



LRRB Research Need Statement

LRRB-6

Date: March 8, 2021

Need Statement Champion:	Name	Agency	E-mail	Phone
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Submitted by:	LRRB via Priority Process			
Originated from:	LRRB Idea Solicitation Process (Pre-Screen Board Mtgs)			

Select Type:

Research OR Implementation

Need Statement Title:

Tire Derived Aggregate (TDA): Light Weight Fill and as Stormwater Infiltration Media

Need Statement: Describe the problem or the opportunity. Include background and objective.

Solid waste products such as Tire Derived Aggregates (TDAs) have been successfully used in road construction as light weight fill, diverting them from ending up in landfills and recycling the waste material for beneficial use. [Minnesota State Statute](#) specifically allows for use of TDAs as light weight fill but does not allow other use without case-by-case evaluation and permitting as regulated by the Minnesota Pollution Control Agency (MPCA) which states that tires may be used in the following ways without further MPCA approval:

- Crumb rubber used in asphalt paving or applications as a substitute for rubber or similar elastic material.
- Tire shreds used as lightweight fill in the construction of public roads in accordance with Minnesota Stat. § 115A.912, subd. 4.
- Tire chips used as a substitute for conventional aggregate in construction applications when the ratio of substitution is no greater than one to one by volume.

One aspect of this research should be to evaluate how other states are allowing TDA to be used (both above and below the water table). What research is necessary to determine degradation of the TDA above and below the water table?

Another use of TDA is as a stormwater infiltration media. This research should document agencies that have experience using TDA for a stormwater infiltration media:

- Has TDA been used as a filtration media successfully elsewhere?
- How many case specific beneficial use determinations have been approved?
- What is the cost to the local agency to prepare and submit for case-by-case approvals?
- How much time is needed to secure approval?
- Has the MPCA and/or local watershed districts allow its use as a pilot project or provided any guidance? If so, what have been the results?
- How effective is the TDA material at reducing phosphorous and other stormwater pollutants?
- What are the TDA leachate concerns versus the do nothing approach?
- What is the life expectancy for TDA as a stormwater infiltration media?
- What maintenance steps are required for TDA when used as a stormwater infiltration media?
- What can be done with the TDA material in the event it is removed?



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Beyond the necessary evaluation of pollutants by the regulatory agency, the research should explore other pollutant reduction benefits.

Suggested Deliverables:

Applicability of Tire Derived Aggregate (TDA) for Stormwater Infiltration Media (Report)

How does this project build upon previous research (include title or reference to a completed research effort)?

Usage Guide Tire Derived Aggregate

<http://dot.state.mn.us/mnroad/nrra/structure-teams/geotechnical/files/meetings/tda-user-guide.pdf>

Provide names to consider for a Technical Advisory Panel:

Rod Rue (City of Eden Prairie); Mark Hansen (City of Coon Rapids); Tom Kaldunski (City of Inver Grove Heights); Jim Foldesi (St. Louis County); Joe MacPherson (Anoka County); MnDOT Water Resources Representative; Minnesota Pollution Control Agency Representative; Recycled Materials Resource Center Representative; Terry Beaudry (MnDOT); Brad Skol (MnDOT)