GRP Practice Guide

Massachusetts FY 2012

Practice Code	Practice Name	Practice Unit	Lifespan *(years)*	Scenario	Payment Unit	Scenario Notes	State Program Rules
314	Brush Management	AC	5	Light Mechanical	AC	• Pastures or wildlife land of various sizes with woody plants encroaching on the edges and throughout the field due to under utilization of the pasture or field. Minimum treatment area is 0.1 acre or more of woody plants. Below this amount should be controlled through manual clipping. After treatment, livestock grazing should keep the woody vegetation under control and undesirable plants are controlled or eradicated.	• Practice eligible on all lands except active cropland.
				Medium Mechanical		• Pastures or wildlife land of various sizes with woody plants encroaching on the edges and throughout the field due to under utilization of the pasture or field. Minimum treatment area is 0.1 acre or more of woody plants. Undesirable plants are controlled or eradicated and desirable forage species become dominant cover. After treatment, livestock grazing should keep the woody vegetation under control and undesirable plants are controlled or eradicated.	
				Mechanical-Chemical		• Pastures, wildlife land, forests and early successional habitats of various sizes with woody plants encroaching throughout. At least 1 mechanical and 1 herbicide treatment is needed to control the target species, and annual monitoring is necessary. Minimum treatment area is 0.1 acre or more of woody plants. Undesirable plants are controlled or eradicated.	• Rate is for 2 separate treatments
				Moderate Chemical Control		• Sites where chemical control of invasive exotics with backpack sprayer (foliar), cut-stump treatments or basal bark treatments are required. Access is good and the general coverage of the invasive plants is less than 75%. Typical size of this scenario is variable ranging from an acre to many acres.	• Rate is for 2 separate treatments
				Difficult Chemical Control		• Sites where chemical control of invasive exotics with backpack sprayer (foliar) or for dense areas where cut-stump treatments or basal bark treatments are required. Access is very poor due to distance or heavy slash.	• Rate is for 2 separate treatments

Note: Scenarios describe *typical* uses of each conservation practice in the state, but they are *not exclusive of all* alternatives that meet the conservation practice standards. Practice applications that are not covered in the typical scenarios must be approved by the state program staff.

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						Typical size of this scenario is small; generally an acre or less to address a dense stand of invasive plants.	
315	Herbaceous Weed Control	AC	5	Invasives Control-Chemical/Mechanical	AC	• Cost per acre for treatment of herbaceous invasive plants with foliar systemic herbicides OR hand pulling of plant and roots OR flaming of Garlic Mustard (*Alliaria petiolata*)	• Practice eligible on all lands except active cropland. • Rate is for 2 separate treatments
				Chemical Control of Bedstraw-Perennial Weeds in Hay		• Cost per acre for chemical treatment of bedstraw or other hard-to-kill perennial weeds. • Weed seed production must be eliminated with mowing • Practice must be scheduled for two consecutive years. • Forage and Biomass Planting (512) may be scheduled if vegetative cover (after chemical treatments) is reduced to less than 75%.	• Practice is ONLY eligible on permanent pasture and hayland. • Eligible for payment for 2 treatment years. • Weed seed production must be controlled with mowing during the treatment years.
				Tillage Control of Bedstraw-Perennial Weeds in Hay		• For CERTIFIED ORGANIC farms to perform cultural (tillage) control of bedstraw or other hard-to-kill perennial weeds. • Practice should be scheduled for two consecutive years. • Summer cover crops (340) must be scheduled for two consecutive growing seasons. • Annually tilled cash crops are NOT permitted due to limitations in practice standard; practice may not be applied on active cropland. • Forage and Biomass Planting (512) should be scheduled following the second year of 315.	• Practice is ONLY eligible on permanent pasture and hayland.
327	Conservation Cover	AC	5	Convert Cropland to Cool Season Grasses For Wildlife	AC	• Cost includes seed bed prep, soil amendments and application, seed and seeding • Includes forgone income based on hay/corn rotation	• Vegetative practice rule (ref. 515.81). • For land use conversion to wildlife.
				Convert Cropland to Warm Season Grasses For Wildlife		• Cost includes soil amendments and application, seed, and seeding costs • Includes forgone income based on hay/corn rotation	
				Pollinator		• Minimum ½ acre plots seeded with a mix of 9 species to enhance pollinator habitat, includes seed bed preparation, seed, and chemical weed control	
				Pollinator enhancement – plugs		• 2000 SF planting of forbs into existing pollinator habitat	

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342	Critical Area Planting	AC	10	Disturbed Areas	AC	• Severely eroding crop fields protected by permanent vegetation • Use farm equipment to disk plow, harrow, seed and spread lime/fertilizer • Manual labor to spread mulch • Seeding Mix #5 - Specification Guide (cool season grasses)	• Vegetative practice (ref. 515.81).
				Manual Herbaceous Seeding		• Steep eroding bank where conventional equipment cannot be used • Hand tools and labor to prepare site, lime, fertilize, seed and mulch • Low-maintenance herbaceous seeding mixture (Mix #10)	
382	Fence	LF	20	Portable Electric Fence	LF	• A polywire electrical fence is installed to facilitate improved prescribed grazing management. A typical fence includes three strands of portable electric wire with fiberglass or plastic type temporary posts at 20 ft o.c. The temporary fence is connected	• If a permanent fencing system different from these scenarios is used, it must follow manufacturers' specifications (included in documentation) and match the closest scenario by price. • Permanent fence is eligible when used in conjunction with a prescribed grazing system on land that is currently grazed, or when excluding animals from water resources, or for protecting practices or safety in association with a practice. • Boundary or property line fences are ineligible, except to protect habitat for wildlife or to exclude livestock from environmentally sensitive areas. • Ref. 515.81(E) Ineligible Practices.
				Wire Fence		• A high-tensile wire fence is installed according to specifications for prescribed grazing management or other livestock control. A typical fence includes 3 high-tensile electric strands with posts at 30ft o.c., eight corner bracings, 2 heavy-duty gates,	
				Wooden Fence - Boards		• Typical installation procedure for 3-board fence: dig fence holes 8' o.c. just beyond the concrete slab or curb and around the perimeter of the barnyard. Install CCA treated fence posts 36" into the ground. Attach 3-2"x6" CCA treated boards to the inside	
				Woven Wire		• A woven wire fence is installed for access control and safety. A typical fence includes a 4ft high woven wire with a single strand of barbed wire at the top. Posts are typically installed at 10ft o.c. Fence holes are augured at a minimum 3' in depth.	
391	Riparian Forest Buffer	AC	15	Zones 1 and 2	AC	• Located adjacent to and up-gradient from watercourses or water bodies • Planted to trees and shrubs at a density of 200 plants/ ac	• Minimum widths of zones must meet standard

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						• Trees have protectors	
				Natural Regeneration		• Located adjacent to and up-gradient from watercourses or water bodies • Control of invasive plants through mowing, chemical treatment and/or shrub/sapling management	
				Buffer in Forest		• Cost includes on-the-ground designation of buffer and enhancement planting of 2-0 seedlings at density of 100 trees per acre • Trees do NOT have protectors	
460	Land Clearing	AC	10	Cut & Chip trees	AC	• Site preparation of a field with chainsaw operators to cut and chip trees (<8") for pasture and hayland planting	• For pasture land use only. • Fields to be cleared must be ≤5 acres to comply with NEPA.
				Brontosaurus		• Site preparation of a field using a brontosaurus to cut trees and loader to remove chips and slash.	
500	Obstruction Removal	AC	10	Stump Removal	AC	• Stump removal – may be through grinding or grubbing with dozer.	• EQIP application is only for turtle habitat.
512	Forage and Biomass Planting	AC	5	Cool Season	AC	• Typically installed on a corn field which is being converted to long-term grazing. • Field is prepared for seeding, lime and nutrients are spread according to soil test results, and cool season grasses and legumes are established. • Pasture is managed for long-term grazing. Erosion is minimized and there is reduced sedimentation and nutrient runoff, and improved water and soil quality (including an increase in organic matter).	• Field must have Hay or Pasture land use for 5 year practice life or for the length of the contract, whichever is more. • Planned rotation systems must meet soil tolerance criteria per RUSLE2.

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				Frost Seed		• Typically used on hayland previously established as timothy/red clover mix but now has < 5-10% legume composition. • Field is limed in the fall and legume seed is broadcast in the spring at snow melt as the soil freezes and thaws. • Legume composition is increased above 20% and forage and plant quality is improved due to an increase in species diversity and biological N fixation.	
				Organic Cool Season		• Typically installed on an overgrazed pasture that is a weedy mix of cool season grasses. • Field is prepared for seeding. Lime, potassium, and manure are spread according to soil test results, and certified organic cool season grasses and legumes are established. • Pasture is managed for long-term grazing. Erosion is minimized and there is reduced sedimentation and nutrient runoff, and improved water and soil quality (including an increase in organic matter).	
				Organic Frost Seed		• Typically used on hayland previously established as timothy/red clover mix but now has < 5-10% legume composition. • Field is limed in the fall and certified organic legume seed is broadcast in the spring at snow melt as the soil freezes and thaws. • Legume composition is increased above 20% and forage and plant quality is improved due to an increase in species diversity and biological N fixation.	
				Warm Season		• Typically installed on an overgrazed pasture that is a weedy mix of cool season grasses. • Field is prepared for seeding, lime and nutrients are spread according to soil test results, and warm season grasses are established. • Weeds are managed during establishment through mowing and chemical control. • Pasture is managed for long-term grazing.	

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516	Pipeline	FT	20	Above Ground - 1 inch or less Above Ground >1 inch, <2 inch Above Ground - 2 inch or more	FT	• Water is properly supplied to livestock in an efficient manner. Resource concerns regarding soil quality, water quality and livestock forage availability and quality are reduced or eliminated. • 1,000 feet of appropriately sized UV rated PE - SiDR 9 or equivalent pipeline is installed along the outside of a pasture fenceline and not buried below the ground surface. • Location along the fenceline will provide protection from damage by machinery or grazing livestock, and growing forage along the fenceline provides some protection from UV light. • Any section of pipeline which has potential to be crushed by machinery or livestock must be buried.	
				Buried Below Frostline - <=1 inch Buried Below Frostline >1 inch, <2 inch Buried Below Frostline - >=2 inch		• Water is properly supplied to livestock in an efficient manner. Resource concerns regarding soil quality, water quality and livestock forage availability and quality are reduced or eliminated. • 1,000 feet of appropriately sized - PE - SiDR 9 or equivalent pipeline is installed in a trench below the anticipated frost line, using a hydraulic excavator, machinery operator, and general labor. 3 frost free hydrants are typically included in a 1,000 foot run.	
				Shallow Buried Pipeline		• Water is properly supplied to livestock in an efficient manner. Resource concerns regarding soil quality, water quality and livestock forage availability and quality are reduced or eliminated. • 1,000 feet of 1" - PE - SiDR 9 or equivalent pipeline is installed along the outside of a pasture fenceline and buried in a shallow trench using a trencher, light equipment operator and general labor. • Location along the fenceline will provide protection from damage by machinery or grazing livestock, and placement in the shallow trench provides protection from UV light in order to ensure the pipeline meets the intended lifespan. • Any section of pipeline which has potential to be crushed	

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						by heavy machinery must be buried in a trench dug below frost line.	
528	Prescribed Grazing	AC	1	Basic Rotation	AC	• Typically used for growing stock and adult, non-lactating stock where animals are moved to new paddocks every 3-7 days according to a grazing management plan. • Assumes labor to measure forage biomass and height, adjusting stocking rates, subdivide pastures, keep records, and attend a grazing workshop • Forage biomass and grazing height is measured weekly using a grazing stick. • Pastures are subdivided using interior or portable fencing, and paddock size is estimated based on rotation length, biomass, and grazing height. • Bare spots and weed pressure is reduced and plant productivity, and forage quantity/quality is improved. • Monitoring and record keeping is performed weekly and system is adjusted as needed.	• At least 75% of livestock forage needs must be obtained (based on forage animal balance). • Land mgt. practice (ref. 515.81).
				Intensive Rotation		• Typically used for lactating stock where animals are moved to new paddocks every 1-2 day, or for multi-species grazing according to a grazing management plan. • Assumes labor to measure forage biomass and height, adjusting stocking rates, subdivide pastures, keep records, and attend a grazing workshop Animals are rotated daily according to a grazing management plan • Forage biomass and grazing height is measured weekly using a grazing stick. • Pastures are subdivided using interior or portable fencing, and paddock size is estimated based on rotation length, biomass, and grazing height. • Bare spots and weed pressure is reduced and plant productivity, and forage quantity/quality is improved. • Monitoring and record keeping is performed weekly and system is adjusted as needed.	
533	Pumping Plant	No.	15	Subsurface <= 5HP	HP	• Install submersible pump <= 5HP with 4' dia. x 4' deep	• Not intended to solely replace an

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						pre-cast concrete manhole or well tile, or install surface pump <= 5 HP with 10' x 10' insulated building. • This scenario is applicable for only grazing systems. o Grazing system - existing surface waters are impacted by unrestricted access by livestock and inadequate water supply is available for livestock.	existing pump (considered as maintenance). • See Watering Facility (614) for Nose Pump
				Subsurface > 5HP		• Install submersible pump > 5HP with 4' dia. x 4' deep pre-cast concrete manhole or well tile, or install surface pump > 5 HP with 10' x 10' insulated building. • This scenario is applicable for only grazing systems. o Grazing system - existing surface waters are impacted by unrestricted access by livestock and inadequate water supply is available for livestock.	
				Surface Water - Solar	EA	• The typical scenario assumes installation of a solar pump on a stream, river, pond, or lake bank. • The installation includes the pump, wiring, intake pipe, solar pannels, mounts, inverter, and all appurtenances. • Grazing - Livestock exclusion from surface water will result in improved surface water quality and reduced erosion.	
				Well - Solar		• The typical scenario assumes installation of a solar powered pump in a well. • The installation includes the pump, wiring, pipeline in the well, solar pannels, mounts, inverter, and all appurtenances. • Grazing - Livestock exclusion from surface water will result in improved surface water quality and reduced erosion.	
574	Spring Development	No.	20	Well Tile	EA	• Costs for development of a spring using well tile or spring box, and includes PE tubing collector pipe and plumbing. • Refer to Pipeline (516) for the pipe, hydrant, and drain valve; Watering Facility (614) for the trough or tank, and Pumping Plant (533) for pumps. • Add seeding (342) separately	• Must meet all applicable provisions / permit requirements, including US ACOE jurisdiction, National Food Security Act, other federal, state, local regulations, prior to contract obligation.

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				Tile Drain	LF	• Same as above, but using buried PE tubing to collect seeps and deliver to a watering facility.	• Only for grazing systems
575	Animal Trails and Walkways	FT	10	Animal Trails & Walkways	SF	• Priced per square foot of road surface. • Cost includes excavation, grading and shaping, geotextile, gravel fill for the surface, and culvert to allow flows under the road. 12 ft wide with one 12" culvert per 500 ft of length assumed. • Does not include subsurface drain (606) and CAP (342).	
578	Stream Crossing	No.	10	Ford	EA	• Stream fords priced each, complete, including excavation, fill, geotextile, and armoring. • Does not include fence (382) for the cross stream fencing, exclusion fence and gates; and seeding (342). Add these practices separately.	• To address erosion and sedimentation resource concerns on existing access roads (any applicable land use). • To facilitate restricted animal crossing associated with a prescribed grazing system, while protecting stream and banks; • Must meet all applicable provisions / permit requirements, including US ACOE jurisdiction, National Food Security Act, other federal, state, local regulations, prior to contract obligation.
				Culvert, < 24" Culvert, 24" to 36" Culvert, > 36"	SF	• Priced by the square foot of the travel portion of the crossing, top of bank to top of bank. • Generally use in situations where MA Stream Crossing requirements do <u>not</u> apply.	
				Culvert for Fish Passage	SF	• Culvert(s) assumed to span the stream width to ensure passage of fish and other wildlife, according to MA Stream Crossing requirements. • Priced by the square foot of the travel portion of the crossing, top of bank to top of bank.	
				Arch Culvert, ≤ 15 ft. Arch Culvert, > 15 ft.	LF	• Bottomless arch culverts installed to span the stream width to ensure passage of fish and other wildlife, according to MA Stream Crossing requirements. • Priced per lineal feet of culvert	
				Bridge	SF	• Priced by the square foot of the travel portion of the crossing, top of bank to top of bank.	
580	Streambank and Shoreline Protection	FT	20	Bioengineering with Rock Toe	LF	• Installation of streambank protection using a riprap toe with live stakes and/or other bioengineering techniques on the slope above the rock. • Includes excavation, geotextile, riprap, wattles, live stakes, seeding and erosion control blanket	• Must meet all applicable provisions / permit requirements, including US ACOE jurisdiction, National Food Security Act, other federal, state, local regulations, prior to contract obligation

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614	Watering Facility	EA	20	Frost-free trough	EA	• Installation of a (1) freeze protected Trough with valve for a typical 30 acre rotational grazing system that provides fresh water to livestock when freezing conditions are expected, as is experienced in New England and necessary where animals will be spending time during the winter out in pastures. This will provide an adequate supply of water to livestock throughout the cold weather.	Applicable for existing or new grazing systems. Not for barns, HUAs or barnyards.
				Permanent Storage Tank with trough		• Installation of a (1) permanent storage tank with trough for distribution of adequate water to implement a rotational grazing system. The setting is a 30 acre pasture where the water supply is not adequate to provide enough water on-demand, so storage is needed so collection can occur when livestock are not drinking. Water is pumped into the permanent tank from a designated water source then delivered by gravity to moveable watering tanks in the pasture. The typical setting is a 30 acre pasture where surface water is being used. A rotational grazing system is being implemented.	
				Permanent Trough		• Installation of trough, valve and foundation for permanent watering facility to provide livestock access to daily water requirements and to improve livestock distribution. • Installed for utilization by more than one grazing unit. Typically surrounding area must be stabilized to avoid further resource degradation. • The troughs installed are typically larger than 200 gallons, as they serve multiple paddocks. They may be installed in lanes or areas where several paddocks have access to the same waterer. A suitable area surrounding the waterer will have to be stabilized with gravel, or in some cases, concrete, depending on the situation, using Heavy Use Area. • The result is that livestock access to fresh water with no degradation to soil and water resources.	
				Portable Trough		• Installation of portable trough (s), quick-couple valve for movable watering facility used in a rotational grazing system to meet daily water requirements and improve Livestock distribution. • The typical setting is a field or fields approximately 30	

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						acres in size where a rotational grazing system is being implemented. • Average number of troughs is 3 per 30 acre grazing system.	
				Nose Pump		• Installation of nose pump with all fittings to provide livestock access to surface water where feasible. • The use of a nose pump for delivering surface water to livestock keeps the livestock out of the water body and provides clean fresh water in adequate quantities. It also assists with proper animal distribution. • The typical setting is a 30 acre pasture where surface water is being used. A rotational grazing system is being implemented.	
642	Water Well	No.	20	Well, All types	EA	• One cost for all types of well	• Only for Livestock Watering • To facilitate animal distribution for prescribed grazing • Not for barnyard water.
				Well yield test		• One price for well yield test, authorized for new or existing wells to determine design yield and drawdown for irrigation or livestock wells. • Use this only when the estimated yield is not sufficient to complete the design of the system.	