MONTANA WILDLIFE AND TRANSPORTATION

DATA AND INFORMATION WORKGROUP

Thursday, July 28th, 2022

Meeting Notes

Meeting Notes structure is different than normal. Beta test responses were captured and collated for discussion and action by the DI group. Decisions are documented in blue.

Overall

- Colors- should they be consistent across all maps or does that generate confusion regarding the fact that the district maps are relative heat within that district?
    - Are colors color blind friendly (8% male population). If not, can we change to color blind friendly? Consider Viridis color ramps. (Adam will take lead on addressing with Mike and Brian. Will need to come up with new color scheme)
- Is there a way to link to more specific data used in the tool (in summary document maybe it already is), e.g. AADT data from MDT, FWP polygons for species, etc. This would be used in the finer analysis of segments/locations identified from this tool. (Links are already included, include in help guide. Need to assign task for guide. Example guide from Mike as reference)
- Discussed below, but what is the output that users can get from this map so they can save/collect information from this tool without simply writing everything down? Export tool from attributes table? How to snap a screen shot of map or print a map view? (Mike and Brian will lead on developing solution to this. Example of need- maps for regional and zoomed in look of proposed highway section showing relative need in order to include background information/justification for proposal. Solution – help guide includes instructions on how to take screen shots and be able to access and interpret scores in attribute table)
- Can the zoom area (e.g. area of interest) be held throughout moving to other maps or adding other layers so don't have to zoom back in every time? (Mike/Brian will test to see if this is possible)
- Name for NAC 5 needs to be changed to "**Highways and** Adjacent Linear Infrastructure that May Impede Wildlife Movement" throughout tool and documentation, including appendices. (Andrew made edits to summary report document)
- Add MWT Partner logos and branding to the maps and documents. (PIT crew will determine what needs to be addressed)

Final Analysis Map

- How to select multiple segments (user guide topic as well) of roadway?
    - Can these then show up in the attribute table together? (Mike/Brian will look at options here)
    - How to export this data for analysis? Can we export multiple segments at once? (Mike/Brian will look at options here)
    - Screen shot of map for export. (Guidance in help guide to take screenshots)
    - Can folks get an average score for length of road (e.g. 10 miles) for analysis? (Guidance in help guide on how to do this outside application)
- Segment pop-up:
    - Segment score not necessarily consistent across entire segment listed in some maps (adjacent segments listed across range when selecting only one segment). Needs to be fixed. (Include explanation in Help guide)

    - How are segments selected (add to user guide?) (Include explanation in help guide)
    - Enable selection and display of multiple segments. (Addressed above)
      Have all NAC scores contribution to the total listed on the pop-up for each segment. Pop up should show, Route and MP range(s), NAC roll up score, each NAC contributing score to total for that segment (range- Mike/Brian will lead on addressing this)
- Traffic layer will not load – needs to be fixed. (Brian/Mike will fix)
- Allow swipe between individual NAC maps, not just with final analysis map. (Provide guidance for swipe function application in help guide)
- Can we include tribal boundaries as a layer? (Mike/Brian will add to be available for base layers)
- County Boundaries layer? (Mike/Brian will add to be available as base layers)
- Is there some way to alert users to limitations for tribal and NP areas in pop-up? (No action at this time) In these areas can we have something on the pop-up that says "Incomplete Data. See Limitations Section of the Summary Document."
    - Andrew to add something to the effect of "Contact tribal or NP personnel to discuss the limited data/needs for these areas" to the limitations section of the Summary document. (Andrew addressed already in summary report but needs to be added to help guide).
- NAC Maps in this Final Analysis Map still go out to 6 decimal places, seems to be fixed in other maps. Desire to round all to whole numbers throughout. (Brian/Mike to address in final analysis map)
- NAC 5 map shows blank values for some route names –. (Not to be addressed)
- Verify or rectify consistency between all maps pop up and attribute displays (e.g. whole numbers, routes, mile posts, etc.) (Group to verify consistency before finalization)
- Make it easier to click on road segments to view scoring pop up when other layers are turned on. In other words, click has to be very precise to get the pop up when other layers are on. (Not to be addressed)
- Can mile marker reference layer be on as a default? (Mike/Brian will address by making it be scale dependent)
- More location/reference detail could be helpful (e.g., more town names, more highway numbers, etc.) (Not to be addressed)
- It could be helpful to provide users the opportunity to turn on and off layers for a couple different percentile cutoffs. (Need SC guidance on how/if address, PIT crew will flag)
- Is there a way to quickly access individual criterion maps without having to scroll through story map? (Provide guidance in help guide for selecting or unselecting individual criteria layers as another option to view)

District Maps

- Color scheme: Why are district map colors so drastically different? Group split on if this was good or bad. Assume it was done because these maps are drastically different than NAC and overall maps. Maybe shouldn't be the same as NAC maps but should be similar. The black/red/gray/white color scheme was not working for most. (Not to be addressed, but color blind scheme needs to be per above)
- Generally clunky to move around in compared to NAC maps and "look weird". Make more similar in function and feel as NAC maps. Ensure location of tools (legend, arrows, etc.) are similar between NAC maps and District maps. (Not to be addressed)
- Floating title covers part of maps.(Mike/Brian will look into solution)
- Remove "top 10%" from legend (Districts 2-5, Missoula ok). (Mike/Brian to fix title)

- Zoom issue-Maps do not zoom all the way back out when switching between districts, Glendive district specifically brought up. (Not to be addressed)

Story Map

- Can we have hyperlinks to summary document throughout the story map in appropriate areas? (Not to be addressed)
- On first page NAC list, can we add "of overall weight" after the % for each NAC? Is there a way to visually demonstrate the contributions of each criterion (e.g. pie chart)? (Mike/ Brian to add text "of overall weight" after each percentage)
- In text for NAC 5 explanation add "Highways and" in front of Adjacent in the title. Title should be "Highways and adjacent linear infrastructure…" (Addressed above in summary report but now needs to be changed in story map. Mike/Brian will address)
- Make Title more pronounced, bigger font, underlined, something to make it stand out, in Individual Criteria Map Text. Increase font size of storymap text. (Leave Title as is but address text below to make smaller. Mike/Brian will address)
- Some discussion of text for Individual Criteria maps was too long, to scientific, whatever. Was discussion of PIT crew taking yet another stab at this? Use paragraph breaks to add clarity to the text narrative. Is there a way to make the story map more interactive with visual examples rather than so much text? (Address per above)
- While Individual Criteria Maps show NAC Specific Score, NAC 3 specific map says Final NAC score, others just say NAC score. May have confused some folks. Maybe list in the User guide that Final Analysis Map has final score, Individual NAC maps have individual NAC score, District Maps show final score. (Example; looked at US 12 curve, MP 27.613-31.867). (Provide explanation in user guide and make title change to NAC 3 map. Mike/ Brian to make title change.)
- Link to the summary report from within the app at various spots (e.g. live link to NAC layer lists and discussions from story maps/individual NAC maps to summary report/excel table of layers) (Not to be addressed)
- There was some confusion about the scrolling and folks not noticing the maps changing in the Individual Criteria Maps section. Too subtle moving between NAC maps. (Brian to decide if this should be changed and if so how)
    - Explain in user guide, but is there a way to make this more pronounced? Is it needed?
    - Can we have buttons instead of scrolling? Is that needed?
    - Gap between text in story map seems too big – can this be tightened up?
- Include a description of the color scheme and scoring (e.g. highest scores represent the highest need based on this analysis and are represented by red color). (Brian/ Mike to clarify text in legend stating that higher numbers indicate greater need and lower numbers indicate lesser need.
- Is there a way to incorporate some context into the story map around what the scores mean? (Addressed in above point action item)

Summary Document

- Table of contents, more titles listed for sections with hyperlinks to each section from TOC. Have hyperlinks in TOC to take you to that section of report. (Andrew to address)
- Need to move "intended uses" or general explanation of tool and how it should/should not be used to the top of document – maybe an executive summary? This information is also included in the Tool Description which will be linked to webpage. FAQ Section? What is intended use of the tool? Set expectations up front. This could also include a short background on the MWT statewide

partnership. (Use same couple of paragraphs you can link to in the tool and include them in the beginning of the Summary Report. Justin will drop in the paragraphs and Andrew will finalize)

- Better explanation of the NAC needed – what do the scores mean? (Mike/ Brian will add text at top of story map right after list of needs assessment criteria stating that explanation of scores and weighting can be found in Summary Report and include link.)
- More detailed explanation of scoring and weighting – how was this done, what does it mean? (Already addressed in detail) What is the sensitivity / subjectivity of the weighting? (Not to address)
- Andrew to add something to the effect of "Contact tribal or NP personnel to discuss the limited data/needs for these areas" to the limitations section of the Summary document. (Already addressed)
- Include brief explanation of content in Help Guide, but direct users to specific locations in summary document for more detailed information on certain things (e.g. related to scoring, NAC composition, etc.). May need to add information to summary document to cover some of these questions/concerns. (Add reminder statement at beginning of help guide that points people to summary document for more detail and include link.)
- Need to explain traffic data – what does AADT mean? How is seasonal fluctuations shown or captured? Can this link to other traffic data outside of tool (e.g. traffic counts, seasonal data? Text in the report is hard to read. Differentiate between headings, subsections, content, etc. general formatting improvements. (Define AADT and explain that seasonal fluctuations are not captured in that data. Paul to provide exploration where data set graphs are included. PIT crew will address formatting etc.)
- Sturm (correct) spelled Strum in Appendix 2 (Addressed already)
- Ensure maintenance and updates schedule are clearly identified. What are anticipated next steps beyond V1.0? Maybe needs to be summarized if sprinkled throughout limitations section?
    - How will action (e.g. accommodation projects) affect the map and how often will that be updated? (Not to be addressed any further)
    - How will new data/models be added, who will decide if they are added and when? (This is already addressed, PIT crew to review with SC)
- Can more background be provided? Why is this important? How does MT compare to larger picture? MT and national statistics? Bigger picture? IS this application the right place for this information? Maybe better addresses somewhere else? (Link Summit Report to in context section of Summary document. PIT crew will review to make sure it's useful)
- Add page numbers and acronym key in report (Andrew will address)
- What does "fine scale assessment" mean? (Not to address at this time due to SC still needing to define)
- Go through document and wordsmith to make more concise and clear. (Andrew will review again)
- Include a reference page of all acronyms (Addressed above)
- Could the summary document be distilled into an additional 1 pager overview for an average user from the public who may not read or follow the summary document in detail? (PIT crew will consider including as a tactic of larger communications strategy with purpose of letting people know it exists versus explaining technical details)

User Guide (Mike showed example of MDT Active Projects user guide that looked great)

D and I group agrees that the below items should be addressed in a User/help guide. Also, make sure to incorporate items for help guide as identified in above sections. (Paul, Liz, and Mike to work together to create guide.)

- Include brief explanation of content, but direct users to specific locations in summary document for more detailed information on certain things (e.g. related to scoring, NAC composition, etc.). May need to add information to summary document to cover some of these questions/concerns.
- Attribute Table Explanation- what does all this mean?
- How to use Swipe Bar, which layer is on top, how to add other layers, how to change maps swiping between, etc.
- How to find tools on each map type (legend, arrows, etc.) – basic "how to" use the tool needed.
- Explain that certain features (e.g. cities, towns, etc.) only become visible when zoomed into certain scale(s)
- MP notation in attribute table explanation (e.g. MP 1+0.156 equals MP 1.156). Round this to 0.10-mile? Don't need out to thousandth. (Standard, not to change but explain)
- Cache clear issue of NAC maps not showing for multiple BETA testers, have front and center in user guide. Came up with NAC 3 map as well.
- Basic explanation of scoring, higher means greater relative need identified.
    - What does xx/100 mean? Why aren't District Maps on different scale (not necessarily max = 100)?
- Explain difference between Final Analysis Map, NAC maps, District Maps.
- Explain the use of "new window" in Final Analysis Map for improved functionality of final map display options selecting multiple sections of road (analysis), export from attribute table?
- Screen shot of map for sections selected.
- Final NAC Map Explanation:
    - Explain button to open the map in new window.
    - Explain folks can look at each NAC with base layers in this map, swipe bar to slide between each NAC.
    - Can look at all NAC data in this Final Analysis Map, with base layer choice.
- Maybe in User Guide, maybe in Summary Document consider including an example of locations and their scores – how to view and interpret? And show and tell illustration of what information can be gleaned from the tool?

Attribute Table

- Have NAC columns on far left for first thing that shows up.(Move ratings to far left, Mike/Brian to make change)
    - In attribute table say NAC 1, NAC 2, etc. for column title, not "Human Safety and Property Damage", etc. for simplicity. (Mike/Brian to make text change so that it has NAC 1: Human Safety and Property Damage. Text needs to match titles)
- Export information in attribute table explanation. (Addressed already)

Other

- NAC 4 – FWP tester curious why no birds or herps included? Maybe need to explain rationale further in summary document? (statement about reasoning to be added, Andrew will address)
- Nuances of weighting and scoring (see in Summary Doc bullets) – FWP tester questions NAC 2-4 – clarify how weighting and scoring was completed, sensitivity analysis, upper and lower bounds or values in mapping – DI group requests Justin Gude address this clarification. Need to keep in mind the broadscale nature of the tool and it's intended uses, and not meant to be species specific, project specific, etc. (Addressed by Justin already)

- Why aren't fences included as a layer – addressed in data gaps/limitations of summary report – ensure this is clearly discussed in summary document and the "surrogate" of "adjacent linear infrastructure" in NAC 5. (addressed already)
- Can we link to other data sources from within the tool (e.g. traffic data)? Is this already included in the Summary Document "sources" section? (addressed already)
- Do we need a discussion of underreporting of carcass data in some areas – e.g. absence of carcass data does not necessarily mean no conflict, may be function of reporting inconsistencies. (Paul will check and address if needed)
- Add layer of completed wildlife accommodation projects – MDT working on this – maybe mention in summary document and will be added when available? V2.0? (Andrew will add statement in summary that this is a future goal)
- Clarify intent of tool = areas of need based on these 5 NAC representing conflict and connectivity. (already addressed) Opportunity addressed through the P3 application process. (PIT Crew will discuss)
- US 93 N segment score is 100- is this really correct? (Paul, will look into it)
- It would be neat to have a tool that provided an opportunity for viewing individual species maps (Not to address at this time)

Next Steps:

- All action items included above to be addressed by Aug. 19th. The final draft of the tool and summary report will be shared with SC prior to its meeting on Aug. 24th and then D and I members will be present at meeting to answer questions with the goal of gaining final approval so that tool can be released early September.
- Add Mike to emails- meidum@mt.gov