#### **ORCS** Natural Resources Conservation Service

#### Erosion Control Strategies for Runoff & Erosion Control

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THE NATURAL RESOURCES CONSERVATION SERVICE IS AN EQUAL OPPORTUNITY EMPLOYER AND PROVIDER

# **Soil Erosion Types:**

- Raindrop Splash
- Sheet and Rill
- Ephemeral
- Gully
- Streambank
- Slope Instability



## Factors That Influence Soil Erosion

Soil Type
Slope/Topography
Vegetation
Rainfall

(Amount & Intensity)

Human Impacts



# Farming ("Human") Activities Influencing Runoff

- Infrastructure
- Land Grading
  - Affects natural drainage, soil & plant conditions...
- Impervious Surfaces
- On-going Operations



Soil compaction, water mgt, maintenance, etc

#### **Runoff Control Strategies** *"Runoff Control Reduces Erosion"*

4-D Formula:
Decrease
Detain
Dissipate
Divert



#### **Decrease** Volume and Concentration of Runoff

- Capture & Reuse
- Reduce Slope Length
- Water Mgt
- Reduce Impervious/
   Compacted Surfaces
- Vegetation
- Increase Infiltration



# Detain (and/or Retain) Runoff

Detention v.s.
 Retention

 Detain & Meter Runoff

 Retain, Clean & Reuse



## **Dissipate Runoff**

 Reduce Erosive Velocities
 Improve Infiltration
 Protect Water Quality



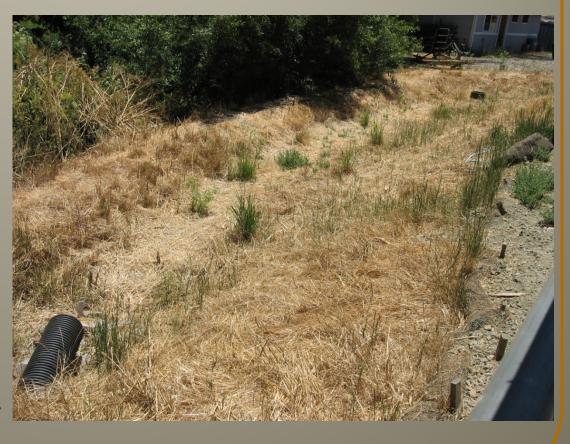
#### **Divert Runoff** *Use with Caution*

**Diversions** Cause **Concentration & Increased Volume**  Redirect To a Safe Outlet Divert & Spread • Divert & Capture



## **Erosion Control Strategies**

 Management Vegetative Structural Combination • Temporary/ Emergency



## **Management Practices**

- Irrigation Water Management
- Nutrient Management
- Pest Management
- Wildlife Habitat Management
- Ag Energy Management
- Conservation Practice Operation & Maintenance

## **Vegetative Practices**

- Vegetated Treatment System
- Stream Habitat & Riparian Restoration
- Grass Waterway
- Critical Planting
- Hedgerow
- Cover Crop
- Windbreak



## **Structural Practices**

- Water Developments
- Irrigation Systems, Pumps
- Access Roads
- Drainage Systems
- Tail Water Recovery
- Water Filtration Systems



Water & Sediment Control Structures

#### Temporary/Emergency Practices Use with Caution

- Can cause other problems
- Makes problem worse
- Waste of time & money
- Short lived
- High maintenance
- False sense of security



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