

## North Carolina Department of Transportation

### I-26 WIDENING PROJECT

#### River Safety Plan



Rev	Date	Prepared By	Approved By	Description
B	11/12/2019	Jeff Charboneau	Zachary Hensley	FUA Approved; Ready for Submittal To NCDOT for Review and Comment
A	11/11/2019	Jeff Charboneau	Zachary Hensley	Initial Draft – Ready for Internal Review & Approval

## I. Purpose

The North Carolina Department of Transportation (NCDOT) and Fluor-United Asheville, LLC (FUA) are committed to the safety and health of the users on the French Broad River (FBR) during the construction and demolition of the I-26 bridge. Accordingly, the measures established in this River Safety Plan (RSP) have been developed by FUA, in conjunction with the NCDOT *Strategic Communications Plan (SCP) for the Construction of the I-26 Bridge Over the French Broad River*, to ensure for the safe passage of FBR users.

## II. Process

### a. Signage

- i. Signage will be installed and maintained by FUA both upstream and downstream of the I-26 Bridges to alert river users to construction. These signs will note that the last public pull out is at Bent Creek River Park, located 1 mile upstream of the bridge.

These signs will be placed at the following locations; all are public with the exception of the privately owned launches marked with an asterisk (\*). Refer to Figure II.a -1 below, *NCDOT Transportation Management Plan – French Broad River Warning Sign*.

*Locations:*

- Headwaters Outfitters\* – 25 Parkway Road, Rosman
  - Champion Park River Access (Transylvania County Parks and Recreation) – Old Turnpike Road, Rosman (1st public access from the headwaters)
  - Hannah Ford Campground - Headwaters Outfitters\* - Green Road (SR 1127), Rosman
  - Island Ford River Access (Transylvania County Parks and Recreation) – Island Ford Road, Brevard
  - Hap Simpson Park (Brevard Parks and Recreation) – 968 Greenville Hwy, Brevard
  - Wilson Road River Access (Transylvania County Parks and Recreation) – Wilson Road, Pisgah Forest
  - Penrose Boat Ramp (NC Wildlife Resources Commission) – 170 Apac Drive, Penrose
  - Blantyre Park (Henderson County Parks and Recreation) – 500 Cliff Road, Penrose
  - Horse Shoe River Access Park (Henderson County Parks and Recreation) – Horse Shoe
  - Westfeldt Park (Henderson County Parks and Recreation) – 83 Old Fanning Bridge Road, Fletcher
  - Glen Bridge River Park (Buncombe County Parks and Recreation) – 77 Pinner Road, Arden
  - Corcoran Paige River Park (Buncombe County Parks and Recreation) – 9 Pinner Road, Arden
  - Bent Creek River Park (Buncombe County Parks and Recreation) – 1592 Brevard Road, Asheville
  - Hominy Creek River Park (Buncombe County Parks and Recreation) – 194 Hominy Creek Road, Asheville
  - Mills River Park (Town of Mills River) – 124 Town Center Drive, Mills River (*This park is near the confluence of Mills River and French Broad River and a common starting point for paddlers of the French Broad River.*)
- ii. *River Warning Signs* to be utilized for the information of FBR users (at a minimum) are illustrated as follows:

# RIVER WARNING SIGN

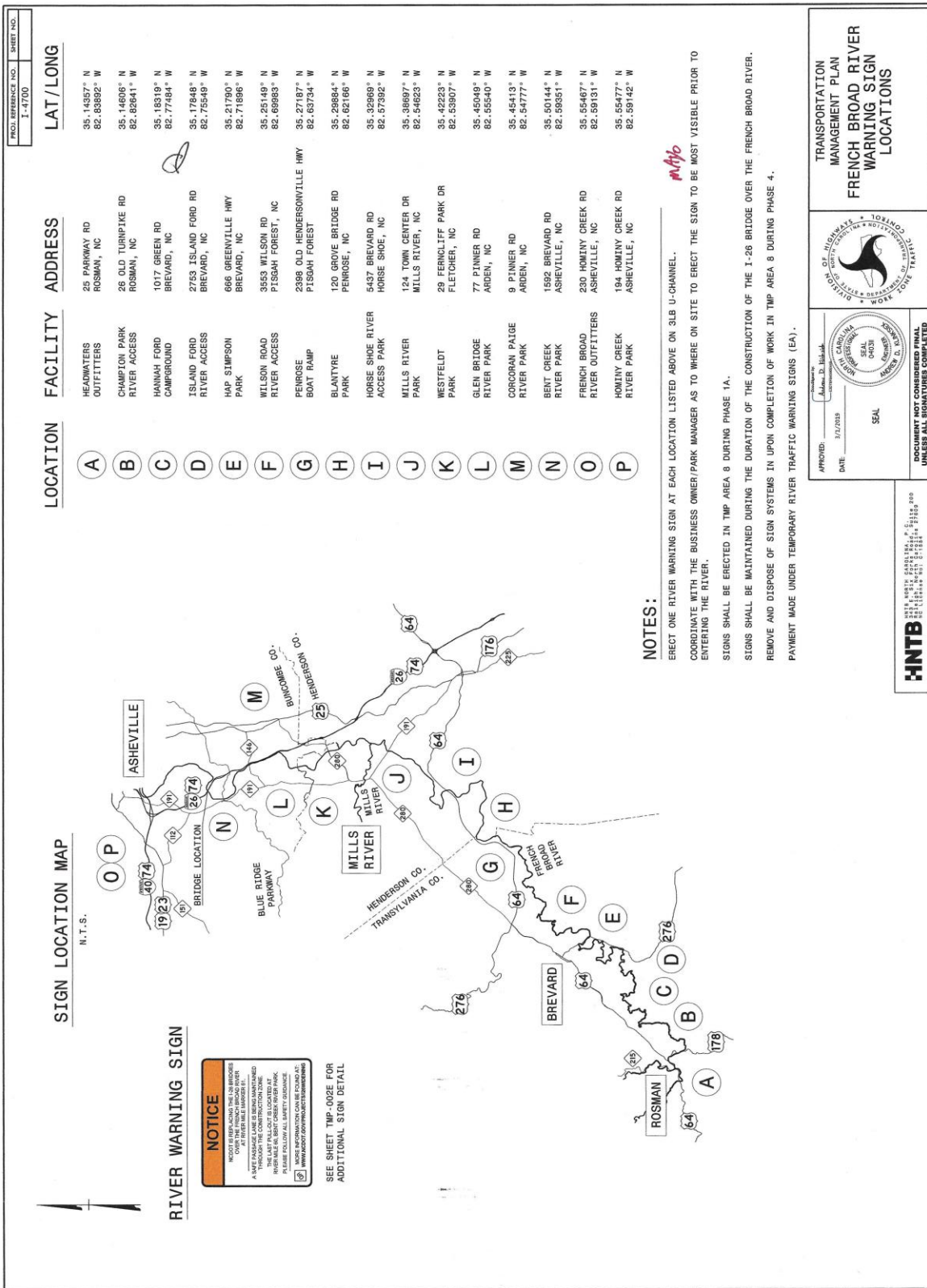


SEE SHEET TMP-002E FOR  
ADDITIONAL SIGN DETAIL

- iii. Additional *Warning* or *Danger Do-Not-Enter* signage will be installed by FUA on the causeway to warn river users away from potential construction related hazards and to prevent river users from using the causeway as a stopping point.
- iv. Should work activities require closure of the river in the causeway during construction activities e.g., girder placement, demolition activities, etc., additional floating signage (similar to the below illustration) will be installed by FUA to warn users of hazards and direct to nearest pull-out:

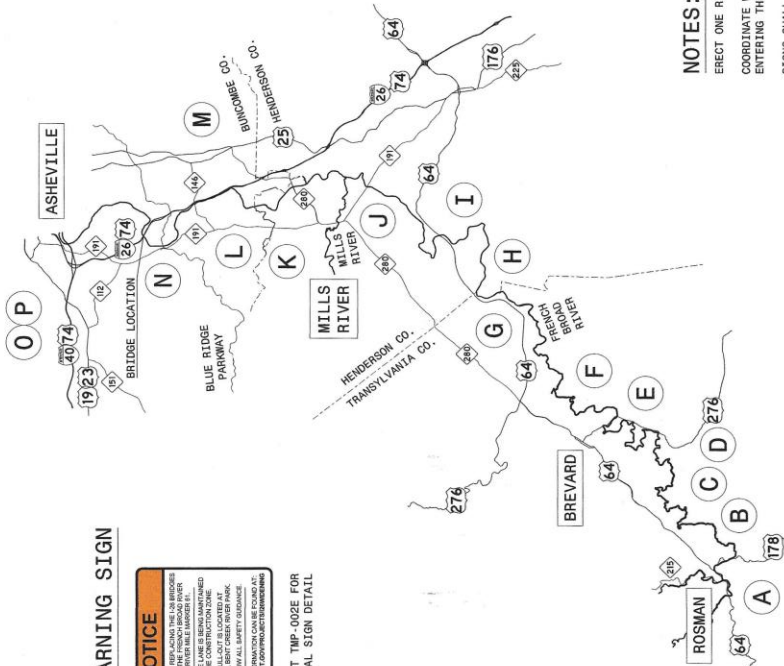


Figure II.a - 1



**SIGN LOCATION MAP**

N.T.S.



**RIVER WARNING SIGN**

**NOTICE**  
 YOU WILL BE REQUIRED TO STOP AND WAIT AT THE BRIDGE AT THE RIVER CROSSING. PLEASE FOLLOW ALL SAFETY ORDINANCES.  
 SEE SHEET TWP-002E FOR ADDITIONAL SIGN DETAIL.


**NOTES:**

- ERECT ONE RIVER WARNING SIGN AT EACH LOCATION LISTED ABOVE ON 3LB U-CHANNEL.
- COORDINATE WITH THE BUSINESS OWNER/PARK MANAGER AS TO WHERE ON SITE TO ERECT THE SIGN TO BE MOST VISIBLE PRIOR TO ENTERING THE RIVER.
- SIGNS SHALL BE ERECTED IN TWP AREA 8 DURING PHASE 1A.
- SIGNS SHALL BE MAINTAINED DURING THE DURATION OF THE CONSTRUCTION OF THE I-26 BRIDGE OVER THE FRENCH BROAD RIVER.
- REMOVE AND DISPOSE OF SIGN SYSTEMS UPON COMPLETION OF WORK IN TWP AREA 8 DURING PHASE 4.
- PAYMENT MADE UNDER TEMPORARY RIVER TRAFFIC WARNING SIGNS (EA).

**TRANSPORTATION MANAGEMENT PLAN  
FRENCH BROAD RIVER  
WARNING SIGN  
LOCATIONS**

APPROVED: [Signature]

DATE: 3/7/2018



SEAL

**HNTB**

**b. River Navigational Markers/Aids**

- i. Steady-state “red” solar powered navigational lights erected by NCDOT on the causeway to alert river users shall be maintained in good working order during construction activities by FUA.
- ii. Navigation rope buoys will be utilized by FUA in addition to signage prescribed in Section II.a above to mark and direct river traffic around hazardous construction work areas/activities.
- iii. Rope buoys will be completely filled with urethane foam or other materials to prevent potential failure (i.e., sinking) which meet or exceed *United States Coast Guard* requirements.
- iv. Rope buoys will be effectively secured against accidental or intentional displacement.
- v. Placement of rope buoys shall be pre-approved by FUA Construction Management and the FUA HSE department.

**c. Monitors/Flaggers**

- i. FUA will provide trained monitors/flaggers to control river user access to hazardous construction work area/activities as needed.
- ii. One or more monitors/flaggers will be staged upstream as needed to stop river use at limited times when working over the river via communications of handheld radios (refer to Section II.a.iv above)
- iii. FUA monitors/flaggers shall be trained in Swiftwater/Flood Rescue (per NFPA 1670 or equivalent) to assist those river users that may be in distress when navigating the FBR through the causeway.

**Note:** At a minimum, trained monitors/flaggers shall participate in two emergency drills annually involving the rescue of a distress boater(s). The emergency drills shall be planned and executed by the FUA HSE department.

**d. Working Over Water**

- i. FUA shall erect a rigid, non-drooping, catchment device on the overhead structure from South of Old River Road to the opposite side of the FBR to prevent material from falling on river users, equestrians, bicyclists, or in the water.
- ii. The catchment device shall be cleaned of debris and inspected by the responsible FUA Construction Management on a daily/shift basis prior to the initiation of any work activity that day/shift. Any deficient conditions shall be brought to the immediate attention of the FUA Construction Manager for repairs or replacement. Daily inspections shall be documented on the applicable Safety Task Assignment (STA). All Fall Protection will meet the criteria of the FUA Site Safety Plan. “The approved Site Safety Plan was submitted to NCDOT”

**e. Boat/Skiff and Ring Buoys**

- i. FUA will provide a boat/skiff for emergency rescue operations, equipped with paddle or oars, four (4) adult and four (4) child life preservers, and a reach extension device.  
**Note:** When utilized, the boat/skiff shall be manned by a minimum of two FUA trained boater operators.
- ii. If warranted by strong current conditions, the boat/skiff will be outfitted with motor.
- iii. A safety line may be connected between the boat/skiff and a structural member capable of maintaining the position of the boat/skiff.

- iv. Under all conditions, the boat/skiff must be located such that it is available for immediate use if an emergency arises. It will be kept secured and all pertinent personnel will be able to access as necessary. This will be discussed / implemented during morning STA meetings and all personnel will be privy to immediate needs during working operations
- v. Ring buoys (four total) will be strategically located on each side of the river both upstream and downstream of the causeway during construction activities. Each ring buoy shall be equipped at least 90-feet (27.4 m) of rescue line (and throw bag).
- vi. Prior to use each day/shift, both the rescue boat/skiff and ring buoys will receive a visual daily inspection by the assigned personnel to ensure all rescue equipment is in good working condition. All deficiencies shall be brought to the attention of the FUA HSE department. Inspections shall be documented on the associated STA.
- vii. Both the rescue boat/skiff and ring buoys will receive a documented weekly inspection by the FUA HSE department to ensure all rescue is in good working condition. Deficient items will be immediately taken out of service and repaired or replaced.

**f. Spill Control**

- i. Spill containment kits will be procured and strategically placed by FUA where potential spill hazards into the FBR exist, i.e., cranes, heavy equipment, drill rigs, etc.
- ii. Kits will be of sufficient size and type for the hazard being mitigated/cleaned up.
- iii. Documented monthly inspections shall be conducted by the FUA HSE department.
- iv. All unplanned and/or uncontrolled spills of hazardous materials into the FBR shall be immediately reported to the FUA Project Management Team, FUA HSE, and NCDOT.
- v. Spill response personnel shall be appropriately trained by FUA.

**g. Flooding**

- i. Any predicted storm event that has the potential to cause water to flow over the causeway will require the removal of all FUA personnel and equipment from the flood plain. The work site shall be secured until water recedes to normal levels.
- ii. Once the water has returned to normal levels, an inspection of the causeway and surrounding areas shall be performed by FUA Project Management, Construction Management, and HSE for new hazards as a result of the flooding. All new hazards shall be mitigated and/or controlled before resuming construction activities.

**III. RSP Review**

The RSP shall be reviewed (at a minimum) annually and revised accordingly by the FUA Project Management Team and HSE department for effectiveness in both process development and implementation. The review shall be documented and ensure that all deficient conditions and opportunities for improvement are identified and addressed.