

# SAN ANTONIO RIVER IMPROVEMENTS PROJECT

PRELIMINARY EXCAVATED MATERIAL

DISPOSAL ANALYSIS

for the

MISSION REACH

September 9, 2003

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## Introduction

The Mission Reach of the San Antonio River Improvements Project is approximately nine miles in length and will be constructed in four phases. This project will produce approximately 2.6 million cubic yards of clean excavated material (in-situ) that will require off-site disposal (see Table 1 for breakdown per phase as obtained from earthwork model produced by Carter & Burgess, Inc.). Note that the quantities shown reflect the adjustment based on the assumption that 10% of the material excavated may require appropriate landfill disposal due to contamination as noted in the Mission Reach Preliminary Design Report.

**TABLE 1**

<b>PHASE</b>	<b>Approximate Amount of Excavated Material (in-situ) Requiring Disposal Off-site</b>
Lone Star to San Pedro Creek	183,867 CY
San Pedro Creek to San Juan Diversion Structure	1,144,346 CY
San Juan Diversion Structure to Espada Dam	465,322 CY
Espada Dam to Espada Mission	858,757 CY
<b>TOTAL</b>	<b>2,652,292 CY</b>

The purpose of this analysis is to determine the approximate cost associated with the disposal of this excavated material. A key component in determining this disposal cost is identifying possible locations to dispose of this material. This analysis discusses liability and permitting issues associated with selecting a disposal site and also documents potential disposal sites that were investigated. Potential disposal sites are determined to be functional or non-functional based on further information obtained. Lastly, an approximate cost per cubic yard for excavation and disposal of the excavated material is determined and will be used in the preliminary design cost estimate developed for the Mission Reach.

## Liability and Permitting

### Liability

For any potential site to be used as a place for disposal of excavated material, the environmental history of the property as it pertains to potential contamination must be investigated. If a site has had existing soil contaminated or had contaminated material dumped on it, there is liability associated with the disposal of excavated material from this project on the site. This liability

could include, at worst case, the cleaning up of the entire site. It is recommended that during the final design phase, Phase I and II Environmental Site Assessments be performed on any potential disposal sites. It is also recommended that the Texas Commission on Environmental Quality (TCEQ) be contacted early in the process of site selection. These steps will help reduce the liability of the owner for this project.

### Permitting

If the potential disposal site is an abandoned pit or quarry and is considered connected via surface hydrology or springs to a United States Army Corps of Engineers (USACE) jurisdictional waters, then the pit or quarry is also within the jurisdiction of the USACE and may be considered a wetland area. In many cases, if the quarry or pit is located within the 100-year floodplain of any USACE jurisdiction water, then the quarry or pit is considered jurisdictional. Since the excavated material is from a federally sponsored project, any potential disposal site must also have an Environmental Assessment performed documenting significant or non-significant impacts due to the disposal of the excavated material. It is recommended that potential disposal sites be coordinated early with the USACE to fully understand all potential permitting requirements specific to each site.

### Potential Disposal Sites

Several potential disposal sites were identified as a part of this study. For documentation purposes, both functional and non-functional sites will be discussed. It is important to note that while some of these sites are determined to be functional now and perhaps in the foreseeable near future, there is no guaranty in the functionality of some of these sites many years from now. It is also important to note that any potential disposal site was deemed non-functional if the site was determined to be within the 100-year floodplain.

### Non-Functional Disposal Sites

- **SITES ADJACENT TO THE RIVER** - Several open areas located near the river were identified as having the potential for the disposal of excavated material. These sites are, but not limited to, several properties located on the east bank near IH 410 and the property owned by Harlandale Housing Corporation located at 8514 Mission Road. These properties were determined non-functional due to being within the 100-year floodplain and/or being heavily vegetated.
- **VELA SITE** - The Vela site is located at 11373 Southton Road and is owned by Eddie Vela. Mr. Vela accepts the disposal of automobile parts, appliances and other miscellaneous material. This property borders the San Antonio River and is within very close proximity to the end of the Mission Reach. Some of the property is within the 100-year floodplain per current FEMA maps. However, the area of property located within the floodplain does not contribute to the conveyance of flood waters. This site may allow the disposal of approximately 200,000 cubic yards of excavated material. This site was determined to be non-functional due to liability concerns based on large amounts of

automobile parts, appliances, and other miscellaneous material currently disposed of and continually being accepted.

- **CAMPOS SITE** - The Campos Site is located at 1650 SW Loop 410 and is owned by Esquivel Campos. This previous gravel pit has little volume left for additional disposal. From what little volume is left, the owner is currently accepting demolition material. The property is outside the 100-year floodplain limits per current FEMA maps. This site was determined to be non-functional due to the small amount of volume left for excavated material disposal.
- **BLUE WING SITE** - The Blue Wing Site is located on the east side of the San Antonio River near Blue Wing Lake and is owned by Kenneth Whitely. There is little volume left for material disposal at this site and the owner has stated that he is no longer accepting and additional fill. Thus, this site has been deemed non-functional.
- **IH-410 / IH-37** - The IH-410 S. /IH-37 Site is outside the 100-year floodplain limits per current FEMA maps. This site was previously a gravel quarry that looks to have been abandoned for some time. It appears that the owner has not previously accepted any material for disposal. This site has the potential to take all of the excavated material produced by this project. Currently, there are discussions taking place with the owner about the possible use of this area as a disposal site. However, due to a lack of commitment from the owner at this time, this site has been determined to be non-functional.
- **PRESSIG SITE** - The Pressig Site is located near the IH 410 S. and Somerset Road intersection and is owned by Dr. Randy Pressig. Part of this property was previously a gravel quarry which now has little fill capacity available. The slope of the property would allow for some fill. However, due to the fact that a majority of the property is located within the 100-year floodplain (based on its proximity to Leon Creek) this property has been deemed non-functional. The property owner conveyed that a proposed TxDOT parkway was to go through the area and there may be some need for fill. After contacting TxDOT, they stated that the parkway will be elevated and no fill will be required. Based on this information, the site was determined non-functional.

### Functional Disposal Sites

- **STANLEY SITE** - The Stanley Site is located at 7985 S. W.W. White Road and is owned by Scott Shipman and Wayne Stanley. This former gravel pit is outside the 100-year floodplain limits per current FEMA maps and has the disposal potential of approximately 200,000 cubic yards.
- **BORALIS SITE** - The Boralis Site is located at 8980 S. W.W. White Road and is owned by Boralis, Inc. This former gravel pit is outside the 100-year floodplain limits per

current FEMA maps and has the disposal potential of approximately 500,000 cubic yards. The owner is currently accepting demolition material for disposal.

- **TIMMS SITE** - The Timms Site is located at 12515 Fischer Road and is owned by Timms Trucking and Excavating, Ltd. This former gravel pit is located near Medio Creek and is outside the 100-year floodplain limits per current FEMA maps. This site has the disposal potential of approximately 200,000 cubic yards and is currently accepting demolition material for disposal.
- **PEARSALL PARK SITE** - The Pearsall Park Site is located at 5050 Old Pearsall Road and is owned by the City of San Antonio. The site consists of open land and a closed landfill which was owned by and operated by BFI. The site borders Leon Creek and a portion of it lies within the 100-year floodplain limits. Rodney Dzuik with the City of San Antonio states there is a need for approximately 50,000 cubic yards of fill to be placed in areas outside the 100-year floodplain. The City of San Antonio has plans to develop this area into a park.
- **SALADO 15R SITE** - The Salado 15R Site is located in McAllister Park near the intersection of Starcrest and Jones Maltsberger. This site consists of a flood water retarding dam that is currently in its final phase of completion. In order to construct the earthen portion of the dam, material was excavated from areas downstream of the dam. These excavated areas can be filled with material produced by the River Improvements Project. These areas will be out of the 100-year floodplain upon completion of the dam and have the disposal potential of approximately 325,000 cubic yards.
- **SOUTHTON ROAD SITE** - The Southton Road Site is located at 11269, 11716 and 11410 Southton Road and is owned by Erwin Janszen. This site consists of 240 acres of cleared land, of which 100 acres is within the floodplain of Salado Creek. All excavated material produced by this project is proposed to be mounded over thirty feet on the portion of the property which is outside the floodplain. The side slopes will be contoured to 10:1 and the mound will be re-vegetated with grass and trees after disposal is complete. The owner has been contacted and is a willing seller. It is important to note that the subject property at one time had several oil wells located at this site. The Texas Commission on Environmental Quality (TCEQ) was contacted to determine the environmental history of the property. TCEQ stated that it was not within their regulated jurisdiction and to contact the Railroad Commission of Texas (RRCT). Upon contacting RRCT, they stated that the identification numbers on all wells on the property would be required for them to research the possibility of any spills. The RRCT also stated the chance that there is any contamination is very slim due to their strict regulations and oversight. Nonetheless, as stated previously, full Phase I and II Environmental Assessments are recommended before purchase.

The Southton Road Site (see figure 1) is the closest disposal site to the project; has the ability to

take all generated excavated material; is guaranteed to be available in the future (if property is secured by purchase); and the costs of purchasing and re-vegetating the property is approximately equal to disposal fees required by other functional sites. Thus, the Southton Road site is the recommended site to dispose of the excavated material produced by this project.

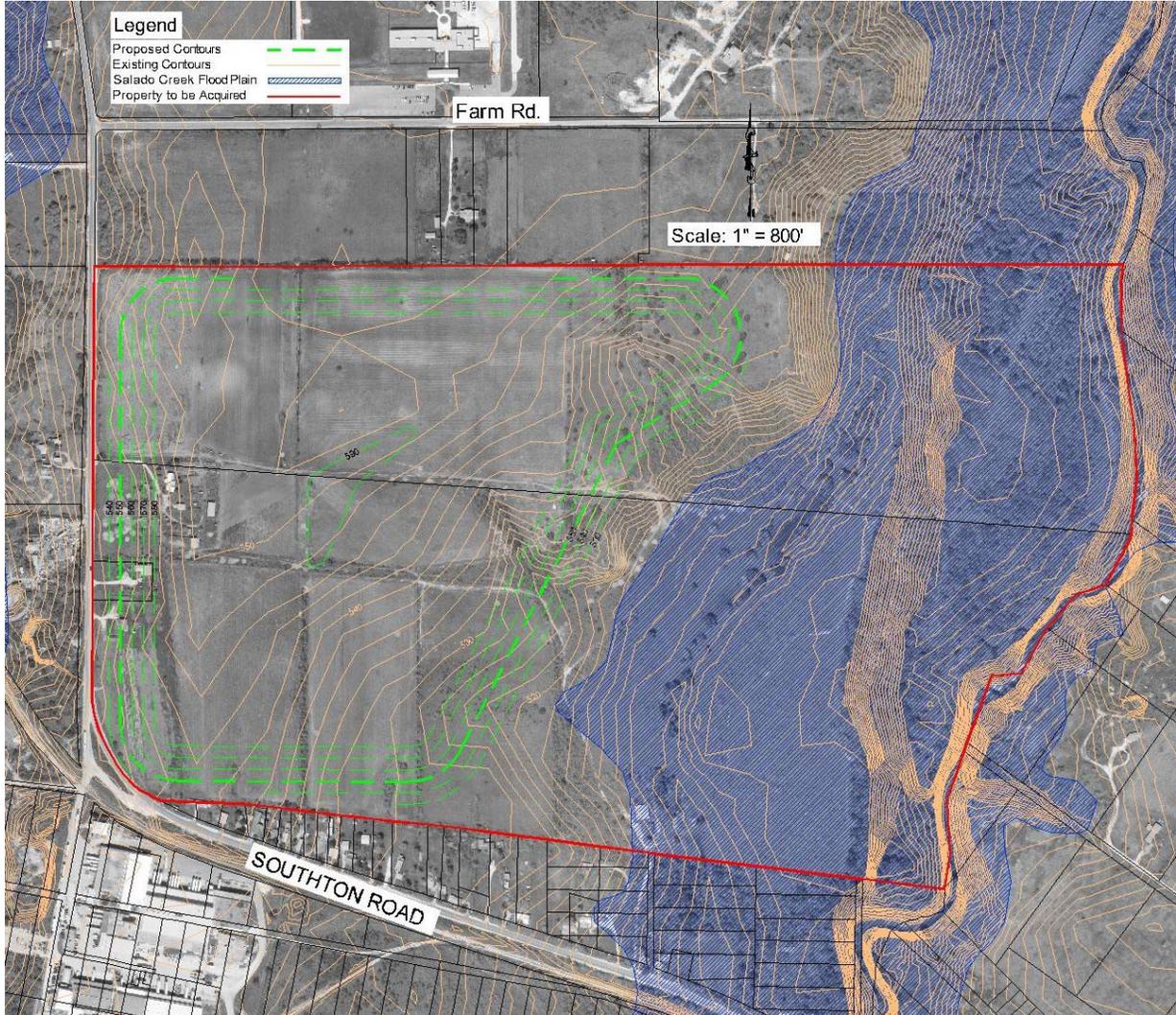


FIGURE 1- Southton Road Site

## Cost Analysis

The objective of this excavated material disposal analysis is to determine an approximate cost for the disposal of excavated material produced by this project. The cost analysis is based on utilizing the Southton Road site for excavated material disposal.

It is important to note that while this study identifies sites to dispose of excavated material and the cost associated with it, there is opportunity for construction contractors to market the

material providing for a lower disposal cost. The marketing of the material was not explored in this analysis due to the unpredictability of future demand and the fact that the quality of the excavated material for use as structural fill is poor. The disposal cost developed by this analysis is also based on uncontaminated material.

Cost associated with each step in the excavated material disposal process was obtained from local earthwork contractors and estimators. The approximate cost for material excavation, truck loading and fine grading on the project site equates to \$1.25/CY. The approximate cost per cubic yard to haul the excavated material was determined by multiplying the approximate haul time (note that loading time is included in the haul time) to each site by the hourly truck cost of \$50.00/hour and divided by seventeen, which is the cubic yardage each truck is able to transport. The number was also multiplied by 1.25 to account for swelling of the excavated material. The average weighted distance to the disposal site (Southton Road site) is six miles. This distance equates to an approximate haul cost of \$2.70/CY. The approximate cost to dispose of the excavated material once it has been transported to the disposal site is \$1.79/CY and is presented in **Table 2**. Note that contingencies have been added in the overall Mission Reach cost estimate and are not reflected in the estimates shown.

**TABLE 2**

ITEM DESCRIPTION	COST	COST PER CUBIC YARD
Land Purchase	\$1,200,000	\$0.45
Re-vegetation and Other *	\$ 900,000	\$0.34
Embankment at Disposal Site	\$ 2,652,292	\$1.00
<b>TOTAL</b>	<b>\$ 4,752,292</b>	<b>\$1.79</b>

\*Other includes stockpiling of topsoil, temporary and permanent erosion control, irrigation and fencing.

The cost associated with the periodic sampling and testing for possible contaminants of the excavated material has not been reflected in the earthwork cost. At this time, diligence in making sure that the contaminated material is properly disposed will consist of aggressive in-situ soil testing. This testing will take place in the final design phase. It is felt that the approximate \$3.5 million budgeted for environmental permitting for the Mission Reach as shown in the Design Guidelines will be enough to cover any permitting requirements as well as Phase II Environmental Site Assessments and any additional soil testing.

## Conclusion

This analysis provides a cost estimate to dispose of the excavated material produced by this project as required for the preliminary design phase. As it can be seen from the cost analysis,

the step in the disposal process which has the greatest impact on the overall cost is the haul distance to the disposal site. An additional five minutes of haul time equates to an extra \$0.31/CY. For a project that requires approximately 2.6 million cubic yards of excavated material to be disposed of, an extra \$0.31/CY will add over \$800,000 to the material disposal total cost. This reflects the importance of locating a disposal site as close to the project as possible.

It is important to start land acquisition negotiations as soon as possible so that the Southton Road Site is not purchased by another party. Several hundred acres of land were recently purchased on the corner of the Southton Road and Shane Avenue by Pulte Homes with plans to develop the site into a residential subdivision. Interest in property in this area has probably increased due to the proposed San Antonio River Improvements Project and the Toyota Plant development.

An additional issue which needs to be addressed in final design is receiving public approval of the proposed disposal site.