



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, MEMPHIS DISTRICT
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MEMPHIS, TENNESSEE 38103-1894

CEMVM-EC-D

10 MAY 2019

MEMORANDUM FOR RECORD

SUBJECT: Pre-coordination Meeting Summary of Tom Lee Park Resiliency Project

1. A meeting was held on May 6, 2019 at 11:00 at the Memphis District Office. The meeting was run by Kimley-Horn and the Project Design Team. Personnel from USACE, Kimley-Horn, PSI, SCAPE, City of Memphis, and Studio Gang attended. See attached meeting sign in sheet for attendees. The project is in pre-coordination stage for Section 408 permissions and Regulatory permits. This is the second meeting.

2. The purpose of the meeting was for the Project Design Team (PDT) to present the major aspects of a proposed project on Tom Lee Park to the Memphis District Section 408 review team and Regulatory Branch. Tom Lee Park is a Federal project consisting of dikes and berm that stabilizes the bluffs and establishes the Mississippi River navigation channel.

3. Below items were discussed in the meeting. A pdf was presented by SCAPE showing the major aspects of the proposed design. (Attached). The notes below reference pages within that pdf.

- General comments/ discussion:
 - SCAPE stated the project will provide improved liner or existing liner will remain.
 - USACE reiterated how critical this federal project is to Navigation; millions of dollars per day in delay costs would be experienced by the towing industry if the bank should fail plus the expense to reestablish the dikes, berms and infrastructure damage. Also communicated that the dikes and berm are critical to public safety by protecting the bluffs. The construction background of the dikes were discussed (showed attendee the hallway photos). Also discussed failures that occurred during construction on the south end of the project and near failure of the dikes due to very slight change in dike slopes; minimum safety factor was used in original design which may be a limiting factor to proposed construction.
 - USACE emphasized that a stability analysis is critical to ensure the integrity of the dike and berm system. The analysis will be a challenging task. Present conditions and changes in the river system and other factors since previous analysis were performed will need to be taken into account.
 - The PDT confirmed that they are cognizant of the need for stability analysis and acknowledged the effects of a bank failure.
 - The existing dike system/structure was designed for sheet flow runoff. (The proposal did not show how they would handle the concentrated flows from their re-contouring.)
- Resilience Concept Diagram page.
 - PDT designing to receive rainwater and floodwater.
 - Directing stormwater to specific locations with topography.
 - Releasing water back to river.

- Resiliency Strategy page.
 - PDT discussed how water (floodwater and rainwater) would be used within the different areas of the park. I.e.) Floodable swale, stormwater micro swales, permeable lawn, permeable planting and paving, enhanced layered edge.

- Cut/ fill page
 - PDT provided a cut/fill diagram. This is a work-in-progress. There will be a maximum of 6 feet of fill and maximum 6 feet of cut within various locations in the park.

- Existing Edge Conditions page.
 - The drawing is incorrect showing Elevation 211 as the "base of the USACE dike". Actually Elevation 211 is the Crown or top of the USACE Dike that was built to a +30 LWRP, and the actual base of the USACE dike is variable and extends down to approximate Elevation 160 (51' or possibly lower based on existing ground elevation).

- Section A, B, D & E pages:
 - Bridge to be supported on piers supported by spread footings.

- Section C pages: Steps
 - **USACE Concerns:**
 - a. Concrete steps are toeing into the existing dike. No excavation into the dikes will be allowed.
 - b. Placement of the steps will increase the loading on the dikes. This will need to be analyzed for stability.
 - c. The concrete could impede drainage in these areas, impacting the stability of the structure.
 - d. The concrete paving is not flexible and will not conform to any differential settlement. This could lead to a failure that would be undetected until it became a large problem.
 - e. Concrete on the Riverside face of the slopes will adversely impact the Corps ability to perform maintenance in that area.

 - Also discussed using different material instead of concrete. Unsure of acceptable material.

- Section F page: Shows a typical pathway section. This is slab on grade.

- Section G page: River Overlook:
 - **USACE Concerns:**
 - a. The overhang may be a safety concern. Safety to navigation, tows hug this side of bank during high waters and downstream tows have no brakes and are concentrating on navigating thru the bridge piers. Don't need another obstacle to miss. Public safety concern if people were on the overhang and it got hit.
 - b. At high stages the overlook will catch and trap woody debris
 - c. The towing industry will need to review during the Section 408 review period.

 - Discussed option of getting the towing industry to review at early stage to establish a maximum overhang distance prior to continuing design effort for the overhang structure.

- Compost grouting page:
 - The proposed pneumatically injected compost soil placed on the existing rock was discussed.
 - PDT stated this was proposed to help strengthen the dike and provide resilient growth.

- **USACE Concerns:**
 - a. Concerned that the proposed will restrict the movement of water thru the rock dike into the river thus creating a buildup of pore pressures causing instability in the dike.
 - b. Must allow drainage thru rock dike into the river.
 - c. USACE stated that this type of seeding would be difficult to maintain due to the inconsistency in the MS river levels.
 - d. We do not want large vegetation or trees growing on the slopes. When a tree falls, the roots will displace rock impacting the structure.
 - e. Covering the riverward slopes of rock with soil and vegetation will inhibit our ability to evaluate stability and will adversely impact our ability to perform maintenance.

- Pavilion Building Locations page.
 - Smaller park structures such as small pavilions and restrooms are proposed.
 - USACE stated that small structures that are on shallow spread footings will not be a concern.

- Phase 2 : Habitat structure - Proposing a habitat structure at the south end of the park.
 - The slide was brought up to discuss foundation conditions and determine USACE knowledge of what the existing dike sections looks like in this area and if there are any issues placing structure here.

- **USACE Concerns:**
 - a. USACE did not know what the existing cross section material looks like at this location; will need to research it.
 - b. Although the location will have no effect on navigation, there are eddies in this area and drift accumulation that will affect the design.
 - c. bank stability will need to be analyzed.

Overall Comments.

- **Stability Concerns:**
 - Drainage changes may affect the stability analysis.
 - Stability analysis will be required for:
 - Areas with added fill
 - Areas of point loading (bridge foundations, overhang structure foundations)

- **Environmental Concerns:**
 - PDT will be required to have bat survey performed for the southern end of Tom Lee Park.

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4. DUE-OUTS from USACE:

- a. River Engineering will provide the page showing the overhang structure to the towing industry to get preliminary feedback on overhang distance allowed.
- b. Provide boring data. Geotechnical Branch will need to determine/locate data we have that we can provide to the PDT. The PDT will go through FOIA process to obtain.
- c. Geotechnical Branch to provide safety factor requirements for stability analysis.
- d. Geotechnical Branch to provide loading conditions that the PDT must check in the stability analysis.

5. Next Meeting

Kimley-Horn will contact us for next meeting after the design team has advanced further with the proposal incorporating comments from meeting and when they have begun the stability analysis to have a better idea that what they are proposing will not de-stabilize the bank.

6. Tanya Wells, Tanya.L.Wells@usace.army.mil, is the POC for Section 408 permissions.
Randy Clark, Jame.R.Clark@usace.army.mil, is the POC for Regulatory permits.

Tanya Wells
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