For every dollar not spent on erosion control $10-$15 is spent on off site impacts.
The Secret is Planning

Using The Right Tool…

And Proper Installation…. 

Site Practices

Site Practices: Slope Drains

Site Practices: Tracking
Site Practices: Construction Site Entrances

Construction Site Entrances: Gravel

Site Practices: Dewatering

Site Practices: Stormwater Treatment

Straw Bales

Silt Fences
Silt Fence Placement

Long runs should be avoided. Sediment tends to accumulate in one area causing premature overflow.

Silt Fence Placement

Designs called J-hooks insure water and sediment are ponded behind each silt fence.

Silt Fence Placement

Large areas often need additional runs installed in the interior to reduce the volume of water reaching the perimeter fences.

Silt Fence Placement

The ends of a “smile” must always be long enough to pond water and sediment.

Silt Fence Placement

Silt fence should be placed at least 6 feet from the toe of a slope for increased ponding volume.

Silt Fence Considerations

- Consider topography and drainage patterns
- Do not use for concentrated flow
- Do not use on slopes
- Put only along same contour
- Limit drainage area to 100 sq. ft. per linear foot of silt fence
Silt Fence Types

Slotted Installation Silt Fence

Slotted Installation Silt Fence

Silt Fences

- Installed Correctly
  - Trench
  - Fabric staked on downslope side of trench
  - Fabric buried 8 inches in trench
  - Overlap at least 6 inches and folded at joints

Silt Fence Installation
Silt Fence Maintenance

- Maintenance is necessary when sediment reaches 1/3 the height of the silt fence

Channel Protection

- Rock Check Dams

Channel Protection: Rock Check Dams

Riffles and Pools

- Gravel Bag Barriers

Channel Protection: Gravel Bag Barriers
Channel Protection:
Triangular Silt Dike

Channel Protection:
Georidge

Channel Protection:
Fiber Logs

Channel Protection:
Sod

Channel Protection:
Native Plants

Channel Protection:
Texas Riprap
In-water Devices
Flotation Silt Curtains

Inlet Protection

Inlet Protection
Drop Structures

Inlet Protection
Curb Structures

Inlet Protection

• Maintenance is ALWAYS an issue!
Site Preparation

Vegetation Establishment: Seed Selection
- Satisfying design requirements
- Compatibility with surroundings
- Production of extensive root systems
- Rapidity of establishment
- Tolerance of site conditions
- Resistance to insects and diseases
- Availability from commercial suppliers

Vegetation Establishment: Seed Selection
- Ability to self-perpetuate
- Compatibility with maintenance objectives
- Select native species where practical
- Do not include noxious weeds

Use of Natives

Seeding Techniques
Slope Protection

Slope

1:1 100% 45°
2:1 50% 26°
3:1 33% 18°
4:1 25% 14°

Straw Mulch

Rolled Erosion Control Products

• Biodegradable Blankets
  – Wood Fiber
  – Straw
  – Straw Coconut
  – Coconut
  – Hemp

Netting Determines Application

• Netting Types
  – Quick Grow—No UV Stabilization
    • For use in areas that will be mowed in same season
    • Breakdown 6-8 weeks
  – Standard Netting—Moderate UV Stabilization
    • For use in areas that require full season protection
    • Breakdown 1 year
  – Heavy Netting—High UV Stabilization
    • For use in channels and other extreme conditions
    • 3 year breakdown
  – Biodegradable Netting
    • Primarily used in streambank stabilization and sensitive sites
    • Breakdown varies with material
Netting Determines Application

- Number of nets
  - Net One Side
    - Light duty slope application—up to 3H:1V slopes
  - Net Two Side
    - Steep slope and channel applications

Rolled Erosion Control Products

- Non-Biodegradable Blankets
  - Polypropylene
  - Recycled Plastics
- Applications
  - Channel Stabilization
  - Turf Reinforcement

Hydraulically Applied Mulches

- Recycled Paper
- Wood Fiber/Paper Blends
- Wood Fiber

Hydraulically Applied Mulches: Bonded Fiber Matrix

Rolled Erosion Control Products Turf Reinforcement Mats (TRM’s)
Resources

• Protecting Water Quality in Urban Areas
  – Minnesota Pollution Control Agency
  – www.pca.state.mn.us/water/pubs/sw-bmpmanual.html

• Minnesota Urban Small Sites BMP Manual
  – www.metrocouncil.org

• Minnesota Erosion Control Association
  – www.mnerosion.org

• International Erosion Control Association
  – www.ieca.org