



Cost Savings and Efficiency

COMPOST FOR ROADSIDE STABILIZATION



Who We Are

- Prairie Dirt Solutions currently operates 2 permitted composting sites
 - Oklahoma City – DEQ
 - Washington, OK – ODAFF
- Current production: 64,000 yards of compost annually
- Currently diverting 170,000 yards of material from the landfill



What is Compost?

- Nutrient-rich organic soil created through technical decomposition of organic matter such as yard waste and food scraps
- Key benefits
 - Vegetation establishment
 - Erosion control
 - Stormwater mitigation





20% - 60% Cost Savings Using Compost

- Texas DOT adopted the use of compost for roadside stabilization over 20 years ago.
- ***"Using compost on normal roadside maintenance, erosion control, or repairs saves about 20 percent of the cost of traditional seed-soil-erosion blanket,"*** says TNRCC (now Texas Commission on Environmental Quality) Commissioner John Baker. ***"For new construction, the savings jump to about 60 percent."*** The amount of the savings depends on the location of the project, the costs of transporting compost to that site and the type of application

Erosion Control and Soil Health

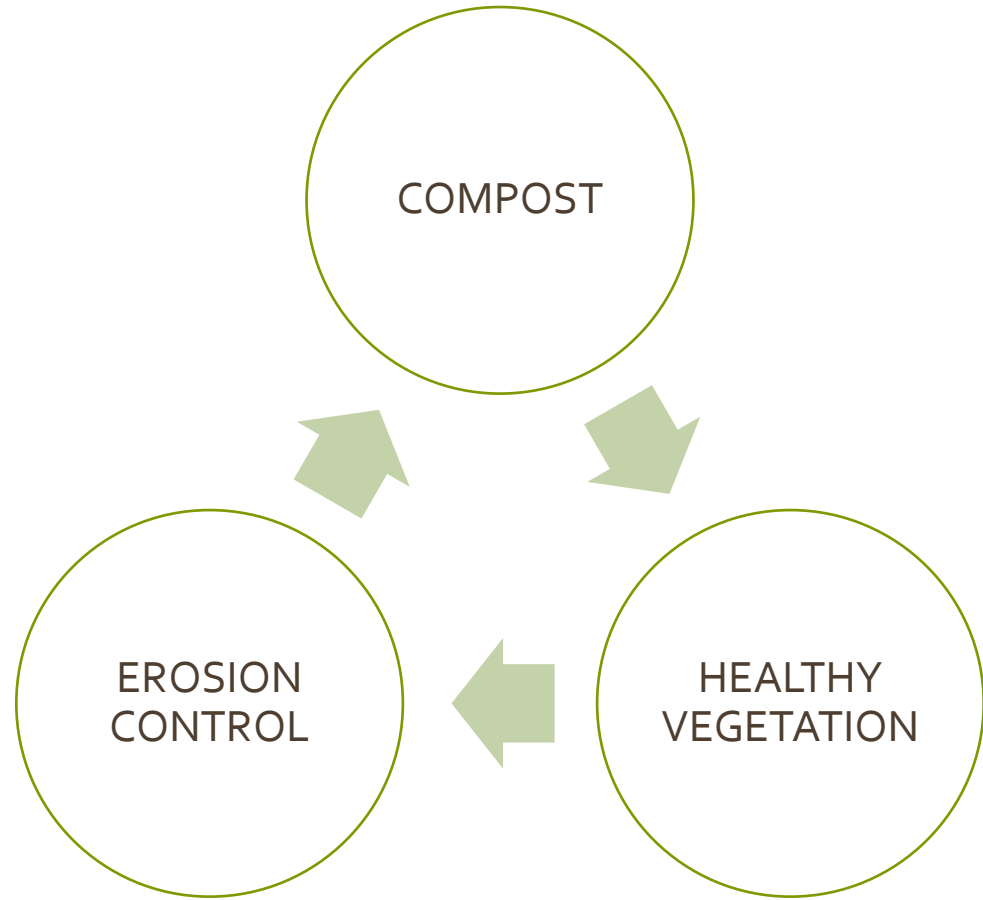
- Compost stabilizes soil and prevent erosion by binding soil together, increasing infiltration, and slowing the surface flow of water
- Stabilization from compost leads to cost savings by reducing the need for expensive erosion control measures.

Reduction in sediment movement: 67 – 99%
Stormwater runoff reductions: 60-97%



Vegetation Growth and Maintenance

- Compost supports healthy vegetation growth
- Healthy vegetation growth reduces the risk and costs of replacing vegetation
- Established vegetation prevent soil erosion



Water Management

- Compost improves soil structure, allowing it to retain up to 20 times its weight in water
- Improved soil structure leads to less need for irrigation of roadside landscaping, greatly reducing water truck trips which saves fuel, labor and water.

Water savings – minimum of 25%



Infrastructure Improvement

- When used as part of soil improvement in construction projects, compost can reduce the need for importing expensive topsoil, soil amendments or cement, leading to cost savings



Roadside Plant Health

- Compost-amended soil will promote healthier plant growth along roadsides, making vegetation more resilient to stressors like pollution, road salt and draught.





Application



Compost Types

1. Course Compost

- Least expensive
- Great for most difficult erosion areas
- 5" minus - product specification
- 1 – 5" application depending on restoration need
- 54% savings over least expensive sod

2. Single Screened

- 2" application with appropriate seeding to establish vegetation
- 1/2" minus – product specification
- Great for 4 to 1 or flatter slope
- May be used under sod

3. Double Screened

- Thin application on top of sod for water holding capacity, long-term nutrients
- 1/4" minus – product specification



Case Studies



Cleveland County

Before



Installation of 6-12 inches course compost



After 3.34" rainfall event



Today – fully recovered to
native prairie



Compost Benefits



It's a Climate Change Superhero

- **Input:** Composting of organic material diverts from landfill where the same materials generate methane
- **Output:** Compost use/plant growth sequesters carbon from the atmosphere
- **Improves soil structure and root environment**
- **Helps in drought** by retaining water
- **Helps in storms** by reducing erosion/runoff

It's a Plant's Best Friend

- **Supplies** organic matter
- **Improves** soil's ability to hold nutrients for plants
- **Improves** and stabilizes soil PH
- **Supplies** micro and macronutrients
- **Holds soil In place** by **Increasing plant life decreasing runoff**



Strive For 5



Strive for 5

- 5% organic matter in soil
 - 1cy of our compost holds 400 gallons of water
- Desire to partner on 5 ODOT projects to demonstrate cost reduction

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