



LRRB Research Need Statement

LRRB-7

Date: March 8, 2021

Need Statement Champion: Submitted by: Originated from:

Name	Agency	E-mail	Phone
Lon Aune	Marshall County	lon.aune@co.marshall.mn.us	218-745-4381
Rich Sanders	Polk County	sanders.rich@co.polk.mn.us	218-470-8253
Tim Erickson	Douglas County	time@co.douglas.mn.us	320-762-2967
LRRB via Priority Process			
LRRB Idea Solicitation Process (Pre-Screen Board Mtgs)			

Select Type:

Research OR Implementation

Need Statement Title:

Impervious Surface Exchange Program

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

The Minnesota Pollution Control Agency provides regulations limiting the increase of impervious surfaces to reduce flood impacts and pollutant transfer. When road authorities reconstruct highways or whenever shoulders are widened, agencies increase impervious surfaces resulting in costly mitigation in stormwater capture and treatment. Previous research provided new methodology for determining Effective Impervious Area (EIA); See [NEW METHOD FOR DETERMINING IMPERVIOUS AREAS SAVES TIME AND MONEY](#).

However, there is no credit given to road authorities when improvement results in an increase to pervious conditions, for example elimination of agriculture creep into the right of way with a re-established vegetated and widened backslope. Can there be a methodology for determining “net zero” impacts by agencies?

This study will need to determine how to equitably capture a local agencies investment in reducing stormwater runoff impacts at both the project and a programmatic level. At the project level, how does the EIA differ for a 3-foot shoulder with 3:1 in slope vs. a 5 -foot shoulder with 4:1 in slope? In the event an agency acquires additional right-of-way or flattens the inslope with wider ditch bottoms to capture pollution runoff, could the environmental benefit be tallied to offset future needs when increasing impervious surfaces are unavoidable? From a programmatic level, how does the runoff mitigation of added buffer strips along drainage ways get calculated and then credited to an agency?

Another example at the project level, if a narrower road section is constructed resulting in reduced impervious surface and in fact increasing stormwater capture on site in restored green space, could that net change to the impervious surface be banked as a credit? At the programmatic level, would the MPCA consider eliminating permits for agencies who adopt and enforce local ordinances like the City of Inver Grove Heights (Section 515.80 Subd. 39 of the City of Inver Grove Heights City Code)? Could agencies who are heavily invested in their Municipal Separate Storm Sewer (MS4) program see mutual benefit of those investments to offset unavoidable increased impervious surface impacts?



Research is needed to document the benefit local agencies gain by reducing imperviousness and reducing runoff. This research should explore methodology to better calculate increased or decreased impacts to impervious surface area. The research should further identify the reverse benefit for an area that is converted back to pervious surface area by capturing what would have been the required cost for stormwater treatment to mitigate that same area as an impervious surface area. That cost of that pervious surface area value could become a “credit” for an agency. Research should quantify debits and credits for agencies and make recommendations for permit modifications.

The research should explore needed documentation of benefit in order to determine how to best update the process for permitting impervious surfaces to include an exchange/bank system when local agencies reduce impervious surface impacts and/or increase the pervious area within their jurisdiction.

Suggested Deliverables:

Investigative Report: Impervious Surface Impact Report

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

Provide names to consider for a Technical Advisory Panel:

Jim Foldesi (St. Louis County); Lon Aune (Marshall County); Steven Backowski (Morrison County); Joe MacPherson (Anoka County); Phil Wacholz (Freeborn County); Mark Sehr (Rock County); Sam Muntean (Lac Qui Parle County); Rich Sanders (Polk County); Tim Erickson (Douglas County); Tom Kaldunski (City of Inver Grove Heights); Minnesota Pollution Control Agency Representative; MnDOT Water Resources Representative.