



**SOUTHEAST CEMENT
PROMOTION ASSOCIATION**



www.secement.org

PCCP and FDR: THE RIGHT COMBO for Elizabeth City Regional Airport in North Carolina



1 FDR underway



2 Concrete paving underway



3 Aerial view of ECG (Phase 1)

The Elizabeth City Regional Airport (ECG), located in Pasquotank County, North Carolina, is a joint-use facility with the United States Coast Guard occupying the northern portion of the airport and ECG occupying the southern portion.

The approximate 25,000 square yard asphalt ramp, located adjacent to the airport administration building, was in poor condition. The existing thickness had a high degree of variability due to prior modifications and rehabilitations. Portions of the ramp, used for parking a broad range of aircraft, were prone to ponding of water due to depressions in the pavement. Also, the section of the ramp that accommodated fueling operations did not adequately slope away from the administration building and thus did not meet FAA criteria.

During the preliminary design stage, the engineering consultant, Parrish & Partners, took into account vertical constraints and drainage and developed four (4) viable pavement design options for consideration. All the pavement sections were prepared in accordance with FAA requirements using FAARFIELD software. One of the pavement alternates included a 9" Portland Cement Concrete Pavement (PCCP) over an 8" Full-Depth Reclaimed (FDR) Base Course. Carolinas Concrete Paving Association and the Southeast Cement Promotion Association conducted training on the FDR with cement process. The training presented best practices and illustrated other case studies where FDR with cement had provided a homogenous and stronger base for general aviation pavements.

In the report prepared for ECG Airport Authority, four pavement alternates were scored on the following criteria:

1. Pavement longevity
2. Pavement fuel resistance
3. Compatibility with adjacent structures and pavements
4. Ability to withstand grade corrections
5. Cost
6. Environmental sustainability and ability to use recycled materials

Based on the analysis contained within the report and discussion with the North Carolina Department of Transportation (NCDOT)'s Aviation Department and the Airport Manager, the decision to use the combination of FDR for the pavement base and PCCP was made. The combination of PCCP and FDR scored the highest when compared to the other three pavement alternatives and represented the best overall value.

The project was bid in February 2015 and the first phase (slightly less than 1/2 of apron area) got underway in June. Like most projects, a strong project team was required to make adjustments to the original construction plan. The construction team included the general contractor, Barnhill Contracting; the full-depth reclamation contractor, Slurry Pavers; and the concrete paving contractor, McCarthy Improvement Company, who all worked closely with the consultant, Parrish & Partners, and the owner to ensure key schedules were met and operations continued at the airport.

Continued on back

