Another objective is to evaluate the design parameters of geosynthetic reinforced flexible pavement in terms of the 1993 American Association of State Highway and Transportation Officials (AASHTO) pavement design guide and the Mechanistic-Empirical Pavement Design Guide (MEPDG) that can provide a more suitable pavement structure design responsive to site conditions and projected loading.

METHODOLOGY

The following major tasks will accomplish the designated research objectives:

- ***Task 1 :*** Conduct a comprehensive literature survey on relevant published works.
- ***Task 2 :*** Design, instrument, and construct test lane sections.
- ***Task 3*** : Conduct accelerated load tests on the sections.
- ***Task 4 :*** Conduct cyclic plate load tests on the sections.
- ***Task 5 :*** Analyze experimental test results.
- ***Task 6 :*** Conduct a cost benefit analysis and implementation plan.
- ***Task 7 :*** Prepare a final report.

IMPLEMENTATION POTENTIAL

By the end of the proposed research, the benefits of the geosynthetic subgrade/base stabilization/reinforcement in pavement structures built on weak subgrades will be demonstrated in terms of increasing the service life of the pavement structure and/or reducing the base thickness. The improvement in design life can be used to back-calculate the equivalent thickness of the base course layer that will correspond to the same design life. The research team is expected to provide the Louisiana Department of Transportation and Development (LADOTD) with typical design parameters of geosynthetic reinforced flexible pavement in terms of the 1993 AASHTO pavement design guide and possibly in terms of MEPDG. This can be achieved through back-calculation to evaluate an equivalent base layer coefficient for reinforced base and/or evaluate a composite resilient modulus for the stabilized subgrade. The researchers are also expected to provide LADOTD pavement engineers with guidance on how to include the geosynthetic reinforcement in the design of flexible pavements.