Practice: 412 - Grassed Waterway

Scenario # 1 **<35 foot top width**

Scenario Description: **Missouri**

Typical practice is 1 acre, 30' topwidth, 8:1 side slopes, 1.25' depth, 55% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Before Practice Situation:

The field has a small gulley which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to covey runoff from concentrated flows, terrarces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 1 acre, 30' topwidth, 8:1 side slopes, 1.25' depth. The practice is installed using a dozer. Critical Area Planting (342) is included for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Acre of Waterway

Scenario Typical Size:	1	Acre	Tot Unit Cost	$3,381.97

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Excavation, common earth, large equipment,	554.25	Cubic Yard	$3.49	$1,934.33
Equip./Install.	Excavation, common earth, large equipment,	184.75	Cubic Yard	$1.47	$271.58
Labor	Supervisor or Manager	1	Hour	$37.21	$37.21
Mobilization	Mobilization, large equipment	2	Each	$374.89	$749.78
Forgone Incom	FI, Soybeans Dryland	0.5	Acre	$385.53	$192.77
Forgone Incom	FI, Corn Dryland	0.5	Acre	$392.59	$196.30
				Total Cost:	$3,381.97

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$2,139.92	EQIP-HU	$2,985.41
EQIP-NSHTI	$2,536.47	EQIP-HUNSHTI	$3,043.77
EQIP-NOI	$2,536.47	EQIP-HUNOI	$3,043.77
EQIP-MRBI	$2,536.47	EQIP-HUMRBI	$3,043.77
EQIP-CCPI	$2,139.92	EQIP-HUCCPI	$2,985.41

Practice: 412 - Grassed Waterway

Scenario # 2 **35-55 foot topwidth**

Scenario Description: **Missouri**

Typical practice is 1 acre, 45' topwidth, 10:1 side slopes, 1.5' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Before Practice Situation:

The field has a small gulley which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to covey runoff from concentrated flows, terrarces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 1 acre, 45' topwidth, 10:1 side slopes, 1.5' depth. The practice is installed using a dozer. Critical Area Planting (342) is included for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Acre of Waterway

Scenario Typical Size:	1	Acre	Tot Unit Cost	$3,584.95

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Excavation, common earth, large equipment,	605.25	Cubic Yard	$3.49	$2,112.32
Equip./Install.	Excavation, common earth, large equipment,	201.75	Cubic Yard	$1.47	$296.57
Labor	Supervisor or Manager	1	Hour	$37.21	$37.21
Mobilization	Mobilization, large equipment	2	Each	$374.89	$749.78
Forgone Incom	FI, Soybeans Dryland	0.5	Acre	$385.53	$192.77
Forgone Incom	FI, Corn Dryland	0.5	Acre	$392.59	$196.30
				Total Cost:	$3,584.95

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$2,271.86	EQIP-HU	$3,168.09
EQIP-NSHTI	$2,688.71	EQIP-HUNSHTI	$3,226.45
EQIP-NOI	$2,688.71	EQIP-HUNOI	$3,226.45
EQIP-MRBI	$2,688.71	EQIP-HUMRBI	$3,226.45
EQIP-CCPI	$2,271.86	EQIP-HUCCPI	$3,168.09

Practice: 412 - Grassed Waterway

Scenario # 3 **>55 foot topwidth**

Scenario Description: **Missouri**

Typical practice is 1 acre, 60' topwidth, 10:1 side slopes, 2.0' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Before Practice Situation:

The field has a small gulley which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to covey runoff from concentrated flows, terrarces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 1 acre, 60' topwidth, 10:1 side slopes, 2.0' depth. The practice is installed using a dozer. Critical Area Planting (342) is included for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Acre of Waterway

Scenario Typical Size:	1	Acre	Tot Unit Cost	$4,387.91

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Excavation, common earth, large equipment,	807	Cubic Yard	$3.49	$2,816.43
Equip./Install.	Excavation, common earth, large equipment,	269	Cubic Yard	$1.47	$395.43
Labor	Supervisor or Manager	1	Hour	$37.21	$37.21
Mobilization	Mobilization, large equipment	2	Each	$374.89	$749.78
Forgone Incom	FI, Soybeans Dryland	0.5	Acre	$385.53	$192.77
Forgone Incom	FI, Corn Dryland	0.5	Acre	$392.59	$196.30
				Total Cost:	$4,387.91

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$2,793.78	EQIP-HU	$3,890.76
EQIP-NSHTI	$3,290.93	EQIP-HUNSHTI	$3,949.12
EQIP-NOI	$3,290.93	EQIP-HUNOI	$3,949.12
EQIP-MRBI	$3,290.93	EQIP-HUMRBI	$3,949.12
EQIP-CCPI	$2,793.78	EQIP-HUCCPI	$3,890.76