Objectives
- Assess the current state of practice in the use of tire bales in erosion control and bank stabilization.
- Identify the configuration of baled tires.
- Compare the life cycle cost (LCC) of alternative methods using the FHWA detailed LCC analysis.
- Perform engineering analysis of the existing practice and monitor the performance of existing and under construction tire bale systems.
- Construct representative tire bale systems in a controlled environment.
- Facilitate a parametric study of tire bale systems.

Benefits
- Promotes the use of increasing stockpiles of waste tires and a growing demand for adequate backfill material in highway construction.
- Use compressed tire-bales as a means to reduce cost of construction and to recycle used tires which would otherwise occupy much larger space in landfills or be improperly disposed.
- Recycled tires are suitable for a wide range of applications in civil engineering due in large part to their low density, which makes them suitable as lightweight fill material.
- The bailing of tires for use in construction represents a means of disposal and a means of creating a valuable commodity.

Analysis
- In accordance with the use of tires in the US, a best practices environmental literature review was conducted and listed within the report (Table 3).
- The liquid and plastic limits of a soil determine the phase relationships, and are important for classifying the soil.
- The average water content of the soil samples taken from the EMRTC site. Specific gravity was tested and is useful for determining other physical properties of soil, such as void ratio and degree of saturation. The test is performed only on the sample portion smaller than 4.76 mm (No. 4 sieve).
- The bailing of tires for use in construction represents a means of disposal and a means of creating a valuable commodity.

Results
- Visual observations indicate that erosion of sediment in the channels and water flow across the top of the structures has the potential to destabilize the tire-bale structures, therefore additional support would be needed.
- It was observed that most tire-bale structures suffer the greatest risk from deformation failure, particularly in the saturated-backfill condition.
- Several failure modes were observed, however, it is the conclusion of the Research Team that the failure modes can be traced to inadequate structural design and inadequate knowledge and control of surface and subsurface water infiltration.

Implementation Status
- Eight structures were built: seven in District 1 and one in District 6.
- Construction lasted 2 weeks (May 10 to 24, 2010).
- Flowcharts describing the sequence of construction were created and presented in the report submitted to the NMDOT.
- To view the standard drawings below in full view, please click the following link or visit: http://dot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/Standard_Drawings/602.pdf

Background
- Although whole scrap tires can be legally landfilled in New Mexico, they are banned in 37 states in the US.
- Find alternative use for post consumer or used tires.
- The disposal of tires is a recognized problem around the world.
- Tire-bale structures are used for erosion control in relatively few states for the principal reason that many structures that were built since the late 1990s have experienced significant distress and/or failure.

Analysis
- The principal reason that many structures that were built since the late 1990s have experienced significant distress and/or failure.

Analysis
- The principal reason that many structures that were built since the late 1990s have experienced significant distress and/or failure.

Implementation Status
- Eight structures were built: seven in District 1 and one in District 6.
- Construction lasted 2 weeks (May 10 to 24, 2010).
- Flowcharts describing the sequence of construction were created and presented in the report submitted to the NMDOT.
- To view the standard drawings below in full view, please click the following link or visit: http://dot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/Standard_Drawings/602.pdf

Analysis
- The principal reason that many structures that were built since the late 1990s have experienced significant distress and/or failure.

Implementation Status
- Eight structures were built: seven in District 1 and one in District 6.
- Construction lasted 2 weeks (May 10 to 24, 2010).
- Flowcharts describing the sequence of construction were created and presented in the report submitted to the NMDOT.
- To view the standard drawings below in full view, please click the following link or visit: http://dot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/Standard_Drawings/602.pdf