

# Mud Lake Workshop Q & A

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## Natural Resources Questions

**Q:** Why does Mud Lake need clean-up? Why is it being pursued at this time?

**A:** Mud Lake is identified for restoration and cleanup in the official federal/state/tribal St. Louis River Area of Concern Remedial Action Plan because of the confirmed presence of contaminants that could pose a threat to human health and the environment and the importance to the health of the entire St. Louis River Estuary of restoring hydrological connectivity, deep water, native wetlands, and wild rice at this site.

**Q:** Is there a pollution cleanup plan?

**A:** No matter what Mud Lake alternative the City of Duluth chooses, the Minnesota Pollution Control Agency and the Environmental Protection Agency will ensure that contaminants in Mud Lake are cleaned up to protect human health and the environment. The agencies will develop a specific cleanup plan in the fall after the City of Duluth makes its decision about the future of Mud Lake.

**Q:** Can the cleanup happen with the causeway intact?

**A:** Contaminants can be fully cleaned up with or without the causeway. Ecological goals of restoring hydrological connectivity, deep water, native wetlands, and wild rice at Mud Lake can be partially achieved with the causeway in place.

**Q:** Can you please explain the purpose of the levee included in some of the alternates? If the goal is to open and improve water flow, why decrease water flow with levees?

**A:** The goal of the study was to use pre-existing alternatives developed over the past several years by resource managers to maximize outcomes and to balance open water areas with protective bays to create a diversity of habitats for plants and animals throughout their life cycles.

**Q:** Does the study show anything about the muskrat and beaver populations?

**A:** This study did not directly address muskrat and beaver populations; however, the study evaluates each alternative against habitat restoration goals established in the Area of Concern Remedial Action Plan for Mud Lake and the entire estuary that consider the habitat needs of all native species, including aquatic mammals.

**Q:** We are currently experiencing high water levels, but since these are not historically the standard, should we instead base this study on the historic averages, assuming islands, banks, and wetlands will return to their natural state?

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**A:** The studies and designs used a water-surface elevation that represents the low water level consistently recorded during average, or “ordinary”, conditions. The level used was determined to be 601.05 IGLD 1985 by the Minnesota Department of Natural Resources.

**Q:** Explain how the alternatives help prevent invasive species; won't recreational boating in Mud Lake increase invasive species?

**A:** Regardless of which alternative the City selects, the DNR-led ecological restoration of Mud Lake will include removal of invasive species and planting of native species and that restoration will have to be followed up with on-going efforts to prevent the return of invasive species.

**Q:** What is the confidence in the models, statistical differences in the model systems, and what are the margins of error on the testing numbers?

**A:** The aquatic vegetation models are given as probabilistic estimates, so the area associated with 25%-75% is the middle quartiles of likelihood. The key numeric model is the Submerged Aquatic Vegetation model. The website (<https://duluthmn.gov/media/8081/predicting-submerged-aquatic-vegetation-cover.pdf>) has the model accuracy information. See Table 5 in the paper where it provides the model prediction accuracy for Spirit Lake as 85%.

Other models are rule-based, and so do not have error, but are presence-absence based on whether the conditions were met (for example, the boating metrics, or shoreline fishing metrics).

Other models are a hybrid between the two – both a set of rules and probabilistic estimates (for example, the northern pike and musky spawning model). We did not produce an error distribution for the hybrid models.

**Q:** What do you want to achieve with the second entrance to the causeway – flow, removing pollutants, oxygen?

**A:** In estuaries, water flow and the natural movement of sediments are important for maintaining high quality shallow water habitats. Improved connectivity also improves fish access to nursery and breeding habitats. The cleanup of contaminants is addressed prior to and separate from the restoration of hydrological connectivity.

**Q:** Is the goal to restore Mud Lake to its original state, or something else?

**A:** The aim of the project is not to restore the historic geographic form of Mud Lake but to restore the historic ecological function of Mud Lake as a shallow sheltered bay habitat.

**Q:** Are the models from bathymetric mapping? At what point can the hydrology influence the plan, and should there be a hydrologic study before deciding on an alternative?

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**A:** The depth used for the modeling was the average “ordinary” water elevation (601.05 IGLD). This is used to determine depth, aspect, and slope; wind and wave energy is used as well. Once an alternative is chosen, more hydrodynamic data collection and modeling will be done to optimize the final design to best accomplish Area of Concern ecological goals for Mud Lake.

**Q:** The inflow and outflow to the lake is pushing and pulling, not steady. Why do you think there is going to be a continued flow and not the constant back and forth pulsing? Will adding the additional entrance change the flow?

**A:** The main flux and flow comes from two things, the time of year and Lake Superior’s slushing back and forth under the bridges. The river also has a general current pattern that moves with the lake and the models are able to take these complexities into account

**Q:** Is there any research into the wild rice population?

**A:** There is historical evidence that wild rice stands were once abundant at Mud Lake. Wild rice is not known to be present in Mud Lake today. Mud Lake has been identified as an area that will have potential to support wild rice after the Area of Concern restoration and cleanup project is complete. Wild rice restoration sites are being monitored throughout the estuary. Water depths, substrate, chemistry and biological control (e.g., goose populations) are critical to establishing new beds. One of the design goals of the final cleanup and restoration design will be to create the best ingredients to restore wild rice habitat.

**Q:** How does deep water help vegetation? Why is Alternative 4 the only one that included deep water habitat? Why can’t the dredging planned in east Mud Lake for Alternative 4 also be done for Alternatives 2 and 3?

**A:** Existing conceptual plans were used as starting points to design the depths (bathymetry) for each alternative. The scientists worked with the existing bathymetry using their knowledge of the river to draft the alternatives designs which could then be modeled to better understand habitat conditions. The bathymetry lines were designed to work efficiently with the existing river bottom. Alt 4 had greater opportunity for deep water habitat and the Alts 2 and 3 had greater opportunity for shallow water habitat. All play a role in restoration.

**Q:** Can you explain the qualifications and experience – particularly local experience – of the scientists doing these assessments?

**A:** Scientists from the EPA and MNDNR who helped with these assessments have worked in the estuary for well over 10 years and some up to 20. Their work is highly regarded locally and regionally. Several of them are working with other Great Lakes Areas of Concern and the research they have done here has been very helpful.

**Q:** Is there different vegetation and habitats depending on the alternatives? How do you decide on the best option and the best economic value?

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**A:** Each alternative has different benefits. Please read the report and review the infographic to see the benefits from the various alternatives. See the website at <https://duluthmn.gov/parks/parks-planning/st-louis-river-corridor/mud-lake-study/>

**Q:** Who is doing the cleanup of contamination in Mud Lake?

**A:** Minnesota Pollution Control Agency will lead the cleanup of contamination.

**Q:** Who is paying for the clean-up/remediation, and will it include restoration of the causeway?

**A:** Contaminant cleanup and ecological restoration will be funded primarily by the State of Minnesota and the federal government in association with efforts to clean up and delist the St. Louis River Area of Concern as a whole. It is likely that any and all changes to the causeway, up to and including removal, that may be made for the purpose of restoring Mud Lake would be paid for with federal and state cleanup funds. It is likely that any and all changes made to the causeway exclusively for recreational purposes would depend on funding from a source other than the state and the federal government.

**Q:** How is the clean-up of Mud Lake tied to the clean-up of the US Steel site?

**A:** As a regulatory matter, the cleanup of the US Steel site and the cleanup of Mud Lake are being handled more or less separately. In practice, cleanup of adjoining portions of the US Steel site is likely to be necessary to support long term accomplishment of Mud Lake cleanup goals.

**Q:** Why is the river being made shallower in other places (other than Mud Lake)?

**A:** Deep and shallow water is part of building a complex aquatic habitat. A balance is needed between the two.

**Q:** Can alternative design plans for causeway include more than one opening?

**A:** Yes, two of the alternatives call for two openings (Alt 2 and 3).

**Q:** Isn't Mud Lake designated by the MPCA as a low priority project?

**A:** Mud Lake is an Area of Concern project and it has a strict timeline. You can find the plan here: <https://www.pca.state.mn.us/sites/default/files/wq-ws1-30.pdf> - see page 33, project 5.18 and page 55, project 9.08 for the Mud Lake projects.

**Q:** Can you still have deep water habitat with the causeway remaining in place?

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**A:** Yes, some alternatives provide more of that habitat than others. The depth classes from page 12 of the report shows the modelled bathymetries provide 21% of the project area greater than 6 feet deep for alternatives 2 and 3 and 28% for alternative 4.

**Q:** Because of pollution in the St. Louis Bay, eating fish has been dangerous. What has been done about it? Where is it now?

**A:** Consumption advisories for PCB and mercury are relevant to the estuary as a whole. The remediation efforts underway through the work being carried out by the Area of Concern are doing a lot to clean up contaminated sediments from past industrial practices. There are still fish advisories and will be in the foreseeable future. It is hopeful the sediment work will reduce the risk, however, the state is still trying to understand atmospheric deposition and the problems it may pose especially for mercury. The sediment clean up at Mud Lake is not related to PCBs or mercury.

**Q:** Does mercury, dioxin, PCB get into wild rice?

**A:** Pollutants are known to move through plant systems. It is complicated, depends on the circumstances and varies between plant parts.

**Q:** How does flushing Mud Lake affect other islands or Wisconsin down river?

**A:** In restoring the coastal wetland there would not be a great deal of sediment from Mud Lake. In fact, restoration would be engineered in such a way to maintain the site so it doesn't degrade over time.

**Q:** You started your presentation by emphasizing deep water habitat, yet the only alternative that poses dredging for deep water habitat is number four. Why can't this be proposed for all the alternatives so we can get a clear idea of the tradeoffs and reduce any slant?

**A:** There are many ways to conceptualize alternatives at Mud Lake, however, for this study, the scientists worked with the existing bathymetry using their knowledge of the river to draft the alternative that came from existing concepts. This is summarized in the report on pages 7 to 10.

**Q:** How can we give input when we don't know other opportunities for deep water habitat within the river?

**A:** As part of this process much of this information will be online so you can review the documents. <https://duluthmn.gov/parks/parks-planning/st-louis-river-corridor/mud-lake-study/>

**Q:** Is the AOC goal to restore 1700 acres of "deep water" habitat as stated in the workshop, or 1700 acres of shallow sheltered bay habitat?

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**A:** The goal of the AOC is to restore 1,700 acres of aquatic habitat. This includes a mixture of deep and shallow water habitats.

**Q:** What is percent variation between models i.e. between Alternatives 1,2,3 and 4?

**A:** The aquatic vegetation models are given as probabilistic estimates, so the area associated with 25%-75% is the middle quartiles of likelihood. The key numeric model is the Submerged Aquatic Vegetation model. The website (<https://duluthmn.gov/media/8081/predicting-submerged-aquatic-vegetation-cover.pdf>) has the model accuracy information. See Table 5 in the paper where it provides the model prediction accuracy for Spirit Lake as 85%.

Other models are rule-based, and so do not have error, but are presence-absence based on whether the conditions were met (for example, the boating metrics, or shoreline fishing metrics).

Other models are a hybrid between the two – both a set of rules and probabilistic estimates (for example, the northern pike and muskie spawning model). We did not produce an error distribution for the hybrid models.

**Q:** Was the causeway recognized as providing shelter to West Mud Lake?

**A:** Page 50 of the report states that the amount of sheltered bay habitat, shoreline, and floating leaved vegetation is lower for Alternative 4 than for the other alternatives. Sheltered bay was measured for each alternative of which only one did not include the causeway. It is determined by the relative exposure index (which is based on depth and fetch) and is measured as the number of acres below the mean relative exposure index for reference bays including Duck Hunter Bay, Radio Tower Bay, Styker Bay and Rask Bay.

**Q:** A year ago at a public presentation to the Parks Commission, the City represented that environmental folks overwhelmingly indicated that the presence of the causeway was bad. It had to be removed for thorough environmental cleanup. Now, tonight it is clear that there are environmental benefits to keeping the causeway-shore land protection, etc. Why was there such a drastic change?

**A:** The inter-agency Lower St. Louis River Habitat Plan attributes the diminished ecological functionality of Mud Lake as a shallow sheltered bay to the historic placement of the causeway across Mud Lake and the resultant loss of hydrological connectivity and habitat. In that document, the problem statement for Mud Lake reads, "Habitat function and recreational opportunity has been reduced in the northwest portion of Mud Lake due to a Northern Pacific Railroad Causeway." The EPA and DNR analysis conducted as part of this study confirm that, overall, removal of the causeway makes possible significantly greater improvements in the ecological health of Mud Lake than options that leave the causeway in place.

**Q:** Is wild rice truly feasible here? In other areas attempted for wild rice remediation, geese have been interfering with its introduction.

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**A:** Wild rice restoration sites are being monitored throughout the estuary. Water depths, substrate, chemistry and biological control (e.g., goose populations) are critical to establishing new beds. One of the design elements will be to create the best ingredients to restore its' habitat.

**Q:** Has any party (DNR, EPA, etc) actually observed the wildlife that currently use Mud Lake as their home?

**A:** The work focused on aquatic wildlife because fish have different habitat needs and different recreational components. A wildlife study was done for the entire estuary as part of the Area of Concern work.

**Q:** By removing the causeway, isn't this a major disturbance of the current habitats?

**A:** This is an opportunity to improve habitats in the estuary that have been impacted.

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## Cultural Resource Questions

**Q:** How much of the length of the train would be reduced by abandonment of the causeway?

**A:** The Mud Lake segment is approximately 1.5 miles.

**Q:** Have you contacted the Fond du Lac tribe to consult about important cultural resources?

**A:** In past studies around the area, the tribe has been involved and they are still involved now.

**Q:** If the causeway is removed, will the train still be viable?

**A:** There are many factors in determining its future viability, including age of equipment, maintenance of the line, the hours and days the train runs, ongoing volunteer efforts, possibility of future partnering, funding sources, marketing and promotion, etc.

**Q:** Would the rail line still be eligible for listing on the national historic register if it was altered?

**A:** There are two main requirements for listing. First, the property has to be significant (activities/events at the site, important people affiliated, workmanship/construction, archaeological). The second requirement is integrity. In the case of this line, integrity is in question especially if the causeway is moved. However, most of this line has already been removed. A formal determination of eligibility would have to be made by the State Historic Preservation Office.

**Q:** Why is removal of the causeway even being considered? What about historic laws that prevent demolition of historic resources?

**A:** There are habitat benefits and long-term cost benefits to removal of the causeway. Historic laws regulate the process for any adverse impact to a historic resource. Any alteration would be considered an adverse impact that would need to be mitigated in some way. This process would be done in consultation with the local Heritage Preservation Commission and the State Historic Preservation Office.

**Q:** Has the rail line ever been considered for historic designation?

**A:** The local Heritage Preservation Commission has nominated it for listing on the local historic registry. City Council will make the final decision on this nomination.

**Q:** Does the rail line provide better access for people with disabilities to view the causeway and river?

**A:** Lake Superior and Mississippi Railroad has provided many stories and testimonials about people who enjoyed the train ride that were unable to access the river via hiking, kayaking, etc. The railroad is not accessible to wheelchairs; patrons must be able to climb three large steps into



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the train.

**Q:** Can wild rice be restored in the area, as this is a cultural resource as well as a natural resource?

**A:** Wild rice is recognized as an important cultural attribute in the estuary, and its habitat was considered in the natural resource study.

**Q:** The agenda refers to “recent agency-mandated analyses of the historical significance of the LSMR” – what are these studies?

**A:** These are studies that would have been required when projects with state or federal funding are undertaken in the area, i.e. Chambers Grove improvements and TH 23.

**Q:** How many people currently volunteer with the railroad?

**A:** The railroad representatives in attendance reported that 50 or so volunteers operate this, and have done so for the past 39 years.

**Q:** Is there anything else in West Duluth that conveys the area’s history like the railroad does?

**A:** The rail line is significant because it connected St. Paul to Duluth along the river, passing by early neighborhoods and industry along the way. For this reason, the area’s history will be carefully considered with appropriate mitigation chosen for any historic impacts.

**Q:** Are we being inclusive of all of the history in this area, specifically the Indigenous community?

**A:** The St. Louis River Corridor includes many sites of cultural importance to a variety of groups within the community, including the Indigenous community. The rail line is a representation of one period in Duluth’s history. Representatives from the railroad said that the train narrator shares some Indigenous history on the route. The City welcomes additional input to other cultural resources around Mud Lake of importance.

**Q:** If the train ends before Mud Lake, where would the turn-around be? Has that cost been included?

**A:** The turn-around will be about 900 linear feet that will run parallel to the existing track at Boat House Point. The costs have not been fully vetted, but range from \$500,000 to \$800,000.

**Q:** Does the rail have to be removed for clean up to occur?

**A:** Portions of the rail north of Mud Lake must be temporarily removed in order for cleanup of US Steel sediments to proceed but US Steel has committed to put the rail back in place at the end of the cleanup. Permanent removal of the rail at Mud Lake is not necessary to clean up contaminants. Permanent removal of the rail at Mud Lake is necessary to achieve the best ecological outcomes. Temporary removal of portions of the rail at Mud Lake may be necessary to undertake the Mud Lake

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cleanup and restoration project. That will not be clear until the City has selected an alternative and DNR and MPCA have fully designed a specific cleanup and restoration remedy.

**Q:** Was the rail the only way people could get in and out of Duluth originally?

**A:** The rail that is laid today is largely the same one as in the 1870s, and was built before other rail lines or major roads.

**Q:** Has the City considered a rail and trail combination, with a wider causeway and bridges?

**A:** It is anticipated that construction of wider causeway and wider bridges to enable side-by-side rail and trail across the causeway would cost more than \$10 million, several times greater than the other alternatives that were studied. The lowest cost alternative includes routing a trail along the mainland, not on the causeway.

**Q:** What other partnerships could LSMR explore to build its visibility within the community?

**A:** Attendees at the workshop suggested partnering with Courage Center, nursing homes, and others who would benefit from an easier way to access the river.

**Q:** How long has the information on environmental issues and alternatives been available?

**A:** The alternatives analysis was completed in spring 2019.

**Q:** What is the process for designation?

**A:** The processes for local and national designation are different. The process for national designation is much more lengthy and would take more than a year.

**Q:** What would mitigation of a historic resource look like?

**A:** Mitigation steps are determined after consultation with the Heritage Preservation Commission, State Historic Preservation Office, and other stakeholders. It often involves documentation of the historic resource, interpretation and story-telling, moving the resource to another area, and reusing parts of the historic resource.

**Q:** Was the levee that was proposed to be added considered historic?

**A:** The new low-elevation wetland envisioned in some alternatives may or may not have been present historically. The levee is, however, an effective way to restore the historic function of Mud Lake as a shallow sheltered bay.

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## Economic Development Questions

**Q:** What is the impact of the causeway staying in place under any of the scenarios and how might the different scenarios affect the port authority sites?

**A:** In general, improvement of the ecological health, beauty, and public accessibility of Mud Lake will help attract businesses to invest in the Port Authority sites. As beauty is in the eye of the beholder and retention of the causeway preserves one form of public access while inhibiting or postponing other forms of access, it's hard to say what the net impact of leaving the causeway would be on efforts to redevelop the US Steel site.

**Q:** What type of development may happen? Will there be deep foundations and digging?

**A:** No decisions have been made. The Port Authority hopes to do further analysis of soils in the future to see what the site's potential is.

**Q:** What is the connection between Seaway Port Authority and Mud Lake?

**A:** An important consideration for businesses deciding where to locate and invest is what services and amenities are viewable and/or accessible from a given site. Generally, more beautiful prospects to cleaner and more accessible bodies of water will make the US Steel site more attractive to business investment. In addition, one of the options shows a trail on the property that will affect the land owned by Port Authority.

**Q:** Without a remediation plan in place, will you truly know the footprint of your property? Will the property lines shift?

**A:** Yes, property lines related to the purchase agreement have changed. The original purchase agreement stretched over Mud Lake- it has since been change to encompass the useable space not underwater. The part of the property that is least contaminated and most developable is the area that the Port Authority will work to develop.

**Q:** Would more businesses create more use of the train and trail?

**A:** Likely yes, but it is impossible to predict to what degree use would increase.

**Q:** Is there a plan for remediation of the former steel plant property? How many years will it take?

**A:** US Steel has not announced plans or timelines for cleanup of the terrestrial portions of their property that are not a part of the pending sediment cleanup project area.

**Q:** Did the economic impact study take into account the effect of the current uncertainty of the train?

**A:** No.

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**Q:** Does the \$1 million impact only include people on the train ride? Or does it include other things too?

**A:** It includes all of the spending in town for all of the train riders. Some said it was one of a few reasons for their visit.

**Q:** Is the role of the Port Authority changing or staying the same within the city?

**A:** The Port Authority is an independent government authority whose mission, vision, goals, and plans are viewable on the Port Authority web site – [duluthport.com](http://duluthport.com)

**Q:** Why hasn't the entire site been purchased by the Port Authority?

**A:** There needs to be a broader plan for the entire site. The property that is under purchase agreement is the portion that is the least contaminated and ready to be redeveloped first.

**Q:** Is water transportation an option for future businesses?

**A:** We have not looked into those options, but the big concern would be to utilize or build new infrastructure to serve the site. I have not seen any plans that extend water transportation up into this area at this time.

**Q:** Of the 17 annual jobs referenced in the economic study for the rail line, are they direct jobs?

**A:** None of the jobs are direct train jobs, but rather recreation and hospitality jobs.

**Q:** What is the estimated income for those 17 jobs?

**A:** According to the report 13 of those jobs were the result of direct spending from LS&MR visitors and four resulted from increased spending by local businesses and consumers due to visitor spending (pg.16 of the report) The definition of employment for this report is as follows: Estimates (from U.S. Department of Commerce secondary data) are in terms of jobs, not in terms of full-time equivalent employees. Therefore, these jobs may be temporary, part-time, or short-term (pg 21 of the report).

**Q:** What support does the city give to both the LSMRR and North Shore?

**A:** The city provides \$20,000 a year in tourism taxes to LSMRR. The city provides a lump sum of \$220,000 for the Historic Union Depot. It is not clear what portion of that sum goes to the North Shore Railroad – one of several attractions at the Depot.

**Q:** In the economic study, where would the extra 3 employees for the rail/trail scenario be employed?

**A:** Those extra employees are based on higher usage of the train. The employees are in leisure and hospitality industries.

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**Q:** What is the holdup for development on the site?

**A:** Before the site may be developed, the US Steel sediment cleanup project must be completed, the cleanup of upland portions of the site must be completed, and plans and financing to run road and utility infrastructure to the site must be solidified.

**Q:** Can the US Steel site be utilized for residential or other uses?

**A:** There is a need to conduct long range planning for the entire site. The comp plan prioritizes this site for industrial development. However, the specific uses will be identified through a small area plan.

**Q:** US Steel stored its iron ore and coal on the site. What are the pollutants that exist there?

**A:** Analysis of contaminants present at the US Steel site is available on the EPA and MPCA web sites.

**Q:** Would the economic impact of the rail with trail be greater than the \$1.6 million estimate for the train alone?

**A:** With or without rail, high quality accessible trails along large, clean, scenic bodies of water have been shown by a large body of research to be an unusually powerful stimulus to economic development of all kinds. This research suggests that the trail would likely increase property values, stimulate residential construction, attract new business investment, and catalyze job creation.

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## Public Recreation Access Notes

**Q:** You addressed kayakers, canoers, boaters, and fishing, but who is using the railroad?

**A:** The study does not take into account demographics or public versus fee based services.

**Q:** Why are fish treated separately from wildlife?

**A:** We separate them for two reasons, one they have different habitat needs and different folks recreate differently for each group. For purposes of management, we wanted to send this information to MNDNR in the format they manage wildlife separately.

**Q:** In the summary you did it says the change in land and available water is not that significant between alternatives. Some things that are big changes are not necessarily habitat, how is that addressed.

**A:** Correct, some of the categories don't change much between the different alternatives. Many of the birds are in the protected riparian zone and the outcome of deep lake could affect this habitat.

**Q:** Say that bird watchers is a positive to a trail but they are out there without the trail. You said boaters don't have access to that site. If you get funded for this don't build a big bridge rather a crossing. Like to see clean up a bit because not factual.

**A:** Our access assumes that there is an open waterway to move the boat without impedence. Yes, you could drag a canoe or kayak over the railroad but don't want people doing that routinely.

**Q:** Where are you going to put the parking lot?

**A:** In the trail design we don't have the parking lot completely sited. The parking lot had been studied as part of alternatives analysis.

**Q:** Recognizing that there is a compromise for all the alternatives and a balance how do you review all the different criteria. What priority does each of these have?

**A:** The point of this study is to have this information for further conversation and to explore all the different values groups and decision makers have.

**Q:** What was the sample size for the people you talked to. What was the name of the workshop you surveyed at?

**A:** See page 54 of the final report  
(<https://duluthmn.gov/media/8009/mudlakecommvaluestechmemo-final.pdf>) for a discussion

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of the meeting that was held on March 4, 2019 to help with the process of identifying the social and environmental determinants of health most valued by the community. 29 people attended.

**Q:** Could you do a design that incorporates portages into Mud Lake for Alternatives 2 and 3?

**A:** It is a very narrow piece of land to get up and over. With the required shoreline revetment along the causeway it would not mimic typical portage approach. Additional safety considerations would have to be studied to fully vet this option.

**Q:** Could you move the train to the CN line and route it over the Oliver Bridge?

**A:** This concept has not been explored, nor suggested as an alternative by LSMR or other stakeholders to date.

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## Costs

**Q:** How much money would the railroad lose if the causeway were removed, and can that amount be incorporated into cost summaries?

**A:** The LSM Excursion Railroad, is a separate 501(c)3 nonprofit. The study and projections of their operations are independent from the City of Duluth cost analysis.

**Q:** Why are the estimated costs \$1.5 million to keep the causeway, when LSMRR does the maintenance?

**A:** A large portion of the costs includes strengthening and restoring the causeway. These are assumed costs should the land be used for rail or trail.

**Q:** How much will US Steel pay the City of Duluth to not put tracks back?

**A:** US Steel would not pay the City of Duluth to not put the railroad tracks back in place. However, if US Steel did not have to cover the cost of putting the railroad tracks back in place, they would likely reallocate some of the significant financial resources that would have gone to railroad restoration instead to the construction of new or renovated park, trail, and recreation amenities.