

An aerial photograph of a wooded area. A large, dark, irregularly shaped pond is visible on the right side. A building with a light-colored roof is situated near the pond. The surrounding area is densely forested with green and brown trees. The text 'Dredging Considerations' is overlaid in white on the left side of the image.

Dredging Considerations

Keith Gray,
President

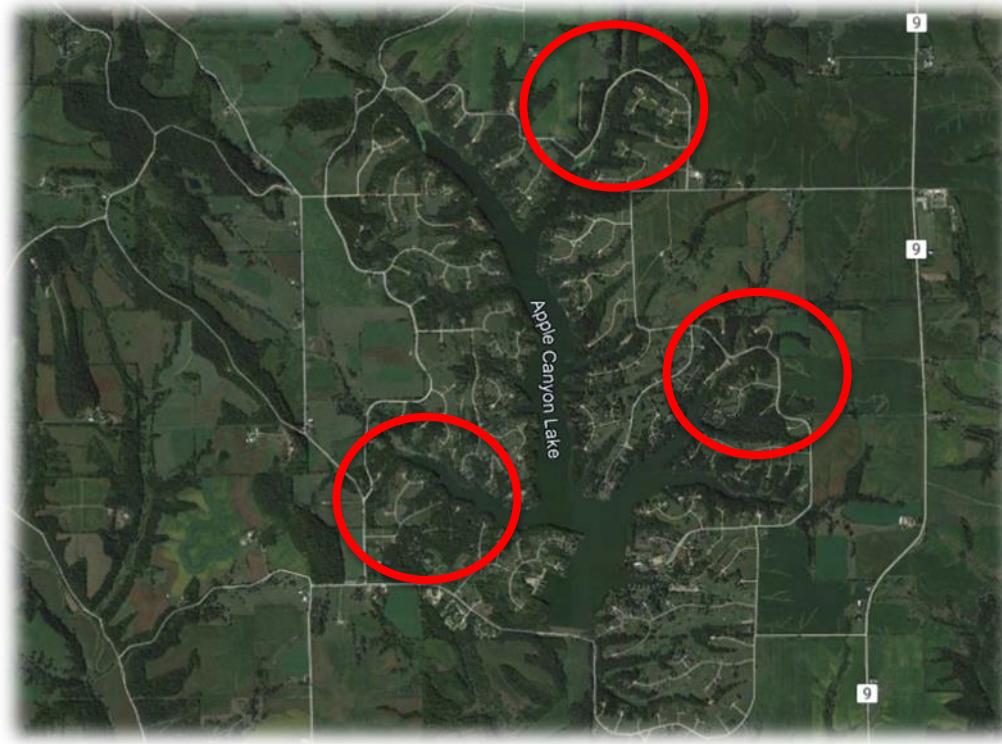
Public Relations



Design Changes



Setting Priorities



Dredging Methods



Hydraulic



Mechanical Wet



Mechanical Dry

Hydraulic Dredging



- Uses a cutter head with suction
- Minimizes sediment resuspension
- Fits in tight spaces
- Easy to transport

Hydraulic Dredge





Hydraulic Dredging

- Cutter head sits on the bottom and sucks up sediment.
- Sediment is drawn into a hose on the dredge machine and pumped into a dewatering bag on land.

Hydraulic Dredging

- Need to be neighborly





Hydraulic Dredging

- Sediment collected in a dewatering bag.
- Bag size depends on available space.
- Water slowly drains from the bag.
- Sediment dry time depends on sediment type.



Hydraulic Dredging

- **Polymers** are a **coagulating agent** used to aid in the dewatering process.
- **“Floc”** drops out of the water column much quicker.



Hydraulic Dredging

- Dried sediment can be repurposed on site.

Mechanical Dredging Wet

- Scoop sediment directly from water.
- Sediment resuspension is a factor.
- Needs ample space for machines.
- Sediment is typically hauled off.



Mechanical Dredging Wet

- Simplest operation uses a long-reach excavator working from shore.



Mechanical Dredging Wet

- Dump trucks rotate transporting sediment to disposal site.
- Distance to disposal site strongly influences disposal costs.



Mechanical Dredging Wet

- Amphibious excavator and barge allows work to take place away from the shoreline.



Mechanical Dredging Wet

- Floating excavator dumps sediment into barge.
- Barge is pushed to the shore when full.



Mechanical Dredging Wet

- Need additional long reach excavator on shore to scoop material from the barge to a truck.
- Requires more equipment which costs more money.



Mechanical Dredging Dry



- Basically “pulls the plug” from a lake or pond to let it drain.
- Makes access to sediment easier.
- Sediment has a chance to dry out before removal.
- Wildlife implications.

Mechanical Dredging Dry



Mechanical Dredging Dry



Structural Considerations



Water Quality



Restoration



Access

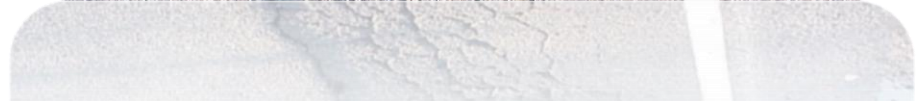


Transport





Road Damage



Mud



Permitting

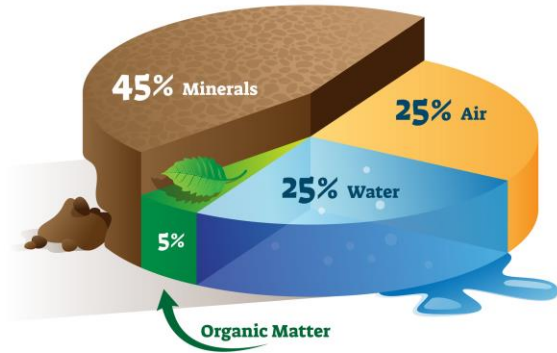


Material “Disposal” or Reuse



Material Analysis

SOIL COMPOSITION



6/17/2009



Mulwala

Lake Mulwala

Yarrawonga

2769 m

Image © 2013 DigitalGlobe

Google Earth

Tour Guide 2005

Imagery Date: 6/17/2009 35°59'57.01" S 146°04'35.82" E elev 124 m eye alt 12.09 km

Support

01

-Project
Manager/Consultant

02

-Bonding

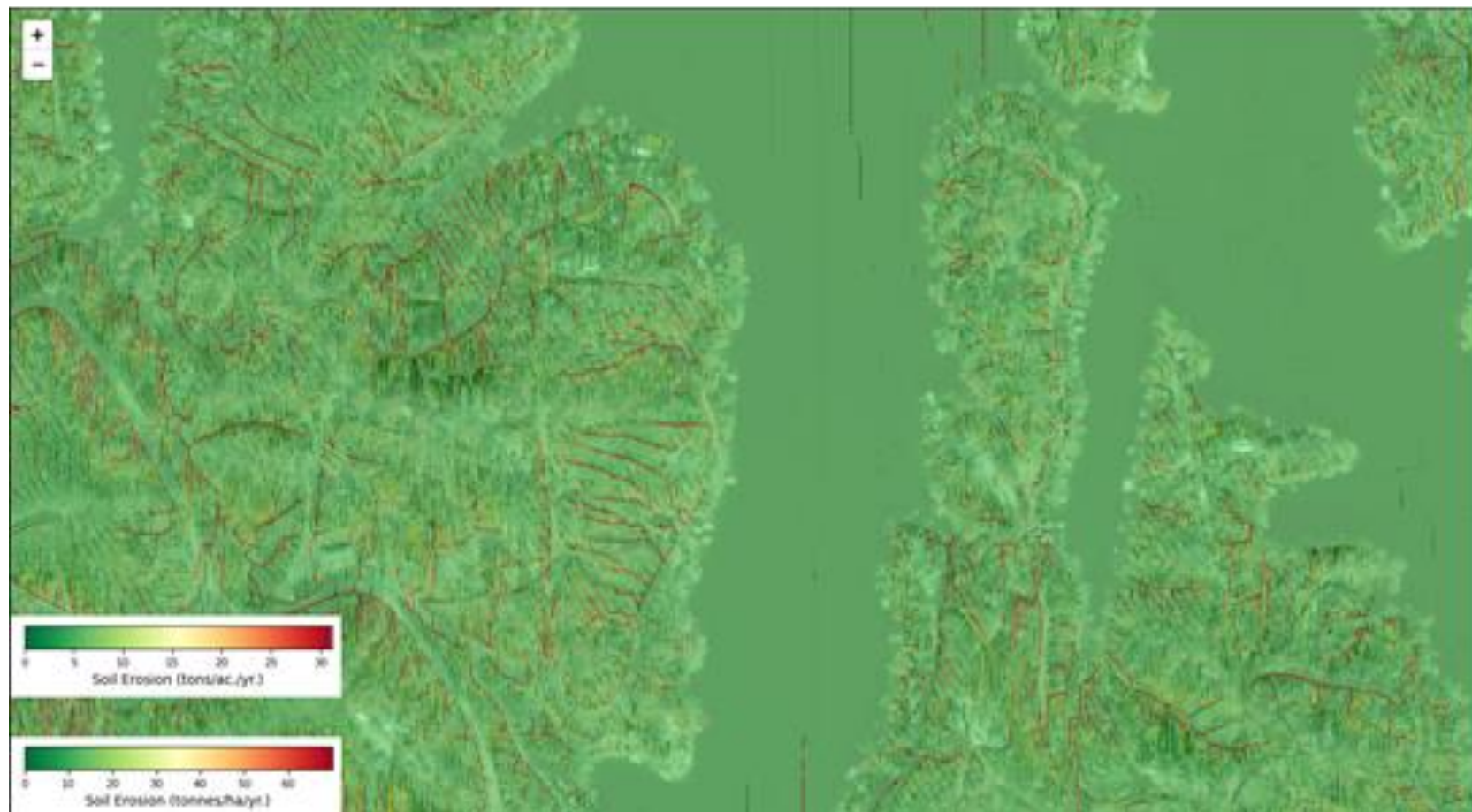
03

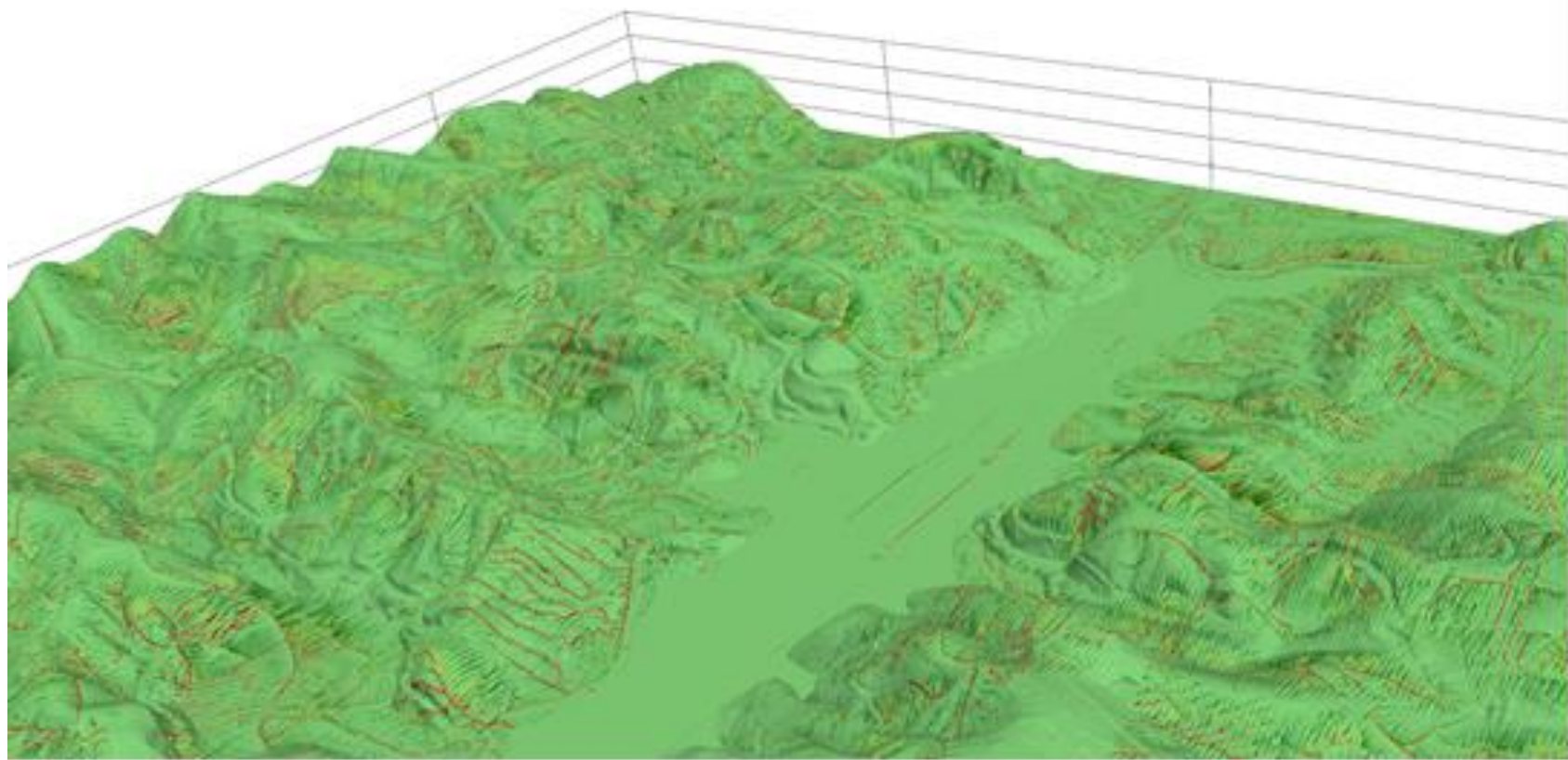
-Multiple
Contractors?

04

-Multi-year
agreements?







Thank you

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