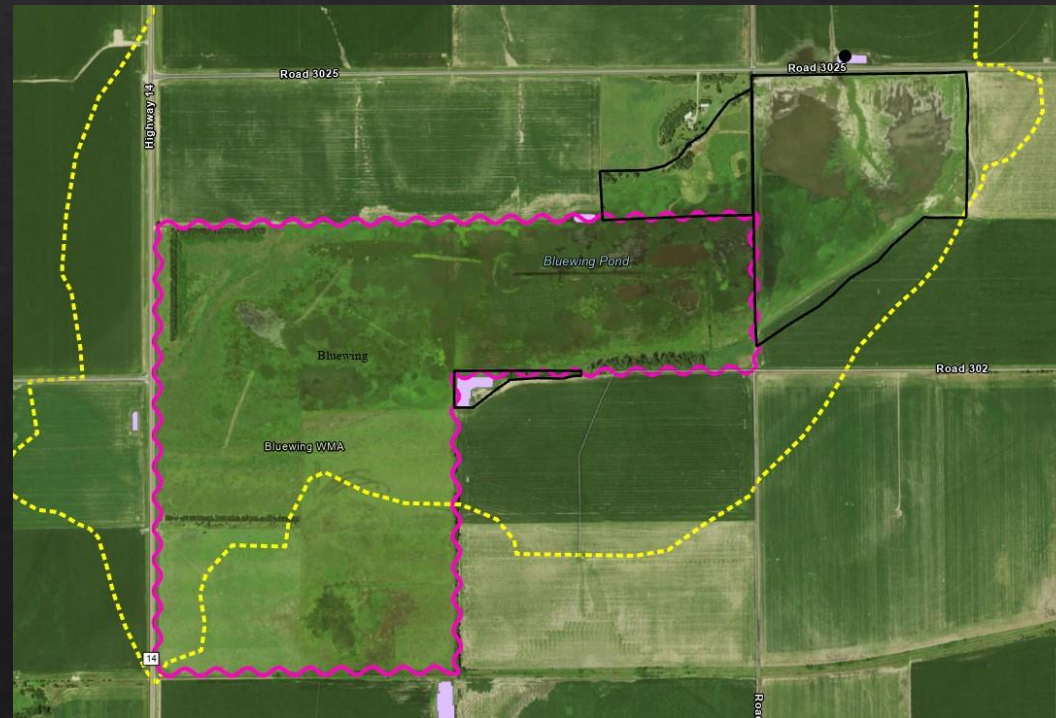


# Roundout Restorations

Keys to the Success of  
Perpetually Protected Wetlands

# What is a Roundout?

- ◇ 512 wetland footprints in the Rainwater Basin region total 51,574 acres
  - ◇ Fee titles and easements
  - ◇ Of those footprints, 28,378 acres are perpetually protected and 23,100 acres (44.8%) are not under ownership or easements



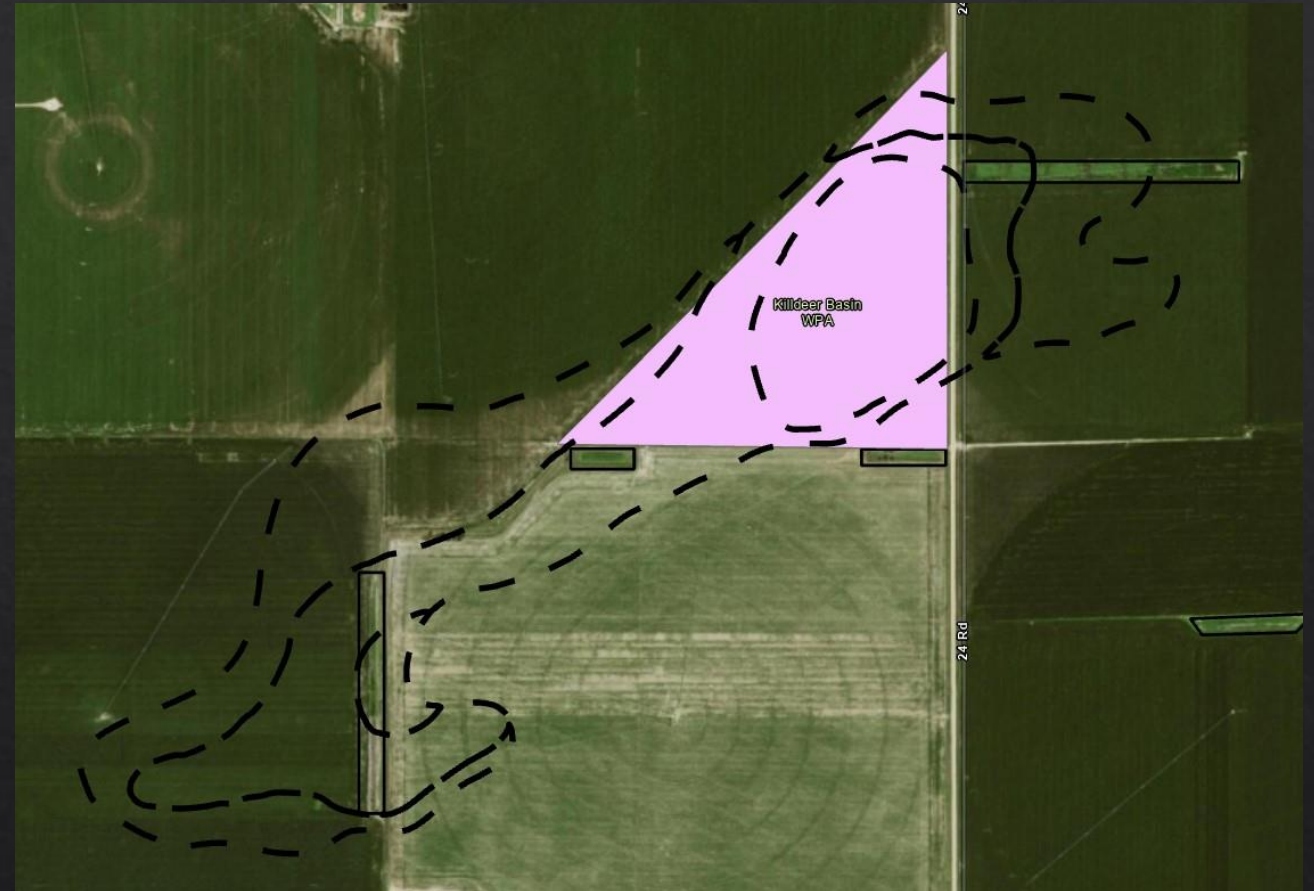
◆ Why are roundouts important to the agencies?

◆ Inability to pond water across hydric soils in dry years through pumping

OR

◆ Landowner has a hydrologic modification that prevents water from getting to the wetland

◆ Limits management if adjacent landowner is unwilling to participate in management actions which reduce invasive species (spraying, burning)



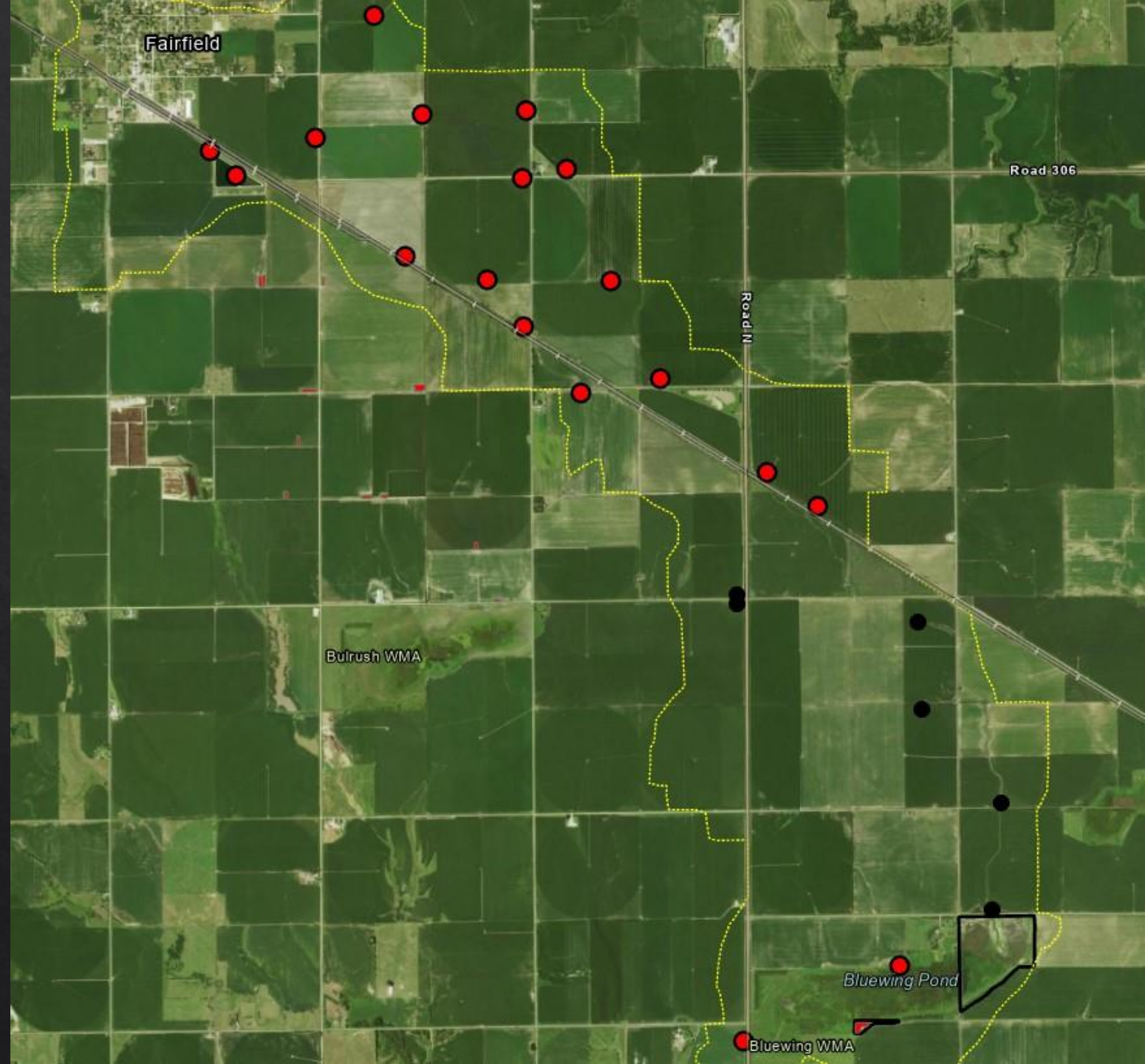






# The Watershed

- ◇ 23 pits in watershed
  - ◇ 44.2 acre feet captured by irrigation reuse pits
  - ◇ 276 acre feet captured by large pit dug to create the overpass
- ◇ No grass/buffer
- ◇ Follow the water





# Background

◆ Soils, elevations, function





# Phase I Tree Removal

- ◆ Cottonwoods
  - ◆ Fastest growing native tree in North America
  - ◆ Fire and grazing would have limited cottonwoods on the landscape
  - ◆ Can consume (depending on size) 50 to 200 gallons of water every day
- ◆ Considerations for removal
- ◆ Pile, burn, and bury in the uplands
- ◆ 48 acres





Then It Rained.....



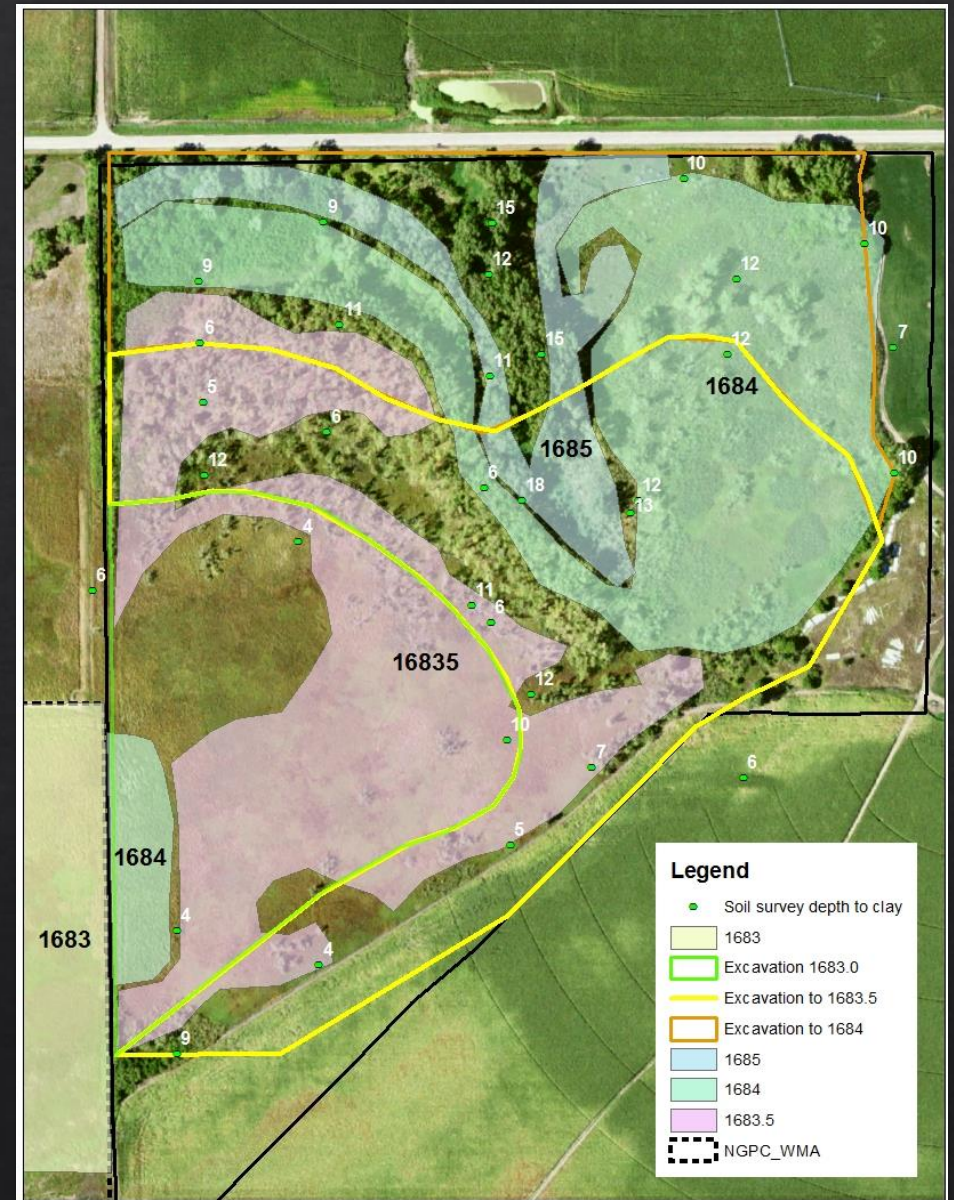






# Phase II Excavation

- Matched the excavation with the elevations we wanted to see
  - What does the vegetation say
  - What do the soils say
  - Existing elevations vs cut-to elevations
- ~38,712 cubic yards



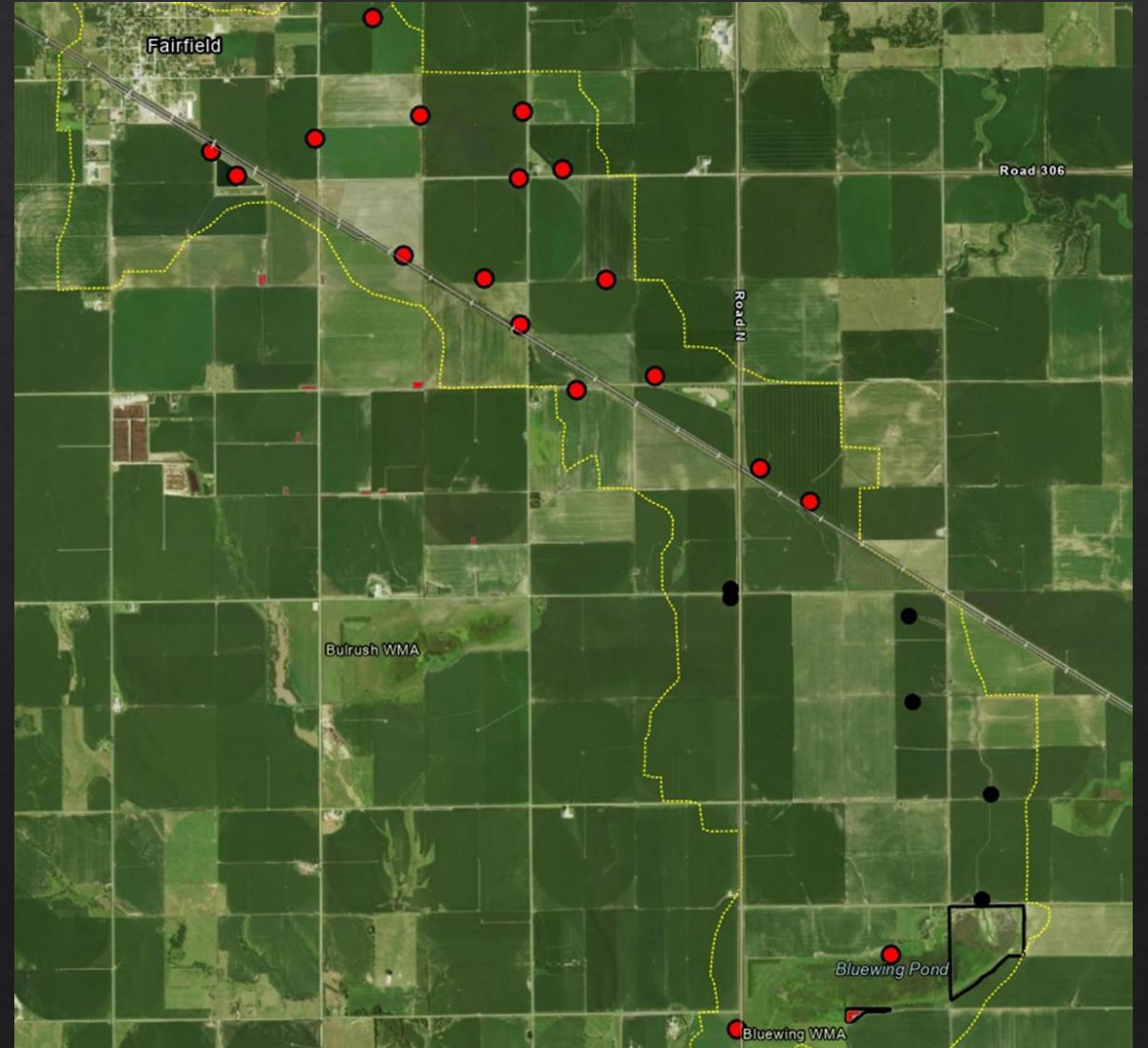


Voilà!



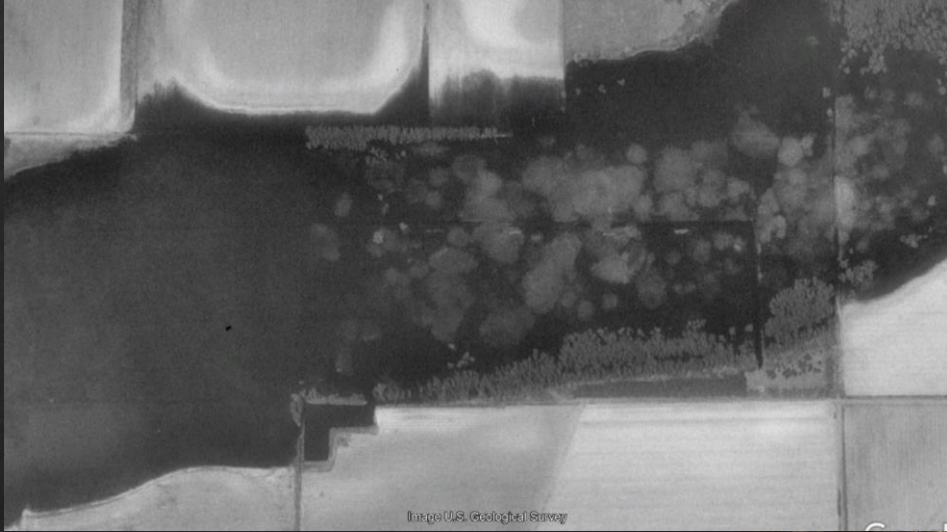
# Phase III Watershed Restorations

- ◇ It's a lot of dirt
- ◇ Pits in the hydric soils first
- ◇ Upland pits second





# Priority Pit Fill #1



- 13,000 cubic yards (includes 25% overfill)
- Storage capacity: 6.5 acre feet of water



# Priority Pit Fill #2

- ◆ 3,000 cubic yards (includes 25% overfill)
- ◆ Storage Capacity: 1.5 acre feet of water





# Upland Pit Fills

- ◇ 3 planned in the immediate future
- ◇ Remaining spoil will be removed by adjacent private landowner for his pits that aren't in the watershed (private cost)



# Phase IV Fence and Well Development

- 7,600 linear feet of fence installation
- Livestock watering facility



# Project Costs

Tree Removal	\$39,200.00
Excavation	\$62,520.75
Pit Fill #1	\$49,250.00
Pit Fill #2	\$11,622.50
Grazing Infrastructure	\$45,578.96
Total	\$208,172.21

# Special thanks to the Schrock Family





Questions?

