



**US Army Corps
of Engineers**
Wilmington District

White Oak Dike Flood Control, Bladen & Pender Counties, NC

- **White Oak Dike (improved by Corps in 1946 & 1962) Removed from Rehabilitation & Inspection Program (PL 84-99) in 2001 due to significant deficiencies including: man-made breaches, vegetation, & erosion.**
- **Town of Kelly, NC impacted by Flooding from Hurricane Florence in 2018.**
- **Local Interests Seeking Federal Assistance**



CONGRESSIONAL DISTRICT: NC 07

DATE: 25 March 2019

1. **AUTHORIZATION:** 10 November 1960, Section 205, Flood Control Act of 1948, as amended by Public Law 685, 84th Congress.
 2. **LOCATION:** Southeast section of Bladen County and northwest section of Pender County, NC, approximately 35 miles northwest of Wilmington. Located on the northeast side of the Cape Fear River near the town of Kelly, NC, in the Lyon Swamp and White Oak Swamp watershed.
 3. **PRE-EXISTING PROJECT DESCRIPTION:** Upper section of old dike extended across Frenches Creek Dam and was constructed in 1911. Another section of dike was constructed in 1934 by Works Progress Administration. The dike at this time was approximately 5 miles long. A record flood in 1945 caused 11 breaches in the dike. These breaches were repaired by the Corps in 1946-47 under Section 5 of the Flood Control Act of 1941.
 4. **EXISTING PROJECT DESCRIPTION:** Authorization in 1960 provided for repairing and raising 3.72 miles of existing dike, construction of new flood gate structures and 9.6 miles of new dike. The project was completed in 1962. The project Maintenance Manual was completed in October 1962. Detailed Project Report was approved February 6, 1964.
- The White Oak Dike Flood Control Project, Federally authorized, non-Federally operated and maintained, consists of approximately 14.5 miles of earthen dike from a point approximately 3 miles northwest of Kelly, to a point approximately 3.6 miles below the Bladen-Pender County line.
5. **SPONSOR:** Lyons Swamp Drainage and Levee District

6. **REMOVED FROM REHABILITATION & INSPECTION PROGRAM 2001:** On 6 September 2001 representatives of the Wilmington District conducted, with the local sponsor, a Continuing Eligibility Inspection of the White Oak Dike. The complete removal of the levee in sections (man-made breaches) for apparent timbering activity access, the presence of vegetation (mature trees) on the entire levee length, and erosion of the levee profile in numerous areas (resulting from possible vehicular access) resulted in the levee being rated as UNACCEPTABLE. Thereafter, the White Dike was classified as INACTIVE in the Rehabilitation and Inspection Program under cover letter dated 18 October 2001 from the Wilmington District to the Local Sponsor, Lyons Swamp Drainage and Levee District.

7. **PERIODIC INSPECTION 2010:** A nation-wide effort to better document ACTIVE and INACTIVE levee systems prompted a one-time Periodic Inspection of the White Oak Dike in 2010. The Periodic Inspection was conducted on 14 and 15 April 2010. Significant deficiencies were observed: (1) large trees; (2) man-made breaches from apparent timbering operations; (3) encroachments - structures, small buildings, sheds and fences; (4) 6 of the 9 culvert pipes could not be located; (5) culverts and headwalls in deteriorating condition; (6) areas of erosion on the levee; and (7) debris within 15 feet of the levee throughout the project. This resulted in a continued rating of UNACCEPTABLE and INACTIVE status in PL 84-99 Program. A meeting was held by the Corps on 29 April 2011 in Kelly, NC to discuss the continued INACTIVE status of White Oak Dike. The meeting was attended by Bladen County officials, Dike Commission representatives, local residents, and Corps (Wilmington District) levee safety officials. In a letter dated 21 February 2012, the Corps Levee Safety Officer presented the official Periodic Inspection Report to Lyons Swamp Drainage and Levee District. Additionally, the Sponsor was given information on ways to re-admit the White Oak Dike Project back into the PL 84-99 program; primarily through local efforts to rehabilitate significant project deficiencies.

8. **HURRICANE FLORENCE FLOODING 2018, NEW FLOOD OF RECORD:** Hurricane Florence was a powerful and long-lived Cape Verde hurricane that caused catastrophic damage in the Carolinas in September 2018, primarily as a result of freshwater flooding. Florence dropped a total of 35.93 inches of rain in Elizabethtown, North Carolina, becoming the wettest tropical cyclone recorded in the Carolinas.

Stream Gages in southeastern NC indicate that peak flows for Florence were characterized as less than 0.2% annual exceedance probability, or greater than a 500 year recurrence interval, becoming the New Flood of Record. Florence Peak Stage at Lock and Dam 1 on Cape Fear River near Kelly, NC compared to previous flood of record in 1945, and Hurricane Matthew:

<u>Date</u>	<u>Lock & Dam 1 Peak Stage</u>	<u>Event</u>
09/21/2018	30.68 feet	Hurricane Florence: New Flood of Record
09/23/1945	29.80 feet	Previous Flood of Record (1945)
10/13/2016	28.58 feet	Hurricane Matthew

9. **19 MARCH 2019 PUBLIC MEETING IN KELLY, NC:** A public meeting was held in Kelly, NC on 19 March to discuss history of project deficiencies and potential path forward for rehabilitation of White Oak Dike.