LaFayette Airport	Upper Coosa	SAS-2004-13790	12/8/04	After	0.5	$	2,603.19
Floyd	GDOT Rome Bypass	Upper Coosa	SAS-2007-01249	6/30/11	Before	38.3	$	255,804.24
Floyd	**Development Authority of Floyd County**	**Upper Coosa**	**SAS-2008-01376**	**9/2/11**	**Before**	**40.09**	**$**	**265,215.18**
Gordon	GDOT South Calhoun Bypass	Upper Coosa	SAS-2011-00140	3/30/12	Before	114.09	$	653,594.94
Gilmer	**Atlanta Gas Light Blue Ridge**	**Upper Coosa**	**SAS-2012-00126**	**9/6/12**	**Before**	**1.16**	**$**	**11,028.62**
Cobb	Torras Properties	Etowah	SAS-99-0001970	12/27/00	After	1.2	$	7,975.06
Cobb	Ebenezer Farm Subdivision	Etowah	SAS-2003-12360	2/20/04	After	0.2	$	1,035.20
Murray	Westside MSW Landfill	Etowah	SAS-2005-00944	10/10/05	After	1.9	$	9,985.87
Cherokee	**Barnett Mitigation Modification**	**Etowah**	**SAS-2001-07240**	**6/22/10**	**Before**	**1**	**$**	**8,105.04**
Cobb	**Kennesaw State Sports Complex**	**Etowah**	**SAS-2009-00736**	**11/2/10**	**Before**	**0.5**	**$**	**9,450.43**
Cobb	**Noonday Creek Phase 2**	**Etowah**	**SAS-2008-00840**	**1/21/11**	**Before**	**0.8**	**$**	**7,798.52**
Paulding	**GA Transmission Dabbs Bridge**	**Etowah**	**SAS-2011-00105**	**4/11/11**	**Before**	**0.5**	**$**	**4,701.31**
Paulding	**GA Transmission Dabbs Bridge**	**Etowah**	**SAS-2011-00105**	**4/11/11**	**Before**		**$**	**2,472.80**
Cobb	**Wellstar/JFBC Facility**	**Etowah**	**SAS-2011-00472**	**8/3/11**	**Before**	**0.5**	**$**	**3,759.20**
Cherokee	**Atlanta Gas Pipeline**	**Etowah**	**SAS-2011-00491**	**12/20/11**	**Before**	**7.75**	**$**	**73,823.51**
Paulding	**Airport Sewer**	**Etowah**	**SAS-2011-01045**	**9/5/12**	**Before**	**3.9**	**$**	**37,137.14**
						233.39	**$**	**1,517,309.05**

*After = impacts to waters took place prior to actual compensatory mitigation on 7/10/2009 (in this particular situation, the work completed at the proposed Applewood ILF site)
Before = AWMA mitigation completed prior to impacts

Total Proposed Permits	
Wetland Credits	56.20
Total Dollars	$ 423,491.75

WETLANDS AND OPEN WATERS
MITIGATION WORKSHEETS

RESTORATION/ENHANCEMENT MITIGATION FACTORS

Factor	Options				
Net Improvement Vegetation	Minimal Enhancement 0.1 ---------- to ---------- Complete Restoration 1.4				
Net Improvement Hydrology	Minimal Enhancement 0.1 ---------- to ---------- Complete Restoration 1.4				
Credit Schedule	Schedule 5 0	Schedule 4 0.1	Schedule 3 0.2	Schedule 2 0.3	Schedule 1 0.4
Kind	Category 2 0.2	Category 1 0.6			
Maintenance	High 0	Moderate 0.1	Low 0.2	None 0.3	
Monitoring and Contingencies Plan	N/A 0	Minimum 0.1	Moderate 0.2	Substantial 0.3	Excellent 0.4
Control	RC 0.1	RC + CE or GPP 0.3	RC + CE + GPP 0.5		

PROPOSED RESTORATION/ENHANCEMENT MITIGATION WORKSHEET

Factor	AWMA				
Net Improvement Vegetation	**1.4**				
Net Improvement Hydrology	**1.4**				
Credit Schedule	**0.4**				
Kind	**0.6**				
Maintenance	**0.3**				
Monitoring and Contingencies Plan	**0.1**				
Control	**0.3**				
Sum of m Factors	M_1 = **4.5**	M_2 =	M_3 =	M_4 =	M_5 =
Mitigation Area	A_1 = **12**	A_2 =	A_3 =	A_4 =	A_5 =
M × A =	**54**				

Total Restoration/Enhancement Credits = Σ (M × A) = **54**

WETLANDS AND OPEN WATERS
MITIGATION WORKSHEETS

MINIMUM UPLAND BUFFER WIDTHS FOR MITIGATION CREDIT †

Adjacent Land Use Category	Minimum Width
Single Family Residential	50 feet
Multi-Family	75 feet
Commercial	75 feet
Industrial	100 feet
Landfill	100 feet
Other Categories	case-by-case

† widths are based on linear, constant elevation measurement

BUFFER MITIGATION FACTORS

Factors	Options				
Upland Buffer Factor (U1)	>95% 1.0	68% to 95% 0.8	50% to 67% 0.6	33% to 49% 0.3	<33% 0.1
Buffer Enhancement Factor (U2)	>95% 0.15	50% to 95% 0.1	<50% 0.05		

UPLAND BUFFER CREDIT WORKSHEET

	Area 1	Area 2	Area 3	Area 4	Area 5
Total Jurisdictional Boundary (B1)*	**3,271.2**				
Buffered Jurisdictional Boundary (B2)*	**1,726.6**				
(B2 ÷ B1) x 100 = % Buffered	**53**				
Acres of Upland Buffer (A1)	**1.97**				
Upland Buffer Factor (U1)	**0.6**				
A1 x U1 = C1	**1.18**				
Aquatic Mitigation Area Acres (A2)	**12**				
Buffer Enhancement Factor (U2)	**0.1**				
A2 x U2 = C2	**1.2**				
C1 + C2 = D	**D_1=2.38**	**D_2=**	**D_3=**	**D_4=**	**D_5=**

Total Buffer Credit = $\sum D_{1\text{-}5}$= **2.38**

* B1 = Total linear feet of jurisdictional boundary of each proposed restoration, enhancement, preservation and/or creation area.
* B2 = Total linear feet of jurisdictional boundary proposed to be buffered for each restoration, enhancement, preservation and/or creation area.

WETLANDS AND OPEN WATERS
MITIGATION WORKSHEETS

Mitigation Summary Worksheet For Permit Application #_____

I. Required Mitigation

A.	Total Required Mitigation Credits =

II. Mitigation Credit Summary	**Credits**	**Acres**
B. Mitigation Bank		
C. Restoration and/or Enhancement	**54**	
D. Creation		
E. Functional Replacement Mitigation = B + C + D		
F. Upland Buffer	**2.38**	
G. Preservation		
H. Total Proposed Non-Bank Mitigation = E + F + G	**56.38**	

The following criteria must be satisfied for the mitigation proposal to meet minimum SOP requirements:

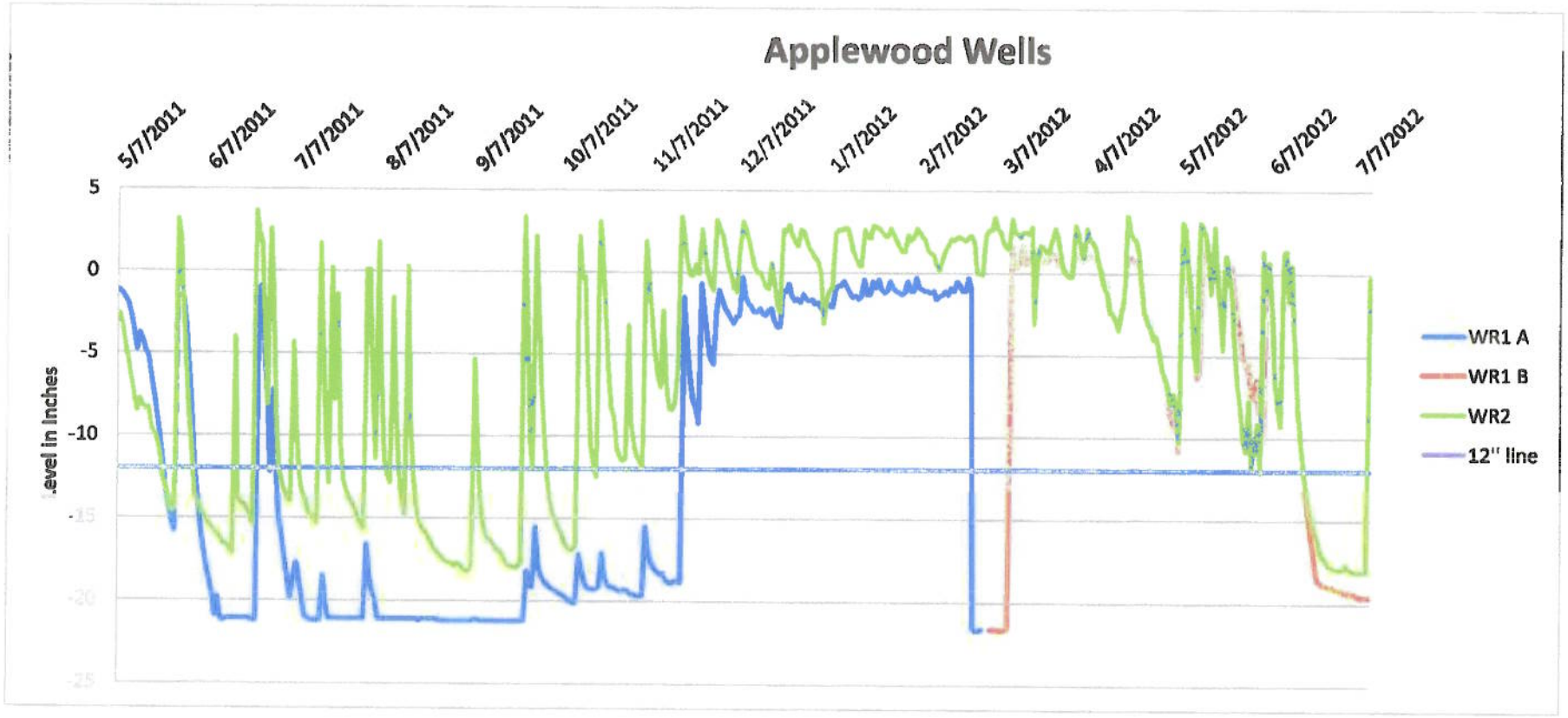
1. Total Proposed Mitigation (Row H) must be greater than or equal to Total Required Mitigation Credits (Row A).

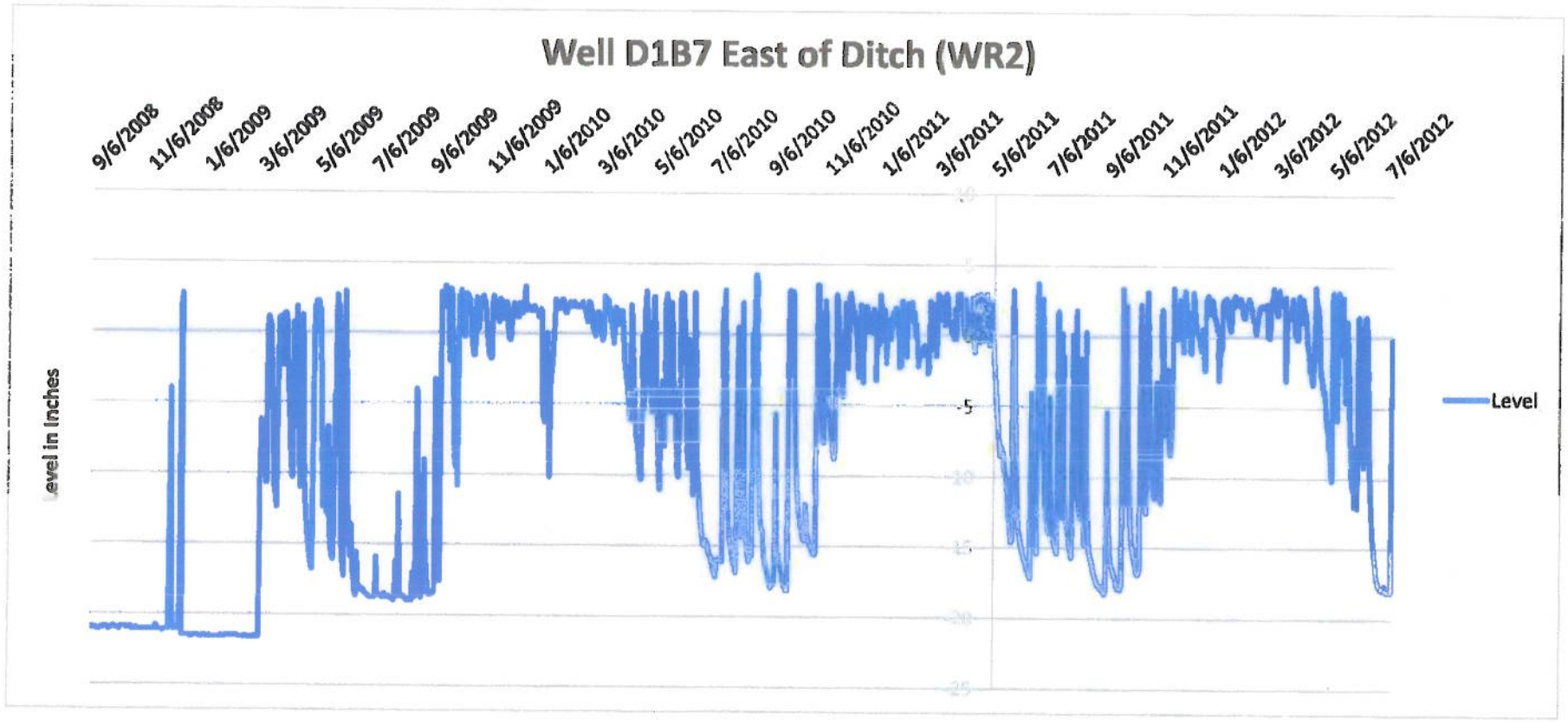
2. Functional Replacement Mitigation (Row E) must be at least 50% of Row A.

3. Preservation Mitigation (Row G) can be up to, but not more than 50% of Row A, if no Upland Buffer Credits are proposed. If Upland Buffer Credits are proposed, then Preservation Mitigation may be reduced to 30% of the Total Required Mitigation Credits.

4. Upland Buffer (Row F) cannot exceed 20% of the Total Required Mitigation (Row A). The following table provides examples of how Preservation and Upland Buffer Mitigation can be used in combination:

Total Required Mitigation Credits	**Functional Replacement Credits**	**Preservation Credits**	**Upland Buffer Credits**
100	50	50	0
100	50	40	10
100	50	30	20


Applewood Wells
5/7/2011
6/7/2011
7/7/2011
8/7/2011
9/7/2011
10/7/2011
11/7/2011
12/7/2011
1/7/2012
2/7/2012
3/7/2012
4/7/2012
5/7/2012
6/7/2012
7/7/2012
5
0
-5
-10
-15
-20
-25
Level in Inches
WR1 A
WR1 B
WR2
12" line


Well D1B7 East of Ditch (WR2)
9/6/2008
11/6/2008
1/6/2009
3/6/2009
5/6/2009
7/6/2009
9/6/2009
11/6/2009
1/6/2010
3/6/2010
5/6/2010
7/6/2010
9/6/2010
11/6/2010
1/6/2011
3/6/2011
5/6/2011
7/6/2011
9/6/2011
11/6/2011
1/6/2012
3/6/2012
5/6/2012
7/6/2012
Level in Inches
-5
-10
-15
-20
-25
Level