Brazos River Erosion Management Project (BREM)
Briefing Paper

1. **Project Definition**
   Streambank Protection of Brazos River at the City of Richmond, Texas

2. **Authorization**
   Public Law 110-114 (Water Resources Development Act of 2007), Section 5158 (G)(270) authorizes the Secretary of the Army to expend up to $20,000,000 for water infrastructure in Fort Bend County, Texas. General program authority is provided in Section 219, Water Resources Development Act of 1992, for Environmental Infrastructure Projects. Additional federal involvement is potentially available through Flood Control Act 1941 Section 14 and WRRDA 2014 Section 7001.

3. **Requested Actions**
   The non-federal project sponsor, Fort Bend County, Texas is requesting support for:
   - A Section 219 Appropriation for BREM within FY15 Energy and Water legislation
   - Support of a Section 7001 Application for the BREM project

4. **History of Richmond, Texas**
   The City of Richmond has a significant historical role within the State of Texas.

   - Founded in 1822 with construction of a fort titled Fort Settlement
   - Stephen F. Austin's "Old Three Hundred" posted at Fort Settlement
   - Incorporated in 1837 as the second city within the Republic of Texas
   - Home to Deaf Smith, Jane Long and Mirabeau B. Lamar
     - Deaf Smith was the courier who reported to Sam Houston on the pending battle at the Alamo
     - Jane Long was known as the "Mother of Texas"
     - Mirabeau B. Lamar was the 2nd President of the Republic of Texas
   - Contains Morton Cemetery, resting place for Deaf Smith, Jane Long, Mirabeau B. Lamar and other Texas pioneers
   - Contains the Mirabeau B. Lamar (2nd President of the Republic of Texas) Historical Site
   - Contains the historical 1909 Fort Bend County Courthouse

   The City of Richmond, Texas also is the county seat of Fort Bend County and has the following significance:
   - Population of 11,600
   - Contains the Fort Bend County Justice Center Complex

   Fort Bend County Levee Improvement District No. 6 owns and operates a series of levees protecting properties with over $1.1B of assessed value and public infrastructure (highways, roads, utilities, bridges) in the vicinity of the City of Richmond.

5. **Floodplain Geomorphology**
   Extensive erosion of the Brazos River occurs within a 12,000 foot segment of the river, in the vicinity of Richmond, Texas. Geomantic analysis of maps from 1941 through 2012 suggest that

average annual migration rates of the Brazos River near Richmond, Texas are 4-foot per year. In excess of 400-feet of movement has occurred within that 70 year period. Over ten feet of soil loss has been documented following peak storm events. Geotechnical data reveals upper layers (4-5 foot) of soft silty-sand laden soils underlain with higher porosity clay soils. The Brazos River near Richmond, Texas is an area of historic Brazos River alluvium, extending downstream to the Gulf of Mexico. Additional scour and soil loss, from erosion, of the Brazos River threatens historically significant properties, public buildings owned by Fort Bend County and private property. Additionally, further erosion will impact public infrastructure including levees, utilities, roads and railroad bridges. Additional erosion will cause extensive damages to the community of Richmond, Texas.

6. **Proposed Solution**
   The proposed project will include the study, planning, design and construction of solutions to protect public infrastructure from the negative impacts of continued erosion. Study phases will assess socioeconomic and property information. Geomorphological assessment will analyze geotechnical data, including a soil loss assessment. Planning phases will study potential solutions including river training and armoring. A full suite of armoring options including gabions, rip-rap, palisades, sheet piling, etc. will be assessed. Following detailed assessment, recommended solutions would be designed and constructed.

7. **Status of Environmental Compliance**
   Anticipated permitting actions include Section 10 and Section 404. Permitting and other required environmental actions are included in the cost estimate above and can be completed expeditiously upon funding and project initiation. The proposed project does not affect a Federal project or require modification approval under Section 408 of the Rivers and Harbors Act of 1899.

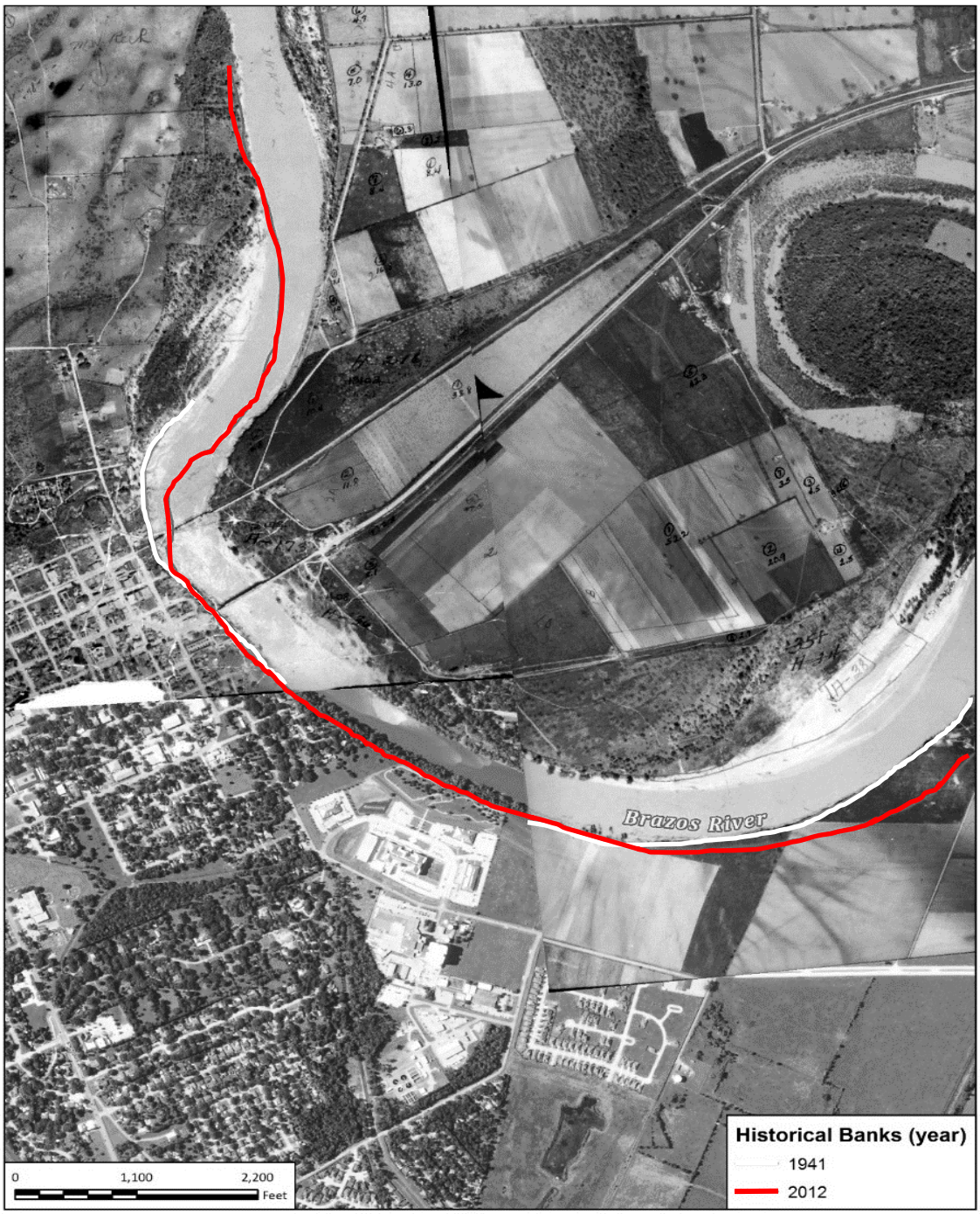
8. **Partners and Cost Sharing**
   The non-Federal Sponsor for the proposed BREM project is Fort Bend County, Texas. Fort Bend County understands the financial obligations of a non-Federal sponsor and is prepared to contribute the required non-Federal Sponsor share of the project cost in cash and real estate. This project also has the support of the City of Richmond and other affected entities. Private sector resources are available to support planning, design, and construction management, consistent with federal program requirements.

Jane Long gravesite

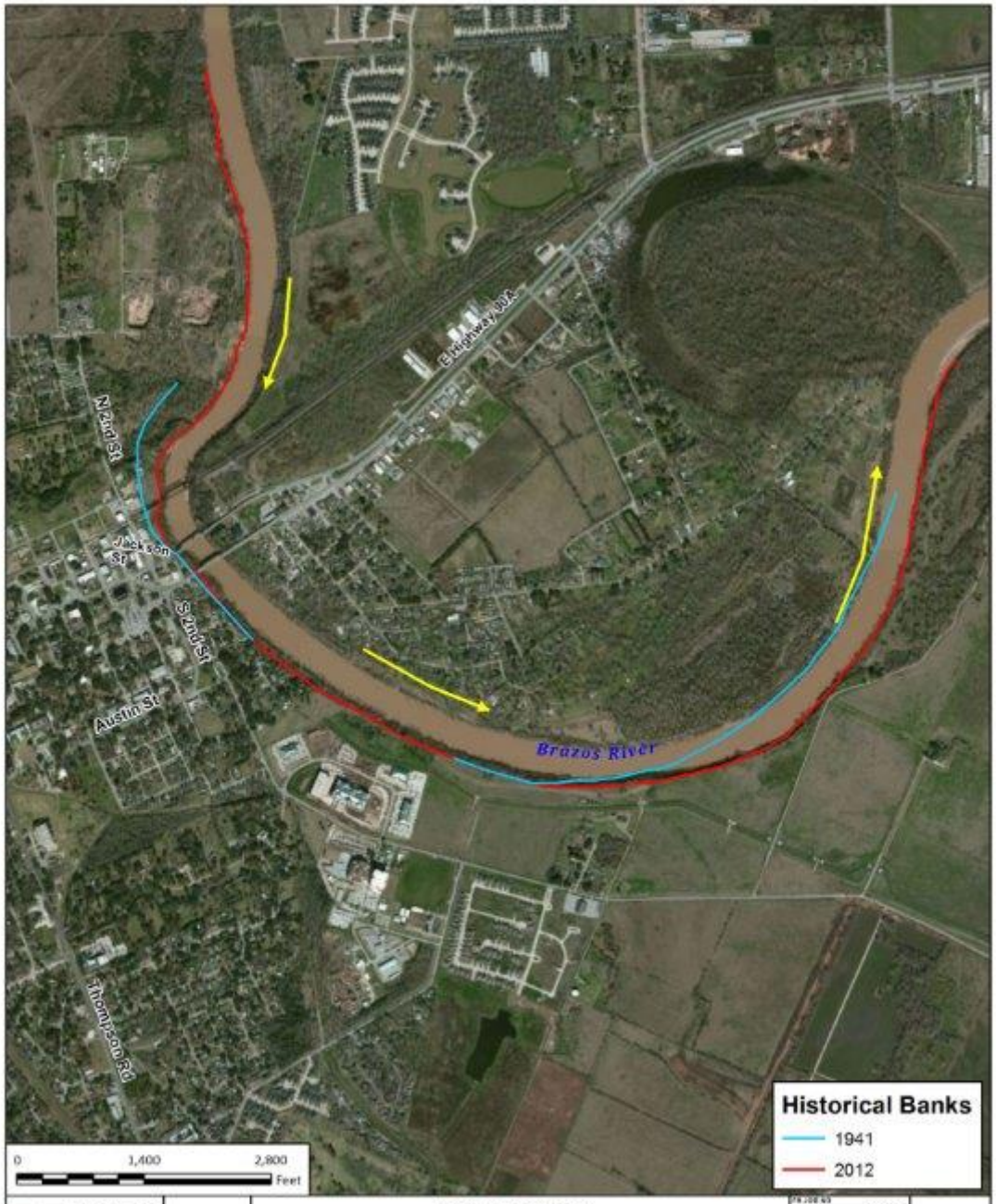
Fort Bend County Justice Center Complex

Fort Bend County Courthouse

Aerial View of City of Richmond, Texas



Brazos River Bank Migration from 1941 to 2012



FREESE AND NICHOLS
4055 International Plaza
Suite 200
Fort Worth, Texas 76109
P: 817-735-7300

Fort Bend County

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