

## State Planning and Research Program Quarterly Report

**PROJECT TITLE:** *Salt Shed Design Template*

**OBJECTIVES:** The purpose of this project is to develop three salt shed scalable designs that can be used as templates by agencies for a variety of sites. The designs will consider a number of factors including code adherence, incorporation of state and federal regulations associated with environmental and related concerns, pad design, material selection options, construction techniques, and easy design modification.

**PERIOD COVERED:** July 1 – September 30, 2021

**PARTICIPATING AGENCIES:** Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee

<p><b>PROJECT MANAGER:</b> Hafiz Munir / Tom Peters</p> <p><b>LEAD AGENCY:</b> MnDOT</p> <p><b>PRINCIPAL INVESTIGATOR:</b> Wilf Nixon</p>	<p><b>SP&amp;R PROJECT NO:</b> MnDOT Contract No. No. 1044530</p> <p>Federal Project Number: TPF-5(353)</p>	<p><b>PROJECT IS:</b></p> <p style="text-align: center;"><input type="checkbox"/> Planning <input checked="" type="checkbox"/> Research &amp; Development</p>
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**ANNUAL BUDGET:** \$83,326

**PROJECT EXPENDITURES TO DATE:** \$22,793

**WORK COMPLETED:** The amended timeline requested at the end of the previous quarter has been approved.

**Task 1 – Literature Review:** The literature review has continued. The two themes reported on last quarter (location and run-off mitigation) continue as major themes. In addition, there is some work on optimal location of salt storage facilities. There is also a few pieces of literature that are more pertinent to the project in that they deal with issues around salt storage facility design, although their focus is not design of the facility itself but rather of facility layout, and the use of conveyer systems.

As indicated in the last report, the literature on storage for other granular materials is limited, and the likelihood alluded to in the last report that most such materials were stored outside was confirmed by personal communication with several authorities in the area of these other granular materials. The end result of this part of the investigation is that there is no pertinent information relating to facility design forthcoming from the area of other granular materials. This result is included in the literature review, and will necessitate that the two surveys planned under task 2 will be reduced to a single survey.

**SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:**

- Task 1 (literature review) will be completed and the draft of the review will be provided to the panel for their review.
- Task 2 (surveys of practice) will be continued. However, as noted above, and based on personal communication from experts in the broader granular materials area, it is proposed that the second survey (to granular materials storage facilities) not be conducted. The draft of the salt storage facility survey will be provided to the panel for their review.

**STATUS AND COMPLETION DATE:**

As noted above, the difficulty in completing the sub-contract has delayed progress (due to the PI not having experience with such matters, and assistance being very difficult to receive due to COVID restrictions). Accordingly this revised schedule has been requested:

Task	Current Task Start Date	Current End Date for Task Approval	Revised Task Start Date	Revised Due Date to Submit Draft Deliverables	Revised End Date for Task Approval
1	1/5/2021	5/15/2021	1/8/2021	8/31/2021	10/31/2021
2	4/1/2021	10/15/2021	7/31/2021	1/31/2022	3/31/2022
3	8/1/2021	1/15/2022	1/31/2022	6/30/2022	8/31/2022
4	1/1/2022	5/15/2022	5/1/2022	8/31/2022	10/31/2022
5	3/1/2022	7/15/2022	7/1/2022	11/1/2022	1/1/2023

Thus the revised estimated ending date for the project is now 1/1/2023.