



**Texas Aggregates and Concrete Association  
Developing a Sustainable Future for the San Jacinto River**

Rivers and streams are nature's transport system for sediment. Sedimentation is a process that impacts rivers and lakes throughout the world as a part of the natural and dynamic evolution of surface water hydrology. This natural process has occurred for eons and poses a challenge for surface water authorities as the sediment fills streams, rivers and ultimately reservoirs. Many of these authorities utilize hydraulic dredging, a form of mining, to manage and remove these sediments. In 2017, Texas and the greater Houston area experienced the ravaging effects of Hurricane Harvey which led to widespread flooding.

As the community has worked to identify a long-term approach to mitigate the adverse impacts associated with flooding, including sedimentation, a number of different potential tools have been identified to help meet this need. Importantly, Harris County voters recently approved an historical \$2.5 billion bond package to implement a number of mitigation solutions, which will be leveraged to maximize the much-needed financial assistance from both the state and federal governments. These are also being supplemented by a number of other opportunities which can further leverage these efforts. One such area of public-private collaboration is the opportunity to work with area sand and gravel mining operations to identify ways where these facilities can assist regional and local authorities with efforts that can significantly improve the area's ability to withstand flooding events both in the near- and long-term.

These are described in some detail below and collectively offer the region a set of highly cost-effective measures that will require little – if any – government funding but will yield some significant benefits to the area:

- 1) **Develop Sediment Traps for Ongoing Removal** – This would involve working with the San Jacinto River Authority and others to identify areas well-suited for sediment removal, either through natural deposition areas or development and construction of sediment-trap features, to regularly remove accumulated sediment from the river and preserve its flow capacity. Working together with key resources, this option can be implemented rapidly, and can be continued ongoing as sediment re-accumulates. Operators could remit a royalty to fund the implementation of the program for the SJRA and provide for future planning.
- 2) **Dredge Impacted Areas** – Identify areas of reduced flow, such as near lake entrances, which can contribute to lateral flooding in those spots, and conduct a selective dredging program to remove that sediment. This would be coordinated through a local authority such as the SJRA, along with all other required permissions. While this would be considered a site-specific approach, it could be re-implemented in the future as the areas may be impacted by sediment in the future. This would be a longer-term process.
- 3) **Develop a Network of Floodwater Storage Structures Along the Riverway to Mitigate Floodwaters** – Working with regional stakeholders and authorities, develop a long-term

strategy to utilize both existing and future excavations to help contain floodwater as off-channel storage. A number of these already exist today that could be integrated into a network of storage lakes, and others which are currently being mined could be done so in a manner to intentionally construct storage lakes for the future. This approach would be significantly more cost-effective than construction of one or two water reservoirs in the area, given the lengthy and costly permitting and land acquisition costs, not to mention operational requirements over the long-term.

- 4) **Identify Opportunities for Land Conservancy** – with areas that have been completed for mining, there are also opportunities to work with local organizations and stakeholders to develop wetland or other natural areas for wildlife habitat preservation. Many of these facilities, once operations are completed, are well-suited to support waterfowl and fish habitats for recreation or simply natural preservation. There are examples of some of these already in place, but this process would be a longer-term evaluation with individual operators along the San Jacinto River region.

Each of these are examples of the opportunity to leverage a public-private partnership in ways that can yield many benefits. They can assist in improving the health of the river system, expand the area's ability to withstand flooding events, and are a cost-effective way to put in place ongoing and sustainable measures that make good sense. The US Army Corps is currently performing a dredging project in one segment of the San Jacinto River, and it is expected to cost approximately \$69 million to remove 1.8 million yards of sand and sediment.

*The different approaches discussed above can all be implemented with little or no public funding, saving taxpayers millions while also creating a significant improvement over the long term for the region. As an industry that is focused on stewardship of our natural resources, the sand and gravel mining operations along this region stand ready to work together with all stakeholders to create better, more durable long-term solutions for the San Jacinto River.*

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