

Effects of NRCS Conservation Practices - National

Subsurface Drain

A conduit installed beneath the ground surface to collect and/or convey excess water.

Code: 606

Units: ft.

Typical Landuse:

| | |
|--------------|--|
| AL-Aso Land | |
| O-Other | |
| W-Water | |
| D-Developed | |
| FS-Farmstead | |
| Pr-Protected | |
| P-Pasture | |
| R-Range | |
| F-Forest | |
| C-Crop | |

| <u>Soil Erosion</u> | <u>Effect</u> | <u>Rationale</u> |
|----------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------|
| Soil Erosion - Sheet and Rill Erosion | 4 | Reducing soil profile saturation increases infiltration by improving drainage and therefore decreases water runoff. |
| Soil Erosion - Wind Erosion | -1 | Improving drainage may increase surface soil drying. |
| Soil Erosion - Ephemeral Gully Erosion | 4 | Reducing soil profile saturation increases infiltration by improving drainage and therefore decreases water runoff. |
| Soil Erosion - Classic Gully Erosion | 1 | Interception water and reduction of seeps that can cause gully formation. |
| Soil Erosion - Streambank, Shoreline, Water Conveyance C | 1 | Interception water and reduction of seeps that can cause streambank instability. |
| <u>Soil Quality Degradation</u> | | |
| Organic Matter Depletion | -2 | Reducing water table increases oxidation of organic matter |
| Compaction | 2 | Soils have less risk of compaction when they are dryer. |
| Subsidence | -2 | Lowering of water table allows the oxidation of organic matter. |
| Concentration of Salts or Other Chemicals | 2 | The leached salts may be removed from the soil through drainage. |
| <u>Excess Water</u> | | |
| Excess Water - Seeps | 4 | Interception of excessive seepage through drainage. |
| Excess Water - Runoff, Flooding, or Ponding | 4 | Removal of excessive surface water through drainage will reduce flooding and ponding. |
| Excess Water - Seasonal High Water Table | 4 | Control of water table - subsurface water is collected and conveyed to a proper outlet. |
| Excess Water - Drifted Snow | 0 | Not Applicable |
| <u>Insufficient Water</u> | | |
| Insufficient Water - Inefficient Use of Irrigation Water | 2 | Drains can collect water for beneficial use or reuse and improved soil, water air relationship. |
| Insufficient Water - Inefficient Moisture Management | 1 | Drains can collect water for beneficial use or reuse and improved soil, water air relationship. |
| <u>Water Quality Degradation</u> | | |
| Pesticides in Surface Water | 2 | The action decreases runoff and promotes aerobic degradation of pesticide residues. Avoid direct outlet to surface water. |
| Pesticides in Groundwater | 2 | The action decreases deep percolation and promotes aerobic degradation of pesticide residues. |
| Nutrients in Surface water | -2 | Collecting and releasing nutrient laden water removed from fields to receiving surface waters. |
| Nutrients in Groundwater | 1 | The action collects and removes water and soluble nutrients from the site. |
| Salts in Surface Water | -2 | Percolating water picks up salts that are then collected in tile lines and outletted to surface waters. |
| Salts in Groundwater | 2 | Leaching of saline and sodic soils will be intercepted before salinity reaches groundwater. |
| Excess Pathogens and Chemicals from Manure, Bio-solic | 0 | Limited decrease due to decreased runoff, but any infiltrating water with pathogens will be concentrated in tile lines |
| Excess Pathogens and Chemicals from Manure, Bio-solic | 1 | Pathogens leached from the soil will be intercepted before reaching groundwater. |

| Excessive Sediment in Surface Water | 2 | Runoff and resulting erosion will be decreased | | | | | | | | | | | | | | |
|--------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--|---------------------------|-------------|---------------------------------------|---------------------|------------------------|---------------------------------|----------------------------------|-----------------------|----------------------|--------------------------------------|--|--------------------------|
| Elevated Water Temperature | 0 | Not Applicable | | | | | | | | | | | | | | |
| Petroleum, Heavy Metals and Other Pollutants Transport | 0 | The action reduces runoff and increases infiltration. Percolating water picks up metals that are then collected in tile lines. | | | | | | | | | | | | | | |
| Petroleum, Heavy Metals and Other Pollutants Transport | 1 | Heavy metals leached from the soil will be intercepted before reaching groundwater. | | | | | | | | | | | | | | |
| <u>Air Quality Impacts</u> | | | | | | | | | | | | | | | | |
| Emissions of Particulate Matter (PM) and PM Precursors | 0 | Not Applicable | | | | | | | | | | | | | | |
| Emissions of Ozone Precursors | 0 | Not Applicable | | | | | | | | | | | | | | |
| Emissions of Greenhouse Gases (GHGs) | 0 | Not Applicable | | | | | | | | | | | | | | |
| Objectionable Odors | 0 | Not Applicable | | | | | | | | | | | | | | |
| <u>Degraded Plant Condition</u> | | | | | | | | | | | | | | | | |
| Undesirable Plant Productivity and Health | 2 | Improved drainage enhances growing environment for non-hydrophytes. If hydrophytes are desired, drainage will increase the problem. | | | | | | | | | | | | | | |
| Inadequate Structure and Composition | 0 | Not Applicable | | | | | | | | | | | | | | |
| Excessive Plant Pest Pressure | 0 | Not Applicable | | | | | | | | | | | | | | |
| Wildfire Hazard, Excessive Biomass Accumulation | 0 | Not Applicable | | | | | | | | | | | | | | |
| <u>Fish and Wildlife - Inadequate Habitat</u> | | | | | | | | | | | | | | | | |
| Inadequate Habitat - Food | 0 | Increase or decrease in food supply depends on plant species on the site due to soil moisture/plant relationships. | | | | | | | | | | | | | | |
| Inadequate Habitat - Cover/Shelter | 0 | Increase or decrease in cover/shelter depends on plant species on the site due to soil moisture/plant relationships. | | | | | | | | | | | | | | |
| Inadequate Habitat - Water | 4 | The action will increase available wet habitat for some species and decrease it for others. | | | | | | | | | | | | | | |
| Inadequate Habitat - Habitat Continuity (Space) | 0 | Not Applicable | | | | | | | | | | | | | | |
| <u>Livestock Production Limitation</u> | | | | | | | | | | | | | | | | |
| Inadequate Feed and Forage | 4 | Quantity and quality of forage species will be improved if drainage is installed to enhance their production. | | | | | | | | | | | | | | |
| Inadequate Shelter | 0 | Not Applicable | | | | | | | | | | | | | | |
| Inadequate Water | 0 | Not Applicable | | | | | | | | | | | | | | |
| <u>Inefficient Energy Use</u> | | | | | | | | | | | | | | | | |
| Equipment and Facilities | 0 | Not Applicable | | | | | | | | | | | | | | |
| Farming/Ranching Practices and Field Operations | 0 | Not Applicable | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th colspan="2"><u>CPPE Practice Effects:</u></th> </tr> </thead> <tbody> <tr> <td>5 Substantial Improvement</td> <td>0 No Effect</td> </tr> <tr> <td>4 Moderate to Substantial Improvement</td> <td>-1 Slight Worsening</td> </tr> <tr> <td>3 Moderate Improvement</td> <td>-2 Slight to Moderate Worsening</td> </tr> <tr> <td>2 Slight to Moderate Improvement</td> <td>-3 Moderate Worsening</td> </tr> <tr> <td>1 Slight Improvement</td> <td>-4 Moderate to Substantial Worsening</td> </tr> <tr> <td></td> <td>-5 Substantial Worsening</td> </tr> </tbody> </table> | <u>CPPE Practice Effects:</u> | | 5 Substantial Improvement | 0 No Effect | 4 Moderate to Substantial Improvement | -1 Slight Worsening | 3 Moderate Improvement | -2 Slight to Moderate Worsening | 2 Slight to Moderate Improvement | -3 Moderate Worsening | 1 Slight Improvement | -4 Moderate to Substantial Worsening | | -5 Substantial Worsening |
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