

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Access Control, management of access	Access Control	472	1 1/4 hr time per 10 acres to monitor and manage access control devices (see fence for fence costs)	Ac.	\$ 2.00	10	\$0.06	\$0.29
Access Road, 14ft gravel with geotextile	Access Road	560	14 ft wide including shoulders. 22A gravel 6" deep. Geotextile. includes on 15 inch diameter culvert in the 500 ft of lane.	Ft.	\$ 16.00	10	\$0.48	\$2.34
Agrichemical Handling Facility, chemical building with pad	Agrichemical Handling Facility	309	Agrichemical handling facility for storage, mixing, and loading, by sq. ft. building footprint	Sq. Ft.	\$ 30.00	15	\$0.90	\$3.38
Agrichemical Handling Facility, liquid or dry fertilizer storage and pad	Agrichemical Handling Facility	309	Liquid or Dry fertilizer facility with timber frame metal roof, including operational pad	No.	\$ 24,500.00	15	\$735.00	\$2,757.71
Agrichemical Handling Facility, pad only	Agrichemical Handling Facility	309	Mix load pad or Operational pad only, concrete	Sq Ft.	\$ 9.25	15	\$0.28	\$1.04
Alley Cropping, hardwoods without protection shelters	Alley Cropping	311	10 acre (660'x660') site. 26 rows of red oak trees with 25' spacing between rows, and 10' spacing within rows.	Ac.	\$ 215.00	15	\$6.45	\$24.20
Alley Cropping, hardwoods protection shelters	Alley Cropping	311	Adding tree protectors for pest control on hardwoods, protector tube, stake, ties, and labor to install	each	\$ 4.75	15	\$0.14	\$0.53
Anaerobic Digester - Controlled Temperature	Anaerobic Digester - Controlled Temperature	366	Anaerobic Digester, small digester only. Get an Engineer's design cost estimate.	No.	\$ 285,000.00	25	\$8,550.00	\$24,554.36
Animal Mortality Facility	Animal Mortality Facility	316	Composter, Refrigeration, Incinerator/Gasifier, Burial Pit as per practice standard. See engineer for specific cost estimate based on type of facility. Basic composting facility cost.	No.	\$ 34,000.00	15	\$1,020.00	\$3,827.02
Animal Trails and Walkways, gravel surface with geotextile	Animal Trails and Walkways	575	Aggregate surface (MDOT 22A gravel) surface 6" thick, 16 feet wide, includes grading and shaping, geotextile, seeding and mulching. Fence not included.	Ft.	\$ 19.00	10	\$0.57	\$2.77

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Aquaculture Pond	Aquaculture Ponds	397	Embankment in or off channel (above ground embankments cost more depending on design and fill materials) or Excavated. Range of \$115,100 to \$185,900 for 3-5 acre ponds. May also require a liner. Use Pond Sealing or Lining - Flexible Membrane (521A). Get an Engineer's design cost estimate.	Ac.	\$ 24,000.00	10	\$720.00	\$3,504.89
Aquatic Organism Passage, box or arch culvert	Aquatic Organism Passage	396	box culvert or arch culvert with fish friendly bottom, does not include road surface.	No.	\$ 50,000.00	5	\$1,500.00	\$12,355.46
Aquatic Organism Passage, replace culvert	Aquatic Organism Passage	396	Replace culvert with passable culvert - 54" diameter. Includes excavation, backfill and outlet protection, not road surface. By Mile of passage installed.	No.	\$ 26,000.00	5	\$780.00	\$6,424.84
Aquatic Organism Passage, rock scour hole protection	Aquatic Organism Passage	396	Rock scour hole protection - 16 tons riprap plus geotextile, shaping	No.	\$ 2,700.00	5	\$81.00	\$667.19
Aquatic Organism Passage, single lane timber bridge	Aquatic Organism Passage	396	Timber Bridge, single lane, add \$2000 for two lane	No.	\$ 4,500.00	5	\$135.00	\$1,111.99
Brush Management, mow/brush hog	Brush Management	314	Flail type mower or bush-hog with tractor, some handwork for removal of undesirable species scattered throughout pasture acres. Typical pasture treatment on 20 acres with < 20% shrubs >2 inches.	Ac.	\$ 55.00	10	\$1.65	\$8.03
Brush Management, cut and treat	Brush Management	314	Typical forestland or wildlife habitat treatment. Mechanical and/or chemical treatment of brush foliage, stem, bark as spot spraying handwork; injection with or without cutting; stump treatment immediate after cutting.	Ac.	\$ 56.00	10	\$1.68	\$8.18
Brush Management, dense invasive species, hand cut and treat stems	Brush Management	314	Forest/Wildlife Site, clean invasive woody species, cut and treat stems (\$400-750 per acre depending on density of material)	Ac.	\$ 475.00	10	\$14.25	\$69.37

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Channel Bed Stabilization, channel bottom armoring or grade control structure in channel bottom	Channel Bed Stabilization	584	Installation of channel bottom armoring (lining). Riprap D50 = 6-inch angular rock for armoring. Minor clearing of channel to remove deadfall, stumps, trees, and debris. On site disposal of materials. 12 foot wide channel. 200 lin. feet. Does not include cost of DEQ Hydraulic review.	Ft.	\$ 55.00	10	\$1.65	\$8.03
Combustion System Improvement, add variable frequency drive to 100 HP electric motor.	Combustion System Improvement	372	Addition of a variable frequency drive to a 100 HP electric motor that is replacing an older diesel pump motor with fuel tank and lines used for an irrigation pump.	Ea.	\$ 19,700.00	10	\$591.00	\$2,876.93
Composting Facility, gravel surface	Composting Facility	317	For composting manure, vegetable or other crop materials ONLY. Gravel (5") surface over compacted sand (4"). Typical is 8,000sq.ft	Sq Ft.	\$ 1.45	15	\$0.04	\$0.16
Composting Facility, concrete pad	Composting Facility	317	Concrete pad for composting manure, vegetable or other crop material ONLY. Typical cost is concrete (5") over 4" compacted sand. Typical is 8,000sq.ft.	Sq. Ft.	\$ 3.70	15	\$0.11	\$0.42
Conservation Cover, introduced, cool season	Conservation Cover	327	Cool season grass and legume mix 3 from practice standard 5 lbs per ac red clover and 8 lb per acre smooth brome grass.	Ac.	\$ 155.00	5	\$4.65	\$38.30
Conservation Cover, organic, introduced, cool season	Conservation Cover	327	Cool season grass and legume mix 3 from practice standard 5 lbs per ac red clover and 8 lb per acre smooth brome grass.	Ac.	\$ 285.00	5	\$8.55	\$70.43
Conservation Cover, orchard vineyard alleys, cool season mix, by acre of site	Conservation Cover	327	Cool season grass and legume mix suitable for orchard, vineyard alleys. Assumes 60% of total orchard/vineyard site is planted to conservation cover	Ac.	\$ 115.00	5	\$3.45	\$28.42
Conservation Cover, Michigan Pollinator Planting	Conservation Cover	327	Warm season grass and Michigan pollinator wildflower mix	Ac.	\$ 575.00	5	\$17.25	\$142.09
Conservation Cover, warm season grasses	Conservation Cover	327	Warm season grass mix	Ac.	\$ 65.00	5	\$1.95	\$16.06
Conservation Cover, warm season grass and forb mix	Conservation Cover	327	Warm season grass and wildflower mix	Ac.	\$ 213.00	5	\$6.39	\$52.63

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Conservation Crop Rotation	Conservation Crop Rotation	328	analysis of crops, and acreages to determine rotation. Includes analysis of the recordkeeping of fields and crops to create crop rotations.	Ac.	\$ 5.00	1	\$0.00	\$5.00
Contour Buffer Strips, warm season	Contour Buffer Strips	332	Warm season buffer strip	Ac.	\$ 250.00	5	\$7.50	\$61.78
Contour Buffer Strips, cool season	Contour Buffer Strips	332	cool season buffer strip	Ac.	\$ 120.00	5	\$3.60	\$29.65
Contour Buffer Strips, organic	Contour Buffer Strips	332	Organic buffer strip	Ac.	\$ 145.00	5	\$4.35	\$35.83
Contour Farming	Contour Farming	330	typical 20 ac crop field. Measure out and mark contours for farming operations. Document contours.	Ac.	\$ 6.00	5	\$0.18	\$1.48
Contour Orchard or Other Fruit Area	Contour Orchard or Other Fruit Area	331	typical 10 acre orchard. Measure out and mark contours before planting new orchard. Document actions	Ac.	\$ 12.00	10	\$0.36	\$1.75
Cover Crop, non-legume (cereal grain)	Cover Crop	340	Non-Legume Cover Crop (cereal grain)	Ac.	\$ 67.70	1	\$0.00	\$67.70
Cover Crop, organic non-legume (cereal grain)	Cover Crop	340	Organic Non-Legume Cover Crop (cereal grain)	Ac.	\$ 100.00	1	\$0.00	\$100.00
Cover Crop, legume (drill or slurry seeding)	Cover Crop	340	legume cover crop for crop and/or vegetable crop fields. Regular, aerial, or manure slurry seeding.	Ac.	\$ 75.00	1	\$0.00	\$75.00
Cover Crop, organic legume (drill or slurry seeding)	Cover Crop	340	organic legume cover crop for crop and/or vegetable crop fields. Regular, aerial, or manure slurry seeding.	Ac.	\$ 112.00	1	\$0.00	\$112.00
Cover Crop, Virginia Wild Rye for Tree Shrub Establishment	Cover Crop	340	per acre cost for typical virginia wild rye for weed supression cover crop for tree shrub establishment	Ac.	\$ 74.00	1	\$0.00	\$74.00
Cover Crop, Oil Seed Radish (compaction)	Cover Crop	340	oil seed radish for deep roots compaction breakup with mechanical removal roller crimper or disk	Ac.	\$ 123.00	1	\$0.00	\$123.00
Cross Wind Trap Strip, Filter or Field	Cross Wind Trap Strip - Filter or Field	342	one or more strips across prevailing wind direction, typical 25 ft wide less than 1 ft tall. 1742 ft per acre.	Ac.	\$ 125.00	10	\$3.75	\$18.25
Cross Wind Trap Strip, Filter or Field, Organic	Cross Wind Trap Strip - Filter or Field	342	Organic, one or more strips across prevailing wind direction, typical 25 ft wide less than 1 ft tall. 1742 ft per acre.	Ac.	\$ 220.00	10	\$6.60	\$32.13

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Deep Tillage. Subsoil or V-rip	Deep Tillage	324	Subsoiling and/or V-ripping used to relieve compaction.	Ac.	\$ 18.00	1	\$0.00	\$18.00
Dike	Dike	356	Excavation and compaction of earthfill. Get an Engineer's design cost estimate.	Cu. Yd.	\$ 4.50	20	\$0.14	\$0.43
Diversion, Earthen	Diversion	362	Combination earth dike 1 foot high and channel cut 1 foot deep, 8 foot bottom width with 4:1 uphill slope, 8 foot top width on fill, topsoil stripping under fill, seeded and mulched	Ft.	\$ 4.50	10	\$0.14	\$0.66
Diversion, Concrete	Diversion	362	Concrete Curb and channel for diverting water from animal operations 1 foot high with graded channel	Ft.	\$ 26.00	10	\$0.78	\$3.80
Drainage Water Management, 6 adjustments per year on 1 structure	Drainage Water Management (Ac.)	554	6 adjustments per year with 1 water control structure in a nearly flat tile drained crop field from November 1 through March 15. Control and management of water surface elevation, including adjustment of water control device according to Drainage Water Management plan. Installation of any structural measures identified in the plan will be done using 587 - Structure for Water Control.	Ac.	\$ 8.85	1	\$0.00	\$8.85
Dry Hydrant	Dry Hydrant (No.)	432	Get an Engineer's design cost estimate.	No.	\$ 35,000.00	15	\$1,050.00	\$3,939.58
Early Successional Habitat Development/Management, Mow Strips	Early Successional Habitat Development/Management	647	Mow strips 50-100 feet wide with bobcat fitted fecon head (or similar equipment) approximately 1-5 acres in size with five strips.	Ac.	\$ 400.00	1	\$0.00	\$400.00
Early Successional Habitat Development/Management, clear cut aspen/alder	Early Successional Habitat Development/Management	647	clear cut aspen areas - regeneration. labor and equipment for clear cut.	Ac.	\$ 500.00	1	\$0.00	\$500.00

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Early Successional Habitat Development/Management, Mow, Rake, Removal from Grasslands	Early Successional Habitat Development/Management	647	Mowing, raking, and removal of material from grassland area.	Ac.	\$ 106.00	1	\$0.00	\$106.00
Early Successional Habitat Development/Management, Spot Spray	Early Successional Habitat Development/Management	647	Spot spraying of 6 acres per 25 acres of grassland area (approx. 25%).	Ac.	\$ 5.41	1	\$0.00	\$5.41
Farmstead Energy Improvement, Lighting Fixtures	Farmstead Energy Improvement	374	Removal of 400W Mercury Vapor (455W total input watt) fixtures and replace with high-efficiency PSMH lighting system includes materials and installation.	No.	\$ 175.00	10	\$5.25	\$25.56
Farmstead Energy Improvement, Variable Frequency Drive, Electric Motor	Farmstead Energy Improvement	374	variable frequency drive and appurtances attached to a electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment with 5 to 30 HP motors involved with agricultural production.	HP	\$ 215.00	10	\$6.45	\$31.40
Farmstead Energy Improvement, Screens, Energy Curtains, Greenhouse	Farmstead Energy Improvement	374	Install screens / energy curtains in a greenhouse. The mechanical energy screen system consists of a drive motor, support cables, controls, and shade material, which may be woven, knitted, or non-woven strips of aluminum fiber, polyethylene, nylon or other synthetic material.	Sq Ft.	\$ 1.66	10	\$0.05	\$0.24
Farmstead Energy Improvement, Circulation Fan	Farmstead Energy Improvement	374	Replacement of conventional 48" circulation fan with 48" panel circulation fan with a thrust of 30.62 (lbf) and a thrust efficiency of 25.6 (lbf/kW) .	No.	\$ 450.00	10	\$13.50	\$65.72
Farmstead Energy Improvement, Heating System	Farmstead Energy Improvement	374	High-efficiency heating systems include any heating unit with efficiency rating of 80%+ for fuel oil and 90%+ for natural gas and propane.	BTU output	\$ 0.02	10	\$0.00	\$0.00
Farmstead Energy Improvement, Vacuum Pump	Farmstead Energy Improvement	374	a 10 HP vacuum pump used for milking facility that is replaced with a new NEMA premium pump motor	No.	\$ 673.00	10	\$20.19	\$98.28

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Farmstead Energy Improvement, Plate Cooler and Water Storage Tank, Milking Facility	Farmstead Energy Improvement	374	Install plate cooler ahead of the milk storage tank to reduce milk temperatures 55°F to 70°F before it enters the refrigerated storage tank.	No.	\$ 4,155.00	10	\$124.65	\$606.78
Fence, High Tensile Electric	Fence	382	Interior high tensile electric, 2 strand, metal T posts, wood post corners and braces, 3/4 to 1 mile per grazing system, wire gates. Light site prep with <30% on installation area needing hand removal of shrubs.	Ft.	\$ 1.40	20	\$0.04	\$0.13
Fence, TB exclusion	Fence	382	10' Woven wire for exclusion of deer, etc from feed storage. TB concern. 66'x660', 1452 lin ft with 1 gate. 20 ft post spacing.	Ft.	\$ 4.00	20	\$0.12	\$0.38
Fence, Safety Waste Storage Facility	Fence	382	Permanent Safety fence around waste storage as required per standard 313; 600 feet of 4 strand HT smooth, polycoated, barbed or regular barbed wire for livestock safety; gates every 150 ft for access and agitation.	Ft.	\$ 3.10	20	\$0.09	\$0.30
Field Border, plant and establish mowing	Field Border	386	cool season, on farm equipment, seed, fertilizer, herbicide, drill, 2 mowing to establish.	Ac.	\$ 130.00	10	\$3.90	\$18.98
Field Border, Pollinator, plant and establish mowing	Field Border	386	MI pollinator mix added to planting, 2 mowing to establish	Ac.	\$ 554.00	10	\$16.62	\$80.90
Field Border, Prairie Planting and establish mowing	Field Border	386	MI prairie restoration mesic mix	Ac.	\$ 1,082.00	10	\$32.46	\$158.01
Filter Strip, cool season	Filter Strip	393	cool season grass, lime, fertilizer and installed	Ac.	\$ 130.00	10	\$3.90	\$18.98
Filter Strip, Organic cool season	Filter Strip	393	Organic cool season grass, lime, fertilizer and installed	Ac.	\$ 243.00	10	\$7.29	\$35.49
Firebreak, Vegetation	Firebreak	394	30' wide permanent cool season grass firebreak.	Ft.	\$ 0.08	5	\$0.00	\$0.02
Firebreak, Disking	Firebreak	394	Disking to create firebreak for Prescribed burning of a grassland site. 15ft wide (disking)	Ft.	\$ 0.02	5	\$0.00	\$0.00
Fish Raceway or Tank, Tank	Fish Raceway or Tank	398	Fiberglass or other material tank with fittings.	Ea.	\$ 3,000.00	10	\$90.00	\$438.11
Fish Raceway or Tank, Raceway	Fish Raceway or Tank	398	Concrete raceway by linear ft of raceway based on typical 4' wide and 4' deep concrete lined.	Ft.	\$ 120.00	10	\$3.60	\$17.52

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Fishpond Management, per pond	Fishpond Management	399	management of 1/2 acre pond for production of fish, 20 hr per yr @ \$28 to carry out practice standard. Does not include operation/production and maintenance time.	No.	\$ 560.00	1	\$0.00	\$560.00
Forage and Biomass Planting, Pasture Planting	Forage and Biomass Planting	512	forages for pasture.	Ac.	\$ 240.00	5	\$7.20	\$59.31
Forage and Biomass Planting, inter or overseeding pasture	Forage and Biomass Planting	512	Interseeding or overseeding of cool season grasses and/or legumes into existing pasture	Ac.	\$ 100.00	5	\$3.00	\$24.71
Forage and Biomass Planting, Warm Season Grass Pasture	Forage and Biomass Planting	512	warm season grass or grass mixes for pasture	Ac.	\$ 200.00	5	\$6.00	\$49.42
Forage Harvest Management	Forage Harvest Management	511	Timely cutting, harvest and removal of forage from field as hay, green-chop or ensilage. management of forage dry down for hay.	Ac.	\$ 12.00	1	\$0.00	\$12.00
Forest Stand Improvement, Marking	Forest Stand Improvement	666	analysis (inventory), marking, and removal of undesirable trees in a high density, uneven-aged hardwood stand to increase productivity, health, and vigor. Basal area is reduced from 100 to 75 sq. ft./acre. Timber revenue covers cost of removal.	Ac.	\$ 40.00	10	\$1.20	\$5.84
Forest Stand Improvement, Marking & Cut	Forest Stand Improvement	666	Analysis (inventory), marking, and removal of undesirable trees in a high density, uneven-aged hardwood stand, to increase stand productivity, healthy, and vigor. Basal area is reduced from 100 to 75 sq. ft./acre. Cut trees are disposed of locally (e.g. firewood) and not sold commercially.	Ac.	\$ 280.00	10	\$8.40	\$40.89
Forest Stand Improvement, Plantation, Mark Rows	Forest Stand Improvement	666	Analysis (inventory), marking, and removal of every third row in a 20 year old red pine plantation to increase productivity, health, and vigor. Removed trees are sold commercially. Timber revenue covers cost of removal.	Ac.	\$ 20.00	10	\$0.60	\$2.92
Forest Stand Improvement, Plantation, Mark and Cut Rows	Forest Stand Improvement	666	Analysis (inventory), marking, and removal of every third row in a 20 year old red pine plantation to increase productivity, health, and vigor. Cut trees are disposed of locally (e.g. firewood) and not sold commercially.	Ac.	\$ 100.00	10	\$3.00	\$14.60

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Forest Trails and Landings, New Trail	Forest Trails and Landings	655	New trail to access forest for installation of other forestry practices, and to address soil erosion, water quality, compaction, and plant health through proper layout of trail and installation of waterbars and/or broadbased dips. Trail is 16 ft wide 1500 ft long.	Ac.	\$ 3,493.00	5	\$104.79	\$863.15
Fueling Facility, without Tanks	Fueling Facility Above-Ground Storage	713	Tanks and fueling area are placed on a reinforced concrete pad to collect any spills and drips. Tanks protected by guard posts. Surface and ground water protected. 600 sq ft	No.	\$ 3,900.00	0	\$0.00	\$3,900.00
Fueling Facility, with Tanks	Fueling Facility Above-Ground Storage	713	New dual wall tanks and fueling area are placed on a reinforced concrete pad to collect any spills and drips. Tanks protected by guard posts.	No.	\$ 7,022.00	0	\$0.00	\$7,022.00
Grade Stabilization Structure, geotextile vegetated chute	Grade Stabilization Structure	410	Geotextile vegetated chute	No.	\$ 974.00	15	\$29.22	\$109.63
Grade Stabilization Structure, rock/block chute	Grade Stabilization Structure	410	Rock/Block Chute	No.	\$ 4,655.00	15	\$139.65	\$523.96
Grade Stabilization Structure, pipe drop	Grade Stabilization Structure	410	Pipe drop structure with 40 feet of 30 inch dia. Corr. Plastic pipe with 42 inch diam. Drop inlet 8 feet tall, anti swirl baffle, grading and filling, seeding and mulching	No.	\$ 4,193.00	15	\$125.79	\$471.96
Grade Stabilization Structure, weir	Grade Stabilization Structure	410	Structure with 10 foot weir, 4 foot drop, riprap outlet, made of 2X2X6 concrete blocks, 2:1 DS slopes, geotextile and sand or gravel backfill, grading and filling, riprap basin, seeding and mulching	No.	\$ 6,353.00	15	\$190.59	\$715.09
Grassed Waterway, Vegetated, grade, shape, seeding, & mulch	Grassed Waterway	412	New grassed waterway without drainage tubing. Grading , shaping, seeding and mulching. Mulch netting in center 1/3 of waterway.	Ac.	\$ 3,600.00	10	\$108.00	\$525.73
Grassed Waterway, Rock Center, grade, shape, rock, seeding, and mulch	Grassed Waterway	412	Grassed waterway with rock center. 40 foot width, rock 6" d50, 6 feet wide and 1 foot deep Grading , shaping, seeding and mulching.	Ac.	\$ 27,549.00	10	\$826.47	\$4,023.18

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Heavy Use Area Protection, Gravel	Heavy Use Area Protection	561	Gravel surface with geotextile base. 1,600 square feet, 9" thick, compacted in place.	Sq. Ft.	\$ 1.76	10	\$0.05	\$0.26
Heavy Use Area Protection, Concrete	Heavy Use Area Protection	561	2000 sq ft (40 ft. x 50 ft.) with 5" concrete over 4" compacted sand.	Sq. Ft.	\$ 3.70	10	\$0.11	\$0.54
Heavy Use Area Protection, Concrete with 1 ft wall	Heavy Use Area Protection	561	2000 sq ft (40 ft. x 50 ft.) with 5" concrete over 4" compacted sand. 1 ft reinforced concrete wall.	Sq. Ft.	\$ 4.42	10	\$0.13	\$0.65
Heavy Use Area Protection, Concrete with 2 ft wall	Heavy Use Area Protection	561	2000 sq ft (40 ft. x 50 ft.) with 5" concrete over 4" compacted sand. 2ft reinforced concrete wall.	Sq. Ft.	\$ 6.70	10	\$0.20	\$0.98
Hedgerow Planting, two row, trees and shrubs	Hedgerow Planting	422	One row of trees (10' spacing within row) and one row of shrubs (6' spacing within row) with 12' spacing between rows or mixed trees/shrubs within each row. Includes initial herbicide treatment plus second and third year herbicide treatments. 612' x 24' wide.	Ft.	\$ 0.80	15	\$0.02	\$0.09
Hedgerow Planting, wildlife corridor	Hedgerow Planting	422	Wildlife corridor, minimum 66 ft wide. One row of trees (10' spacing within row), two rows of small trees (8' spacing within row) and three rows of shrubs (6' spacing within row) with 16' spacing between tree and small tree rows and 12' spacing between small tree and two shrub rows or mixed trees/shrubs within each row. Includes initial herbicide treatment plus second and third year herbicide treatments.	Ft.	\$ 1.83	15	\$0.05	\$0.21
Herbaceous Weed Control, Spot Spray around new tree/shrub planting	Herbaceous Weed Control	315	chemical treatment using spot spraying in 36" diameter spots around individual trees, to reduce weed competition in sites where desirable trees and/or shrubs have been planted to establish natural habitat site.	Ac.	\$ 33.00	5	\$0.99	\$8.15
Herbaceous Weed Control, Mechanical and/or Chemical Treatment	Herbaceous Weed Control	315	chemical spray time after mechanical treatment, tractor with brush hog and hand tools on quad runner.	Ac.	\$ 55.00	5	\$1.65	\$13.59
Herbaceous Wind Barriers	Herbaceous Wind Barriers	603	Typical 1/2 mile strips or rows. 2 rows spaced 3 ft apart, vegetation >0.5 ft tall.	Ft.	\$ 0.24	5	\$0.01	\$0.06

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Integrated Pest Management, Forage and Field Crops	Integrated Pest Management	595	Forage and Field Crops, Basic	Ac.	\$ 23.00	1	\$0.00	\$23.00
Integrated Pest Management, Orchards	Integrated Pest Management	595	Orchards, Basic	Ac.	\$ 173.00	1	\$0.00	\$173.00
Integrated Pest Management, Small Fruit, Vegetable, and Speciality Crops	Integrated Pest Management	595	Small Fruit, Vegetable, and Specialty Crops, Basic	Ac.	\$ 114.00	1	\$0.00	\$114.00
Irrigation Pipeline	Irrigation Pipeline	430	Plastic pipeline installed underground . Typical is 400 lin ft of pipeline installed with trencher serving an micro irrigation system on a 2 acre field.	Ft.	\$ 2.81	20	\$0.08	\$0.27
Irrigation Reservoir, get bids	Irrigation Reservoir	436	See engineer or get bids for site specific cost information.	Ac. Ft.		15	\$0.00	\$0.00
Irrigation System, Microirrigation, Seasonal Hoop House System	Irrigation System, Microirrigation	441	two small 2178 sq ft hoop houses fro seasonal growing. Complete micro system for water use to effieciently provide water for crop produciton.	Sq Ft.	\$ 0.19	15	\$0.01	\$0.02
Irrigation System, Sprinkler, Upgrade Sprinkler Pkg	Irrigation System, Sprinkler	442	Upgrade sprinkler package for center pivot, linear move, fixed solid set, or periodic move irrigation systems	Ft.	\$ 6.00	15	\$0.18	\$0.68
Irrigation System, Surface and Subsurface, get bids	Irrigation System, Surface and Subsurface	443	See engineer or get bids for site specific cost information.	Ac.		15	\$0.00	\$0.00
Irrigation Water Management, system evaluation and implementation	Irrigation Water Management	449	Conduct in-field system evaluation AND implementation of an Irrigation Water Management Plan. \$19.65 to \$280 per acre depending on irrigation type and operation size. Typical is 72 acres of crops with pivot system.	Ac.	\$ 20.00	1	\$0.00	\$20.00
Land Reclamation, Abandoned Mined Land, cap and vegetation	Land Reclamation, Abandoned Mined Land	543	Removal of wood and other debris; grade and shape site to address future runoff considerations after covering, etc.; place appropriate soil cap 6" thick and establish basic vegetation. 5 acre site, 6" cover thickness.	Ac.	\$ 15,000.00	15	\$450.00	\$1,688.39

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Land Reclamation, Currently Mined Land, cap and vegetation	Land Reclamation, Currently Mined Land	544	Removal of wood and other debris; grade and shape site to address future runoff considerations after covering, etc.; place appropriate soil cap 6" thick and establish basic vegetation. 5 acre site, 6" cover thickness.	Ac.	\$ 15,000.00	15	\$450.00	\$1,688.39
Land Smoothing	Land Smoothing	466	small dozer for 4 hr on site with mob and demob works smaller areas within 10 acre field	Ac.	\$ 98.00	10	\$2.94	\$14.31
Lined Waterway or Outlet, rock lined with geotextile and seeding	Lined Waterway or Outlet	468	12 foot wide X 200 foot long rock lined waterway with 6" d50, 8 oz nonwoven geotextile, seeding and mulching disturbed areas at edge, seeding at edge = rock area	Ft.	\$ 4.00	15	\$0.12	\$0.45
Lined Waterway or Outlet, Turf	Lined Waterway or Outlet	468	100 foot X 12 foot turf reinforcement lined waterway without drainage. Seeding, mulching and netting. Seeding = total 2 X TRF area. Grading and shaping	Ft.	\$ 2.70	15	\$0.08	\$0.30
Lined Waterway or Outlet, Turf with Drain tubing	Lined Waterway or Outlet	468	100 X 12 foot turf reinforcement lined waterway with 4" drain tubing. Seeding, mulching and netting. Seeding = 2X TRF area. Grading and shaping	Ft.	\$ 3.10	15	\$0.09	\$0.35
Mine Shaft and Adit Closing, Small, Get Bids	Mine Shaft and Adit Closing	457	small adit or shaft Framed steel plate with door and slot, or grate for openings	No.	\$ 10,000.00	15	\$300.00	\$1,125.59
Mine Shaft and Adit Closing, Typical, Get Bids	Mine Shaft and Adit Closing	457	Shaft or Adit closure grate for openings, excavation at entrance, rock scaling for stability	No.	\$ 25,000.00	15	\$750.00	\$2,813.99
Mulching, between rows, by acre of field	Mulching	484	Straw, hay, wood chip, or bark chip mulch hand spread in rows for moisture and weed control. Typical vegetable or small fruit production with material between rows or plastic mulch material on raised beds.	Ac.	\$ 45.00	1	\$0.00	\$45.00
Mulching, Certified Organic, between rows, by acre of field	Mulching	484	Organic Straw, hay, wood chip, or bark chip mulch hand spread in rows for moisture and weed control. Typical vegetable or small fruit production with material between rows or plastic mulch material on raised beds.	Ac.	\$ 50.00	1	\$0.00	\$50.00

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Mulching, erosion control blanket	Mulching	484	Straw, hay, wood chip, or bark chip mulch. Small construction sites where critical area planting is not used, but ground protection is needed to address a soil erosion or runoff resource concern.	Sq. Ft.	\$ 0.20	1	\$0.00	\$0.20
Mulching, weed barrier Fabric for tree/shrub	Mulching	484	Weed barrier fabric squares 36" x 36" installed with 5 sod staples each, around individual trees and shrubs to control weed competition. 305 trees/shrubs per acre on 4-acre planting site (1220 trees/shrubs). Organic.	Ea.	\$ 2.00	1	\$0.00	\$2.00
Mulching, Hand Spread	Mulching	484	as per RS Means, Straw	Sq. Yd.	\$ 1.48	1	\$0.00	\$1.48
Mulching, Hydro mulch	Mulching	484	hydro mulcher as per RS Means, Straw	1000 Sq. Ft.	\$ 66.00	1	\$0.00	\$66.00
Nutrient Management, Field Crops and Forages	Nutrient Management	590	Basic Field Crops and Forages (Organic and Non-Organic Production).	Ac.	\$ 8.00	1	\$0.00	\$8.00
Nutrient Management, Vegetables, Small Fruits, and/or Speciality Crops	Nutrient Management	590	Vegetables, Small Fruits and/or other Specialty Crops	Ac.	\$ 35.00	1	\$0.00	\$35.00
Nutrient Management, Tree Fruit and/or Grapes	Nutrient Management	590	Tree Fruit and/or Grapes	Ac.	\$ 31.00	1	\$0.00	\$31.00
Obstruction Removal	Obstruction Removal	500	Mob. & Demob. Plus 70 - 250 HP dozer @ 6 hr per 1/2 acre. On site disposal.	Ac.	\$ 2,223.00	10	\$66.69	\$324.64
Open Channel	Open Channel	582	Create 2 stage ditch from existing open channel. 1500 ft long, excavation and shaping. Includes seed & mulch of construction site.	Ft.	\$ 11.00	15	\$0.33	\$1.24
Livestock Pipeline, above ground	Livestock Pipeline	516	Above ground pipeline for livestock water. 1 1/4" pipe at 160 psi, 3,000 ft long with 300 ft of 2" overflow pipe from watering tanks to safe outlet.	Ft.	\$ 1.10	20	\$0.03	\$0.11
Livestock Pipeline, shallow buried	Livestock Pipeline	516	Shallow buried pipeline for livestock water. Buried 18" deep. 1 1/4" pipe at 160 psi, 1,800 ft long with 200 ft of 2" overflow pipe from watering tanks to safe outlet..	Ft.	\$ 1.25	20	\$0.04	\$0.12
Livestock Pipeline, plate cooler & water tank	Livestock Pipeline	516	Pipeline from plate cooler water tank to reuse endpoint. Gravity flow, 2" pipe at 100psi, 200 ft long.	Ft.	\$ 2.11	20	\$0.06	\$0.20
Livestock Pipeline, Buried below frost line	Livestock Pipeline	516	Pipeline Buried (Year Round Use)	Ft.	\$ 2.66	20	\$0.08	\$0.26

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Pond, Excavated	Pond	378	Excavated pond 1/4 acre, 6 foot average depth, with 2 foot high embankment, Rock Chute spillway, shallow core trench, seeding and mulching	No.	\$ 9,950.00	20	\$298.50	\$954.99
Pond, Embankment	Pond	378	Embankment pond with 12 in diameter principal spillway, 18 inch riser w/ anti swirl baffle, 2500 cubic yard, 15 foot tall earthfill and excavation, 10 foot top width, shallow core trench, sand filter diaphragm, seeding and mulching	No.	\$ 11,200.00	20	\$336.00	\$1,074.96
Pond Sealing or Lining - Bentonite Treatment	Pond Sealing or Lining - Bentonite Treatment	521C	Aquaculture pond line only. Bentonite treatment. 25,000 sq.ft. pond top dimensions surface area. 6 foot average water depth. Silty sand soils. Use existing outlet structure and harvest kettle. 1 foot of earthfill compacted over bentonite layer. reline pond after empty and cleaned out post harvest.	No.	\$ 19,755.00	15	\$592.65	\$2,223.61
Pond Sealing or Lining - Flexible Membrane	Pond Sealing or Lining - Flexible Membrane	521A	43,560 sq.ft. (two-0.5 ac) pond top dimensions surface area. 45 mil LLDPE liner. 8 oz. nonwoven geotextile installed under the liner for protection. A gas venting system installed consisting of 12" wide J-Drain on 50 ft spacing in both directions.	Sq Ft.	\$ 1.65	20	\$0.05	\$0.16
Pond Sealing or Lining - Soil Dispersant	Pond Sealing or Lining - Soil Dispersant	521B	Aquacultural pond relining. Soil Dispersant (soda ash) treatment. 25,000 sq.ft. pond top dimensions surface area. 6 foot average water depth. Silty sand soils. Use existing outlet structure and harvest kettle.	No.	\$ 4,750.00	20	\$142.50	\$455.90
Prescribed Burning	Prescribed Burning	338	Small Prescribed burning on 15 acres of grassland or forestland to control undesirable plants, reduce wildfire risk by removing fuel, and encourage regeneration of desirable plants. Crew of approx. 5 people. Burn approx. 5 hours.	Ac.	\$ 750.00	1	\$0.00	\$750.00
Prescribed Grazing, continuous to prescribed grazing	Prescribed Grazing	528	Prescribed grazing and/or browsing to harvest vegetation to improve species composition and vigor over extensive grazing.	Ac.	\$ 65.00	1	\$0.00	\$65.00

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Prescribed Grazing, confinement to prescribed grazing	Prescribed Grazing	528	Prescribed grazing and/or browsing to harvest vegetation to improve or maintain quantity and quality of forage when changing from confinement to grazing.	Ac.	\$ 86.00	1	\$0.00	\$86.00
Pumping Plant, Diesel Manure Pump	Pumping Plant	533	10 HP diesel with 4" output, electric start. Pipeline contracted separately.	No.	\$ 3,300.00	15	\$99.00	\$371.45
Pumping Plant, add VFD to Electric	Pumping Plant	533	Add variable frequency drive to existing irrigation pump electric motor or to new electric motor that is replacing a diesel pump motor.	No.	\$ 20,000.00	15	\$600.00	\$2,251.19
Pumping Plant, Diesel Aquacultural Pond Pump	Pumping Plant	533	10 HP diesel with 4" output, electric start for aquacultural pond. Pipeline contracted separately	No.	\$ 6,800.00	15	\$204.00	\$765.40
Recreation Land Grading and Shaping	Recreation Land Grading and Shaping	566	Dozer with Mob. & DeMob for 8 hr day	day	\$ 1,027.00	15	\$30.81	\$115.60
Residue Management, Mulch-Till	Residue Management, Mulch-Till	345	Gathering data on residue cover, analysis of data and crop rotations and keeping records of residue management.	Ac.	\$ 12.00	1	\$0.00	\$12.00
Residue Management, No-Till, Strip Till, Direct Seed	Residue Management, No-Till/Strip Till/Direct Seed	329	No-Till Drill/Planter rental rate plus mobilization	Ac.	\$ 17.00	1	\$0.00	\$17.00
Residue Management, Ridge Till	Residue Management, Ridge Till	346	Gathering data on residue cover, analysis of data and crop rotations and keeping records of residue management. Use on farm equipment to do ridge tillage.	Ac.	\$ 23.00	1	\$0.00	\$23.00
Residue Management, Seasonal	Residue Management, Seasonal	344	Gathering data on residue cover, analysis of data and crop rotations and keeping records of residue management.	Ac.	\$ 12.00	1	\$0.00	\$12.00
Restoration and Management of Declining Habitats, Mesic Tall/Short Grass Prairie Establishment	Restoration and Management of Declining Habitats	643	Mesic Tallgrass Prairie Seed mixture of Michigan genotype with 5 lb of 7 native warm season grasses and 3 lbs of 27 forbs wildflower mixture per acre.	Ac.	\$ 1,082.00	15	\$32.46	\$121.79

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Restoration and Management of Declining Habitats, Restoration of Oak Savanna, Grass and Tree clumps	Restoration and Management of Declining Habitats	643	Restoration of oak savanna which includes tall grass prairie establishment on the entire acreage plus oak trees and shrubs planted in clumps on approximately 25% of the area. Includes dry short grass prairie mix with grasses and forbs suited to restoration.	Ac.	\$ 1,333.00	15	\$39.99	\$150.04
Restoration and Management of Declining Habitats, Restoration of Oak Savanna, Grass and Tree clumps and protectors on all trees	Restoration and Management of Declining Habitats	643	Restoration of oak savanna which includes tall grass prairie establishment on the entire acreage plus oak trees and shrubs planted in clumps on approximately 25% of the area. Includes dry short grass prairie mix with grasses and forbs suited to restoration. with tree protectors	Ac.	\$ 1,770.00	15	\$53.10	\$199.23
Riparian Forest Buffer	Riparian Forest Buffer	391	Trees and shrubs planting. 5 rows of lg hardwoods with 12' spacing and 80% with tree protectors. 2 rows of med. trees @ 10' spacing. 2 row of shrubs @ 8' spacing. 104 ft wide (including 20' upgradient buffer) x 1210 ft long.	Ac.	\$ 1,277.00	15	\$38.31	\$143.74
Riparian Herbaceous Cover, Cool Season	Riparian Herbaceous Cover	390	Introduced / cool season cover.	Ac.	\$ 324.00	5	\$9.72	\$80.06
Riparian Herbaceous Cover, Warm Season	Riparian Herbaceous Cover	390	native planting / warm season cover.	Ac.	\$ 435.00	5	\$13.05	\$107.49
Road/Trail/Landing Closure and Treatment	Road/Trail/Landing Closure and Treatment	654	4 hr work by each a dozer and backhoe with mob and demob shape site with on-site soils to prepare site for natural regeneration of forest vegetation and block access and use.	Ea.	\$ 1,240.00	10	\$37.20	\$181.09
Roof Runoff Structure, Gutters	Roof Runoff Structure	558	Roof Runoff Structure with gutter cross section of 24 or more sq inches by feet of gutter. Includes downspouts.	Ft.	\$ 13.00	15	\$0.39	\$1.46
Roof Runoff Structure, French Drain	Roof Runoff Structure	558	French drain is 2' x 2' trench with geotextile, 4" tile, 80 ft long.	Ft.	\$ 21.75	15	\$0.65	\$2.45
Roofs and Covers, Flexible Membrane	Roofs and Covers	367	flexible membrane cover material	Sq. Ft.	\$ 2.00	15	\$0.06	\$0.23

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Roofs and Covers, Hoop Structure	Roofs and Covers	367	Hoop Roof Structure with fabric cover for Dry Stacking Waste Storage Facilities. Typical size is 58' x 70' over a typical 50' x 70' dry stacking facility with modular block walls. Roof to be measured by sq ft of facility footprint.	Sq. Ft.	\$ 4.80	15	\$0.14	\$0.54
Roofs and Covers, Rigid Structure	Roofs and Covers	367	Rigid Roof structure. By sq ft of facility footprint	Sq. Ft.	\$ 12.00	15	\$0.36	\$1.35
Seasonal High Tunnel System for Crops	Seasonal High Tunnel System for Crops	798	seasonal movable high tunnel from supplier covers. 30x96 of vegetable crop field. Without electrical, heat, ventilation, etc.	Sq. Ft.	\$ 3.00	4	\$0.09	\$0.89
Sediment Basin, Excavated	Sediment Basin	350	Excavated sediment basin - may have up to 1/2 excavated material used in fill. Seeding and mulching, corrugated plastic pipe outlet, assume 500 cu yd	No.	\$ 3,145.00	20	\$94.35	\$301.85
Sediment Basin, Earthfill	Sediment Basin	350	Earthfill sediment basin Grading and shaping, Seeding and mulching, corrugated 8" pipe outlet with 12" riser, assume 300 cu yd fill	No.	\$ 2,488.00	20	\$74.64	\$238.80
Shallow Water Development and Management	Shallow Water Development and Management	646	Shallow Water development, push out and locate spoil on site to create 18" water. Small site where hydrology and topography facilitate shallow water for wildlife habitat and feeding.	Ac.	\$ 1,198.00	5	\$35.94	\$296.04
Solid/Liquid Waste Separation Facility	Solid/Liquid Waste Separation Facility	632	Sand Lane Separation	No.	\$ 89,600.00	15	\$2,688.00	\$10,085.33
Spring Development	Spring Development	574	Spring development with an interceptor tile with a collection trench cross slope to catch seep with restrictive barrier downstream and spring box.	No.	\$ 3,500.00	20	\$105.00	\$335.93
Stream Crossing, Aggregate	Stream Crossing	578	Aggregate is 20 feet wide by 100 feet long, 1ft. depth. Geotextile under aggregate. Includes fence or other confinement measures to control livestock travel.	No.	\$ 5,490.00	10	\$164.70	\$801.74
Stream Habitat Improvement and Management, Root Wad and Gravel Bar	Stream Habitat Improvement and Management	395	Root wad and gravel bar placement to provide aquatic habitat and provide channel morphology for desired species.	Ac.	\$ 41,700.00	5	\$1,251.00	\$10,304.45

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Stream Habitat Improvement and Management, Rock Placement	Stream Habitat Improvement and Management	395	Rock placement to provide aquatic habitat and provide channel morphology for desired species.	Ac.	\$ 23,052.00	5	\$691.56	\$5,696.36
Streambank and Shoreline Protection, Geotextile and Riprap	Streambank and Shoreline Protection	580	Wave and ice protection. Riprap D50 = 6 inch angular rock. With geotextile. 4H:1V shore slope. 4 feet vertical protection. 250 lin. Feet	Ft.	\$ 77.00	20	\$2.31	\$7.39
Stripcropping	Stripcropping	585	measurement and alignment of tillage and planting operations to follow the designed strip layout. Documentation of practice implementation. Typical 20 acre field.	Ac.	\$ 4.00	5	\$0.12	\$0.99
Structure for Wate Control, Plastic Pipe in-line structure	Structure for Water Control	587	70 feet of 15-inch dia plastic pipe, Agridrain in-line water control structure 6 foot tall, D50 = 6-inch riprap at inlet and outlet, rodent guard.	No.	\$ 4,585.00	20	\$137.55	\$440.06
Structure for Wate Control, water level control on tile	Structure for Water Control	587	Drainage water management water level control structure on an 8" tile, 6' high in a nearly flat 80 acre tile-drained crop field. 20 feet of solid pipe are installed.	No.	\$ 1,284.00	20	\$38.52	\$123.24
Structure for Water Control, Rock Chute	Structure for Water Control	587	Rock Chute Riprap D50 = 6 inch, geotextile, seeding and mulching edges, shaping, 12' X 50'.	No.	\$ 3,856.00	20	\$115.68	\$370.09
Structure for Water Control, CPT dual-wall pipe	Structure for Water Control	587	Prefabricated in-line water control structure for water table management: 10 feet of 12-inch dia CPT dual-wall pipe, Agridrain in-line water control structure 6 foot tall.	No.	\$ 1,347.00	20	\$40.41	\$129.28
Subsurface Drain, Tile	Subsurface Drain	606	Waterway Support Drain, tile	Ft.	\$ 3.40	20	\$0.10	\$0.33
Surface Drainage, Field Ditch, get bid	Surface Drainage, Field Ditch	607		Ft.		15	\$0.00	\$0.00
Surface Drainage, Main or Lateral, get bid	Surface Drainage, Main or Lateral	608		Ft.		15	\$0.00	\$0.00
Terrace	Terrace	600		Ft.	\$ 12.00	10	\$0.36	\$1.75
Trails and Walkways, aggregate	Trails and Walkways	568	gravel	Sq. Ft.	\$ 1.30	15	\$0.04	\$0.15
Trails and Walkways, wood chip or bark	Trails and Walkways	568	wood chips, bark	Sq. Ft.	\$ 1.53	15	\$0.05	\$0.17

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Trails and Walkways, wood elevated	Trails and Walkways	568	wood elevated	Sq. Ft.	\$ 3.56	15	\$0.11	\$0.40
Tree/Shrub Establishment, Tree & Shrub mix	Tree/Shrub Establishment	612	Planting hardwood, conifer and shrub mix at 12' x 12' spacing (302 plants per acre) on 4 acres to develop renewable energy systems, improve wildlife habitat, and restore a natural plant community. Planting consists of red oak, red pine, and mixed shrub mix. 50% hardwoods, 25% pine, 25% shrubs. Organic.	Ac.	\$ 492.50	15	\$14.78	\$55.44
Tree/Shrub Establishment, Supplemental under planting	Tree/Shrub Establishment	612	Supplemental under planting on 4 acres of understocked hardwood stand to develop renewable energy systems, improve wildlife habitat, and restore a natural plant community. Add new desirable species and/or increase stand density. 200 added trees/shrubs per acre, 75% hardwoods, 25% shrubs. Organic.	Ac.	\$ 301.86	15	\$9.06	\$33.98
Tree/Shrub Establishment, Add tree protectors	Tree/Shrub Establishment	612	Adding tree protectors for pest control on hardwoods, protector tube, stake, ties, and labor to install	Ea.	\$ 4.75	15	\$0.14	\$0.53
Tree/Shrub Pruning, chainsawing	Tree/Shrub Pruning	660	chainsawing, including labor and mobilization	Hr.	\$ 80.00	10	\$2.40	\$11.68
Tree/Shrub Site Preparation, Tillage, per treatment	Tree/Shrub Site Preparation	490	disking or chisel plow per pass/trip on area	Ac.	\$ 14.75	1	\$0.00	\$14.75
Tree/Shrub Site Preparation, Herbicide treatment	Tree/Shrub Site Preparation	490	Herbicide site preparation, in 36" wide bands on land with slight to moderate herbaceous or grass cover (e.g., recently farmed or tilled). Bands are spaced every 10', centered on tree rows, such that herbicide is applied to 30% of total acreage.	Ac.	\$ 28.55	1	\$0.00	\$28.55
Underground Outlet, single-wall pipe	Underground Outlet	620	8-inch diameter CPT, single-wall pipe; 250 lin. feet; backhoe excavated trench	Ft.	\$ 5.29	20	\$0.16	\$0.51
Underground Outlet, double-wall pipe	Underground Outlet	620	10-inch diameter CPT, dual-wall pipe; 250 lin. feet; backhoe excavated trench	Ft.	\$ 8.23	20	\$0.25	\$0.79

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Underground Outlet, 12" or more pipe	Underground Outlet	620	Pipe underground 12-inch diameter CMP; 20 lin. feet; backhoe excavated trench; D50 = 4-inch rock rip rap at outlet; 3 sites per field	Ft.	\$ 640.00	20	\$19.20	\$61.43
Upland Wildlife Habitat Management, bee tubes	Upland Wildlife Habitat Management	645	add bee tubes where natural habitat is inadequate for habitat. Add 2 bundles of 20-25 per acre.	Ac.	\$ 50.42	1	\$0.00	\$50.42
Upland Wildlife Habitat Management, brush piles	Upland Wildlife Habitat Management	645	Construct brush piles as per NRCS Biology Technical Note #18	Ac.	\$ 27.78	1	\$0.00	\$27.78
Upland Wildlife Habitat Management, Large Bird Boxes	Upland Wildlife Habitat Management	645	Large Bird Boxes	Each	\$ 78.52	1	\$0.00	\$78.52
Upland Wildlife Habitat Management, Small Bird Boxes	Upland Wildlife Habitat Management	645	Add small bird boxes plus mounting pole and associated hardware for tree swallow, house wren, bluebird, etc. at 2 boxes per 4 acres.	Each	\$ 48.89	1	\$0.00	\$48.89
Upland Wildlife Habitat Management, Bat Boxes	Upland Wildlife Habitat Management	645	add bat boxes, mounting post and associated hardware at 2 per acre where natural habitat is inadequate.	Ac.	\$ 168.52	1	\$0.00	\$168.52
Upland Wildlife Habitat Management, Bait and Monitor Feral Swine Traps	Upland Wildlife Habitat Management	645	Baiting and Monitoring Feral Swine Traps	Ea.	\$ 246.00	1	\$0.00	\$246.00
Upland Wildlife Habitat Management, Feral Swine Scouting	Upland Wildlife Habitat Management	645	Feral Swine Scouting	Ea.	\$ 871.00	1	\$0.00	\$871.00
Vegetated Treatment Area	Vegetated Treatment Area	635	0.5 ac. contributing area. Grass channel 40 ft wide, 300 ft long (12,000 s.f.) with 1.5 ft x 2 ft. rock checks every 100 ft. Concrete collection system 60' x 25' with 2 ft walls on 3 sides with slots on one side and a 10H:1V interior clean-out ramp on one side. No outlet storage area.	Ac.	\$ 30,729.00	10	\$921.87	\$4,487.57
Vegetative Barrier	Vegetative Barrier	601	Vegetative barrier with plugs and transplants in center section and seeding at ends. Three rows spaced across the field. Plugs at 3" spacing for 400 plants per 100' of strip plus seeding at ends	Ft.	\$ 4.37	5	\$0.13	\$1.08

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Waste Facility Closure, back fill, grade, shape, and seeding	Waste Facility Closure	360	Embankment or excavated waste impoundments - After manure has been removed using Nutrient Management or Waste Utilization. Removal of residual waste, backfill of impoundment with leveling and seeding. Includes removal of embankment (or fill to bank grade), and shaping. Approx size 110' x 100', 6 feet deep with 4 foot berms.	No.	\$ 3,967.00	15	\$119.01	\$446.52
Waste Facility Closure, Reception Pit, back fill, grade, shape, and seeding	Waste Facility Closure	360	Embankment or excavated waste impoundments - After manure has been removed using Nutrient Management or Waste Utilization. Removal of residual waste, backfill of impoundment. Includes removal of embankment (or fill to bank grade), and shaping. Reception pit structure - After the removal of manure using Nutrient Management or Waste Utilization. Removal of residual waste, removal of materials, fill hole in with sand. Stabilization of site. Reception pit 10x10x6, and decommission of outlet pipe.	No.	\$ 867.00	15	\$26.01	\$97.59
Waste Recycling, Manure or Compost Tests	Waste Recycling	633	Testing of Manure or Compost to facilitate import/export	Ea.	\$ 40.00	1	\$0.00	\$40.00
Waste Storage Facility, Dry Stack without roof, sq ft footprint	Waste Storage Facility	313	Dry Stacking Facility without roof Typical is based on 50 A.U. beef cow operation with bedding 50' X70' with 4 ft walls, stacked 6ft.	Sq. Ft.	\$ 6.50	15	\$0.20	\$0.73
Waste Storage Facility, Excavated and Lined Storage (pit), Cu Ft AWM volume	Waste Storage Facility	313	Excavated and Lined Liquid Storage pit (no roof). Volume based on AWM output report, Structural Volume. Typical is a LLDPE Membrane liner 250'x150' with 26,000 sq ft liner. 12' deep with geocomposite drainage/venting system on side slopes and bottom. Includes a concrete bottom, concrete ramp, 1:1 push off, 100 ft long with safety cable.	Cu. Ft.	\$ 0.50	15	\$0.02	\$0.06

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Waste Storage Facility, Underbarn, Cu Ft AWM volume	Waste Storage Facility	313	Prefabricated or cast in place reinforced concrete panel/tank under barn, based on AWM output report, Structural Volume. Typical is ADL tank with slats that is 40'x120'x10' deep built 8 ft into the ground. Structural Volume is 48,000 cu ft. Includes concrete slats on top of structure and columns for slat support.	Cu. Ft.	\$ 3.62	15	\$0.11	\$0.41
Waste Storage Facility, Slurry Storage, above ground, Cu Ft AWM volume	Waste Storage Facility	313	Above Ground Fabricated Liquid Manure Storage Structure. Volume based on AWM output report, Structural Volume. Typical is a Slurrystore or large concrete tank. Based on 100,000 cu.ft. storage (81' dia. x 19' high). Concrete foundation and steel walls are included.	Cu. Ft.	\$ 2.25	15	\$0.07	\$0.25
Waste Transfer, concrete channel, length x bottom width	Waste Transfer	634	Trapezoid channel, plain concrete 5 in. thick with 4 in. compacted sand. 100 ft long, 8 ft bottom, 5" depth. 10H:1V side slope so can cross with vehicle.	Sq. Ft.	\$ 7.75	15	\$0.23	\$0.87
Waste Transfer, settling basin, pipe, or conveyer belt system, get estimate.	Waste Transfer	634	20 ft x 20 ft x 3ft walls ramped concrete settling basin with 2 ft reinforced divider wall in center of basin. Runoff fills one cell and then flows around end into second cell of settling basin. 6" PVC pipe 50 ft. from second settling basin cell to 2000 gallon septic tank/pump chamber with sewage pump set with floats and an alarm panel. Runoff is pumped into a 2" discharge pipe 150 ft. to the waste storage facility. Detention basin is constructed adjacent to second cell of settling basin with a 4 ft wide weir for outflow. The detention basin is concrete lined circular in shape 90 ft diameter, 2 ft deep (12,723 cu.ft capacity) with a 36" catch basin to a 6" PVC pipe 300 ft. gravity flow to 2000 gallon septic tank/pump chamber.	No.	\$ 35,000.00	15	\$1,050.00	\$3,939.58
Waster and Sediment Control Basin (WASCOB)	Water and Sediment Control Basin (WASCOB)	638	6 foot fill height with 200 foot length, outlet structure, 10:1 front slope, 2:1 back slope, seeding and mulching, 540 cu yd typical	No.	\$ 3,630.00	10	\$108.90	\$530.11

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Water Well, includes pump, drop pipe to pressure tank, and pressure tank	Water Well	642	150 feet deep, includes pump, drop pipe, pipe to pressure tank, and pressure tank. (Does not include cost of power supply to pump.)	No.	\$ 7,775.00	20	\$233.25	\$746.24
Water Well Decommissioning, Dug Well by ft of well	Water Well Decommissioning	642	Dug Well - 25 feet deep; shored with stone, timber or brick; 3-foot diameter; some foreign debris in well to be removed	Ft.	\$ 68.60	20	\$2.06	\$6.58
Water Well Decommissioning, Drilled Well by ft of well	Water Well Decommissioning	642	Drilled or Driven Well - 100 feet deep; 2-inch diameter casing	Ft.	\$ 8.45	20	\$0.25	\$0.81
Watering Facility, Stream or pond, gravel access site	Watering Facility	642	Access for livestock watering without a crossing. 15 feet wide by 40 feet long, excavation, geotextile and 1 foot aggregate with fence.	No.	\$ 2,082.00	20	\$62.46	\$199.83
Watering Facility, Permanent Tank	Watering Facility	642	300 gallon tank with fittings	No.	\$ 700.00	20	\$21.00	\$67.19
Watering Facility, Portable Tank	Watering Facility	642	50-100 gallon poly tank with fittings including quick connects	No.	\$ 175.00	20	\$5.25	\$16.80
Wetland Creation, get Engineers estimate	Wetland Creation	642		Ac.		20	\$0.00	\$0.00
Wetland Creation, get Engineers estimate	Wetland Enhancement	642		Ac.		20	\$0.00	\$0.00
Wetland Creation, get Engineers estimate	Wetland Restoration	642		Ac.		20	\$0.00	\$0.00
Wetland Wildlife Habitat Management, add nesting boxes	Wetland Wildlife Habitat Management	642	Add nesting structures for habitat where natural nesting cavities are insufficient. Large bird box for wood duck plus mounting post, predator guard and necessary hardware @ 1 box per 8 acres.	Each	\$ 78.52	20	\$2.36	\$7.54
Windbreak/Shelterbelt Establishment, one row	Windbreak/Shelterbelt Establishment	642	1-row white spruce windbreak, 1320' long. Trees planted every 10' along length of windbreak.	Ft.	\$ 0.37	20	\$0.01	\$0.04
Windbreak/Shelterbelt Establishment, two rows	Windbreak/Shelterbelt Establishment	642	2-row windbreak, with one row of white spruce and one row of mixed shrubs (3-5 spp.) 1320' long. Trees planted every 10' and shrubs planted every 6' along length of windbreak. Rows approx. 12' apart.	Ft.	\$ 0.69	20	\$0.02	\$0.07

Name / Description	Practice	Code	Typical Installation	Unit	Cost Per Unit	design lifespan	Average Annual Maintenance	Total Average Annual Cost per Unit @ 2.8%
Windbreak/Shelterbelt Establishment, three rows	Windbreak/Shelterbelt Establishment	642	3-row windbreak, with two rows of white spruce and one row of mixed shrubs (3-5 spp.) 1320' long. Trees planted every 10' and shrubs planted every 6' along length of windbreak. Rows approx. 12' apart.	Ft.	\$ 0.91	20	\$0.03	\$0.09
Windbreak/Shelterbelt Establishment, four or more rows	Windbreak/Shelterbelt Establishment	642	4-row windbreak, with two rows of deciduous trees (3-5 spp.) and two row of mixed shrubs (3-5 spp.) 1320' long. Trees planted every 10' and shrubs planted every 6' along length of windbreak. Rows approx. 16' apart (between trees) and 12' apart (bet. trees and shrubs).	Ft.	\$ 1.21	20	\$0.04	\$0.12
Windbreak/Shelterbelt Establishment, four or more rows, 3-5 species Wildlife mix	Windbreak/Shelterbelt Establishment	642	4-row windbreak, with two rows of deciduous trees (3-5 spp.) and two row of mixed shrubs (3-5 spp.) 1320' long. Trees planted every 10' and shrubs planted every 6' along length of windbreak. Rows approx. 16' apart (between trees) and 12' apart (bet. trees and shrubs). Shelters on deciduous trees only.	Ft.	\$ 2.14	20	\$0.06	\$0.21
Windbreak/Shelterbelt Renovation, Supplementa planting & thinning	Windbreak/Shelterbelt Renovation	642	reinforcement, supplemental planting & thinning existing. Repair existing select few trees to be removed and replaced.	Ft.	\$ 5.34	20	\$0.16	\$0.51
Windbreak/Shelterbelt Renovation, Remove Trees and Replace 30%	Windbreak/Shelterbelt Renovation	642	Remove trees in rows and replace with 3 - 5' trees and shrubs. on site disposal pile and burn. 30% dead and damaged trees that need to be removed and replaced.	Ft.	\$ 10.27	20	\$0.31	\$0.99
Windbreak/Shelterbelt Renovation, Remove & Replace single row	Windbreak/Shelterbelt Renovation	642	Remove single row and replace with poplar whips for cherry orchard site. 1/4 mile for 40 acre site. Spacing 10', on site disposal pile and burn.	Ft.	\$ 6.57	20	\$0.20	\$0.63