An Economic Comparison of the USDA-NCRS Environmental Quality Incentives Program Payments and Water Quality Credit Trading in the Great Miami River Watershed of Ohio

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Executive Summary

Kieser & Associates, LLC has prepared a brief economic analysis of payments made to farmers in Ohio under two separate, environmentally-focused programs: Water Quality Credit Trading (WQCT) in the Great Miami River (GMR) and the Environmental Quality Incentives Program (EQIP) in Ohio. Credit trading costs are associated with payment awards from reverse auctions conducted by the Miami Conservancy District (MCD) from 2006 to 2008 under a 10-year WQCT Pilot Program[1]. EQIP costs were obtained from the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) using the economic cost data presented in the Ohio electronic Field Office Technical Guide[2] (eFOTG) for average payments made to farmers in Darke County 2005 and in Ohio Statewide during 2007 and 2008. This comparison has been conducted as part of a 2005 USDA-NRCS Conservation Innovation Grant awarded to the MCD.

Trading focuses on those practices which achieve the highest loading reductions of total phosphorus (TP) and total nitrogen (TN) in relation to the buyer's location in a watershed and point of water quality concern. For the GMR WQCT program, these locations are upstream of wastewater treatment plant (WWTP) buyers. EQIP funding focuses more on farmers interested in implementing conservation plans and considers numerous conservation benefits of all environmental resources. These resources include water quality issues in a ranking system that makes awards based on cumulative benefits. While both programs fund Best Management Practices (BMPs) that may result in water quality benefits, trading programs using reverse auctions focus on those BMPs that deliver the greatest water quality benefits per dollar expended. This contrasts with the EQIP program that more fully considers the resource manager's desires and other natural resource benefits in the ranking systems. Thus, use of these cost comparisons must explicitly recognize these programmatic differences.

The GMR WQCT program has funded forty-nine BMPs since 2006 such as conservation crop rotation, conservation cover, cowlot runoff and milking parlor water management, grassed waterways, grid sampling, high residue management, pasture establishment and grazing management. This particular economic analysis focused on costs from five types of BMPs including high residue management, hayfield and grass establishment, pasture establishment combined with grazing management, alfalfa establishment and grassed waterways. Equivalent EQIP practices exist for all of these five selected BMP types.

Costs from the trading program are typically expressed as cost/pound of nutrient (phosphorus and/or nitrogen) reduced. Those from EQIP are expressed as cost/per acre or cost/linear foot of practice (e.g., buffers in cost/acre and terraces in cost/linear foot). For comparison purposes, trading credit costs were converted to similar cost expressions used for EQIP. For instance, hayfield and grass establishment BMPs cost expressions use a computation that divides the cost of the practice by the acres of the BMP

[1] Great Miami River Watershed Water Quality Credit Trading Program web page http://www.miamiconservancy.org/water/quality_credit.asp

[2] USDA NRCS (Ohio) electronic Field Office Technical Guide web address http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=OH

established. Two of the five BMP types analyzed in this report have different unit cost expressions. The first is grassed waterways, which are sometimes reported in linear feet instead of acres. When the linear foot comparison occurs for grassed waterways, the acreage of the waterway is divided by the width to obtain a cost per linear foot installed. The second BMP type is grazing management, which awards payments on a flat annual rate. When grazing management is part of a system of BMPs being implemented, the annual payment total is subtracted from the cost awarded the producer before the pasture establishment payment computation is made. The pasture establishment payment is a per acre rate as described above.

In all cost comparisons, only the BMP payment to the land manager is considered. This eliminates the differences that occur between counties, where some billed the WQCT program for staff technical assistance, and some did not. This also simplifies cost comparisons with the EQIP program. EQIP has a full complement of technical support staff available, subsidized by the national Food, Conservation, and Energy Act of 2008 (Farm Bill) and/or state cost share programs common to Soil and Water Conservation District (SWCD) offices. Table ES-1 summarizes cost comparisons of EQIP payments in Darke County and statewide in Ohio and WQCT for the GMR Watershed. Results show the average cost for BMP payments in both programs were generally comparable.

Table ES-1. Cost Comparisons for Selected BMPs for EQIP and GMR WQCT Program. (*The range of EQIP represents the range of payments for Darke County and statewide in Ohio).

BMP Type	EQIP*	GMR WQCT Program
High Residue	$8 per acre	$5 per acre
Hayfield and Grass Establishment	$137 to $191 per acre	$183.25 per acre
Pasture Establishment/Grazing Management	$137 to $191 per acre $15 per acre per year	$92.10 per acre $8.12 per acre per year
Alfalfa Establishment	$95 per acre	$37 per acre
Grassed Waterways	$2.80 per linear foot Base payment Items like tile intakes, filter fabric and stone outfalls are additional	$3671.62 per acre or $5.06 per linear foot

These comparisons suggest that farmers will ultimately choose a program that best suits their immediate and long-range planning needs. WQCT programs will account for these farmer interests but focus more explicitly on those practices that yield the greatest water quality benefits at prices comparable to similar EQIP subsidized practices. As WQCT programs grow more robust with increasing credit demand, trading credit payments to farmers could rise (on a per unit basis). This may spawn the need to consider longer-term, more highly incentivized contracts to continue to garner farmer interest in trading programs. Because of the varying program goals, it is likely that Farm Bill incentive programs and credit trading will both continue to add value to farmer operations. However, participation will likely vary based on the geographic and physical characteristics of the setting in each watershed given the WQCT program focus on explicit water quality outcomes associated with greater nutrient load reductions from agricultural BMPs.

Introduction

The USDA-NRCS and the U.S. Environmental Protection Agency (EPA) both promote the use of market-based incentives. In addition, support for further development of these programs is written into the current 2008 Farm Bill. Increased conservation protection, new ways to expand participation, and hopes to leverage federal dollars with private resources are seen as some of the potential benefits these programs offer. Cautious optimism exists that market-based incentive programs like WQCT can provide these attributes at scale. The Farm Bill also supports programs like EQIP which holds different, yet complementary environmental resource objectives. Since both programs seek to implement BMPs, farmers can choose to participate in either program.

Comparable cost information on payments to farmers, however, is typically unavailable where both programs are available in the same watershed. Moreover, few WQCT programs have generated sufficient market-based information for a broad range of competitively bid agricultural BMPs with the exception of the GMR pilot trading program. As such, BMP cost data from the GMR WQCT program can for the first time, be compared to similar BMPs funded by EQIP.

To make economic comparisons of the EQIP and GMR WQCT program, this analysis provides the following evaluations:

- GMR WQCT and EQIP program objectives and ranking methods
- EQIP objectives and ranking methods
- Limitations that prevent a direct program cost comparison
- Cost-effective BMPs in the GMR WQCT program
- Common BMP types funded by each program
- BMP cost comparisons
- Findings and conclusions

The Great Miami River Watershed Water Quality Credit Trading Program

The GMR WQCT program focuses on watershed-based solutions to reduce nutrient loadings using the most cost-effective means available. Nutrient loading issues in the basin are the result of multiple types and sources in many different locations. The differences in requirements placed on buyers (WWTPs) to control their release of nutrients also vary dramatically. Thus, the cost of reduction per pound between source types and source locations can be dramatically different.

A market feasibility study[3] estimated potential cost savings for GMR WWTPs to be in the hundreds of millions if WQCT were implemented. The nutrient reduction desired by implementing potential WWTP upgrades for approximately $422 million could be accomplished by engaging with agricultural managers for equivalent reductions for approximately $38 million. Even when these nonpoint source cost estimates are more than doubled or tripled, the cost saving potential of WQCT is significant.

The GMR WQCT program facilitates a fully operating market structure that supplies nutrient credits driven by the potential for future more stringent nutrient effluent limits placed on the wastewater treatment facilities. To partially fund this structure the MCD was awarded a USDA-NRCS Conservation Innovation Grant with matching support from WWTP partners. These included five municipal partners in the basin which operate nine wastewater treatment plants. MCD staff and partners operate a reverse auction

[3] Kieser & Associates, *Preliminary Economic Analysis of Water Quality Trading Opportunities in the Great Miami River Watershed*, Prepared for the Miami Conservancy District, 2004.

market framework to solicit agricultural BMP proposals. The SWCD staff work with the farmers to prepare a BMP package for the auction that bundles TP and TN credits for the best (lowest) cost given that particular farmer's needs and desires for his operations. The credit value of TP and TN for the BMP is computed using a standardized estimation process. The BMP proposal is submitted into a pool of proposals that are then:

1. Checked for completeness and accuracy
2. Ranked based on combined TP and TN credits generated across the life of the proposed contract divided by the cost of the contract
3. Awarded based on a selected cost range predetermined for that round of proposals

To date, the MCD WQCT pilot program has awarded 49 contracts stemming from four reverse auction requests for proposals. The projects have generated 158,951.5 TP credits and 488,938 TN credits. The final awards provide 647,889.5 combined TN and TP credits at a total purchase cost of $1,016,387.41. The program's average cost for a combined credit is $1.49. (For a separate TP and TN market, the average cost per pound would be $6.39 and $2.08, respectively.)

The Farm Bill and Environmental Quality Incentive Program

Conservation programs authorized by Farm Bill provisions contain numerous goals. It is therefore important to recognize the varying purposes and priorities of each program authorized by the Farm Bill before assuming that a conservation program is based on the most cost-effective payout to address a given priority. This can be contrasted with the GMR WQCT program that targets the lowest cost nutrient loading reduction. Under the Farm Bill, EQIP proposal applications for example, are reviewed using worksheets developed to fulfill national guidance and statutes, statewide requirements and local priorities. Thus, for purposes of comparing costs of EQIP and GMR WQCT a brief review of typical EQIP ranking worksheets is provided here.

A process has been developed by USDA-NRCS to comply with the Farm Bill section on EQIP applications. The USDA-NRCS must consider overall cost-effectiveness of anticipated environmental benefits and how the proposal will provide for conservation improvements over existing systems operated by the applicants. In addition, the review of the proposal must include consideration of how effectively and comprehensively the project addresses the designated resources of concern and best fulfills the EQIP program purpose[4].

To provide guidance on how to implement the requirements of the Farm Bill, USDA-NRCS created a Strategic Plan[5] that identifies six goals to be targeted for conservation. The strategic plan relays these goals in two tiers: foundation goals and venture goals.

<u>Foundation Goals</u>

1. High-quality, productive soils
2. Clean and abundant water
3. Healthy plant and animal communities

[4] Farm Bill, SEC. 1240c. Evaluation of Applications
[5] American Farmland Trust, History of the Farm Bill Farm Policy 101 http://www.farmland.org/programs/farm bill/history/farmpolicy.asp

Venture Goals

4. Clean Air
5. Adequate energy supply
6. Working farm and ranch lands

Protection of water quality is identified by the USDA-NRCS as a goal in the higher tier, sharing this prioritization with conservation goals for soil, plant and animal communities. In Ohio, a successful EQIP proposal undergoes two independent ranking evaluations. One evaluation is for the county level priorities and the other is for compliance with the identified statewide issues.

The USDA-NRCS state office for Ohio and County SWCDs independently develop ranking worksheets which are designed to effectively blend the achievement of the national requirements with their own identified state and county conservation issues. Specific worksheets for Darke County and the State of Ohio (for 2007) used for program payment comparisons in this report are provided in Appendix A (and available online[6]). Overall, these worksheets illustrate the differences between GMR WQCT program objectives and those that are applicable to Darke County EQIP contracts in the GMR Watershed.

Limitations Preventing Direct Cost Comparisons

Due to the variety of policy issues and goals for each of the Farm Bill conservation programs, particularly EQIP, certain limitations are placed on individual contract awards to producers. Such limitations prevent direct cost comparisons to WQCT payments. These limitations are determined by factors such as the producer's adjusted gross income, incentive awards made by other Farm Bill programs, and eligibility determinations regarding special payment features or the land in question[7]. For this reason, a complete cost benefit analysis is not possible without full access to the producer's financial records and linking all programs back to BMP costs, total Farm Bill payments received, and the farmer's income. This type of disclosure is not typically allowed without permission by the Farm Bill itself[8].

To overcome this limitation, this economic analysis uses information in statistical or aggregated form from the eFOTG for the state of Ohio and from Darke County[9]. This includes average results and 2008 maximum payments.

Other limitations exist with these EQIP cost data for making a direct cost comparison with WQCT, including:

- Inability to account for administrative staff overhead (e.g., federal, state and/or local government support of staffing needs at the SWCD level)
- EQIP has limitations on the length of time the practice will be in place
- A cap on the number of acres for which the BMP can be enrolled
- Cost share payments made by the farmer (though such costs are not reflected in county or state data, it is assumed that farmers also have some in-kind costs to be competitive in WQCT reverse auctions)

[6] Darke County EQIP ranking worksheet: ftp://ftp-fc.sc.egov.usda.gov/OH/pub/Programs/EQIP/FY2007/Darke_County_2007_EQIP_LWG_Doc.pdf
Ohio NRCS State Office EQIP ranking worksheet: ftp://ftp-fc.sc.egov.usda.gov/OH/pub/Admin/Bulletins/FY-07/Bulletins-Adobe/2008_EQIP_State_Ranking_Worksheet_Revised.pdf
[7] 110th Congress Food, Conservation and Energy Act of 2008 Title I, Subpart F Section 1604, and Title II Subpart B Section 2102
[8] Title I Subtitle F SEC. 1619. (b)(2) INFORMATION GATHERING.
[9] http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=OH

Regarding practice duration considerations, WQCT management often finds it more desirable to keep the BMP in place for longer durations as a risk management technique. For instance, high residue management is limited to two or three years of annual EQIP payments based on acres (Bennett, personal communication[10]). In the GMR WQCT program, contracts are typically five years in length. Likewise, WQCT may wish to exceed the trial base acreage allowed by EQIP in order to maximize credits generated. In this case, an entire farm may be enrolled in high residue management for trading instead of a limited number of acres based under an enrollment cap in EQIP.

In addition to administrative costs and practice duration, other limitations may arise when comparing BMPs with significant variation in costs due to site-specific design needs, differences in operational costs associated with the farm equipment and/or materials, allowances for the farmer not wishing to introduce the lowest cost BMP or recapturing lost opportunity income.

GMR WQCT Program BMP Costs

As discussed previously, the objective for reverse auctions in the GMR WQCT program is to fund and implement the most cost-effective combined TP and TN reductions. Although numerous bids have been received, all of the contracts awarded in this program have been based on the lowest cost per pound of reduction. Illustrated in Table 1 are the rankings for each BMP type based on cost-effectiveness, from all awarded bids. The unit price for these contracts ranges from 36 cents to $2.00.

It can be noted that select BMP types that exist at the lowest end of the cost range (higher rank) can also be found in contracts at the higher end (lower rank) of the contract range. This variability within the BMP type can result from limitations in site-specific conditions and erosion characteristics associated with varying natural features. This could also relate to added costs due to the producer's management structure (existing equipment, debt load or other factors that limit transition into the use of the BMP).

Table 1. Cost-effective Ranking for Winning Proposals in the GMR WQCT Program.

Cost-effective Rank	BMP(s) by Type	Cost per Pound of Combined TP & TN Reduced ($)
1	Conservation crop rotation/field filter strips (fs)	0.36
2	Conservation tillage	0.58
3	Conservation cover	0.87
4	Conservation crop rotation	1.10
5	Conservation crop rotation	1.11
6	No-till	1.12
7	Hayland	1.12
8	Hayfield establishment	1.19
9	Milking parlor water/cowlot runoff	1.20
10	Sod establishment	1.24

[10] Jim Bennett, District Conservationist, NRCS, Greenville, OH, December 22, 2008.

Table 1 Continued.

Cost-effective Rank	BMP(s) by Type	Cost per Pound of Combined TP & TN Reduced ($)
11	Cowlot runoff/milk parlor waste	1.29
12	Wastewater collection pit/transfer pump	1.30
13	No-till	1.32
14	Conversion of row crops to alfalfa/grass seeding	1.35
15	Animal waste pond	1.39
16	Milk parlor water/cowlot runoff/manure storage	1.39
17	Pasture seeding/prescribed grazing	1.47
18	No-till	1.49
19	Hayland	1.50
20	Pasture seeding/prescribed grazing	1.50
21	No-till	1.51
22	Sod establishment	1.51
23	Sod establishment	1.52
24	No-till	1.53
25	Conversion of row crops to alfalfa/grass seeding	1.56
26	No-till	1.57
27	Hayfield establishment	1.58
28	Grassed waterway	1.59
29	Milk parlor water/cowlot runoff/manure storage	1.60
30	Pasture seeding/prescribed grazing	1.60
31	Milk parlor waste	1.60
32	Conservation tillage	1.67
33	Stream bank stabilization	1.69
34	Roof over concrete feedlot/milking parlor irrigation system	1.72
35	Grid sampling with VRT/conservation crop rotation	1.74
36	Conservation tillage	1.74
37	Ditch bank stabilization/grassed waterway	1.75
38	Residue management/no-till corn after soybeans	1.75
39	Residue management/no-till corn after soybeans	1.75
40	Grade stab. structure/grassed waterway/fs/ditch bank stab.	1.75

Table 1 Continued.

Cost-effective Rank	BMP(s) by Type	Cost per Pound of Combined TP & TN Reduced ($)
41	Grassed waterways	1.75
42	Ditch bank stabilization	1.75
43	Ditch bank stabilization	1.75
44	Conservation tillage	1.77
45	Conservation tillage and conservation crop rotation	1.79
46	Roof over concrete lot	1.80
47	Conservation tillage	1.87
48	Milkhouse treatment	1.97
49	No-till and cover crop	2.00

As of this writing, the most cost-effective BMP used in the WQCT program is conservation crop rotation. This BMP was typically bundled with other BMPs. As such, a discrete BMP cost cannot be calculated. However, cost data suggest that other BMPs packaged with conservation crop rotation provide less nutrient reduction and are applied over smaller areas than this rotation practice provides in the contracts. This practice was found in the contracts ranked first, fourth, fifth and forty-fifth of the forty-nine contracts awarded.

The second most cost-effective BMP is high residue management (no-till or conservation tillage). The twelve awarded contracts have a wide range of cost-effectiveness from a rank of second, then evenly distributed through forty-seventh. The cost range spanned from 58 cents to $1.87 and averaged $1.50 per combined pound of TP and TN reductions.

The third most cost-effective BMP type found in the GMR WQCT program was the conversion of row cropping systems into hayfield, sod, grass or alfalfa crops. This BMP type was found in twelve contracts, sometimes packaged with other BMPs and ranked from seventh to thirtieth. Using only the sites that did not include other BMPs in the contract, these costs ranged from $1.12 up to $1.58 and averaged $1.40 per combined TN and TP unit.

The fourth most cost-effective BMP type addressed cowlot runoff and/or milking parlor water. These types of BMPs were very site-specific both in designs used to address the nutrient loading and in site factors (such as numbers of animals). This BMP was awarded ten contracts which ranged in rank from ninth to forty-eighth. The cost per combined pounds ranged from $1.20 up to $1.97, averaging $1.53.

There is a noticeable break before the other two BMP types appear; grassed waterways ranked twenty-eighth and streambank stabilization ranked thirty-third. This could be associated with the requirement and expense of earthmoving, or the lack of nutrients in subsoils. However, as mentioned above, all practices selected are viewed as the most cost-effective as they out-competed other proposals to receive funding at this early stage of the WQCT program.

The BMP types that either introduced perennial vegetative cover or increased the amount of plant residue left behind from year to year provided the lowest cost per pound of combined TN and TP. However, some of the sites using these types of BMPs were out-competed by other contracts introducing structural practices addressing cowlot runoff, milking parlor water or stream/ditch bank erosion.

BMPs Common to Both Programs

A subset of the BMPs implemented by EQIP are also funded in the GMR WQCT program. These overlapping BMP types include:

- Manure and milk house facilities
- Grid sampling
- Conservation cover
- Filter strips
- Hayfield and alfalfa/grass establishment
- Conservation crop rotation
- High residue management
- Ditch/stream bank stabilization
- Grade stabilization structures
- Grassed waterways
- Pasture seeding and prescribed grazing

Some of these BMP types were excluded from further economic comparison here because of the need for site-specific design details to make adequate comparisons (e.g., manure and milk house facilities, ditch and stream bank stabilization and grade stabilization structures). Other BMP sets were not used because of inclusion of multiple BMPs in the projects as awarded (e.g., individual sites containing grassed waterways, conservation crop rotation and filter strips). Finally, a small number of WQCT projects were eliminated because they were implemented at the only site awarded a contract for that particular BMP, and use of these data may have disclosed the identity of this WQCT program participant without their expressed permission.

Therefore, the BMP categories selected for comparison between the WQCT and EQIP programs were:

- High residue management
- Hayfield, alfalfa or grass establishment
- Pasture establishment/grazing management
- Alfalfa establishment
- Grassed waterways

To compare cost of practices, BMP contracts funded under the GMR WQCT program were converted into units defined by the EQIP program. Appendices B, C and D include details of these average costs as provided by USDA-NRCS. EQIP payments are paid out to agricultural producers either as a one-time payment or in annual installments. Payments are based on linear or areal units which vary by BMP type. High residue management under EQIP paid $8 per acre in Darke County for 2005; however, payments were limited to 2 or 3 years (Bennett, personal communication).

Summary of Average Cost of BMPs for Each Program

Table 2 summarizes the average cost of the five BMP types selected for comparison between the EQIP and GMR WQCT programs. The high residue management BMP type had eleven trading contracts that allowed for evaluation of only that BMP using the EQIP payment structure. The cost per year of the trading contract was $5.00 per acre for five years. This is a lower annual payment than the EQIP payment but extends the payment period out two to three years in comparison to the Farm Bill subsidy.

Hayfield, alfalfa or grass establishment is a one-time payment for implementation under EQIP unless a maintenance plan (like prescribed grazing plan at $15 per acre per year) is also packaged as part of the contract. Average rates in Darke County for legumes or switchgrass are $95 per acre. However, if the vegetation is warm season grasses, the average increases to $191 and $137 per acre with and without chemical treatment, respectively.

On average, warm season grass establishment was $183.25 per acre for the trading program. This was at the high end of the comparable EQIP payment range. Pasture establishment with prescribed grazing averaged $92.10 per acre and $8.12 per acre per year for the prescribed grazing management under the WQCT pilot program. Establishment of alfalfa where row cropping previously existed cost $37 per acre on average. All of these practices appear to be very comparable in cost to the EQIP payment rates with some notable advantages for WQCT when implementing alfalfa establishment.

Grassed waterways are reported as an average of projects constructing greater than 40-foot wide practices using a cost per linear foot. Practices installed under the GMR Watershed WQCT program typically installed 60-foot wide grassed waterways, which place them at a slight disadvantage when comparing these to average EQIP costs. The EQIP payment is a one-time establishment payment for ten years of expected practice life. Under EQIP, the base average cost is $2.80 per linear foot and rises when rock check dams, filter fabric, stone outlet control structures, blind inlets, tiles and old tile removal are considered.

The limited number of grass waterway systems that could be isolated from other BMPs in the trading program cost an average of $3,671.62 per acre or $5.06 per linear foot to install. This is marginally higher than Darke County average 2005 data, but closer to the 2007 and 2008 statewide cost averages.

Overall, Darke County 2005 data compare favorably in these BMP types to the 2007 and 2008 statewide EQIP averages. The statewide numbers indicate high residue tillage ranges from $8 to $10. Statewide grass waterways greater than 40 feet in width averaged $5 a linear foot in 2007 and $3,100 to $6,175 per acre in 2008. An acre of grass waterway 40 feet wide would be 1,089 feet long and would have a base cost of $3,050 in Darke County and $5,450 in 2007 using the statewide figures. Hayfield, alfalfa and grass establishment increased in cost using statewide averages from a range of $135 to $200 in 2007 up to $127.56 to $233.93 in 2008. In all cases, using the 2005 Darke County costs as a baseline comparison is conservative.

Table 2. Cost Comparisons for Selected BMPs for EQIP and GMR WQCT Program.

BMP Type	EQIP	GMR WQCT Program
High Residue	$8 per acre	$5 per acre
Hayfield and Grass Establishment	$137 to $191 per acre	$183.25 per acre
Pasture Establishment/Grazing Management	$137 to $191 per acre $15 per acre per year	$92.10 per acre $8.12 per acre per year
Alfalfa Establishment	$95 per acre	$37 per acre
Grassed Waterways	$2.80 per linear foot Base payment Items such as tile intakes, filter fabric and stone outfalls are additional	$3671.62 per acre or $5.06 per linear foot

Findings and Conclusions

Costs for practices implemented in both WQCT and EQIP programs are generally comparable. This suggests that the two programs offer competitive options for farmers (though it is worth noting the limited size of WQCT sample populations used for this analysis). These findings are a strong indication of the ability of WQCT programs to successfully provide:

- Alternatives to producers which do not wish to participate in Farm Bill programs
- Flexible mechanisms for permitting cost-effective nutrient load reductions
- Watershed managers a tool to cost-effectively manage nutrient reductions

Operational practices like switching to perennial vegetation or high residue have a slight advantage, in some cases, over structural practices like stream or ditch bank stabilization and grade control structures. However, geographic and physical characteristics of individual BMP sites introduce substantial variability in cost for a combined pound of TP and TN reduction. This variability keeps the potential for all of the WQCT BMP types to be within a cost-effective range. The high nutrient content in manure management and milk parlor water keeps associated BMPs highly competitive in cost-effective rankings. In addition, comparable costs suggest that producers may participate in one or the other program based on their individual preferences. Variables such as fund sequencing with project timing, duration of BMP payment period, comfort in the partnership with the paying entity, and flexibility with other uses (like cash cropping) are considerations that will likely surface when evaluating program participation.

These comparisons suggest that farmers will ultimately choose a program that best suits their immediate and long-range planning needs. WQCT in the GMR will account for these farmer interests but primarily focuses on water quality benefits (though still at prices comparable to similar Farm Bill programs). As WQCT programs grow more robust with increasing credit demand, trading credit payments to farmers could rise (on a per unit basis). This may spawn the need to consider longer-term, more highly incentivized contracts to continue to garner farmer interest in trading programs. Because of the varying program goals, it is likely that Farm Bill incentive programs and credit trading will both continue to add value to farming operations. However, opportunities to participate in trading will likely vary based on the geographic and physical characteristics of the setting in each watershed. This relates specifically to the WQCT program focus on explicit water quality outcomes associated with greater nutrient load reductions from agricultural BMPs.

Appendix A

Darke County and NRCS State Issues Ranking Worksheets

EQIP Evaluation 2007—Darke County, Ohio

The Darke County local workgroup completed the EQIP evaluation worksheet for local resource concerns. EQIP applicants can receive up to 100 ranking points for local resource concerns. The local workgroup agreed on priority concerns and practices that would best address the resource concerns of Darke County. These prioritized concerns were then assigned a point value based on water quality issues in each area.

Practices were prioritized by the local workgroup according to the number of requests, need for the practices, projected future requests, and projected future environmental benefits. Water and Air Quality concerns created by livestock, poultry and cropland erosion were the top priorities. Protecting Darke County's high quality streams from potential farm pollutants, while still maintaining a healthy agricultural economy was also included as a specific priority. Waste storage structures, dead animal composters, nutrient management, heavy use areas for livestock, chemical handling facilities, no-till corn implementation, field borders, livestock exclusion from streams and windbreaks were also identified as priority practices. Points were assigned to each practice or scoring category based on the importance it was given by the local workgroup. Finally, the workgroup assigned points based on the cost-effectiveness of all cost shared practices.

Limited resource farmer concerns are to be addressed by setting aside $5,000.00 of the funds for allocation specifically to this group. These applications (Limited Resource Farmer Applications) will be ranked separately. Once all applications have been ranked, the first $5,000 of the county allocation will go to limited resource farmers. In the event that there are no limited resource farmers applying, 100% of the funds will be distributed to the top ranking application(s).

Applicant's Name: _____
Address: _____
Phone Number: _____
Farm #: _____ **Tract #:** _____
Score all items that apply to your farming operation.

LIVESTOCK (Manure Nutrient Management) (55 Points Max)

1. Age Of Operation

0-2 Years	(0 Points)
2+ Years	(3 Points)

2a. Existing Facility Distance To The Creek

0-500 Feet	(5 Points)
500-1500 Feet	(3 Points)
1500-2500 Feet	(1Point
2500+ Feet	(0 Points)

2b. New Facility Distance To The Creek

2500+ Feet	(5 Points)
1500-2500 Feet	(3 Points)
500-1500 Feet	(1 Point)
0-500 Feet	(0 Points)

****Points can only be received from 2a or 2b.**

3. Cowlot/Milkparlor Wastewater In Creek

Direct Discharge Present	(5 Points)
Potential For Direct Discharge	(2 Points)

No Discharge Present (0 Points)

4. Installation Of Pumpout Ports/Purchase Tile Plugs

Yes (7 Points)
No (0 Points)

5a. Manure Handling Facility - New Planned

Current Storage Facility

0-3 Months (5 Points)
3-6 Months (3 Points)
6-12 Months (1 Point)

12+ Months (0 Points)

Planned Storage Facility

12+ Months (5 Points)
6-12 Months (3 Points)
3-6 Months (1 Point)

0-3 Months (0 Points)

5b. Manure Handling Facility - No New Facility Planned

Current Storage Facility

12+ Months (5 Points)
6-12 Months (3 Points)
3-6 Months (1 Point)

0-3 Months (0 Points)

****Points can only be received from 5a or 5b.**

6. Constructing New Composter

Yes (5 Points)
No (0 Points)

7. Complete Grazing System

Yes (5 Points)
No (0 Points)

8. Site Condion Restrictions

Yes (15 Points)
No (0 Points)

(Soil Erosion Management) (25 Points Max)

1. Percent Of Cropland Consisting Of B And C Slopes Or Steeper

Greater Than 80% (5 Points)
60% To 80% (4 Points)
40% To 60% (3 Points)
20% To 40 % (2 Points)
Less Than 20% (1Point)

2. 50% Or More Of Soils With Erodibility Factor (K):

.40 Or Greater (5 Points)

.30 To .40 (3 Points)
Less Than .30 (1 Point)

3. Permanent Erosion Control Structure:

Yes (5 Points)
No (0 Points)

4. Fertilizer Containment Facility

Yes (5 Points)
No (0 Points)

5. Conservation Tillage Practices

Yes (5 Points)
No (0 Points)

(Air Quality Management) (10 Points Max)

1. Practices To Improve Air Quality (Field Windbreaks, Site Screen-Odor & Dust Control)

Yes (10 Points)
No (0 Points)

(Wildlife Habitat Management) (10 Points Max)

1. Practices To Improve Wildlife Habitat (Field Borders - Minimum Of 30 Feet Wide)

Yes (10 Points)
No (0 Points)

Maximum Points = 100 pts.
Total Local Points _____
For questions regarding the program contact Jim Bennett, District Conservationist/NRCS, Tim Brunswick, Darke SWCD MNM Specialist or Jenelle Ott, Soil Conservationist/NRCS.
Applicant Signature_____
NRCS Representative_____

2008 EQIP STATE ISSUES RANKING WORKSHEET

(300 MAXIMUM POINTS)

Applicant: _____ ProTracts Application #: _____

Practice(s): _____ **Total State Issues Score:** _____

I. WATER QUALITY RESOURCE CONCERNS

(300 Points Maximum)

Select points for only one: (A, B, C, or D)

A. Develop a CNMP 300 Base Points

Producer wishes to complete planning on their livestock operation prior to requesting incentive payments for practices. These plans will be "**automatically"** approved at the time of application at the county office as long as **funds** are available **(no other practices will be considered for incentive payments with these type applications)!**

B. Livestock Waste Storage and Facility. Applicants must have and be utilizing an existing CNMP in order to receive incentive payments on any type of waste storage structure.

or

B. Producer has an approved "CNMP" completed prior to 09/17/07 or has been accepted in a prior EQIP sign-up to have one completed.

35 Base Points

Additional Points

B-1. Existing facility/operations is polluting the "Waters of the State." (This applies to livestock waste storage or waste water and runoff management) **35**

or

B-2. Expanding manure storage facility that has a high potential for pollution. (If facility has expanded more than 50 percent in the last five years or since 2002 then consider it a new facility below) **20**

or

B-3. New facility or existing facility with 51 percent or greater expansion in the last five years, (since 2002). **0**

B-4. Existing storage facility is located within 100 feet of a stream. **20**

B-5. Milk house waste water and clean run-off water around the facility and buildings are

properly managed. **4**

B-6. New storage facility located more than 250 feet from a stream. **15**

B-7. Attended LEAP I **or** Equine LEAP **3**

B-8. Attended LEAP II **6**

Total Additional Points

Base Points (35)

Total Points (maximum of 100)

C. Develop a Grazing Management Plan 300 Base Points

Producer wishes to complete planning on their livestock grazing operation prior to requesting incentive payments for practices. These plans will be "**automatically"** approved at the time of application at the county office as long as **funds** are available **(no other practices will be considered for incentive payments with these type applications)!**

D. Pasture Operations: Applicants must have and be utilizing an existing Grazing Management Plan in order to receive incentive payments on any type on any pasture type practices.

or

D. Producer has an approved "Grazing Management Plan" completed prior to 09/17/07 or has been accepted in a prior EQIP sign-up to have one completed.

30 Base Points

Additional Points

D-1. Producer will convert cropfields to pasture acres. **15**

or

D-2. Producer will convert highly erodible cropfields to pasture acres. **21**

D-3. Grazing system has a grazing period of 3 days or less with prescribed rest periods. **10**

or

D-4. Provides increased paddocks to allow for a weekly rotational grazing with

prescribed rest periods. **5**

D-5. All stream corridors will be protected by fences. **31**

D-6. Provides water to all paddocks. **6**

D-7. Improves forages in 60% of the paddocks. **6**

D-8. Attended LEAP Pasture **or** Attended Equine LEAP **3**

D-9. Attended Grazing Schools. **6**

Total Additional Points

Base Points (30pts)

Total Points (maximum of 100)

E. Non-point Source Water Quality 10 Base Points

(Can be used in combination with A, B, C, or D)

Additional Points

E-1. Applicant is located in a watershed with a Draft or Final TMDL where causes such as nutrients, sediment, pesticides attributable to agriculture are identified.

(See reference links/websites on next page for identifying watersheds that meet these criteria) 50

or

E-2. Applicant is located in a TMDL watershed TMDL where causes such as nutrients, sediment, pesticides attributable to agriculture are identified, but neither a Draft or Final TMDL has been completed; OR applicant is located in a non-TMDL watershed but other action plans (e.g., NPS (§319), Maumee and Black River RAPs, Lake Erie LaMP) endorsed by U.S. EPA, Ohio EPA or ODNR have identified causes to impairment attributable to agriculture, such as nutrients, sediment, pesticides.

(See reference links/websites on next page for identifying watersheds that meet these criteria and Attachment F, ODNR Watershed Action Plan Areas and Endorsement Status Map) 40

or

E-3. Applicant located in a 303(d) watershed where causes such as nutrients, sediment, pesticides attributable to agriculture are identified,

(See reference links/websites on next page for identifying watersheds that meet these criteria) 30

PLUS

-Bonus Points-

E-4. Applicant is located in a watershed that is a part of a CREP watershed, State Resource Water watershed, or WRP priority Watershed.

(See reference links/websites on next page for identifying watersheds that meet these criteria)

20

E-5. Applicant is located in a watershed utilized for drinking water with Pesticides and Nitrates MCL Exceedance. **(See Attachment F) 20**

E-6. Applicant is located in a watershed utilized for drinking water with Nitrates MCL Exceedance. **(See Attachment F) 10**

E-7. Applicant is located in a watershed utilized for drinking water with Elevated Pesticides **(See Attachment F) 5**

Total Additional Points: _____ **Base Points (10pts):** _____
Bonus Points (max 50): _____

Total Points (maximum of 100)

Contact Rick Wilson, Environmental Specialist, OEPA @ 614-644-2032 for information on websites on next page

Main Page to Ohio's TMDL program:

http://www.epa.state.oh.us/dsw/tmdl/index.html#TMDL%20Projects

BEST LINK!

This is a document that lists the causes and sources of impairment for each 303(d) listed streams

http://www.epa.state.oh.us/dsw/tmdl/2006IntReport/IR06_app_E2.pdf

TMDL Status map w/links to each TMDL (where the background on impairment is described...updated 11-8-05).

http://www.epa.state.oh.us/dsw/tmdl/OhioTMDLs_InProgress.html

Map of TMDL Status

http://www.epa.state.oh.us/dsw/tmdl/2006IntReport/IR06_map1_TMDLstatus.pdf

Map of Ohio listed 303(d) streams (i.e, impaired streams)

http://www.epa.state.oh.us/dsw/tmdl/2006IntReport/IR06_map2_porsmOverallCats.pdf

List of 303(d) streams:

http://www.epa.state.oh.us/dsw/tmdl/2006IntReport/IR06_app_D_2.pdf

F. Soil Resource Concerns

(40 Points Maximum)

F. Soil Erosion

F-1. Treatment of sheet and rill erosion will reduce erosion to 1/2 “T” or less. **20**

or

F-2. Treatment of sheet and rill erosion will reduce erosion to “T” or less. **10**

F. Soil Quality (Assumes sheet and rill erosion at or below “T”).

F-3. Excellent Soil Quality

High residue crops, pasture, or hayland 66% of time. Planting uses conservation tillage with > 20% residue after planting. **20**

or

F-4. High residue crops, pasture, or hayland 50% of time. Planting uses continuous no tillage with > 30% residue after planting. **25**

F-5. Good Soil Quality

High residue crops, pasture, or hayland 66% of time. Planting uses conventional tillage with < 20% residue after planting. **10**

or

F-6. High residue crops, pasture, or hayland 50% of time. Planting uses mulch tillage with < 30% residue after planting. **10**

F-7. Minimum Soil Quality

High residue crops, pasture, or hayland 50% of time. Planting uses conventional tillage with < 20% residue after planting. **5**

Total Additional Points (max 40 pts.) _____

G. Habitat Recovery for At-Risk Species

(30 Points Maximum)

G. Application will address at-risk species by improvement of habitat. Practices will be specific to the at-risk species which will be identified in the required wildlife management plan. Applies to cropland, grassland, or expiring CRP. See Attachment F.

G-1. Planned practices benefit Federal endangered, threatened, or candidate and species

in selected counties. **30**

or

G-2. Planned practices benefit declining habitats on contract acres to be treated. **20**

Total Points (maximum 30 pts.) _____

Page Total Points (maximum of 70 pts.) _____

H. Air Quality

(20 Points Maximum)

H. Application will address air quality concerns dealing with particulates, chemical drift, or odors.

H-1. Practices will address soil particulates in counties that have soils susceptible

to wind erosion. **20**

or

H-1. Practices will address chemical drift from agricultural operations through a

pest management plan. **20**

or

H-1. Practices will address odor from livestock waste storage and application

systems (must be included in the CNMP). **20**

Total Points (maximum 20 pts.)

I. Bonus Points for Addressing Multiple Resource Concerns

(20 Points Maximum)

Three points per resource concern

I. Applicants can get up to 20 additional points for addressing multiple concerns,

including soil erosion, soil quality, water quality, air quality odors, air quality particulates, air quality chemical drift, animal grazing or water, or animal wildlife habitat.

I-1: One resource concern: _____ **I-2:** Second resource concern: _____

I-3: Third resource concern: _____ **I-4:** Fourth resource concern: _____

I-5: Fifth resource concern: _____ **I-6:** Sixth resource concern: _____

I-7: Seventh resource concern: _____

Bonus Points (maximum 20 pts.)

TOTAL STATE ISSUES POINTS

Page 1 Total:

Page 2 Total:

Page 3 Total:

Page 4 Total:

Page 5 Total:

Total State Issues Points (pgs. 1-6, maximum 300 points): _____

Appendix B

Darke County, Ohio Conservation Practices

FY 2005 DARKE COUNTY PRACTICE, COMPONENT, & AVG COST LIST

Practice Code	Practice_Name	Component	Unit_Type	Unit_Cost	Cost_Type
313	WASTE STORAGE FACILITY	Concrete apron	sq ft	2.75	AC
313	WASTE STORAGE FACILITY	Curbing	ft	4.75	AC
313	WASTE STORAGE FACILITY	Holding Pond w/sand bedding	1000cf	420	AA
313	WASTE STORAGE FACILITY	Holding Pond w/surf manure trnsfr	1000cf	175	AA
313	WASTE STORAGE FACILITY	Holding Pond w/undrgrnd manure transfr	1000cf	225	AA
313	WASTE STORAGE FACILITY	Holding Tank, Milk House/Silage Leachate	cu ft	4.50	AA
313	WASTE STORAGE FACILITY	Liquid Manure Pit	cu ft	3.50	AA
313	WASTE STORAGE FACILITY	Manure Pack with roof concrete walls	1000cf	3600	AA
313	WASTE STORAGE FACILITY	Manure Pack with roof plank walls	1000cf	2750	AA
313	WASTE STORAGE FACILITY	Pump and valve	each	5000	AC
313	WASTE STORAGE FACILITY	Pumping Pipeline	ft	6.00	AC
313	WASTE STORAGE FACILITY	Roof only for Waste Storage	sq ft	6.00	AC
313	WASTE STORAGE FACILITY	Settling Basin	sq ft	6.00	AC
313	WASTE STORAGE FACILITY	Siphon	each	650	AC
313	WASTE STORAGE FACILITY	Storage Struc w/ roof, concrete walls	1000cf	3500	AA
313	WASTE STORAGE FACILITY	Storage Struc w/ roof, plank walls	1000cf	2500	AA
313	WASTE STORAGE FACILITY	Storage Struc w/o roof, concrete walls	1000cf	1500	AA
313	WASTE STORAGE FACILITY	Storage Struc w/o roof, plank walls	1000cf	1000	AA
314	BRUSH MANAGEMENT	Brush Control	ac	25	FR
317	COMPOSTING FACILITY	w/o roof,w/o concrete floor,w/o bins	sq ft	1.50	AC
317	COMPOSTING FACILITY	w/o roof,w/o concrete floor, w/bins	sq ft	4.50	AC
317	COMPOSTING FACILITY	w/roof,w/concrete floor, w/bins	sq ft	18	AC
317	COMPOSTING FACILITY	w/o roof,w/concrete floor, w/bins	sq ft	7	AC
317	COMPOSTING FACILITY	w/roof,w/concrete floor,w/o bins	sq ft	11	AC
317	COMPOSTING FACILITY	w/roof,w/o concrete floor,w/o bins	sq ft	6.50	AC
317	COMPOSTING FACILITY	w/roof,w/o concrete floor,w/bin	sq ft	9.50	AC
327	CONSERVATION COVER	CSG grass mix	ac	95	AC
327	CONSERVATION COVER	WSG Grass Mix A&B slopes	ac	122	AC
327	CONSERVATION COVER	WSG Grass Mix A&B slopes w/Plateau	ac	170	AC
327	CONSERVATION COVER	WSG Grass Mix C&D slopes	ac	137	AC
327	CONSERVATION COVER	WSG Grass Mix C&D slopes w/Plateau	ac	191	AC
328	CONSERVATION CROP ROTATION	Conservation Crop Rotation	ac	5	FR

329A	RESIDUE MANAGEMENT, NO-TILL AND STRIP TILL	No-till / Strip Till	ac	8	FR
329B	RESIDUE MANAGEMENT, MULCH TILL	Mulch Till	ac	8	FR
329C	RESIDUE MANAGEMENT, RIDGE TILL	Ridge Till	ac	8	FR
330	CONTOUR FARMING	Establish Contouring	ac	12	FR
332	CONTOUR BUFFER STRIPS	Establish contour buffer strips	ac	12	FR
338	PRESCRIBED BURNING	Prescribed burning of warm season grasses	ac	30	FR
340	COVER AND GREEN MANURE CROP	Establish Cover Crop	ac	15	FR
342	CRITICAL AREA PLANTING	Crit. Area Seed w/o earthmoving	ac	300	AC
342	CRITICAL AREA PLANTING	Crit. Area Seed w/ earthmoving	ac	480	AC
344	RESIDUE MANAGEMENT, SEASONAL	Crop Residue Mgt	ac	5	FR
350	SEDIMENT BASIN	Sediment Basin	each	5000	AC
356	DIKE	Dike 3 ft. high	ft	3.90	AC
356	DIKE	Dike 3 ft. high w/chain link rodent control	ft	5.90	AC
356	DIKE	Dike 4 ft high	ft	6.40	AC
356	DIKE	Dike 4 ft high w/chain link rodent control	ft	8.40	AC
356	DIKE	Dike 5 ft. high	ft	9	AC
356	DIKE	Dike 5 ft high w/chain link rodent control	ft	11	AC
356	DIKE	Dike 6 ft. high	ft	12.30	AC
356	DIKE	Dike 6 ft high w/chain link rodent control	ft	14.30	AC
359	LAGOON SYSTEM	Lagoon System w/surface Manure Transfer	1000cf	40	AA
359	LAGOON SYSTEM	Lagoon System w/underground Manure Transfer	1000cf	50	AA
362	DIVERSION	Diversion	ft	2.50	AC
378	POND	Pond, Livestock	each	6000	AC
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Farmstead Windbreak, seedlings	ac	500	AC
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak, seedlings	ft	0.37	AC
382	FENCE	Barbed Wire, 3 strands	ft	2.00	AC
382	FENCE	Barbed Wire, 4 strands	ft	2.20	AC
382	FENCE	Woven Wire	ft	3.00	AC
382	FENCE	High Tensile, 6 strands	ft	2.50	AC
382	FENCE	High Tensile, 8-10 strands	ft	3.10	AC
382	FENCE	High Tensile, Electric, 1-2 strands	ft	1.25	AC
382	FENCE	High Tensile, Electric, 3-4 strands	ft	1.60	AC
382	FENCE	High Tensile, Electric, 5 or more strands	ft	2.20	AC
382	FENCE	Feedlot Fence	ft	3.80	AC
382	FENCE	Gate 10 ft to 16 ft wide	each	70	AC

386	FIELD BORDER	Establish CSG/Legumes	ac	95	AC
386	FIELD BORDER	Establish WSG w/o Chemical Trtmt	ac	137	AC
386	FIELD BORDER	Establish WSG with Chemical Trtmt	ac	191	AC
391	RIPARIAN FOREST BUFFER	Trees - Conifer or softwood deciduous	ac	460	AC
391	RIPARIAN FOREST BUFFER	Trees - Hardwood	ac	610	AC
391	RIPARIAN FOREST BUFFER	Trees - Planting only, free trees	ac	250	AC
391	RIPARIAN FOREST BUFFER	Shrub Planting Only	ac	460	AC
393	FILTER STRIP	Establish Cool Season Grasses/Legumes	ac	95	AC
393	FILTER STRIP	Establish Warm Season Grasses w/o Chemical	ac	137	AC
393	FILTER STRIP	Establish Warm Season Grasses with Chemical	ac	191	AC
393	FILTER STRIP	Grassed Infiltration Strip for waste trtmt	sq ft	0.20	AC
394	FIREBREAK	Establish firebreak	ac	95.00	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab Estab with sod	each	1200	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab Estab with seed	each	600	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab RipRap <10 cfs	each	400	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab RipRap 10-30 cfs	each	1500	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab. RipRap 30-60 cfs	each	3000	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab. RipRap >60cfs	each	4500	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab. Concrete Struct.	each	6200	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab. Wood	each	2000	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab. Aluminum	each	4500	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab Pipe <18"	each	1500	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab Pipe 18"	each	2000	AC
410	GRADE STABILIZATION STRUCTURE	Grade Stab Pipe >18"	each	2500	AC
412	GRASSED WATERWAY	Grass WW, <30 ft, no tile	ft	1.75	AC
412	GRASSED WATERWAY	Rock Ck for Gr WW, <30 ft, no tile	each	120	AC
412	GRASSED WATERWAY	Filter Fabric Ck for Gr WW, <30 ft, no tile	each	100	AC
412	GRASSED WATERWAY	Stone Cntrd Outlet for Gr WW, <30 ft, no tile	ft	60	AC
412	GRASSED WATERWAY	Grass WW, 30-40 ft, no tile	ft	2.50	AC
412	GRASSED WATERWAY	Rock Ck for Gr WW, 30-40 ft, no tile	each	140	AC
412	GRASSED WATERWAY	Filter Fabric Ck for Gr WW, 30-40 ft, no tile	each	120	AC
412	GRASSED WATERWAY	Stone Cntrd Outlet for Gr WW, 30-40 ft, no tile	ft	70	AC
412	GRASSED WATERWAY	Grass WW, >40 ft, no tile	ft	2.80	AC
412	GRASSED WATERWAY	Rock Ck for Gr WW, >40 ft, no tile	each	150	AC
412	GRASSED WATERWAY	Filter Fabric Ck for Gr WW,>40 ft, no tile	each	130	AC
412	GRASSED WATERWAY	Stone Cntrd Outlet for Gr WW, >40 ft, no tile	ft	75	AC

412	GRASSED WATERWAY	Mulch netting	sq ft	0.08	AC
412	GRASSED WATERWAY	Mulch netting w/ interwoven straw or coir	sq ft	0.14	AC
412	GRASSED WATERWAY	Old tile search & destroy	ft	0.55	AC
412	GRASSED WATERWAY	Blind Inlet	each	600	AC
422	HEDGEROW PLANTING	Hedgerow Planting	ft	0.34	AC
468	LINED WATERWAY OR OUTLET	Lined WW, Outlet	ft	70	AC
472	USE EXCLUSION	Streambank Exclusion	1000 ft	200	AC
472	USE EXCLUSION	Woodlot Exclusion	1000 ft	200	AC
490	FOREST SITE PREPARATION	Woodland Site Preparation	ac	120	AC
512	PASTURE AND HAY PLANTING	Establish CSG/Legumes -or- Switchgrass	ac	95	AC
512	PASTURE AND HAY PLANTING	Establish Warm Season Grasses w/o Chemical Trtmt	ac	137	AC
512	PASTURE AND HAY PLANTING	Establish Warm Season Grasses with Chemical Trtmt	ac	191	AC
516	PIPELINE	Pipeline, Livestock Water 0.75"	ft	1.40	AC
516	PIPELINE	Pipeline, Livestock Water 1.25"	ft	1.90	AC
528A	PRESCRIBED GRAZING	Prescribed Grazing	ac	15	FR
528	PRESCRIBED GRAZING	Grazing Management Plan - less than 20 animal units	each	0	FR
528	PRESCRIBED GRAZING	Grazing Management Plan - 20-50 animal units	each	250	FR
528	PRESCRIBED GRAZING	Grazing Management Plan - 50-100 animal units	each	500	FR
528	PRESCRIBED GRAZING	Grazing Management Plan - >100 animal units	each	750	FR
533	PUMPING PLANT FOR WATER CONTROL	Pumping Plant, <1000 gallon	each	1000	AC
533	PUMPING PLANT FOR WATER CONTROL	Pumping Plant, >1000 gallon	each	1500	AC
554	DRAINAGE WATER MANAGEMENT	Mamagement of system	ac	0	FR
558	ROOF RUNOFF MANAGEMENT	Roof runoff mgt - Gutters & Spouting	ft	3.10	AC
558	ROOF RUNOFF MANAGEMENT	Roof runoff mgt -Stone for drip trench	cu ft	1.50	AC
560	ACCESS ROAD	Access Road	sq ft	1.30	AC
560	ACCESS ROAD	Livestock Stream Crossing	ft	30	AC
561	HEAVY USE AREA PROTECTION	Non- Livestock Gravel Pad Surface Treatment	sq ft	1.30	AC
561	HEAVY USE AREA PROTECTION	Non-Livestock Concrete Pad Surface Treatment	sq ft	2.75	AC
561	HEAVY USE AREA PROTECTION	Gravel Livestock Pad	sq ft	1.30	AC
561	HEAVY USE AREA PROTECTION	Concrete Livestock Pad	sq ft	2.75	AC
574	SPRING DEVELOPMENT	Spring Development	each	1500	AC
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stab. Riprap	sq ft	10.00	AC
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stab. Seeding Only	ac	600	AC
580	STREAMBANK AND SHORELINE PROTECTION	Streambank stab w/ bioengineering	ft	50	AC
585	STRIPCROPPING, CONTOUR	Stripcropping, Contour	ac	15	FR

586	STRIPCROPPING, FIELD	Stripcropping, Field	ac	10	FR
587	WATER CONTROL STRUCTURE	Wetland Water Control Struc < 10" pipe	each	936	AC
587	WATER CONTROL STRUCTURE	Wetland Water Control Struc 10"- 15" pipe	each	1434	AC
587	WATER CONTROL STRUCTURE	Wetland Water Control Struc > 15" pipe	each	1800	AC
587	WATER CONTROL STRUCTURE	Perm Struc 8" tile w/o storage	each	850	AC
587	WATER CONTROL STRUCTURE	Perm Struc 8" tile w storage	each	1200	AC
587	WATER CONTROL STRUCTURE	Perm Struc 10" tile w/o storage	each	950	AC
587	WATER CONTROL STRUCTURE	Perm Struc 10" tile storage	each	1450	AC
587	WATER CONTROL STRUCTURE	Perm Struc 12" tile w/o storage	each	1050	AC
587	WATER CONTROL STRUCTURE	Perm Struc 12" tile w storage	each	1550	AC
587	WATER CONTROL STRUCTURE	Perm Struc 15" tile w/o storage	each	1175	AC
587	WATER CONTROL STRUCTURE	Perm Struc 15" tile w storage	each	2100	AC
587	WATER CONTROL STRUCTURE	Perm Struc 18" tile w/o storage	each	1300	AC
587	WATER CONTROL STRUCTURE	Perm Struc 18" tile w storage	each	2100	AC
587	WATER CONTROL STRUCTURE	Temp Tile Blocks 4" - 8"	each	210	AC
587	WATER CONTROL STRUCTURE	Temp Tile Blocks 8" - 16"	each	385	AC
587	WATER CONTROL STRUCTURE	Temp Tile Blocks 12" - 21"	each	535	AC
587	WATER CONTROL STRUCTURE	Temp Tile Blocks 20" - 40"	each	1285	AC
587	WATER CONTROL STRUCTURE	22 psi Single "Y" Controller w 35' of Blue Hose	each	160	AC
587	WATER CONTROL STRUCTURE	36 psi Single "Y" Controller w 35' of Red Hose	each	160	AC
589B	STRIPCROPPING, WIND	Stripcropping, Wind	ac	10	FR
590	NUTRIENT MANAGEMENT	CNMP less than 100 AUs	each	500	FR
590	NUTRIENT MANAGEMENT	CNMP 100-250 AUs	each	1000	FR
590	NUTRIENT MANAGEMENT	CNMP 250 AUs+	each	1500	FR
590	NUTRIENT MANAGEMENT	Nutrnt Mgt w/ Precision Farm	ac	6	FR
590	NUTRIENT MANAGEMENT	Nutrient Management	ac	5	FR
595	PEST MANAGEMENT	Pest Management	ac	5	FR
606	SUBSURFACE DRAIN	4" Tile	ft	1.30	AC
606	SUBSURFACE DRAIN	4" Smoothwall	ft	1.40	AC
606	SUBSURFACE DRAIN	5" Tile	ft	1.30	AC
606	SUBSURFACE DRAIN	6" Tile	ft	2.01	AC
606	SUBSURFACE DRAIN	6" Smoothwall	ft	2.89	AC
606	SUBSURFACE DRAIN	8" Tile	ft	3.20	AC
606	SUBSURFACE DRAIN	8" Smoothwall	ft	4.41	AC
606	SUBSURFACE DRAIN	10" Tile	ft	5.00	AC
606	SUBSURFACE DRAIN	10" Smoothwall	ft	5.93	AC

606	SUBSURFACE DRAIN	12" Tile	ft	5.93	AC
606	SUBSURFACE DRAIN	12" Smoothwall	ft	6.86	AC
612	TREE/SHRUB ESTABLISHMENT	Shrub Planting Only	ac	520	AC
612	TREE/SHRUB ESTABLISHMENT	Trees - Conifer or softwood deciduous	ac	460	AC
612	TREE/SHRUB ESTABLISHMENT	Trees - Hardwood	ac	610	AC
612	TREE/SHRUB ESTABLISHMENT	Trees - Planting only, free trees	ac	250	AC
614	WATERING FACILITY	Concrete Tank	each	600	AC
614	WATERING FACILITY	Plastic Tank	each	415	AC
614	WATERING FACILITY	Automatic Waterer	each	450	AC
620	UNDERGROUND OUTLET	Outlet Box	each	400	AC
620	UNDERGROUND OUTLET	4" Tile	ft	1.30	AC
620	UNDERGROUND OUTLET	4" Smoothwall	ft	1.40	AC
620	UNDERGROUND OUTLET	5" Tile	ft	1.30	AC
620	UNDERGROUND OUTLET	6" Tile	ft	2.01	AC
620	UNDERGROUND OUTLET	6" Smoothwall	ft	2.89	AC
620	UNDERGROUND OUTLET	8" Tile	ft	3.20	AC
620	UNDERGROUND OUTLET	8" Smoothwall	ft	4.41	AC
620	UNDERGROUND OUTLET	10" Tile	ft	5.00	AC
620	UNDERGROUND OUTLET	10" Smoothwall	ft	5.93	AC
620	UNDERGROUND OUTLET	12" Tile	ft	5.93	AC
620	UNDERGROUND OUTLET	12" Smoothwall	ft	6.86	AC
633	WASTE UTILIZATION	< 1.9 mile hauling	ac	4	FR
633	WASTE UTILIZATION	2.0 to 4.9 mile hauling	ac	7	FR
633	WASTE UTILIZATION	5.0 plus miles hauling	ac	8	FR
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB System, Grassed Slopes	each	3250	AC
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB System, Farmed Slopes	each	3250	AC
642	WELL	Well for Livestock Water	ft	25	AC
643	RESTORATION AND MANAGEMENT OF DECLINING HABITATS	Control of woody invasives	ac	4000	AM
643	RESTORATION AND MANAGEMENT OF DECLINING HABITATS	Control of herbaceous invasives	ac	2000	AM
643	RESTORATION AND MANAGEMENT OF DECLINING HABITATS	Establishment of native plant community	ac	2000	AM
644	WETLAND WILDLIFE HABITAT MANAGEMENT	Wetland Mgt. for Wildlife	ac	10	FR
645	UPLAND WILDLIFE HABITAT MANAGEMENT	Upland Mgt. for Wildlife	ac	10	FR
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Discing	ac	20	AC
647	EARLY SUCCESSIONAL HABITAT	Spraying	ac	50	AC

	DEVELOPMENT/MANAGEMENT				
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Mowing	ac	5	AC
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Forest openings for wildlife	ac	150	AC
648	WILDLIFE WATERING FACILITY	Wildlife Water Facility	each	250	AC
650	WINDBREAK/SHELTERBELT RENOVATION	Farmstead Windbreak Renovation	ac	44	AC
650	WINDBREAK/SHELTERBELT RENOVATION	Field Windbreak Renovation	ac	63	AC
657	WETLAND RESTORATION	Excavation	cu yd	2	AC
657	WETLAND RESTORATION	Rodent control chain link fence	ft	3	AC
657	WETLAND RESTORATION	Tile Search (Trenching)	ft	0.55	AC
657	WETLAND RESTORATION	Tile Blocking	each	50	AC
657	WETLAND RESTORATION	WRP Sign Post	each	3	FR
658	WETLAND CREATION	Excavation	cu yd	2	AC
658	WETLAND CREATION	Rodent control chain link fence	ft	3	AC
658	WETLAND CREATION	Tile Search (Trenching)	ft	.55	AC
658	WETLAND CREATION	Tile Blocking	each	50	AC
658	WETLAND CREATION	WRP Sign Post	each	3	FR
659	WETLAND ENHANCEMENT	Excavation	cu yd	2	AC
659	WETLAND ENHANCEMENT	Rodent control chain link fence	ft	3	AC
659	WETLAND ENHANCEMENT	Tile Search (Trenching)	ft	0.55	AC
659	WETLAND ENHANCEMENT	Tile Blocking	each	50	AC
659	WETLAND ENHANCEMENT	WRP Sign Post	each	3	FR
660	TREE/SHRUB PRUNING	Woodland Pruning 0-9 ft high	ac	84	AC
660	TREE/SHRUB PRUNING	Woodland Pruning 9-17 ft high	ac	90	AC
660	TREE/SHRUB PRUNING	Woodland Pruning >17 ft high	ac	170	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Thinning	ac	140	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Grape Vine Control, light	ac	50	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Grape Vine Control, moderate	ac	70	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Grape Vine Control, heavy	ac	100	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Crop Tree Release	ac	90	AC
666	FOREST STAND IMPROVEMENT	Woodland Imp TSI - Crop Tree Release and Grapevine Control (same acreage)	ac	130	AC
702	AGRICHEMICAL HANDLING FACILITY	< 7500 gal. Fert Containment Largest Tank	each	2500	FR
702	AGRICHEMICAL HANDLING FACILITY	7500 gal. to 14,999 gal. Fert Contnmt Largest Tank	each	4200	FR
702	AGRICHEMICAL HANDLING FACILITY	15,000+ gal. Fert Containment Largest Tank	each	6000	FR
910	TA PLANNING	TA Planning	no.	NTE	AM
911	TA DESIGN	TA Design	no.	NTE	AM

912	TA APPLICATION	TA Application	no.	NTE	AM
913	TA CHECK-OUT	TA Check-out	no.	NTE	AM

Appendix C

2007 Statewide Ohio EQIP Average Costs

2007 Statewide Ohio EQIP Average Costs

Practice Code	Practice Name	Component	Unit Type	Unit Cost	Cost Type	Share Rate
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP less than 100 AUs	no	500	FR	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP 100-249 AUs	no	1000	FR	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP 250 AUs or greater	no	1500	FR	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP FA Initiative Acres	ac	0.00	AM	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP FA Initiative Animal Units	au	0.00	AM	100
313	WASTE STORAGE FACILITY	Storage - Concrete Slab Only	sq ft	3.5	AC	65
313	WASTE STORAGE FACILITY	Storage - Structural Roof	sq ft	7.5	AC	65
313	WASTE STORAGE FACILITY	Storage - Wall / Curb - Concrete Wall 2' or less (includes footer)	sq ft	6	AC	65
313	WASTE STORAGE FACILITY	Storage - Wall / Curb - Concrete Wall greater than 2' (includes footer)	sq ft	9	AC	65
313	WASTE STORAGE FACILITY	Storage - Wall / Curb - Plank	sq ft	7.5	AC	65
313	WASTE STORAGE FACILITY	Storage - Earthen Pond	cu ft	0.12	AC	65
313	WASTE STORAGE FACILITY	Storage - Earthen Pond w/ Synthetic Liner or Cover	cu ft	0.25	AC	65
313	WASTE STORAGE FACILITY	Storage Tank / Structure - 10,000 or greater	cu ft	2.2	AC	65
313	WASTE STORAGE FACILITY	Storage Tank / Structure - 10,000 or greater w/ Slats or Top	cu ft	4	AC	65
313	WASTE STORAGE FACILITY	Storage Tank / Structure - less than 10,000 gallons	cu ft	7.5	AC	65
313	WASTE STORAGE FACILITY	Transfer - Underground Pipe - 20" or greater	ft	27	AC	65
313	WASTE STORAGE FACILITY	Transfer - Underground Pipe - 12" - 18"	ft	20	AC	65
313	WASTE STORAGE FACILITY	Transfer - Underground Pipe - less than 12"	ft	9	AC	65
313	WASTE STORAGE FACILITY	Transfer - Pump - Large (Manure Pump)	no	11000	AC	65
313	WASTE STORAGE FACILITY	Transfer - Pump - Small (Milkhouse / Runoff Water)	no	3500	AC	65
313	WASTE STORAGE FACILITY	Treatment - Constructed Wetland	sq ft	0.35	AC	65
313	WASTE STORAGE FACILITY	Treatment - Settling Basin	sq ft	12	AC	65
313	WASTE STORAGE FACILITY	Treatment - Filter Strip / Infiltration Area	sq ft	0.25	AC	65
314	BRUSH MANAGEMENT	Brush Management	ac	25	FR	100
317	COMPOSTING FACILITY	Composting Facility - Gravel Pad	sq ft	1.6	AC	65
317	COMPOSTING FACILITY	Composting Facility - Concrete Pad	sq ft	3.5	AC	65
317	COMPOSTING FACILITY	Composting Facility - Roof Only	sq ft	6.5	AC	65
317	COMPOSTING FACILITY	Composting - Wall / Curb - Concrete (includes footer/foundation)	sq ft	9	AC	65
317	COMPOSTING FACILITY	Composting - Wall / Curb - Plank	sq ft	7.5	AC	65
327	CONSERVATION COVER	WSG Mix w/o Chemical Trtmt	ac	150	AC	50
327	CONSERVATION COVER	WSG Mix w/ Chemical Trtmt	ac	200	AC	50
327	CONSERVATION COVER	Cool Season Grasses / Legumes	ac	135	AC	50

328	CONSERVATION CROP ROTATION	Conservation Crop Rotation	ac	5	FR	100
329	RESIDUE MANAGEMENT, NO-TILL/STRIP TILL	Residue Management, No-Till/Strip Till	ac	8	FR	100
330	CONTOUR FARMING	Establish Contouring	ac	12	FR	100
332	CONTOUR BUFFER STRIPS	Establish Contour Buffer Strips	ac	12	FR	100
338	PRESCRIBED BURNING	Prescribed Burning of WSGs	ac	30	FR	100
340	COVER CROP	Establish Cover Crop	ac	15	FR	100
342	CRITICAL AREA PLANTING	Critical Area Seeding - w/ earthmoving	ac	600	AC	50
342	CRITICAL AREA PLANTING	Critical Area Seeding - w/o earthmoving	ac	400	AC	50
344	RESIDUE MANAGEMENT, SEASONAL	Crop Residue Mgt	ac	5	FR	100
345	RESIDUE MANAGEMENT, MULCH TILL	Residue Management, Mulch Till	ac	8	FR	100
346	RESIDUE MANAGEMENT, RIDGE TILL	Residue Management, Ridge Till	ac	8	FR	100
350	SEDIMENT BASIN	Sediment Basin	no	5000	AC	50
356	DIKE	Chain Link Fence along Dike for Rodent Control	sq ft	0.75	AC	50
356	DIKE	Dike	cu yd	3.25	AC	50
359	WASTE TREATMENT LAGOON	Waste Treatment Lagoon System	cu ft	0.11	AC	65
362	DIVERSION	Diversion	ft	4	AC	50
378	POND	Pond - for Livestock Water	ac	6000	AC	50
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Farm Windbreak HQ / Feedlot - Large Potted Stock	ft	0.44	AC	50
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Farm Windbreak HQ / Feedlot - Seedlings	ft	0.21	AC	50
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak - Mineral Soils	ft	0.37	AC	50
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak - Marsh Muck Soils	ft	2.8	AC	50
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak, seedlings	ft	0.37	AC	50
382	FENCE	Fence - Barbed Wire	ft	2.25	AC	50
382	FENCE	Fence - Feedlot Fence	ft	3.75	AC	50
382	FENCE	Fence - High Tensile	ft	2.8	AC	50
382	FENCE	Fence - Electric - Less than 3 strands	ft	1.1	AC	50
382	FENCE	Fence - Electric - 3 or more strands	ft	1.5	AC	50
382	FENCE	Fence - Woven Wire	ft	3	AC	50
386	FIELD BORDER	Cool Season Grasses / Legumes	ac	135	AC	50
386	FIELD BORDER	WSG Mix w/o Chemical Trtmt	ac	150	AC	50
386	FIELD BORDER	WSG Mix w/ Chemical Trtmt	ac	200	AC	50
391	RIPARIAN FOREST BUFFER	Establish Conifer Trees	ac	500	AC	50
391	RIPARIAN FOREST BUFFER	Establish Hardwood Trees	ac	650	AC	50
391	RIPARIAN FOREST BUFFER	Establish Trees - (free trees)	ac	275	AC	50
391	RIPARIAN FOREST BUFFER	Establish - Direct Seeding Establishment Method	ac	660	AC	50

391	RIPARIAN FOREST BUFFER	Establish Trees with Weed Control - Between Row Cover	ac	20	AC	50
391	RIPARIAN FOREST BUFFER	Establish Trees with Weed Control - Chemical / Mechanical Treatment	ac	700	AC	50
391	RIPARIAN FOREST BUFFER	Shrub Planting Only	ft	0.3	AC	50
393	FILTER STRIP	Cool Season Grasses / Legumes	ac	135	AC	50
393	FILTER STRIP	WSG Mix w/o Chemical Trtmt	ac	150	AC	50
393	FILTER STRIP	WSG Mix w/ Chemical Trtmt	ac	200	AC	50
394	FIREBREAK	Establish Firebreak	ac	115	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Concrete Structure 150 CFS or greater	no	6000	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Concrete Structure less than 150 CFS	no	4500	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Straight Pipe or Pipe Drop <18"	no	2000	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Straight Pipe or Pipe Drop 18" or more	no	2900	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Riprap	sq ft	4.25	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Structure Wood	no	2500	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Aluminum	no	5000	AC	50
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Sod - Established with sod	no	1300	AC	50
412	GRASSED WATERWAY	Grass WW, 30 ft or less, no tile	ft	3.25	AC	50
412	GRASSED WATERWAY	Grass WW, 31ft - 40 ft, no tile	ft	4.25	AC	50
412	GRASSED WATERWAY	Grass WW, > 40 ft, no tile	ft	5	AC	50
412	GRASSED WATERWAY	Blind Inlet	no	700	AC	50
412	GRASSED WATERWAY	Riser Inlet	no	210	AC	50
412	GRASSED WATERWAY	Buffer Strips Adj. to WW, Cool Season mix	ac	135	AC	50
412	GRASSED WATERWAY	Mulch Netting	sq ft	0.05	AC	50
412	GRASSED WATERWAY	Erosion Control Blanket	sq ft	0.1	AC	50
412	GRASSED WATERWAY	Rock Check for Grass WW - 40 ft wide or less, no tile	no	140	AC	50
412	GRASSED WATERWAY	Rock Check for Grass WW, greater than 40 ft wide, no tile	no	155	AC	50
412	GRASSED WATERWAY	Stone Centered Outlet - 30 ft wide or less	ft	65	AC	50
412	GRASSED WATERWAY	Stone Centered Outlet - 31 ft to 40 ft wide	ft	75	AC	50
412	GRASSED WATERWAY	Stone Centered Outlet - greater than 40 ft wide	ft	80	AC	50
422	HEDGEROW PLANTING	Hedgerow Planting	ft	0.34	AC	50
468	LINED WATERWAY OR OUTLET	Rock Lined WW, Outlet	sq ft	3.5	AC	50
472	USE EXCLUSION	Exclusion	ft	0.2	AC	50
490	TREE/SHRUB SITE PREPARATION	Woodland Site Preparation	ac	120	AC	50
512	PASTURE AND HAY PLANTING	Cool Season Grasses / Legumes	ac	135	AC	50
512	PASTURE AND HAY PLANTING	WSG Mix w/o Chemical Trtmt	ac	150	AC	50
512	PASTURE AND HAY PLANTING	WSG Mix w/ Chemical Trtmt	ac	200	AC	50

516	PIPELINE	Pipeline - Boring	ft	15	AC	50
516	PIPELINE	Pipeline - Less than 2" pipeline	ft	1.75	AC	50
516	PIPELINE	Pipeline - 2" pipeline or greater	ft	2.4	AC	50
516	PIPELINE	Pipeline - Pond Intake/Siphon System to Toe	no	485	AC	50
528	PRESCRIBED GRAZING	Prescribed Grazing Management	ac	25	FR	100
528	PRESCRIBED GRAZING	Grazing Management Plan - Less than 50 AUs	no	250	FR	100
528	PRESCRIBED GRAZING	Grazing Management Plan - 50-100 AUs	no	500	FR	100
528	PRESCRIBED GRAZING	Grazing Management Plan - More than 100 AUs	no	750	FR	100
533	PUMPING PLANT	Pumping Plant - 1000 gallon or less / hr	no	1000	AC	50
533	PUMPING PLANT	Pumping Plant - >1000 gallon / hr	no	1500	AC	50
533	PUMPING PLANT	Pumping Plant - Ram Pump	no	420	AC	50
533	PUMPING PLANT	Pumping Plant - Solar Pump	no	2900	AC	50
533	PUMPING PLANT	Pumping Plant - Electric Pump	no	725	AC	50
554	DRAINAGE WATER MANAGEMENT	Operation of Structure	no	100	FR	100
558	ROOF RUNOFF STRUCTURE	Roof Runoff Mgt - Gutters and Spouting	ft	5.5	AC	50
558	ROOF RUNOFF STRUCTURE	Roof Runoff Mgt - Rock Filled Trench	ft	6	AC	50
560	ACCESS ROAD	Access Road - Culvert for Drainage (length)	ft	10	AC	50
560	ACCESS ROAD	Access Road - Surface Treatment - Gravel	sq ft	1.6	AC	50
560	ACCESS ROAD	Access Road - Livestock Stream Crossing	sq ft	3.5	AC	50
560	ACCESS ROAD	Access Road - Culvert Crossing Only (length)	ft	13.5	AC	50
561	HEAVY USE AREA PROTECTION	HUA - Surface Treatment - Concrete	sq ft	3.5	AC	50
561	HEAVY USE AREA PROTECTION	HUA - Surface Treatment - Gravel	sq ft	1.6	AC	50
574	SPRING DEVELOPMENT	Spring Development	no	2200	AC	50
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - w/ bioengineering	sq ft	3.5	AC	50
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - Riprap	sq ft	3.5	AC	50
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - Grading and Seeding	ac	600	AC	50
585	STRIPCROPPING	Stripcropping - Contour	ac	15	FR	100
585	STRIPCROPPING	Stripcropping - Field	ac	10	FR	100
587	STRUCTURE FOR WATER CONTROL	Earthmoving	cu yd	3.25	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 8" tile or less w/ storage	no	1600	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 8" tile or less w/o storage	no	1050	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 10" to 12" tile w/ storage	no	1725	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 10" to 12" tile w/o storage	no	1150	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - Greater than 12" tile w/ storage	no	1925	AC	50
587	STRUCTURE FOR WATER CONTROL	Perm Structure - Greater than 12" tile w/o storage	no	1350	AC	50

587	STRUCTURE FOR WATER CONTROL	Slide Gate Valve - Less than 15" tile	no	775	AC	50
587	STRUCTURE FOR WATER CONTROL	Slide Gate Valve - 15" tile or greater Tile	no	1200	AC	50
587	STRUCTURE FOR WATER CONTROL	Straight Pipe or Pipe Drop - Less than 10" pipe	no	1000	AC	50
587	STRUCTURE FOR WATER CONTROL	Straight Pipe or Pipe Drop - 10" pipe or greater	no	1200	AC	50
590	NUTRIENT MANAGEMENT	Nutrient Management	ac	5	FR	100
590	NUTRIENT MANAGEMENT	Nutrient Mgt w/ Precision (Grid) Farming	ac	10	FR	100
595	PEST MANAGEMENT	Pest Management	ac	12	FR	100
595	PEST MANAGEMENT	Pest Management - Slug Sampling and Pest Control	ac	20	FR	100
595	PEST MANAGEMENT	Pest Management - w/ Precision (Grid) Farming	ac	15	FR	100
606	SUBSURFACE DRAIN	Subsurface Drain - 4" Tile	ft	1.25	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 6" Tile	ft	1.75	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 8" Tile	ft	2.5	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 10" Tile	ft	4	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 12" Tile or Greater	ft	6	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 4" PVC	ft	3.6	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 6" PVC	ft	4.8	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 8" PVC	ft	9	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 10" PVC	ft	12.4	AC	50
606	SUBSURFACE DRAIN	Subsurface Drain - 12" PVC or Greater	ft	19	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish Conifer Trees	ac	500	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish Hardwood Trees	ac	650	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish Trees - (free trees)	ac	275	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish - Direct Seeding Establishment Method	ac	660	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish Trees with Weed Control - Between Row Cover	ac	20	AC	50
612	TREE/SHRUB ESTABLISHMENT	Establish Trees with Weed Control - Chemical / Mechanical Treatment	ac	700	AC	50
612	TREE/SHRUB ESTABLISHMENT	Shrub Planting Only	ft	0.3	AC	50
614	WATERING FACILITY	Watering Facility - Frost Free Hydrant	no	100	AC	50
614	WATERING FACILITY	Watering Facility - Automatic Waterer	no	600	AC	50
614	WATERING FACILITY	Watering Facility - Tank / Trough	no	800	AC	50
614	WATERING FACILITY	Watering Facility - Concrete Frost Free Tank	no	850	AC	50
614	WATERING FACILITY	Watering Facility - Portable Plastic Tank	no	225	AC	50
614	WATERING FACILITY	Watering Facility - Storage Tank	no	1600	AC	50
620	UNDERGROUND OUTLET	Underground Outlet - Less than 8" tile	ft	2	AC	50
620	UNDERGROUND OUTLET	Underground Outlet - 8" tile or greater	ft	3.75	AC	50
620	UNDERGROUND OUTLET	Underground Outlet - Blind Inlet	no	700	AC	50

620	UNDERGROUND OUTLET	Underground Outlet - Catch Basin	no	450	AC	50
620	UNDERGROUND OUTLET	Underground Outlet - Riser Inlet	no	210	AC	50
633	WASTE UTILIZATION	Waste Utilization - Less than 1.9 mile hauling	ac	5	FR	100
633	WASTE UTILIZATION	Waste Utilization - 2.0 to 4.9 mile hauling	ac	7.5	FR	100
633	WASTE UTILIZATION	Waste Utilization - 5.0 plus miles hauling	ac	10	FR	100
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB - Farmed Slopes	no	3700	AC	50
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB - Grassed Slopes	no	3100	AC	50
642	WATER WELL	Water Well - Livestock Water w/casing (includes pump and installation)	ft	26	AC	50
643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Control of Herbaceous Invasives	ac	500	FR	100
643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Control of Woody Invasives	ac	225	FR	100
643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Establish Native Plant Community	ac	1000	FR	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Forest Openings for Wildlife	ac	150	FR	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Light Disking to Renovate Habitat	ac	20	FR	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Mowing	ac	10	FR	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Prescribed Burning of Warm Season Grasses	ac	30	FR	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Spraying	ac	50	FR	100
648	WILDLIFE WATERING FACILITY	Wildlife Water Facility	no	250	FR	100
650	WINDBREAK/SHELTERBELT RENOVATION	Farmstead Windbreak Renovation	ac	44	AC	50
650	WINDBREAK/SHELTERBELT RENOVATION	Field Windbreak Renovation	ac	63	AC	50
657	WETLAND RESTORATION	Chain Link Fence along Dike for Rodent Control	sq ft	0.75	AC	50
657	WETLAND RESTORATION	Excavation	cu yd	2.75	AC	50
657	WETLAND RESTORATION	Tile Blocking	no	50	AC	50
657	WETLAND RESTORATION	Tile Search (Trenching)	ft	1	AC	50
657	WETLAND RESTORATION	Vernal Pool	no	2000	AC	50
658	WETLAND CREATION	Chain Link Fence along Dike for Rodent Control	sq ft	0.75	AC	50
658	WETLAND CREATION	Excavation	cu yd	2.75	AC	50
658	WETLAND CREATION	Tile Blocking	no	50	AC	50

658	WETLAND CREATION	Tile Search (Trenching)	ft	1	AC	50
658	WETLAND CREATION	Vernal Pool	no	2000	AC	50
659	WETLAND ENHANCEMENT	Chain Link Fence along Dike for Rodent Control	sq ft	0.75	AC	50
659	WETLAND ENHANCEMENT	Excavation	cu yd	2.75	AC	50
659	WETLAND ENHANCEMENT	Tile Blocking	no	50	AC	50
659	WETLAND ENHANCEMENT	Tile Search (Trenching)	ft	1	AC	50
659	WETLAND ENHANCEMENT	Vernal Pool	no	2000	AC	50
660	TREE/SHRUB PRUNING	Woodland Pruning	ac	110	AC	50
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Crop Tree Release	ac	90	FR	100
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Grape Vine Control	ac	70	FR	100
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Thinning	ac	140	FR	100
702	AGRICHEMICAL MIXING FACILITY	Containment - Largest Tank <7500 gal	no	6000	AC	50
702	AGRICHEMICAL MIXING FACILITY	Containment - Largest Tank 7500-14999 gal	no	9000	AC	50
702	AGRICHEMICAL MIXING FACILITY	Containment - Largest Tank >15000 gal	no	13000	AC	50
702	AGRICHEMICAL MIXING FACILITY	Roof only for Loading / Mixing Area	sq ft	6.75	AC	50
702	AGRICHEMICAL MIXING FACILITY	Concrete Pad for Loading / Mixing Area	sq ft	3.5	AC	50
910	TA PLANNING	TA Planning	no	0	AM	100
911	TA DESIGN	TA Design	no	0	AM	100
912	TA APPLICATION	TA Application	no	0	AM	100
913	TA CHECK-OUT	TA Check-out	no	0	AM	100

Appendix D

2008 Statewide Ohio EQIP Average Costs

2008 Statewide Ohio EQIP Average Costs

Practice Code	Practice Name	Component	Unit Type	Unit Cost	Share Rate
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP less than 100 AUs	no	500	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP 100-249 AUs	no	1000	100
100	COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	CNMP 250 AUs or greater	no	1500	100
313	WASTE STORAGE FACILITY	Concrete Pad for Earthen Holding Pond - Sand Laden Manure Only	sq ft	2.41	100
313	WASTE STORAGE FACILITY	Manure Storage Plank or Concrete Walls with Roof	cu ft	2.43	100
313	WASTE STORAGE FACILITY	Manure Storage Plank or Concrete Walls without Roof	cu ft	1.33	100
313	WASTE STORAGE FACILITY	Manure Storage Tank	cu ft	1.77	100
313	WASTE STORAGE FACILITY	Storage - Structural Roof only	sq ft	5.25	100
313	WASTE STORAGE FACILITY	Waste Storage Facility - Earthen Pond	cu ft	0.09	100
313	WASTE STORAGE FACILITY	Waste Storage Facility - Concrete Pad	sq ft	2.64	100
314	BRUSH MANAGEMENT	Biological, Brush Control	ac	25	100
314	BRUSH MANAGEMENT	Mowing, Brush Control	ac	13.35	100
314	BRUSH MANAGEMENT	Mowing - Spraying, Brush Control	ac	158.68	100
314	BRUSH MANAGEMENT	Clearing - Mowing - Spraying, Brush Control	ac	192.10	100
317	COMPOSTING FACILITY	Bins, Concrete or Plank Walls, Concrete Floor with Roof	cu ft	2.17	100
317	COMPOSTING FACILITY	Bins, Concrete or Plank Walls, Concrete Floor without Roof	cu ft	1.64	100
317	COMPOSTING FACILITY	No Bins, Concrete Floor with Roof	sq ft	7.25	100
317	COMPOSTING FACILITY	Gravel Pad	sq ft	1.20	100
317	COMPOSTING FACILITY	Concrete Pad	sq ft	2.64	100
327	CONSERVATION COVER	Warm Season Grass/Forb w/Herbicide	ac	125.11	100
327	CONSERVATION COVER	Warm Season Grass/Forb w/Fertilizer, No Herbicide	ac	179.45	100
327	CONSERVATION COVER	Warm Season Grass/Forb w/Fertilizer and Herbicide	ac	196.73	100
327	CONSERVATION COVER	Cool Season Grass/Legume	ac	127.99	100
328	CONSERVATION CROP ROTATION	Conservation Crop Rotation	ac	7	100
329	RESIDUE MANAGEMENT, NO-TILL/STRIP TILL	Residue Management, No-Till/Strip Till	ac	10	100
330	CONTOUR FARMING	Establish Contouring	ac	12	100
332	CONTOUR BUFFER STRIPS	Establish Contour Buffer Strips	ac	12	100
338	PRESCRIBED BURNING	Prescribed Burning of WSGs	ac	50	100
340	COVER CROP	Cover Crop - Aerial Seeded Grass	ac	23.21	100
340	COVER CROP	Cover Crop - Cool Season Grasses/Legumes	ac	28.87	100
340	COVER CROP	Cover Crop - Cool Season Grasses	ac	21.36	100
342	CRITICAL AREA PLANTING	Critical Area Seeding - w/Earthmoving	ac	672.26	100

342	CRITICAL AREA PLANTING	Critical Area Seeding - w/o Earthmoving	ac	519.52	100
344	RESIDUE MANAGEMENT, SEASONAL	Residue Management, Seasonal	ac	5	100
345	RESIDUE MANAGEMENT, MULCH TILL	Residue Management, Mulch Till	ac	8	100
346	RESIDUE MANAGEMENT, RIDGE TILL	Residue Management, Ridge Till	ac	10	100
350	SEDIMENT BASIN	Sediment Basin	no	3269.76	100
356	DIKE	Dike with Rodent Protection	cu yd	2.94	100
356	DIKE	Dike	cu yd	2.24	100
359	WASTE TREATMENT LAGOON	Waste Treatment Lagoon System	cu ft	0.07	100
362	DIVERSION	Diversion	ft	2.82	100
367	WASTE FACILITY COVER	Earthen Pond Synthetic Liner or Cover	sq ft	0.49	100
378	POND	Pond for Livestock Water	ac	22708.63	100
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak / HQ / Feedlot - Seedlings	ft	.20	100
380	WINDBREAK/SHELTERBELT ESTABLISHMENT	Field Windbreak / HQ / Feedlot - Large Stock	ft	.86	100
382	FENCE	Fence - Barbed Wire	ft	1.15	100
382	FENCE	Fence - Feedlot Fence	ft	5.92	100
382	FENCE	Fence - Electric - 4 strand or less	ft	1.11	100
382	FENCE	Fence - Electric - 5 strand or more	ft	1.42	100
382	FENCE	Fence - Electric - 6 strand High Tensile	ft	1.74	100
382	FENCE	Fence - Woven Wire	ft	2.00	100
386	FIELD BORDER	Cool Season Grasses / Legumes	ac	127.99	100
386	FIELD BORDER	WSG/Forbs w/Herbicide, No Fertilizer	ac	125.11	100
386	FIELD BORDER	WSG/Forbs w/Fertilizer, No Herbicide	ac	179.45	100
386	FIELD BORDER	WSG/Forbs w/Herbicide and Fertilizer	ac	196.73	100
391	RIPARIAN FOREST BUFFER	Establish Conifer Trees/Shrubs	ac	345.55	100
391	RIPARIAN FOREST BUFFER	Establish Hardwood Trees/Shrubs	ac	419.94	100
391	RIPARIAN FOREST BUFFER	Establish Trees - (free trees)	ac	196.76	100
391	RIPARIAN FOREST BUFFER	Establish - Direct Seeding Establishment Method	ac	182.47	100
391	RIPARIAN FOREST BUFFER	Establish Hardwood Trees/Shrubs with Weed Control	ac	454.51	100
391	RIPARIAN FOREST BUFFER	Establish Conifer Trees/Shrubs with Weed Control	ac	380.12	100
393	FILTER STRIP	Cool Season Grasses / Legumes w/Lime, Fertilizer, and Herbicide	ac	153.99	100
393	FILTER STRIP	WSG w/Herbicide, No Fertilizer	ac	170.93	100
393	FILTER STRIP	WSG w/Fertilizer, No Herbicide	ac	223.23	100
393	FILTER STRIP	WSG w/Fertilizer and Herbicide	ac	239.69	100
394	FIREBREAK	Bare Firebreak	ac	15.09	100
394	FIREBREAK	Sod Firebreak	ac	134.49	100

410	GRADE STABILIZATION STRUCTURE	Grade Stab - Straight Pipe or Pipe Drop < 18"	no	1268.2	100
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Straight Pipe or Pipe Drop 18" or greater	no	1938.9	100
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Concrete/Aluminum/Plank Drop Structure	no	3910.59	100
410	GRADE STABILIZATION STRUCTURE	Grade Stab - Riprap Chute	sq ft	2.83	100
410	GRADE STABILIZATION STRUCTURE	Stone Centered Outlet for Grassed Waterway	sq ft	2.28	100
412	GRASSED WATERWAY	Grass WW	ac	3505.79	100
412	GRASSED WATERWAY	Grass WW with Mulch Netting or Surface Inlets or Rock/Fabric Checks	ac	4062.15	100
412	GRASSED WATERWAY	Grass WW with Erosion Control Blanket	ac	5500.53	100
412	GRASSED WATERWAY	Grass WW with Surface Inlets and Mulch Netting or Rock/Fabric Checks	ac	4736.94	100
412	GRASSED WATERWAY	Grass WW with Surface Inlets and Erosion Control Blanket	ac	6174.87	100
422	HEDGEROW PLANTING	Hedgerow Planting	ft	.20	100
468	LINED WATERWAY OR OUTLET	Rock Lined WW or Outlet	sq ft	2.21	100
472	USE EXCLUSION	Exclusion	ft	.41	100
490	TREE/SHRUB SITE PREPARATION	Woodland Site Preparation	ac	120	100
512	PASTURE AND HAY PLANTING	Cool Season Grasses / Legumes	ac	127.56	100
512	PASTURE AND HAY PLANTING	WSG-Legume No Herbicide	ac	216.64	100
512	PASTURE AND HAY PLANTING	WSG-Legume with Herbicide	ac	233.93	100
516	PIPELINE	Pipeline - Boring	ft	11.56	100
516	PIPELINE	Pipeline - 1.25" pipeline or less	ft	1.44	100
516	PIPELINE	Pipeline - 1.5" pipeline or greater	ft	1.85	100
516	PIPELINE	Pipeline - Pond Intake/Siphon System to Toe	no	414.68	100
521A	POND SEALING OR LINER	Flexible Membrane Lining	sq ft	1.15	100
521D	POND SEALING OR LINER	Compacted Earth Liner	sq ft	0.25	100
528	PRESCRIBED GRAZING	Prescribed Grazing Management - Moderate (meet standard)	ac	15	100
528	PRESCRIBED GRAZING	Prescribed Grazing Management - Intensive (meet standard plus 3 days or less grazing period OR extend grazing season for 60 days or more)	ac	25	100
528	PRESCRIBED GRAZING	Grazing Management Plan - Less than 50 AUs	no	250	100
528	PRESCRIBED GRAZING	Grazing Management Plan - 50-100 AUs	no	500	100
528	PRESCRIBED GRAZING	Grazing Management Plan - More than 100 AUs	no	750	100
533	PUMPING PLANT	Pumping Plant - Drainage - 1000 gpm or less	no	4233.55	100
533	PUMPING PLANT	Pumping Plant - Drainage - >1000 gpm	no	8483.62	100
533	PUMPING PLANT	Pumping Plant - Ram Pump	no	613.23	100
533	PUMPING PLANT	Pumping Plant - Solar Pump	no	2193.77	100
533	PUMPING PLANT	Pumping Plant - Electric Pump	no	726.11	100
554	DRAINAGE WATER MANAGEMENT	Operation of Structure	no	100	100

558	ROOF RUNOFF STRUCTURE	Roof Runoff Mgt - Gutters and Spouting	ft	3.69	100
558	ROOF RUNOFF STRUCTURE	Roof Runoff Mgt - Trench Gutter	ft	7.20	100
560	ACCESS ROAD	Access Road - Gravel Surface	sq ft	1.02	100
560	ACCESS ROAD	Access Road - Gravel with Culvert for Drainage	sq ft	1.07	100
560	ACCESS ROAD	Access Road - Gravel with Large Culvert Crossing	sq ft	1.12	100
561	HEAVY USE AREA PROTECTION	HUA - Surface Treatment - Concrete	sq ft	2.29	100
561	HEAVY USE AREA PROTECTION	HUA - Surface Treatment - Gravel	sq ft	1.05	100
574	SPRING DEVELOPMENT	Spring Development	no	1740.47	100
578	STREAM CROSSING	Stream Crossing - Livestock Stream Crossing	sq ft	2.45	100
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - w/ bioengineering	sq ft	2.26	100
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - Riprap	sq ft	2.29	100
580	STREAMBANK AND SHORELINE PROTECTION	Streambank Stabilization - Grading and Seeding	ac	8215.48	100
585	STRIPCROPPING	Stripcropping - Contour	ac	15	100
585	STRIPCROPPING	Stripcropping - Field	ac	10	100
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 8" tile or less w/ storage	no	1192.5	100
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 8" tile or less w/o storage	no	766.91	100
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 10" tile or greater w/ storage	no	1385.47	100
587	STRUCTURE FOR WATER CONTROL	Perm Structure - 10" tile or greater w/o storage	no	985.34	100
587	STRUCTURE FOR WATER CONTROL	Slide Gate Valve w/ storage - All sizes	no	964.05	100
587	STRUCTURE FOR WATER CONTROL	Slide Gate Valve w/o storage - All sizes	no	582.78	100
587	STRUCTURE FOR WATER CONTROL	Straight Pipe or Pipe Drop	no	477.62	100
590	NUTRIENT MANAGEMENT	Nutrient Management	ac	5	100
590	NUTRIENT MANAGEMENT	Nutrient Mgt w/ Precision (Grid) Farming	ac	10	100
595	PEST MANAGEMENT	Pest Management - Medium Mgt.	ac	12	100
595	PEST MANAGEMENT	Pest Management - High Mgt.	ac	15	100
595	PEST MANAGEMENT	Pest Management - Slug Control	ac	20	100
595	PEST MANAGEMENT	Control of Herbaceous Invasives	ac	73.88	100
595	PEST MANAGEMENT	Control of Woody Invasives	ac	192.10	100
606	SUBSURFACE DRAIN	Subsurface Drain - 4" Tile	ft	.83	100
606	SUBSURFACE DRAIN	Subsurface Drain - 6" Tile	ft	1.15	100
606	SUBSURFACE DRAIN	Subsurface Drain - 8" or 10" Tile	ft	1.72	100
606	SUBSURFACE DRAIN	Subsurface Drain - 12" Tile or Greater	ft	3.92	100
606	SUBSURFACE DRAIN	Subsurface Drain - 4" or 6" PVC	ft	3.06	100
606	SUBSURFACE DRAIN	Subsurface Drain - 8" PVC or Greater	ft	7.12	100
612	TREE/SHRUB ESTABLISHMENT	Establish Conifer Trees/Shrubs	ac	345.55	100

612	TREE/SHRUB ESTABLISHMENT	Establish Hardwood Trees/Shrubs	ac	419.94	100
612	TREE/SHRUB ESTABLISHMENT	Establish Trees - (free trees)	ac	196.76	100
612	TREE/SHRUB ESTABLISHMENT	Establish - Direct Seeding Establishment Method	ac	182.47	100
612	TREE/SHRUB ESTABLISHMENT	Establish Hardwood Trees/Shrubs with Weed Control	ac	454.51	100
612	TREE/SHRUB ESTABLISHMENT	Establish Conifer Trees/Shrubs with Weed Control	ac	380.12	100
614	WATERING FACILITY	Watering Facility - Frost Free Hydrant	no	76.53	100
614	WATERING FACILITY	Watering Facility - Automatic Waterer	no	936.60	100
614	WATERING FACILITY	Watering Facility - Tank / Trough	no	865.60	100
614	WATERING FACILITY	Watering Facility - Concrete Frost Free Tank	no	1203.02	100
614	WATERING FACILITY	Watering Facility - Portable Plastic Tank	no	185.51	100
614	WATERING FACILITY	Watering Facility - Storage Tank	no	2209.80	100
620	UNDERGROUND OUTLET	Underground Outlet - Less than 8" tile	ft	1.31	100
620	UNDERGROUND OUTLET	Underground Outlet - 8" tile or greater	ft	2.28	100
620	UNDERGROUND OUTLET	Underground Outlet - Blind Inlet	no	546.51	100
620	UNDERGROUND OUTLET	Underground Outlet - Catch Basin	no	308.71	100
620	UNDERGROUND OUTLET	Underground Outlet - Riser Inlet	no	208.11	100
632	SOLID/LIQUID WASTE SEPARATION FACILITY	Treatment - Manure/Runoff Concrete Settling Basin	sq ft	7.69	100
633	WASTE UTILIZATION	Waste Utilization - Less than 1.9 mile hauling	ac	7.50	100
633	WASTE UTILIZATION	Waste Utilization - 2.0 to 4.9 mile hauling	ac	10.00	100
633	WASTE UTILIZATION	Waste Utilization - 5.0 plus miles hauling	ac	15.00	100
634	MANURE TRANSFER	Transfer - Scrape Alley - Concrete Wall/Curb 2' or less with alley	sq ft	3.53	100
634	MANURE TRANSFER	Reception Pit - Concrete Tank - Less than 10,000 gallons	cu ft	4.89	100
634	MANURE TRANSFER	Transfer - Underground Pipe - 12" or greater	ft	15.66	100
634	MANURE TRANSFER	Transfer - Underground Pipe - Less than 12"	ft	5.98	100
634	MANURE TRANSFER	Transfer - Pump - Large (Manure Pump)	no	3189.54	100
634	MANURE TRANSFER	Transfer - Pump - Small (Milkhouse / Runoff Water)	no	480.88	100
635	WASTEWATER TREATMENT STRIP	Treatment - Manure/Runoff Filter Strip / Infiltration Area	sq ft	.23	100
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB - Farmed Slopes	no	2347.15	100
638	WATER AND SEDIMENT CONTROL BASIN	WASCOB - Grassed Slopes	no	2038.21	100
642	WATER WELL	Water Well - Livestock Water w/casing (includes pump and installation)	no	2868.75	100
643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Tall Grass Prairie	ac	199.98	100
643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Oak Savanna	ac	739.98	100

643	RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS	Establish Rare Plant Community	ac	500.00	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Forest Openings with Edge Feathering for Wildlife	ac	150.00	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Forest Openings with Edge Feathering and Additional Control for Wildlife	ac	180.65	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Light Disking to Renovate Habitat	ac	16.95	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Mowing	ac	13.35	100
647	EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT	Spraying	ac	25.33	100
648	WILDLIFE WATERING FACILITY	Wildlife Water Facility	cu yd	2.16	100
650	WINDBREAK/SHELTERBELT RENOVATION	Field Windbreak Renovation	ac	40.63	100
656	CONSTRUCTED WETLAND	Constructed Wetland - Treatment Animal Waste	sq ft	.46	100
657	WETLAND RESTORATION	Vernal Pool Restoration	no	1300	100
657	WETLAND RESTORATION	Macrotopography Restoration	cu ft	1.88	100
657	WETLAND RESTORATION	Tiled Cropland Restoration	ac	92	100
657	WETLAND RESTORATION	Depressional Wetland Restoration	ac	168.22	100
658	WETLAND CREATION	Vernal Pool Creation	no	1300	100
658	WETLAND CREATION	Macrotopography Creation	cu ft	1.88	100
658	WETLAND CREATION	Tiled Cropland Wetland Creation	ac	92	100
658	WETLAND CREATION	Depressional Wetland Creation	ac	168.22	100
659	WETLAND ENHANCEMENT	Vernal Pool Enhancement	no	1300	100
659	WETLAND ENHANCEMENT	Macrotopography Enhancement	cu ft	1.88	100
659	WETLAND ENHANCEMENT	Tiled Cropland Wetland Enhancement	ac	92	100
659	WETLAND ENHANCEMENT	Depressional Wetland Enhancement	ac	168.22	100
660	TREE/SHRUB PRUNING	Woodland Pruning	ac	110	100
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Crop Tree Release	ac	90	100
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Grape Vine Control	ac	70	100
666	FOREST STAND IMPROVEMENT	Woodland Improvement TSI - Thinning	ac	140	100
702	AGRICHEMICAL HANDLING FACILITY	Containment - Largest Tank <7500 gal	no	3883.51	100
702	AGRICHEMICAL HANDLING FACILITY	Containment - Largest Tank 7500-14999 gal	no	5828.82	100
702	AGRICHEMICAL HANDLING FACILITY	Containment - Largest Tank >15000 gal	no	8285.24	100

702	AGRICHEMICAL HANDLING FACILITY	Roof only for Loading / Mixing Area	sq ft	4.23	100
702	AGRICHEMICAL HANDLING FACILITY	Concrete Pad for Loading / Mixing Area	sq ft	2.89	100
910	TA PLANNING	TA Planning	no	0	100
911	TA DESIGN	TA Design	no	0	100
912	TA APPLICATION	TA Application	no	0	100
913	TA CHECK-OUT	TA Check-out	no	0	100

Appendix E

Cost Computations for GMR WQCT Proposals

Cost Computations for GMR WQCT Proposals

In order to protect the privacy of the participants in the GMR WQCT program the costs are summarized in the tables below by providing the BMP category, participating acres, an average of the contract length, total payments made in the category and the annual payments per acre. The annual payments given are an average of the average payments made to the producers on a per acre basis and do not equal the total payment divided by the total acres which in general is less than the average of the averages. The difference occurs due to varying costs, acreages enrolled and contract lengths.

High Residue Management

BMP	Acres	Contract Length	Total Payment	Annual Payments Per Acre
Conservation tillage	818.5	5	$23,335.00	$5.70
No-Till	1435.7	5	$25,928.03	$3.61
Residue management, no-till corn after soybeans	402.3	5	$17,195.00	$8.55
			Average	$6.66

Pasture Seeding and Prescribed Grazing

BMP	Acres Established	Average Length of practice per Acre (Years under Contract)	Payment to Producer	Grazing Management ($15 per year)	Pasture Establishment
Pasture seeding and prescribed grazing	22	11.63636364	$4,803.70	$ 8.18	$92.10

BMP	Acres Established	Average Length of practice per Acre (Years under Contract)	Payment to Producer	Annual Payments Per Acre
Sod establishment	85	10	$14,325.00	$160.39

BMP	Acres Established	Average Length of practice per Acre (Years under Contract)	Payment to Producer	Annual Payments Per Acre
Conversion of row crops to alfalfa, grass seeding	93	5	$3,440.00	$31.85

BMP	Acres Established	Average Length of practice per Acre (Years under Contract)	Payment to Producer	Annual Payments Per Acre
Hayland/Hayfield Establishment	76.05	7.912557528	$15,186.77	$210.27

BMP	Acres Established	Average Length of practice per Acre (Years under Contract)	Payment to Producer	Per Acre
Grassed waterway, 60 feet wide	3.48	8.017241379	$ 11,899.06	$ 3,671.62

One acre of a sixty foot wide grassed waterway is 726 feet.