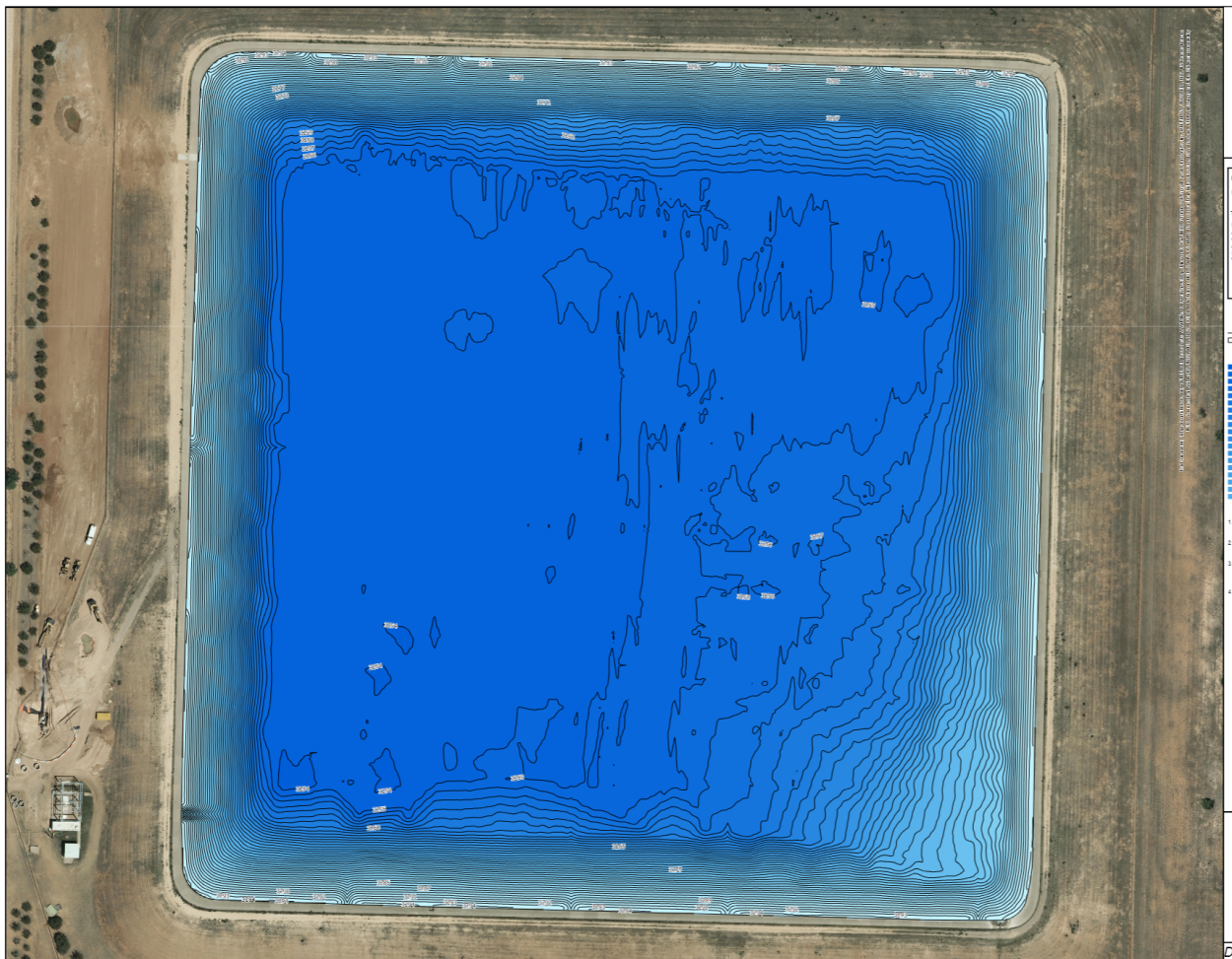


# City of Lubbock Water Treatment Plant Saves \$15M on Dredging 33 Arce Reservoir

*Data accuracy using high resolution, precise, bathymetric surveys, pinpointed exactly where and how to dredge efficiently*



Snapshot:

- Client: City of Lubbock, TX
- Industry: Water Resources, Water Treatment Plants
- Products/services used: dredgeSMART Engineering Program

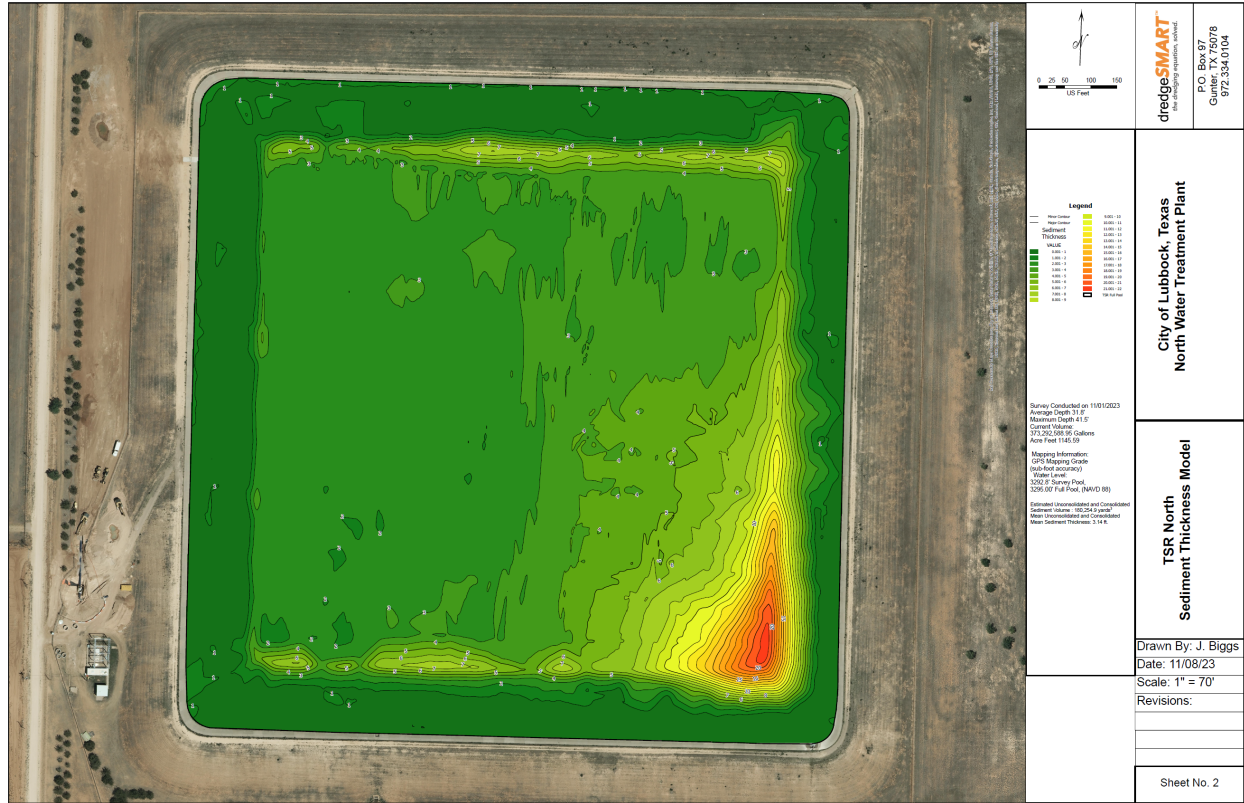
- Results:
  - Using accurate bathymetric surveys, we captured lake bottom and sediment depth and found it was 80% less than other firms assumed
  - Sediment testing and dewatering tests established the exact amount of sediment to haul off, making our RFP bids 95% accurate
  - Post dredging surveys ensure success by resurveying the vendors dredging work according to plans and contours before getting paid

## The problem/goal

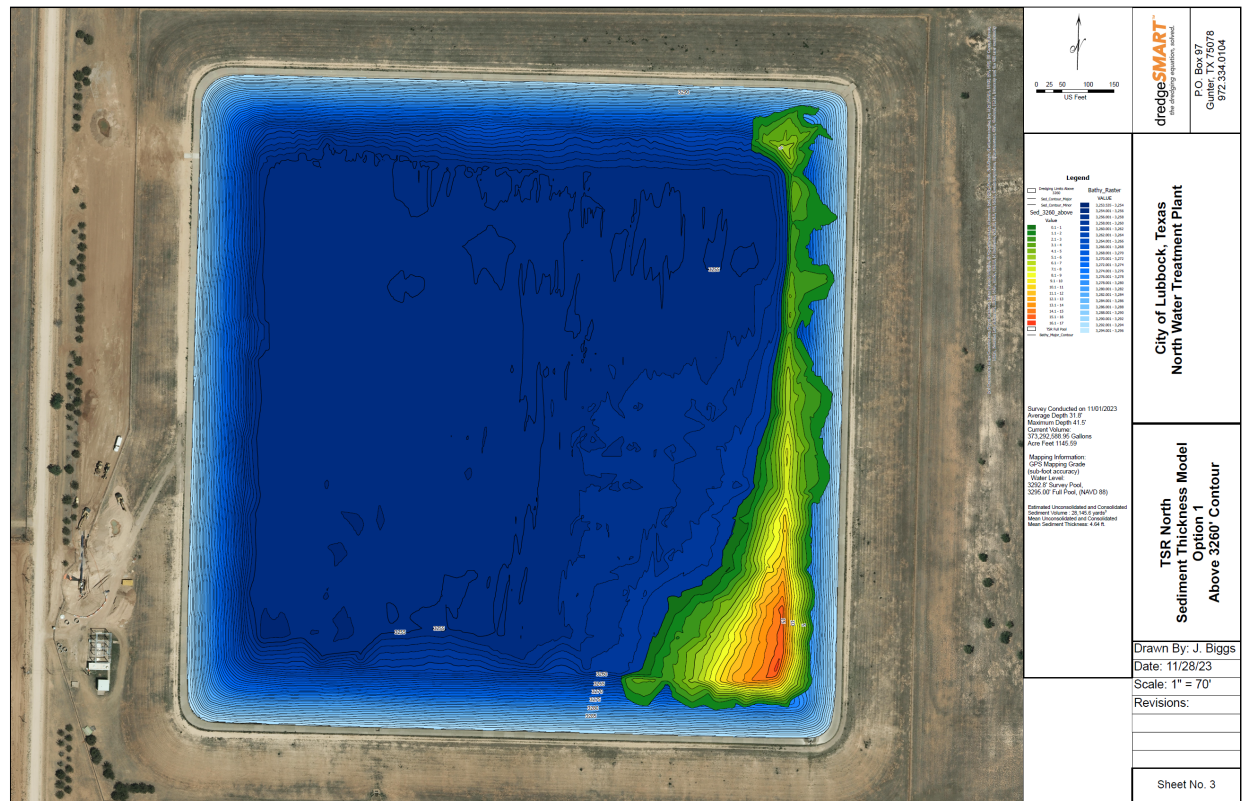
- The City of Lubbock is the home of Texas Tech University and the economic hub for 100's of miles around. Lubbock is proud of its farming and ranching history.
- They wanted to maximize the storage capacity **to** optimize water quality and maximize capacity in the event of a drought
- Using a low accuracy survey from another vendor caused the city to assume there was far more sediment that needed to be **dredged** and they were getting bids in the \$20M range.
- The city couldn't afford the cost of dredging at \$20M so we needed a better approach **than** "dredge the entire reservoir" (Tommy, city civil **Engineering**, PE)

## The solution

- Lubbock found dredgeSMART (dS) searching online because they couldn't find any qualified firms in the Lubbock or pan handle region of Texas.
- We stood out because we have a proven process to plan, design, measure and execute dredging projects with great efficiency. And that saved us a ton of money (said Tommy the city engineer)
- Full dS program was selected to assist the "all too busy" city engineers and CAD department that didn't have time or expertise to help with:
  - Defining success criteria and metrics
  - High resolution bathymetric surveying and sediment tests
  - 3D modeling of 3 major dredging scenarios for budget optimization
  - Engineering design of the full solutions, CAD drawings, and permits
  - Construction administration during the dredging project
  - Post dredging maintenance and monitoring



Sediment Thickness 3D Model



## Option 1 of 3 for Dredging Depths

### The results

- The high-resolution bathymetric surveys pinpointed the exact sediment that needed to be dredging, reducing material by over 80% compared to prior estimates
- Planned the implementation around the operations of the reservoir so there was no impact on other city departments or end users of the drinking water
- Reduced the project budget from \$20M to \$6M so it could stay in budget and still accomplish the success metrics
- We found dewatering sites adjacent to the reservoir which eliminated costly trucking and disposal fees

### Conclusion

- Lubbock now has a solid plan for the future of the main fresh water reservoir
- Lubbock saved money on one project and is now using dS methods to optimize other dredging and pond management projects in their city
- Engineering staff has a trusted and certified partner that can handle turnkey dredging engineering projects, and it actually saves them money by outsourcing
- Words of advice from the customer –“Be careful before assuming you need dredging, and therefore need to hire a dredging company. First you must plan the dredging project, taking into consideration; dredging options, where to dredge efficiently, how to dewater the sediment and where will the sediment be disposed of. If you don't think it all through you can get yourself in a lot of problems with other federal, state, and local authorities. And it will more than likely cost way more than doing it the dS way.”