



## APPENDIX 1 Grassed Waterways

**DEFINITION:** A natural or constructed channel that is shaped or graded to required dimensions and established with suitable vegetation. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Codes 362,412, 410, 468, 600 and 606.

**PURPOSES:** This practice may be applied as part of a conservation management system to support one or more of the following purposes:

1. To convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding.
2. To reduce gully erosion.
3. To protect/improve water quality.

**CRITERIA:**

1. This General Permit (GP) does not authorize the construction of grassed waterways in perennial or natural intermittent streams, or that are constructed in conjunction with sod-busting operations in native prairie or rangeland.
2. The grassed waterway must be constructed along a similar flow route of the existing channel. Grassed waterways requiring substantial straightening of the flow route are not authorized under this GP.
3. The grassed waterway must be constructed with either parabolic or trapezoidal cross sections. Irregular or V-shaped cross sections are not authorized by this GP.
4. The average top width of the grassed waterway must not be less than 20 feet and the bottom width of the grassed waterway must not exceed 100 feet.
5. The constructed side slopes must not be steeper than 4:1.
6. New grassed waterways including subsurface drain designs necessary to establish permanent cover may be authorized on a case by case basis.
7. Subsurface drains and stone centers, necessary for maintenance of existing grassed waterways are authorized.
8. Grassed waterways requiring a NRCS grade stabilization structure or other suitable outlet may be authorized by this GP; however, the grade stabilization structure or alternate outlet design must be designed or approved by the NRCS according to their specific conservation practice standards.
9. Grassed waterways requiring temporary or permanent berms are authorized by this GP. Once the desired vegetation has become established, the temporary berms shall be removed and the earthen material shall be blended into the adjacent fields to allow free drainage into the waterway.
10. Grassed waterway seeding/plantings must be recommended by the local NRCS office, adapted to soil type and climate, and must not include exotic and invasive species, including Reed canary grass (*Phalaris arundinacea*).
11. Grassed waterways constructed in farmed channels, that are completely or partially plowed across and no longer exhibit continuous bed and bank features, may be seeded to a grass mixture that meets the producer's needs, provided the grass(es) are recommended by the local NRCS office.
12. Grassed waterway rehabilitation/maintenance activities are authorized by this GP.

### APPENDIX I SUMMARY TABLE

<b>Scenario / Application</b>	<b>Authorization under GP</b>	<b>Mitigation Required</b>
Grassed waterways constructed in perennial and natural intermittent streams	No	Not applicable
Grassed waterways constructed in conjunction with sod-busting operations in native prairie/rangeland	No	Not applicable
New grassed waterways requiring subsurface drains	Yes	Site specific
Existing waterways requiring subsurface drains or stone centers for maintenance	Yes	Not applicable
Grassed waterways constructed in channels that are completely or partially farmed	Yes	No
Grassed waterway rehabilitation/maintenance	Yes (Note: some maintenance activities may be determined exempt)	No
Grassed waterways that replace impaired channels and riparian zones	Yes	Site specific.
Grassed waterways requiring grade stabilization structures or other suitable outlets	Yes	Site specific

## APPENDIX 2 Grade Stabilization Structures

**DEFINITION:** A structure used to control the grade and head cutting in natural or artificial channels.

**PURPOSE:** To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advance of gullies, headcuts, and to enhance environmental quality and reduce pollution hazards. Examples of grade stabilization structures authorized under this General Permit (GP) include drop spillways, block drop structures and rock chutes. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Codes 410 and 468.

**CRITERIA:** The following criteria are required for GP-40 authorization:

1. Structures proposed in conjunction with embankment ponds or other practices in waters of the United States (WUS), may be authorized, but will be evaluated as a component of the overall proposed project.
2. Grade stabilization structures constructed in or across drainage ways with perennial flow during normal years are not authorized under this GP.
3. The crest of the inlet must be set at an elevation that stabilizes upstream headcutting.
4. Structure must be designed to control the peak runoff from the 10-year storm or to meet the bankfull capacity of the channel, whichever is greater.
5. Disturbed areas, not covered with riprap, must be revegetated as soon as practicable, with plant species recommended by the local NRCS office, excluding Reed canary grass (*Phalaris arundinacea*) and other exotic and invasive species.

### APPENDIX 2 SUMMARY TABLE

Scenario / application	Authorization under GP	Mitigation Required
Grade stabilization structures constructed in conjunction with a proposed embankment pond or other practices in WUS	Yes, but must be evaluated as a single and complete project (Criterion No. 1).	Site specific
Grade stabilization structures constructed in streams with perennial flow during normal years	No	Not applicable
Grade stabilization structures constructed in intermittent and ephemeral streams	Yes	Site specific

### **APPENDIX 3**

#### **Heavy Use Protection Areas**

**DEFINITION:** The stabilization of areas frequently and intensively used by people, animals or vehicles by establishing vegetative cover, by surfacing with suitable materials, and/or by installing needed structures. Example drawings of heavy use protection areas are provided below. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 561.

**PURPOSES:**

1. Reduce soil erosion
2. Improve water quantity and quality
3. Improve air quality
4. Improve aesthetics
5. Improve livestock health

**CRITERIA:**

1. Heavy use protection areas requiring asphalt applications are not authorized under this General Permit (GP).
2. Disturbed areas, not covered with riprap, must be revegetated with grasses recommended by the local NRCS office, excluding Reed canary grass (*Phalaris arundinacea*) and other exotic or invasive species, as soon as practicable.
3. Heavy use protection areas designed for livestock crossing must not substantially disrupt the necessary life cycle movements of aquatic life, indigenous to the watershed.

**APPENDIX 4**  
**Pipelines**

**DEFINITION:** A pipeline installed where it is desirable or necessary to convey water or manure in a closed conduit from one point to another. Applicable Natural Resources Conservation Service (NRCS) conservation practice standards: Code 430.

**PURPOSES:**

1. Convey water from a supply source to points of use for livestock, wildlife, or recreation.
2. Transfer plant and animal waste for further utilization.
3. Convey and manage irrigation water and reduce water conveyance loss.

**CRITERIA:**

1. Pipelines constructed in wetlands must be backfilled with the material removed from the trench.
2. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States, including wetlands.
3. Trench excavation material may be temporarily sidecast in waters of the United States, for up to 3 months, provided the material is not placed in such a manner that it is dispersed by flows, currents, or other events.
4. Sidecast material must not inhibit flows into streams and/or wetlands.
5. Pipelines must avoid wetland impacts to the maximum extent practicable.
6. The written notification must include a detailed map depicting the location of all channel and/or wetland crossings.
7. The revegetation of riparian zones must be based on the recommendations of the local NRCS office. The seeding plan cannot include Reed canary grass (*Phalaris arundinacea*) or any other exotic or invasive species.
8. Pipelines with waste, must not discharge into waters of the United States, including wetlands.

**APPENDIX 4 SUMMARY TABLE**

<b>Scenario / Application</b>	<b>Authorization under GP</b>	<b>Mitigation Required</b>
Pipelines with waste designed to discharge in waters of the United States	No	Not Applicable
Pipelines requiring temporary sidecasting in waters of the United States	Yes	No, criteria 3 & 4 address sidecast material

## **APPENDIX 5**

### **Spring and Seep Developments**

**DEFINITION:** Collection of water from springs or seeps to provide water for a conservation need. Typically, springs are defined as point source flows where ground water intercepts the surface. Seeps are generally broader areas where ground water intercepts the surface but does not provide a point source surface flow. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 574.

**PURPOSES:** Improve the quantity and/or quality of water for livestock, wildlife, or other agricultural uses as well as the improvement of grazing distribution on rangeland.

**CRITERIA:**

1. Areas surrounding the created/improved watering facilities, where animal concentrations or overflow from the watering facility will cause resource concerns, must be protected to maintain or improve water quality.
2. Heavy use protection areas, in conjunction with the spring / seep development, are authorized by this GP.
3. Spring and seep developments, constructed in conjunction with pipeline conveyances, are authorized under this GP.
4. Spring and seep overflow shall be returned, via a stable outlet, to its original drainage course to ensure that aquatic habitats are preserved.
5. Spring and seep developments used to irrigate crops are not authorized under this GP.

## **APPENDIX 6**

### **Ponds**

**DEFINITION:** A water impoundment made by constructing an embankment or by excavating a pit or dugout. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 378.

**PURPOSES:** To provide water for livestock, fish and wildlife, fire control, and other related uses and to maintain or improve water quality.

**EXEMPTIONS:** Some ponds are exempt pursuant Section 404(f)(1)(c) and the Corps will make that determination.

#### **CRITERIA:**

1. Impoundments shall be constructed in environments where failures will not cause the loss of life, damage to homes, highways, roadways; or interruption of the use or service of public utilities.
2. Ponds that have storage capacities of greater than 15 acre feet, at the principal spillway elevation, are not authorized under this GP.
3. Written notification must include the intended purpose(s) of the proposed pond.
4. All exposed surfaces of embankments, auxiliary spillways, outlet channels, borrow areas, spoil, and other disturbed areas adjacent to the reservoir must be seeded to native grasses.
5. Native grasses and vegetation must be recommended by the local NRCS office, adapted to the soil type and climate, and must not include Reed canary grass (*Phalaris arundinacea*) or any other exotic or invasive species.
6. Exclusionary fencing shall be installed to prevent livestock access to the reservoir area, dam, and auxiliary spillway.
7. Ponds constructed for the sole purpose of recreation are not authorized under this GP.
8. The upstream and downstream side slopes of proposed embankments shall not be steeper than 3:1 and 2.5:1 respectively.
9. All impoundments authorized under this GP must meet the mandatory mitigation requirements set forth in stream mitigation guidelines/methods approved by the Corps of Engineers, Kansas City District (KCD).
10. Written notification must include the completed mitigation method worksheets, documenting the appropriate debits and credits associated with the project. The Kansas City District approved stream mitigation methods can be located on the District's Regulatory website at <http://www.nwk.usace.army.mil/Missions/Regulatory-Branch/>

**APPENDIX 6 SUMMARY TABLE**

<b>Scenario / Application</b>	<b>Authorization under RGP</b>	<b>Mitigation Required</b>
Multi-use ponds exceeding 15 acre feet storage capacity at the principle spillway elevation	No	Not applicable
Multi-use ponds with storage capacity $\leq$ 15 acre feet at the principle spillway elevation	Yes	Yes, those set forth in the KCD approved stream mitigation methods/guidelines
Ponds constructed for the sole purpose of recreation	No	Not applicable

## **APPENDIX 7**

### **Diversions**

**DEFINITION:** An artificial channel constructed to divert water from a specific location and direct flow to a desired location. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 362.

**PURPOSE:** Divert channel flows away from existing feedlot and/or KDHE registered animal feeding operation to eliminate water pollution and improve downstream water quality.

**CRITERIA:**

1. The proposed diversion must be constructed within an existing feedlot.
2. Diversions constructed to separate clean water runoff and flow from existing agricultural waste facilities are authorized by this GP.
3. Diversion channels built in conjunction with other agricultural waste treatment system improvements are authorized, provided the purpose of the diversion is not to accommodate expanding additions and facilities. Further, if the facility improvements or additions require the diversion of a clean water stream, the project is not authorized by this GP.
4. Diversion channels designed with permanently vegetated channels, must be seeded to grass(es) recommended by the local NRCS office, adapted to soil type and climate, and must not include exotic and invasive species, including Reed canary grass (*Phalaris arundinacea*).
5. Diversions constructed in conjunction with stable outlets such as grassed waterways, grade stabilization structures, waste storage facilities, solid/liquid waste separation facilities, waste treatment lagoons and wastewater treatment strips, are authorized by this GP.
6. Diversions that result in the loss of wetland resources are not authorized under this GP.

**APPENDIX 7 SUMMARY TABLE**

<b>Scenario/ application</b>	<b>Authorization under RGP</b>	<b>Mitigation Required</b>
Diversions constructed in existing feedlot/KDHE registered facilities	Yes, where the purpose is to separate clean water from contaminated water	Case specific
Diversions constructed to relocate existing channels to accommodate the expansion of an existing feedlot/KDHE registered facility	No	Not applicable
Diversions constructed in association with a new feedlot/KDHE registered facility	No	Not applicable
Diversions constructed in conjunction with other NRCS approved waste treatment and conservation practices (Criterion No. 5)	Yes, where the purpose is to separate clean water from contaminated water as part of an overall improvement or conservation plan to an existing feedlot facility	Case specific

**APPENDIX 8**  
**Water and Sediment Control Basins**

**DEFINITION:** An earthen embankment or a combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Codes 620 and 638.

**PURPOSES:**

1. Reduce watercourse erosion.
2. Trap sediment.
3. Reduce and manage downstream runoff.
4. Improve downstream water quality.

**CRITERIA:**

1. This General Permit (GP) does not authorize the construction of water and sediment control basins in wetlands.
2. Water and sediment control basins constructed in conjunction with approved grassed waterways, diversions or other approved practices, are authorized under this GP.
3. Water and sediment control basins must be designed with approved spillways, underground outlets, or soil infiltration outlets.
4. Water and sediment control basins must be constructed in either artificial channels (diversions or waterways) or farmed channels. Those proposed for construction in natural stream channels are not authorized under this GP.
5. Disturbed areas and newly constructed structures must be seeded /planted to grass(es) recommended by the local NRCS office, adapted to soil type and climate, and must not include exotic and invasive species, including Reed canary grass (*Phalaris arundinacea*).

**APPENDIX 8 SUMMARY TABLE**

Scenario / Application	Authorized under RGP	Mitigation Required
Water and sediment basins constructed in wetlands or natural stream channels	No	Not applicable
Water and sediment basins constructed in conjunction with approved grassed waterways, diversions, or other approved practices	Yes	Case specific.

**APPENDIX 9**  
**Wetland creation, enhancement and restoration**

**DEFINITION:** The creation of a wetland on a site that was historically non-wetland; the rehabilitation of a degraded wetland, reestablishment of a wetland so that soils, hydrology, vegetative community, and habitat are a close approximation of the original natural condition; or the inundation of lands to provide habitat for fish and/or wildlife. Applicable conservation practice standards: Codes 356; 646; 657; 658; and 659.

**PURPOSES:**

1. Create wetland functions
2. Restore wetland functions, values, habitat and diversity
3. Provide habitat for wildlife species such as shorebirds, waterfowl, wading birds, mammals, fish, reptiles, amphibians, etc.
4. Provide specific wetland conditions for targeted functions and species

**CRITERIA:**

1. The conversion of natural wetlands to another aquatic habitat is not authorized under this General Permit (GP).
2. Activities must result in a net gain in aquatic resource functions and services for authorization under this GP.
3. Activities resulting in a net loss of wetlands are not authorized under this GP.
4. The written notification must include a vegetation plan that must consist entirely of native plant species that are endemic to the area, recommended by the local Natural Resources Conservation Service (NRCS) office, are adapted to the soil type and climate, and must exclude Reed canary grass (*Phalaris arundinacea*).
5. This GP does not authorize the diversion of water supply from other wetland resources.
6. The conversion of a stream to a wetland resource is authorized under this GP, provided the required mitigation requirements, as outlined in Kansas City District approved stream mitigation methods for the state of Kansas, are met. Written notification must include the completed mitigation method worksheets, documenting the appropriate debits and credits associated with the project. The Kansas City District approved stream mitigation methods are located on the District's Regulatory website at:  
<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll11/id/2723>. Wetlands constructed on streams, must not exceed 15 acre feet storage capacity at the principal spillway elevation.
7. Dikes constructed in association with approved wetland practices shall have a top width not less than 8 feet and side slopes not steeper than 2:1 horizontal to vertical.

**APPENDIX 9 SUMMARY TABLE**

<b>Scenario / Application</b>	<b>Authorization under RGP</b>	<b>Mitigation Required</b>
Restoration of a historic wetland site	Yes	No
Enhancement of an existing wetland resource	Yes	No
Conversion of natural wetlands to another aquatic habitat	No	Not applicable
Conversion of a stream to a wetland resource	Yes	Yes, see criteria Nos. 5 & 6

**APPENDIX 10**  
**Stream Habitat, Bed, Bank and Shoreline Stabilization, Enhancement and Restoration**

**DEFINITION:** Treatments used to stabilize and protect the bed and/or banks of streams, constructed channels, and shorelines of lakes or reservoirs. Applicable conservation practice standards: Codes 580, 584 and 395

**PURPOSES:**

1. Prevent loss of land or damage to land uses, facilities, or archaeological and traditional cultural properties.
2. Maintain flow capacity of streams and channels.
3. Reduce effects/sedimentation from erosion.
4. Improve or enhance stream corridor for fish and wildlife habitat, aesthetics and recreation.
5. Provide suitable habitat for desired fish, aquatic species and ecological processes.
6. Maintain or alter channel bed elevation or gradient.
7. Modify sediment transport or deposition.

**CRITERIA:**

1. Activities involving stream channel modifications based on natural channel design framework and restoration of natural stream geometry are authorized.
2. The restoration of a stream channel to its natural or original alignment is authorized.
3. Traditional bank and shoreline stabilization practices, such as riprap revetments, armoring, stand-alone longitudinal peaked stone toe (LPSTP) and slope protection, are authorized. The length of traditional stabilization practices cannot exceed 500 linear feet of stream bank or 1 cubic yard of riprap material per running foot, below the plane of the ordinary high water mark (OHWM).
4. The reshaping of the bank or shoreline to a stable slope, is authorized. Reshaped banks must be stabilized with riprap, vegetative plantings or a combination thereof.
5. Non-traditional, bio-engineered stabilization practices such as bendway weirs, rock vanes, chutes, living shore/banklines and woody revetments, are authorized.
6. LPSTP, when incorporated into a bio-engineered design, is authorized and is not subject to the 1 cubic yard per running foot limitation described in “3” above.
7. Removal and clearing of snags, debris or other obstructions, necessary to restore and enhance stream functions, is authorized.

**APPENDIX 10 SUMMARY TABLE**

<b>Scenario / Application</b>	<b>Authorization under RGP</b>	<b>Mitigation Required</b>
Restoration of a stream channel to its natural/original alignment	Yes	No
Bank or shoreline stabilization	Yes, see limitations in "3" above	No
Reshaping of bank or shoreline to stable slope	Yes	No
Non-traditional stabilization and bio-engineering activities	Yes	No
Removal of snags, debris and obstructions	Yes	No

## **APPENDIX 11**

### **Subsurface Drainage**

**DEFINITION:** A conduit, such as corrugated plastic tubing, tile, or pipe, installed beneath the ground surface to collect and/or convey drainage water. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 606.

**PURPOSE:** To improve the soil environment for vegetative growth, reduce erosion, and improve water quality by:

1. Regulating water table and ground water flows.
2. Intercepting and preventing water movement into a wet area.
3. Serving as an outlet for other subsurface drains.

#### **SPECIAL CONDITIONS:**

1. Subsurface drains authorized by this GP must be constructed within a grassed waterway and meet requirements of Kansas Minimal Effect Exemption: KS-2 Terrace System Upgrade from Grassed Waterway/Vegetated Outlet to a Shaped Grassed Waterway with Subsurface Drainage Worksheet.
2. Disturbed areas must be revegetated with grasses recommended by the local NRCS office, excluding Reed canary grass (*Phalaris arundinacea*) and other exotic or invasive species, as soon as practicable.
3. Subsurface drains must discharge into an underground outlet with a bubble up outlet or onto an area either stabilized with vegetation (i.e., grassed waterway, critical area planting, buffer vegetation), a vegetative splash pad as illustrated in the attachments for the Kansas Minimal Effect Exemptions, or other similar area such as a denitrifying bio-reactor approved by NRCS.
4. Subsurface drains **may not** discharge directly into a stream.
5. Trench excavation material may be temporarily side cast in waters of the United States, for up to 3 months, provided the material is not placed in such a manner that it is dispersed by flows, currents, or other events.
6. Subsurface drain rehabilitation/maintenance associated with the rehabilitation/maintenance of a grassed waterway is authorized by this GP.
8. The drainage area must be equal to or less than 120 acres.

## APPENDIX 12

### Terraces

**DEFINITION:** An earthen embankment, or a combination ridge and channel, constructed across the field slope. Applicable Natural Resources Conservation Service (NRCS) conservation practice standard: Code 600.

**PURPOSE:** Apply practice as part of a resource management system for one or more of the following purposes:

1. Reduce erosion by reducing slope length.
2. Retain runoff for moisture conservation.

**SPECIAL CONDITIONS:**

1. Terraces that redirect a degraded channel, where flows no longer follow the original flow path, are authorized by this GP.
2. Terraces that compliment a NRCS designed grassed waterway are authorized by this GP.
3. Terraces that incorporate subsurface drains (Code 606) are authorized by this GP; however, the subsurface drains must discharge onto an area either stabilized with vegetation (i.e., grassed waterway, critical area planting, buffer vegetation), a vegetative splash pad, or other similar area approved by NRCS. Subsurface drains **may not** discharge directly into a stream.
4. Terraces that redirect stream channels flowing within natural alignments **are not** authorized by this GP.

#### SUMMARY TABLE

Scenario / Application	Authorization under RGP	Mitigation Required
Terraces that relocate a natural stream alignment	No	Not applicable
Terraces that restore a stream channel to its natural/original alignment	Yes	No
Terraces that redirect a degraded stream channel to a NRCS grassed waterway	Yes	Case specific
Terraces that incorporate subsurface drains	Yes, see limitations in Condition 3 above.	No

**APPENDIX 13**  
**Lined Waterway or Outlet**

**DEFINITION:** A waterway or outlet having an erosion-resistant lining such as a Turf Reinforced Mat (TRM) of concrete, stone, synthetic turf reinforcement fabrics, or other permanent material.

**PURPOSE:** A practice to provide for 1) the safe conveyance of runoff from conservation structures and water concentrations; 2) stabilization of existing or future gully erosion; and 3) protection and improvement of water quality Code 468.

**CRITERIA:** The following criteria are required for GP-40 authorization:

1. Lined waterway and outlets designed in conjunction with waterways, diversions and grade control structures are authorized.
2. Lined waterway and outlets within systems having maximum flows of 200 cubic feet per second are authorized.
3. Minimum capacity must be adequate to carry peak rate of runoff from a 10-year, 24-hour frequency storm.
4. Lined waterway and outlets associated with streambank soil bioengineering are authorized.
5. Lined waterway and outlets must be designed to incorporate aquatic life passage considerations.

**APPENDIX 13 SUMMARY TABLE**

Scenario / application	Authorization under GP	Mitigation Required
Structures designed in conjunction with other approved NRCS conservation practices	Yes	Site specific
Structures preventing aquatic life passage	No	Not applicable