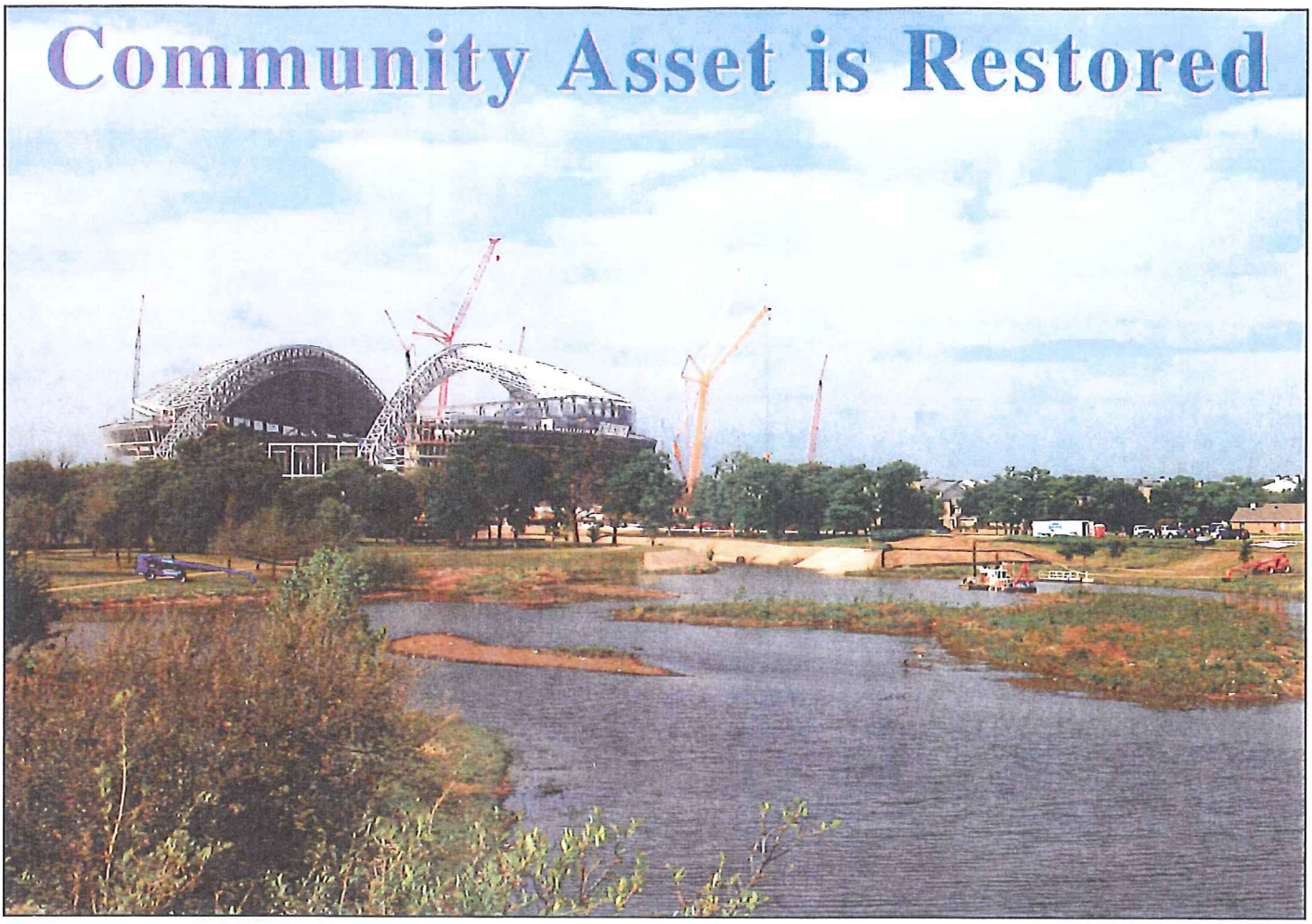
Community Asset is Restored



Ranger Lake, which now averages one foot deep or less, sets in the shadows of the new Dallas Cowboys Stadium.

ARLINGTON, Texas is a happening place. Billed as "Fun Central", it is home to Six Flags, Texas Rangers Baseball Stadium, the Arlington Convention Center and soon to be home of the new Dallas Cowboys Stadium that is presently under construction. All of these entertainment venues are within short walking distance of one another.

Between Rangers Stadium and the Cowboys Stadium, at the foot of the soon to be constructed outdoor ample theater lies Ranger Lake. This 19-acre lake has a 150-acre urban drainage basin fed by Johnson Creek. Despite stringent erosion control policies that are strictly enforced, extensive construction in the drainage basin over a period of years caused Ranger Lake to fill with sediment. What was once a clear lake with twenty feet of depth turned into islands with dense vegetation and a couple of small channels running through the center. A major lake restoration was in order.

The city of Arlington and it's engineers, Graham Associates, Inc., wanted to capitalize on the most cost effective lake restoration methods with the least amount of impact to the surrounding area. As a result, they accepted proposals for both hydraulic and mechanical excavation. After taking bid proposals on the project, Dredge America was selected as being both the most cost effective and the least invasive.

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The contractor mobilized their hydraulic dredge and constructed a temporary 1.5 mile pipeline to pump 110,000 cubic yards of sediment to settling basins constructed upstream. The sediment settled in the basins and the clean water flowed over a flashboard riser where it returned to the lake. A booster pump was utilized in line to ensure the heavy sand was carried the distance.

There were a few challenges along the way. For one, there were several larger trees that had grown up over the years in the creek area where large deposits of sediment had built up along and on top of the concrete slope protection. These trees were removed with conventional excavation equipment and disposed of off site.

Second, there was a large amount of sediment that was upstream of the bridge where the creeks final depth elevations did not allow the dredge to float. The material was moved with dozers to

the downstream side of the bridge where the dredge could pick up the material and pump it to the settling basin upstream.

A third problem was a concrete apron on the bottom of the creek near a point where the creek entered the lake.

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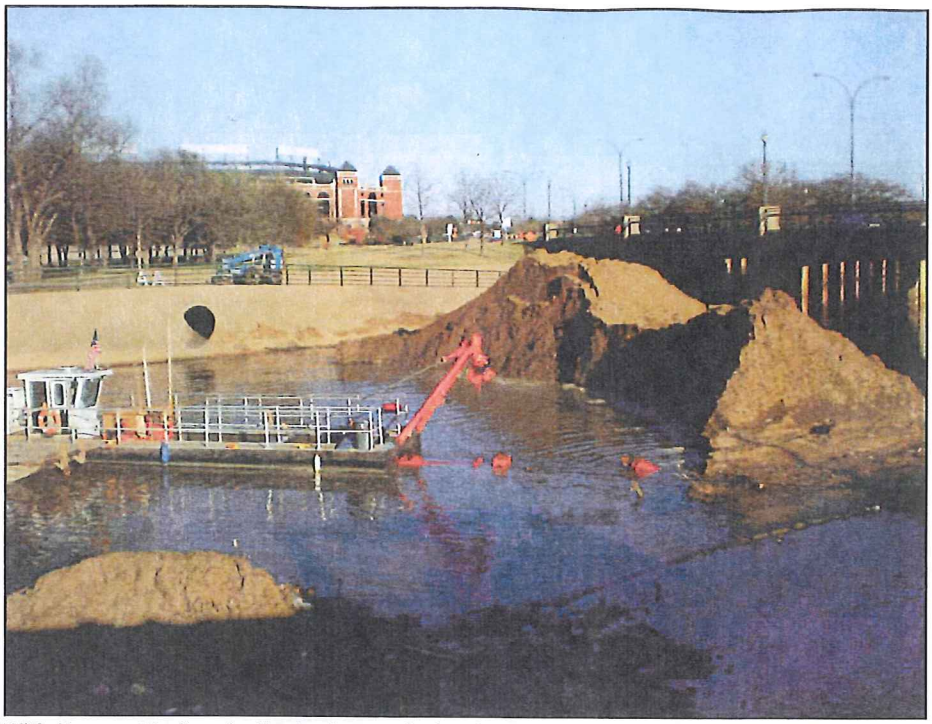
This apron did not allow enough clearance for the dredge to float up the creek. The dredge needed to get past this bottleneck in order to reach the area upstream where a large amount of built up sediment had to be removed. The dredge drafts 28" and the depth of water at this location was only 24". This problem was solved by temporarily putting sandbags on top of the overflow dam and raising the level of the lake enough to clear the apron. After this, it was clear sailing, or rather, dredging.

The dredge "Liberty" moves up the creek to remove a large stockpile of material that was pushed "down the creek" with dozers.

Once the 30,000 C.Y. of material in the creek was removed, the dredge was



With Ranger Stadium in the background, the dredge chips away at the stockpiled material in the creek and pumps it 1.5 miles to a settling basin.

floated back into the lake where it began dredging over a ten foot depth of sediment. Fortunately, the 10" dredge with 450 H.P. and cutterhead were able to handle the excessive trash that had accumulated in the lake over the years. A smaller dredge would not have accomplished much in this environment as a smaller pump would not have passed much of the large solids that were encountered.

The Ranger Lake restoration is a great example of the owner, the engineer and the contractor all working together as partners to accomplish a clear objective. Each time the crew encountered a problem, they worked as a team and created a solution in short order which has kept the project on schedule and under budget.

When the project is completed in a couple of months, the city of Arlington will have a pristine lake located in the center of "Fun Central" that will be the focal point for all of the surrounding entertainment venues. **L&W**

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