# DEPARTMENT OF TRANSPORTATION
# STATE OF GEORGIA

## GDOT Process for Corrosion Resistant Prestressed Concrete (PSC) Pile Recommendation in LRFD Bridge Foundation Investigation Reports

Due to corrosion issues in certain locations in Georgia, we will begin recommending the use of "Corrosion Resistant PSC Piles" in our BFI-LRFD reports. These piles are also called High Performance Concrete (HPC) Piles. They are comprised of low permeability concrete and stainless steel reinforcement.

The following procedure will guide you in recommending HPC piles:

1. The bridge site will require specific testing for corrosion if it meets one or more of the following requirements:
   a. The site is in one of the following counties: Bartow, Bryan, Camden, Carroll, Chatham, Charlton, Cherokee, Fannin, Gilmer, Glynn, Gordon, Haralson, Heard, Liberty, McIntosh, Paulding and Polk.
   b. The site is in a heavily industrialized area/zone, subject to mine drainage, or area with landfills and cinder fills.
   c. The bridge is over a major river such as - Alapaha River, Altamaha River, Brier Creek, Broad River, Canoche River, Chattahoochee River, Etowah River, Flint River, Ochlockonee River, Ocmulgee River, Oconee River, Ogeechee River, Ohoopee River, Oostanaula River, Satilla River, Savannah River, St. Marys River and Withlacoochee River.

2. Make sure soil and water samples are collected per bent specifically for the corrosion tests that are to be performed which are listed in the following table along with their standardized test method and the required results/thresholds.

| **Test Required** | **Standardized Test Method** | **Requirement/Threshold** |
|---|---|---|
| pH | ASTM D2976, D4972, G51, AASHTO T289 | 5.5 to 9.5 |
| Resistivity | ASTM D1125, G57, AASHTO T288 | Greater than 4000 ohm/cm |
| Chloride Content | ASTM D512, AASHTO T291 | Less than 100 ppm (parts per million) |
| Sulfate Concentration | ASTM C1580, D516, AASHTO T290 | Less than 200 ppm |

3. If the samples **do not meet ALL** of the requirements in step 2, Corrosion Resistant PSC Piles/HPC should be recommended in the BFI.