

Responsiveness Summary

Buffalo Reef Final Alternatives Analysis Report

The Buffalo Reef Final Alternatives Analysis Report (Report) was on public notice from January 30 to March 1, 2024. The Report after the analysis of the *No Action* Alternative and three final alternatives discusses the formulation of the final alternatives, compares potential impacts, and identifies the “Upland Alternative” as the Buffalo Reef Task Force’s (BRTF) preferred remedial alternative and “Potential Plan”. The study compares three scales of implementation for the Upland Alternative. The scale of implementation differs based on the volume of stamp sands to be dredged and disposed during the implementation phase. Additionally, the study provides an assessment of the impact the volume of stamp sands removed during implementation has on the cost and duration of the operation, maintenance, repair, replacement, and rehabilitation phase. The BRTF received 24 comments via email and letter. Most commenters supported the progress made to this point as well as the timeline for the chosen alternative. Below is a summary of comments received during the public notice period. In preparing this summary, actual comment language may have been abbreviated, paraphrased, and/or edited for clarity. The BRTFs responses follow the numbered comments. The BRTF appreciates the time of those who responded during the public comment period.

1. **Comment** – The Louisiana Land Company and/or the original mining company should be looked at as a possible responsible party.

Response – The BRTF is looking into partnering with potential collaborators and is continuing to research this area.

2. **Comment** – The landscape around Gay and the mine tailings is very sensitive for archaeological resources. There needs to be an evaluation of the area for pre-contact or colonial-era archaeological sites. There must be a comprehensive archaeological overview and assessment to inform design.

Response - All subsequent actions will continue to adhere to Section 106 of the National Historic Preservation Act as amended and any applicable State or Tribal historic preservation requirements. A cultural resource Programmatic Agreement (PA) is being considered by all participating agencies to clearly define Areas of Potential Effects and mitigation strategies. If this PA is considered there will be a public review period that will consider all Cultural concerns presented by interested parties.

3. **Comment** – When will the public know how much money will be approved for the project?

Response – Money has not been approved for implementation of this project. When and if that happens, the public will be informed when the BRTF is given the approval to release that information.

4. **Comment** – How long has this site been in this condition?

Response – The stamp sands along Lake Superior at Gay were deposited by the Mohawk Mining Company and Wolverine Copper Mining Company from 1902 to 1932.

5. **Comment** – A high level analysis of cost benefit ratios should be included in the report.

Response – The Buffalo Reef project was not evaluated on a quantitative basis. It was evaluated on a qualitative basis to align with recent Federal and State policy changes such as Justice40 and Environmental Justice Initiatives.

6. **Comment** – It would be appropriate given the size of the project to include analyses of the embodied carbon of the proposed design alternatives as part of the alternatives analysis.

Response – No assessment was made on the upstream/legacy embodied carbon associated with the mining and production of the stamp sands as this was not the scope of this Report or analysis. The proposed alternatives were assessed for embodied carbon and the current assumption is that any design effort will incorporate the Buy Clean Initiative if the products can meet the rigorous specifications required in this harsh environment.

7. **Comment** – Remove all the stamp sands from the beach and use a maintenance program to remove any additional stamp sands that are pushed onto the beach during the fall. Nature would do the work and the only effort would be to remove the sands that are pushed onto the beach.

Response – As the report indicates there will likely be requirements to return periodically to conduct maintenance dredging to capture any residual stamp sands.

8. **Comment** – Build a levee into the lake near Gay to permanently contain the stamp sands.

Response – Building a levee would not “permanently contain” the material. This concept is demonstrated by the break wall at Grand Traverse Harbor. The break wall is effective at temporarily delaying the migration of material, but there is evidence that material is starting to migrate around and over the structure as littoral drift carries the material down drift of the original pile.

9. **Comment** – How will sand removal be handled during late summer storms?

Response – Historically, dredging contractors are allotted ‘weather days’ based on rainfall records for the area. This impacts production rates because the contractor will typically cease dredging operations and moor their dredging equipment in protected areas. The Coal Dock Jetty will serve as an available refuge during these storm events.

10. **Comment** – More natural sand should be brought in if the stamp sands are all removed.

Response – As the report indicates there will be a need for beach nourishment and monitoring of these impacted areas. The U.S. Army Corps of Engineers has identified potential burrow pits that were used to develop cost estimates. However, the final source material will be detailed in any design if this project is funded.

11. **Comment** – What type of treatment methods are proposed for the landfill?

Response – As stated in the Report, a lined landfill is what was proposed for the preferred alternative. The runoff collected will be diluted and returned to Lake Superior via a discharge pipe in the Coal Dock Jetty.

12. **Comment** – How many lined pits will be needed to accommodate the stamp sands in the upland placement location?

Response – For the purposes of this Report the project was broken down into three segments, small, medium, and all. The cost estimators assumed there would be at least three lined pits with collection systems. The final design will be determined when funding agencies decide which project is going to be implemented.

13. **Comment** – The BRTF should investigate implementing temporary stabilization measures (such as timber groins or a dynamic revetment) for the currently exposed stamp sand shoreline updrift.

Response – When and if funding is provided for full or partial implementation of this project, temporary stabilization efforts will be considered during the design phase.

14. **Comment** – Will property owners be responsible for moving their septic systems and has the local government been contacted?

Response – The local health department has been consulted concerning existing septic systems in stamp sands. An appropriate mitigation strategy will be developed if the project moves toward implementation.

15. **Comment** – Sand removal should take time over a wide stretch of beach to protect cabins from potential flooding.

Response – The BRTF agrees that removal of stamp sands will change the characteristics of the beach and will affect wave height and flooding during storms. However, stamp sands do not provide increased protection from wave-induced flooding. Extensive research on the topic by Dr. Robert Regis of Northern Michigan University clearly indicates that the removal of stamp sands along the beach, with the creation of a natural beach slope would increase protection for properties during storm events.

The rapid influx of stamp sands has caused beach profiles to become much steeper than they are in natural sand beaches. Breaker and surf zones have narrowed and moved much

closer to the shoreline. As stamp sands continue to be deposited along the shoreline, the beach will continue to widen, the beach face will become steeper, and wave heights will increase. In fact, the property damage that occurred in October 2017 was a consequence of stamp sands altering the beach profile.

The issue of increased protection for properties from ice shove events is less understood. Removal of stamp sands from the impacted beaches may reduce ice shove protection but the risk of ice shove would become like what it is at the natural sand beaches south of the harbor.

16. **Comment** – Will residential wells be impacted from the upland placement?

Response – As the Report indicates, the upland placement facility will meet the regulations established by the State of Michigan for a solid waste landfill. This requirement prohibits the uncontrolled release of effluent. The current plan is to collect and dilute the effluent with fresh water from Lake Superior and then release the treated effluent back to the lake through a discharge pipe in the Coal Dock Jetty.

17. **Comment** – Will there be noise and fumes from hauling, and will the trucks be covered?

Response – If this project awards a contract for construction, then construction contractors will be required to comply with all local ordinances pertaining to noise and air quality. Dust control can be considered during the design phase of the project.

18. **Comment** – Why can't a road be built through the woods rather than setting up a construction zone in a residential neighborhood? How close can a construction project be to a residential home?

Response – As indicated in the Report, the proposed road traverses through a forested area to minimize the impact to Coal Dock Road. If this project is approved for design, the final haul roads will be specified and may vary from the proposed roads.

19. **Comment** – Mix the stamp sands with mortar and use for a variety of projects or use as construction material.

Response – The idea of securing/encapsulating stamp sands within concrete or some other inert substance has also been proposed by two companies with some degree of capability to undertake the approach. However, there are abundant concerns with chemical contamination in areas where stamp sands are deposited. Furthermore, areas where stamp sands are the primary component of the soil are unable to support healthy vegetation.

Approximately 22.7 million metric tons of stamp sand have been deposited offshore in Gay. The stamp sands have been placed on and migrated onto state bottomlands lakeward of the ordinary high-water mark of Lake Superior. Removal of materials from the

bottomland of Lake Superior requires a permit under the Natural Resources and Environmental Protection Act 1994 PA 451, Part 335, Great Lakes Submerged Lands. The amount of stamp sand greatly surpasses the needs of the local construction industry.

20. **Comment** – Could the stamp sands be decontaminated using electro-osmosis?

Response – A pilot project could be proposed to determine if this is feasible, however the priority of the BRTF is to remove stamp sands from the shoreline of Lake Superior and protect Buffalo Reef.

21. **Comment** – All the sand should be used to make a 4x4 ATV park.

Response – The BRTF is exploring opportunities for the beneficial use of stamp sands that accomplish the goal of removing them from incompatible environmental settings. As indicated in the Report, there are abundant concerns with chemical contamination in areas where stamp sands are deposited. Furthermore, areas where stamp sands are the primary component of the soil are unable to support healthy vegetation.

22. **Comment** – Why not distribute stamp sands to counties to alleviate slippery roads?

Response – Historically local counties have used stamp sands for winter traction. At the Gay location stamp sands are removed from the area of the original pile. This location provides finer material that the counties prefer. Approximately 22.7 million metric tons of stamp sand have been deposited offshore in Gay, most of it has been washed and moved by the lake, resulting in characteristics which are not preferred for road traction material. The amount of stamp sand greatly surpasses the needs of the local road commissions.

Prepared by the Buffalo Reef Task Force, March 2024