

Sediment Delivery and Reuse

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Sedimentation is Analogous to Clogged Arteries

Life Saving Emergency Treatment Consists of
Surgery to Remove the Blockage

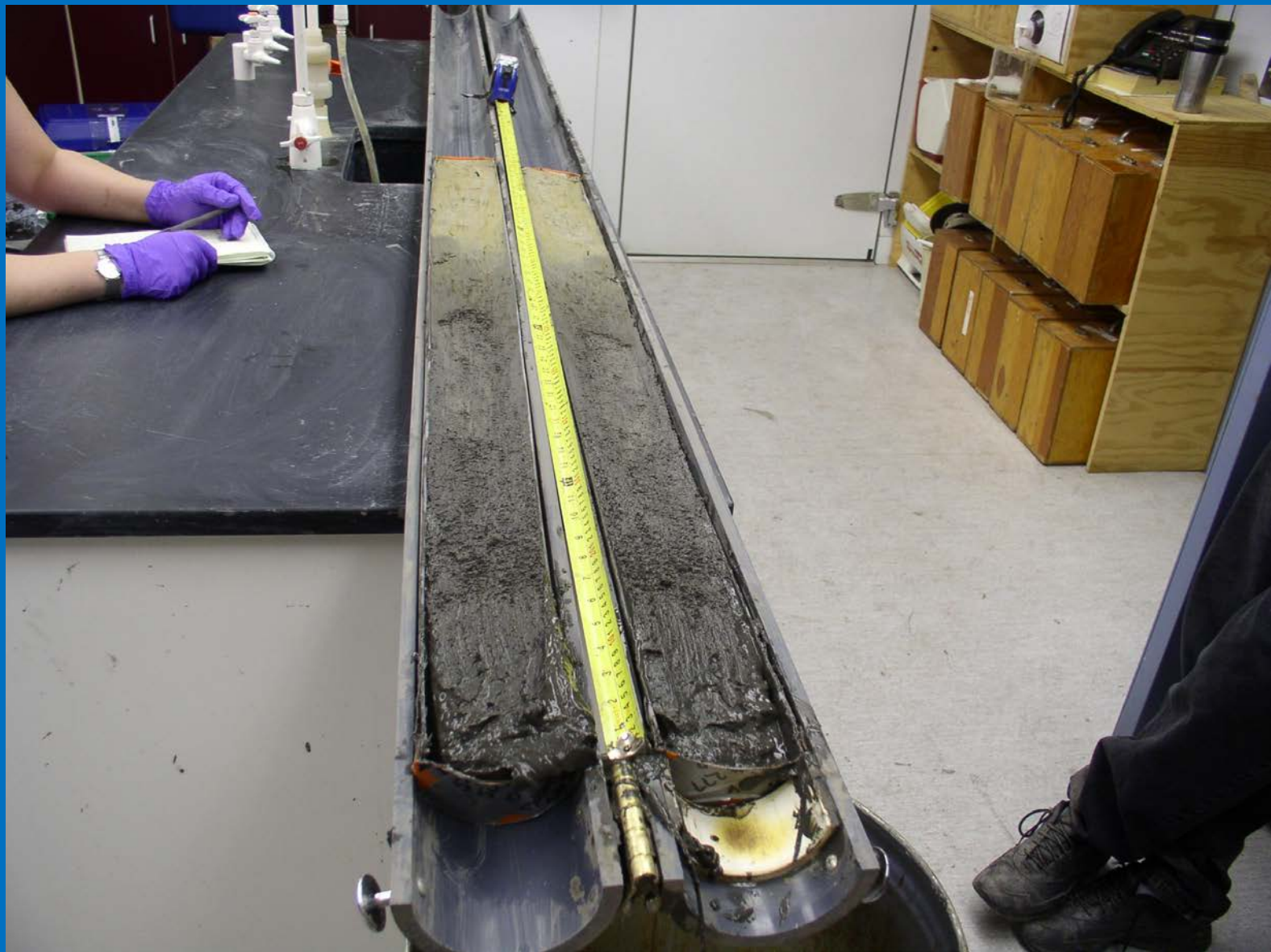
Long Term Treatment Requires Changing the
Patient's Diet and Exercise Habits



Think like an elephant during water project construction.



Think like an ant over decades of maintenance – one grain at a time.



Evaluation of Sediment Cores

- Potential Chemical Contaminants
- Agronomic Fertility
- Soil Classification and Consistence
- Grain Size
- Moisture Content, Density, etc.



Lake Peoria Sediment
Dried in Field
May-Aug. 2000



Lake Peoria Sediment
Spring 2001
after Weathering



Grass one year after placement of wet sediment from Peoria Lake

Sand Farm Crop Harvest



Control: 0 cm sediment on native sandy soil



30 cm sediment added

Corn plant height at harvest time



Sunflowers on strip mine overburden, Banner Marsh SFWA





Pekin landfill August 2008 clay liner/sediment cap

Dredged Material Can be Mixed with Other Material to Produce Manufactured Soil

- Biosolids
- Compost
- Sand
- Other soil
- Various types of organic matter

“Clean” Urban Soil



Reclaimed topsoil from Lower Peoria Lake



Dredging Options:

- Hydraulic
- Various slurry pumps
- Excavator, Clam or Bucket
- Move with pipe, trucks on causeway, conveyor, small barges

Other innovative methods













Lake Decatur 2011 Drought





Walton Lake, Litchfield, Ill., During drawdown









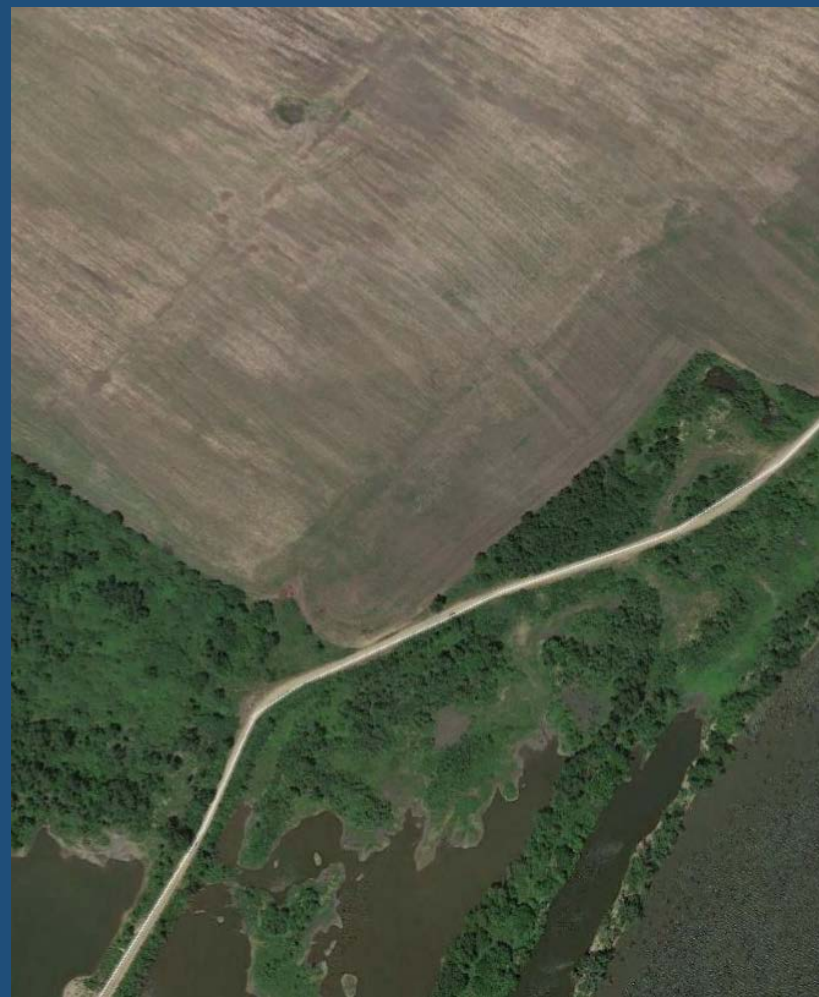




Spread Sediment on Farmland
or Degraded Land



Duck Island Cells Aug 2010



Duck Island Cells June 2016



Rainbowing Dredged Sand



Dredge in foreground rainbowing sediment



Tubeline Nitro 600 Manure Spreader Demo



MOORE





Sediment Traps

- Capture Sediment near inflows
- Hold it for efficient removal
- Keep it out of main portion of lake



Greenwood Lake



Drake's Cr. TN., 2005, vegetated geotextile tubes.





Hesco Barriers can protect shoreline, and form wave breaks and other features

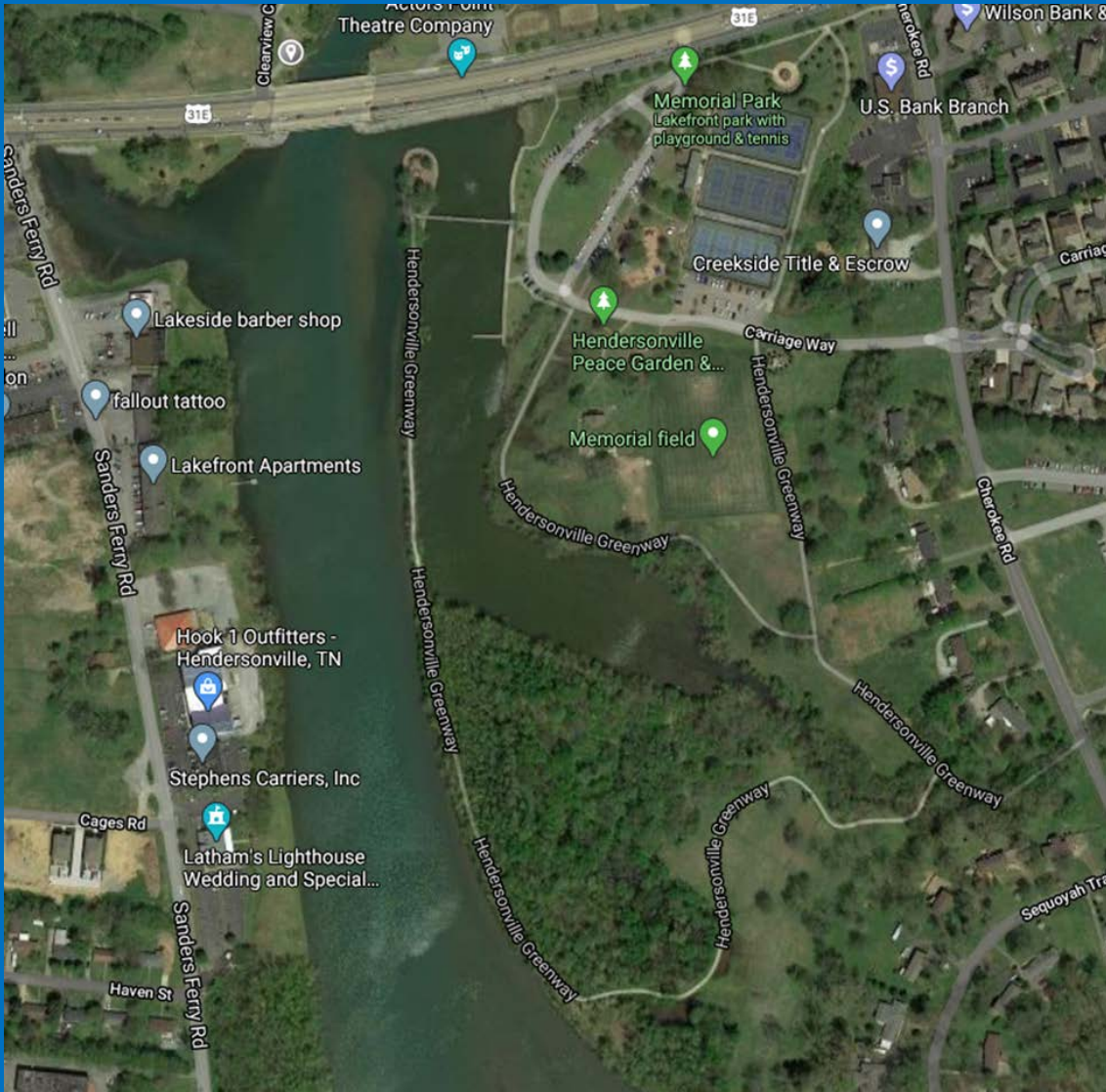
Need for Soil

- It is more valuable than oil
- Adjacent and nearby farms
- Local landscaping – homes, facilities, highways
- Nurseries, contractors, soil sales people
- Large urban areas
- Deserts and degraded areas



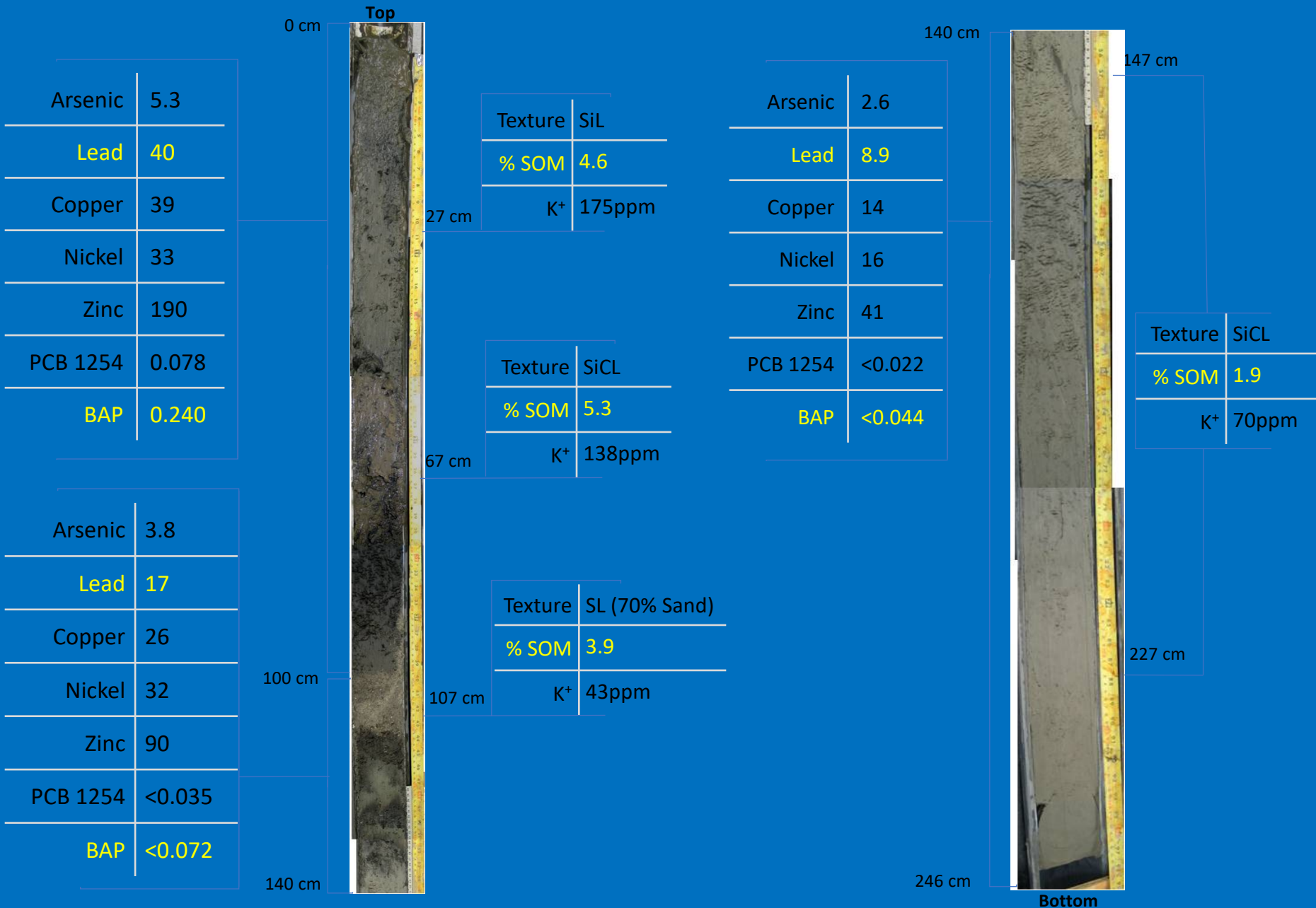
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Hendersonville (TN) Greenway. Created cove alongside main channel.

Core 197 From Lower Peoria Lake Chemical (mg/kg) and Agronomic Properties





Salts leaching from biosolids



Fox Waterway Agency Drying Pond



Deposited wet dredged material develops loose soil structure after winter freezing and thawing



