

## CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
<b>PRACTICE: Access Road 560</b>		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
<b>RESOURCES, CONSIDERATIONS AND CONCERNS</b>	<b>PHYSICAL EFFECTS</b>	<b>RATIONALE</b>			
<b>SOIL - EROSION</b>					
Sheet and Rill	Not Applicable	Not applicable.			
Wind	Neutral	Winds acting on the road edges that are routinely graded may cause saltation, creep, and suspension of soil particles.			
Ephemeral Gully	Slight Improvement	Road will intercept runoff and break up gullies. A slight worsening may occur from runoff water in side-road drainage ditches.			
Classic Gully	Slight Worsening	Water control structures will concentrate flows in drainage ditches.			
Streambank	Not Applicable	Not applicable.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Slight Worsening	Embankment grading steepens slopes.			
Road, Roadsides, and Construction Sites	Slight Worsening	Road built according to standards will have slopes stabilized during and after construction.			
<b>SOIL – CONDITION</b>					
Organic Matter Depletion	Not Applicable	Not applicable.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Slight to Moderate Improvement	Traffic is confined to road areas.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
• Salts and other Chemicals	Not Applicable	Not applicable.			
• Animal Waste and other Organics - N	Not Applicable	Not applicable.			
• Animal Waste and other Organics - P	Not Applicable	Not applicable.			
• Animal Waste and other Organics - K	Not Applicable	Not applicable.			
• Commercial Fertilizer - N	Not Applicable	Not applicable.			
• Commercial Fertilizer – P	Not Applicable	Not applicable.			
• Commercial Fertilizer – K	Not Applicable	Not applicable.			
• Residual Pesticides	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Neutral	Travel ways are designed to minimize sedimentation.			
<b>WATER – QUANTITY</b>					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or	Slight Worsening	Road will create ponding			

Ponding		opportunities.
Excessive Subsurface Water	Not Applicable	Not applicable.
Drifted Snow	Slight to Moderate Worsening	Roads create landscape breaks increasing snow trapping and drifting.
Inadequate Outlets	Slight to Moderate Improvement	Drainage control structures will improve outlet conditions
Inefficient Water use on Irrigated Land	Slight to Moderate Improvement	Road will provide better farm and irrigation equipment access.
Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Slight Worsening	Road intercepts runoff and has no outlet or water could be conveyed to another water course.
<b>WATER – QUALITY</b>		
In Groundwater:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Not Applicable	Not applicable.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Not Applicable	Not applicable.
• Harmful Levels of Petroleum	Slight Worsening	Concentration of traffic increases the likelihood of petroleum spills on road.
In Surface Water:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Not Applicable	Not applicable.
• Excessive Suspended Sediment and Turbidity	Slight Improvement	Interception of runoff.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Temperatures	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Neutral	Potential for slight increase in surface runoff where access road used for haul road for manure distribution.
• Harmful Levels of Petroleum	Slight Worsening	Concentration of traffic increases the likelihood of petroleum spills on road.
<b>AIR – QUALITY</b>		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Worsening	Vehicular traffic on farm roads can contribute to fugitive dust.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Worsening	Vehicular traffic on farm roads can contribute to fugitive dust.
Excessive Ozone	Not Applicable	Not applicable.
Excessive Greenhouse Gas:		
• CO <sub>2</sub> (Carbon Dioxide)	Not Applicable	Not applicable.

• N <sub>2</sub> O (Nitrous Oxide)	Not applicable	Not applicable.
• CH <sub>4</sub> (Methane)	Not Applicable	Not applicable.
Ammonia (NH <sub>3</sub> )	Not Applicable	Not applicable.
Chemical Drift	Not Applicable	Not applicable.
Objectionable Odors	Not Applicable	Not applicable.
Reduced Visibility	Moderate to Substantial Improvement	Reduce fugitive dust emissions
Undesirable Air Movement	Neutral	Roads are designed to minimize funneling and increase in wind speeds through windbreaks.
Adverse Air Temperature	Not Applicable	Not applicable.
<b>PLANTS – SUITABILITY</b>		
Plants not Adapted or Suited	Substantial Improvement	Adapted and suited species are selected for this practice by reference to Critical Area Planting, 342.
<b>PLANTS - CONDITION</b>		
Productivity, Health, and Vigor	Slight to Moderate Improvement	Improved access increases ability to manage stands.
Threatened or Endangered Plant Species:		
• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Not Applicable	Not applicable.
• Declining Species, Species of Concern	Not Applicable	Not applicable.
Noxious and Invasive Plants	Slight Worsening	Roads may provide an environment for weeds.
Forage Quality and Palatability	Not Applicable	Not applicable.
Wildfire Hazard	Moderate to Substantial Improvement	Roads provide firebreaks and access to sites for fuel reduction activities.
<b>ANIMALS - FISH AND WILDLIFE</b>		
Inadequate Food	Not Applicable	Not applicable.
Inadequate Cover/Shelter	Not Applicable	Not applicable.
Inadequate Water	Not Applicable	Not applicable.
Inadequate Space	Slight to Moderate Worsening	Roads reduce and fragment space.
Habitat Fragmentation	Slight Worsening	Roads fragment plant communities to some degree.
Imbalance Among and Within Populations	Not Applicable	Not applicable.
Threatened and Endangered Fish and Wildlife Species:		
• Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
• Declining Species, Species of Concern	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
<b>ANIMALS – DOMESTIC</b>		
Inadequate Quantities and Quality of	Not Applicable	Not applicable.

Feed and Forage		
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not applicable.
Stress and Mortality	Not Applicable	Not applicable.
<b>HUMAN – ECONOMICS</b>		
Land - Change in Land Use	Substantial	Substantial, cropland changed to roadway.
Land – Land in Production	Substantial decrease	Substantial decrease, land taken out of production
Capital – Change in Equipment	Moderate increase.	
Capital - Total Investment Cost	Moderate to substantial.	
Capital – Annual Cost	Slight to moderate increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to moderate decrease	Slight to moderate decrease, more efficient movement around farm.
Labor – Change in Management Level	Negligible	
Risk - Yield	Slight Increase	Slight increase due to land conversion.
Risk - Flexibility	Slight Decrease	Slight decrease due to more efficient accessibility.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Slight to Moderate Increase	Slight to moderate increase due to construction needs.
Profitability – Change in Profitability	Situational	Moderate decrease to slight increase.
<b>HUMAN - CULTURAL</b>		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Moderate to Substantial Increase	Initial construction; increased public access can have adverse effects.
<b>HUMAN – ENERGY</b>		
Depletion of Fossil Fuel Resources	Slight Decrease	Drivable surfaces improve the fuel efficiency of vehicles.
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not applicable.

## Human Considerations Explanation

<b>Considerations</b>	<b>Physical effects indicate:</b>
<b>Land - Change in Land Use</b>	The degree to which implementing the conservation practice is expected to cause a change from one land use to another.
<b>Land - Land in Production</b>	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of land in production.
<b>Capital - Change in Equipment</b>	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of capital equipment required for farm or ranch operations.
<b>Capital - Total Investment Cost</b>	A qualitative measure of the increase in total investment dollars required in order to implement the conservation practice.
<b>Capital - Annual Cost</b>	A qualitative measure of the expected change in annual capital costs required in order to operate and maintain the conservation practice.
<b>Capital - Credit &amp; Farm Program Eligibility</b>	Included to make conservation planners aware of the potential availability of funding for implementing conservation practices.
<b>Labor – Labor</b>	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of overall farm or ranch labor required for operations.
<b>Labor - Change in Management Level</b>	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of required active management on a farm or ranch.
<b>Risk – Yield</b>	The degree to which risk, as related to crop or livestock yields, is expected to increase or decrease as a result of implementing the conservation practice.
<b>Risk – Flexibility</b>	The degree to which risk, as related to the flexibility of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice. For example, converting from flood irrigation to a sprinkler system gives a farmer an increase in flexibility of irrigation, which results in a decrease in the level of risk associated with inflexibility of operations.
<b>Risk – Timing</b>	The degree to which risk, as related to the timing of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
<b>Risk - Cash Flow</b>	The degree to which risk, as related to cash flow in farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
<b>Profitability - Change in Profitability</b>	The degree to which farm or ranch profitability is expected to increase or decrease as a result of implementing the conservation practice.
<b>Cultural Resources and/or Historic Properties Present or Suspected to be Present</b>	The degree to which implementation of the conservation practice is expected to increase or decrease the risk of cultural resource disturbance, degradation, or loss.
<b>Depletion of Fossil Fuel Resources</b>	Inefficient use of fossil-originated energy sources (diesel, gasoline, propane, natural gas, coal), lubricants, and other materials.
<b>Underutilization of Non-Fossil Energy Sources</b>	Available and cost-effective alternative energy sources (solar, wind, biofuel, hydroelectric, geothermal) are not being used or are being used inefficiently.