Shoreline Protection Project Overview

**Project:** Chicago Shoreline Protection Project (Interim III)

**Authorization:** Water Resources Development Act of 1996 (Public Law 104-303)

**Type:** Shoreline Protection/Flood and Storm Damage Reduction–Capital Construction

**Federal Sponsor:** United States Army Corps of Engineers

**State Cooperating Agency:** Illinois Department of Natural Resources

**Local Sponsors:** City of Chicago Department of Transportation, Chicago Park District

Chicago's existing shoreline protection structures were built between 1910 and 1931. Known as revetments, the shoreline protection structures consisted of wood pile cribs filled with stones in the shape of steps. In the 1950s, the wood piles began collapsing, leaving the structures and parkland to erode and wash away. In 1964, the year when Chicago recorded the all-time lowest water levels on Lake Michigan, the wood piles became exposed and started rotting, further increasing the erosion process.

Due to their age and deteriorated condition, these structures no longer provide adequate protection for Lake Shore Drive, a Federal highway adjacent to this shoreline, and other public facilities. This threat of damage prompted Congress in 1974 to direct the U.S. Army Corps of Engineers to investigate these and related erosion problems along the entire Illinois Lake Michigan shoreline.

As cooperating agencies, the City of Chicago and the Chicago Park District worked with the Chicago District of the U.S. Army Corps of Engineers on the Feasibility Study which was used to determine that Federal assistance should be provided to protect the shores of Lake Michigan from future storm damage and erosion. The final Feasibility Report and recommended plan for reconstruction was presented by the Army Corps of Engineers to Congress in 1994. From this report, the eight most critical miles of the lakefront were designated for reconstruction.

The project areas are broken up into "reaches," each reach encompassing different sections of the shoreline. They are:

- Reach 2–step stone revetment reconstruction in the area from Montrose to Fullerton Avenue
- Reach 2F–breakwater and beach nourishment at Fullerton Avenue to prevent flooding of the Fullerton Avenue exit and entrance ramps to Lake Shore Drive
- Reach 3–step stone revetment reconstruction at Solidarity Drive
- Reach 4–step stone revetment reconstruction from 23rd Street to 57th Street alongside Lake Shore Drive
- Reach 5–breakwater reconstruction protecting the South Water Purification Plant
In 1996 Congress authorized Federal funds to be used for reconstructing the eight miles of the Chicago shoreline and a breakwater that protects the City’s South Water Purification Plant. The total cost of the project is estimated at approximately $380 million. This amount is cost shared among the U.S. Army Corps of Engineers the City of Chicago, the Chicago Park District, and the Illinois Department of Natural Resources.

The preferred design of the revetment is vertical steel sheet piles to replace the damaged wood piles, and concrete steps and promenade to replace the existing stones. This design is called a concrete stepped revetment. This type of revetment design maintains safe access to the shoreline while preserving its historical and aesthetic value. At several project segments, the design also incorporates reuse of salvaged stones from the failed revetment.

The reconstruction does not consist entirely of concrete stepped revetments. Some locations such as Fullerton Avenue, 39th Street and the 49th Street Morgan Shoal provide great opportunities not only to expand the lakefront and create parkland but also to diversify amenities. At other locations, such as 31st Street and 40th Street, where the lake is shallow, beaches are constructed in lieu of revetments. Beaches offer the same level of protection as revetments, while providing a (see photo of 31st Street Beach above).

To date, approximately 7 miles of shoreline has been completed (80% of project). Project completion is anticipated in 2018.