

## QUESTIONS & ANSWERS FOR [AMERICAN TRAILS](#) WEBINAR:

### The Value of Trail Assessments

September 2, 2021

**Alexandria asks:** How might I go about getting a trail assessment to opening an OHV trail?

Send an e-mail to [trailhead@nohvcc.org](mailto:trailhead@nohvcc.org) describing the trail(s) you would like assessed and what you hope to accomplish. Please include as much background information as possible. A NOHVCC staff member will follow up with you and let you know if we can help or if we can provide you with contact information for an outside trail consultant in your area.

**Amanda asks:** When closing a trail for an extended period of time for maintenance or for restoration, do you have a criteria for closing the trail that can be communicated to the public?

We recommend using a mix of on the ground and virtual information to communicate that the trail will be closed, how long it will be closed, and why. We recommend closure for at least one major weather event. Often, we try and do work towards the end of our riding season so that our trail can be closed for the winter months. Of course, this is not practical in all areas. Post closure information to the website, social media, newsletter, kiosk, and on the trail itself. If people know that the trail is not closed permanently but rather for work, they are less likely to be upset. Make sure people know that the trail will be closed before they get there.

**Andrea asks:** Do you have standard forms that assessors take out on the trail?

We set up our ArcGIS Collector map to basically serve as a mobile trail management objective form. We can document trail number, name, difficulty level, and problem areas (with notes and pictures). We then convey our findings to a map and report that explains what we saw.

**Anita asks:** I would love to hear about trail assessments and databases which are conducted/managed from the lens of accessibility and inclusion of people with disabilities. We know of many potential trail users who would benefit from descriptive information.

I am unaware of this type of database

**Austin asks:** What have you found to be the best way or method to keep OHV riders off of non-motorized trails? Or best way to reduce it from happening?

Quality mapping and signing are a huge part of this. Also ensuring that quality OHV recreation opportunities exist in the area. If riders find what they are looking for on the trails you want them on, they won't go looking for it elsewhere.

**Brian asks:** Have the presenters seen or used the new LIDAR trail assessment tools?

**Geoff answered:** Which one? But probably not, although I used to do some Lidar work in the USGS where I work and I do like doing Lidar stuff. But that's something we've implemented because Marc and I are mostly a two-man show and have many irons in the fire and doing more things at once but I would love to do more work with Lidar.

**Do you perform trail assessments as a courtesy for trail clubs, or do you contract with trail mgrs.?**

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**Marc answered:** Depending on your situation and, you know, the availability of resources, we like to be creative and flexible on helping people get the tools and resources they need to have sustainable OHV trails. So we're willing to discuss ideas and options for getting those assessments done. And if we're in the area for another project and we can stretch out our stay for a couple days and come help a local club, that's part of our mission and something we really try and prioritize.

**Bryan asks:** Could you please go into potential applications of grade reversals?

Grade reversals are meant to be a fool proof and relatively low maintenance method for controlling/shedding water off your trail. Grade reversals are a short brake in grade where a low spot exists that water cannot escape from. Grade reversals can only be installed on a side slope. Grade reversals can be installed without causing your trail to "climb" by simply crossing back and forth across a topo line.

**Bryan asks:** Can you explain the tangent turn you spoke about a little further? (Can't remember if they were called "broken back turns"?)

If the lowest point of your grade reversal is a turn, you could see water accumulation caused by displacement of soil particles building a berm to the outside edge of the turn. The solution is to have a short straight section or tangent at the bottom of your trail. A quick 4–6-foot straight section is often sufficient, however larger vehicles may require more distance.

**Candise asks:** Our City is looking to install a bike route/path through a rural side of town. What do you recommend for ensuring that the path is created in such a way that it has minimal issues?

We have limited experience with bike paths, and would recommend reaching out to an organization more qualified to discuss sustainability issues, managing user conflict, setting user expectations, etc.

**Caterina asks:** Strategies to manage beaver activity and the resulting trail flooding?

Look for designs for "Beaver Deceivers" or similar structures. There are a few out there. These essentially convince the beaver that all water flow is stopped by creating an outflow that completely bypasses the beaver dam.

**Chris asks:** Can you describe what the broken back curve drain looks like?

See above

**Courtney asks:** Have you ever had a drainage problem that was caused by a neighboring property owner? How have you dealt with that, especially when that neighbor is a railroad?

**Marc answered:** We saw this in Oregon when we were working on a BLM project. We didn't get into the solution too much. We weren't able to spend a lot of time on the ground there because we had multiple places to evaluate. But, you know, I've seen it. I've kind of dealt with the solution and one of our projects we are fully the troublesome neighbor because we are helping create a management plan and a new trail system for an OHV area that has a lot of decomposed granite that has actually plugged up

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some culverts and at certain heavy water events has washed sediment into neighbor's houses. So we haven't been on the side too heavily where we've had to engage the railroad, but we have been on the side where we are solving the problem with the set from our trail system going on to private property. And it's actually been a pretty heavy process where we have a drainage plan, a mitigation plan, a barrier plan and lots of different moving parts to it. We'd be happy to talk about that in detail if that would be helpful kind of off to the side. But it could get to be quite the conversation.

**Dayamiris asks:** What are your recommendations to assess the sustainability of social trails established long ago, currently in use, and in conflict with multiple users? Does greater good to plan new trails or just manage those?

**Marc answered:** The most popular answer we like to give at NOHVCC is it depends. And I don't think there's a great answer to that question because, you know, we use a lot of social trails in our trail systems and even some of our new designs if they're already there. And there, you know, fairly well established and don't create significant resource impacts, we'll use those in conjunction with connector reroutes or new segments of trail to connect to other portions of the trail system. You know, the project I was talking with the sedimentation, we've adopted a lot of the social trails because they're not creating significant impacts, they've been there for a long time, they're fun to ride, people know them and like them and, you know, we get better buy-in from the user community when they get to keep some of their old trail system. And then we add connectors and some new trails to the system to make it a little, you know, flow a little better, work a little better, and make it more accessible. But there's a mix there. So it's -- it's, again, that's part of your evaluation of can I add this to the system? Can I maintain it where it is? And I can afford do so? And what are the user conflicts? Do they create more problems by keeping this trail open to everybody or who is the primary user and those kind of things? So that's a long winded answer of saying it depends.

**Elizabeth asks:** This is such great information!!! The speakers might talk specifically to this in a few minutes, but I'll go ahead and ask it anyway. Two years ago, major MAJOR flooding completely washed out local trails encircling a reservoir. At least 6 to 12 inches of groundcover on the trail was completely washed away, exposing tons of roots/rocks etc. Now only the most intrepid biker or hiker can traverse the once very popular trails. Any suggestions? Does the local trail group need to completely start over? I imagine this problem is shared by many due to changing rain patterns related to climate change. Thank you

It is hard to say if a total restart is needed or if there is a need for just partial reroutes. The thing to keep in mind is that this scenario presents an opportunity to create option lines so that the hardcore riders can still hit the big obstacles, and riders who do not want to can go on a less difficult bypass. This allows the trail to serve a more diverse user base.

**Emma asks:** Do you have recommendation for trail surface for rails to trails that are flat to avoid rutting, especially during the wet season?

It would depend on user type, user volume, climate, soil type, etc.

**Harry asks:** Why not super elevate the curve, as in highway design?

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Superelevation happens naturally in OHV trails and to a lesser extent mountain bike trails. This is actually a good thing for the most part, unless that superelevation exists at a low point in the trail and causes water accumulation. These are discussed in more detail in the Great Trails book.

So the outside elevation is higher than the inside?

Yes

Under trail drain would need to be included?

In some cases yes, we do our best to avoid man made structures as they require extra maintenance, materials, funding, paper work.

**Henry asks:** What is the best way to present compiled data (qualitative or quantitative) in the context of a trail degradation assessment? I am doing trail assessments for research in the coming weeks.

I don't know

**Jeffrey asks:** where can we view examples of good trail assessments?

Please send an e-mail to [trailhead@nohvcc.org](mailto:trailhead@nohvcc.org) and we would be happy to share some of our examples. We can't speak to what else is out there, but we have a few.

**Jen asks:** How often should trail assessment be completed/updated?

**Marc answered:** I mean, ideally you do every every year or multiple times a year. But we all know that's not realistic with the limited time and resources that we have to work on trails. But, you know, I think just creating some sort of schedule and keeping to that schedule that's realistic that you can obtain is really important. If you know you can only get out to every part of your trail system every two or three years, then plan for that. Be realistic with your goals for your assessments and be flexible. If a problem arises, then you need to get out there and assess earlier than you thought, make that a priority.

**Geoff answered:** And it comes back to it depends, but if it's a new system get out there more often. If you're not seeing issues, you can probably stretch out your assessments further out in the future. So, yeah, just depends on your system. And if you're just doing a new reroute you want to check it more often. But as things settle in and you don't see problems, you can probably let that one stretch a little longer.

**Joseph asks:** After completing trail assessments, how do you store the data and keep this information up to date?

**Marc answered:** So we don't have a particular program or platform. You know, you kind of touched on an important point that this is not a one and done document. And as Geoff mentioned, trail assessments are ongoing. That evaluation never stops, it's cyclical. So you need to go back to this and update it. Geoff and I keep everything on a shared drive that him and I both use and share back and forth and, you know,

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that way we can both manipulate and edit the document without having to have 40 paper copies being passed back and forth. But, you know, I'm not sure of any particular software that is being used for that matter.

**Geoff answered:** Well, one of the things that we do utilize is we use GIS a lot. If we have a certain issue, we'll obviously plot that point or, you know, if we're going to do a reroute, we'll collect that proposed reroute. And I use collector, which is kind of a mobile app. I'm sure a lot of people have used that as well. Not necessarily saying that you should use any GIS products, but having a GIS system is going to be I think a key element to doing this as well and pretty much all land managers have all their stuff in the GIS format of some sort. So we use that a lot, use any GIS in collector so I can plot things. We can have our attributes if we need to reroute a section of trail, we can lay that out. But I can say what kind of trail it have notes as to what issue it's facing. You can have all of that in your GIS system as well. I think that's a huge part of this is making sure now have all the stuff spatially referenced on the ground as well in addition to having your photos and documentation and keeping those attributes in there. And that way you can send it on to other people in land agencies, volunteers, and you can still update that data as needed.

**Justin asks:** Removing invasive plants is a big part of habitat management in our parks. We have been creating drainage issues in places on our trails. Do you have any advice on removing large amounts of vegetation without creating drainage issues?

I don't feel that we are the best organization to answer this.

**Karen asks:** This might overlap the question re: social trails, but how would you address drainage issues caused by social trails when mitigation is not an option (hoe issues, etc.)

We would need more information to answer this.

**Kat asks:** When considering wheelchair access and an area with wash out on a packed granite trail, what would be a long term solution if the trail is defined by rails and a deep slope on the other side? Do you have a recommendation for an app to record a grade/incline on the trail?

**Geoff answered:** I mean, as far as grade goes, we actually use clinometers a lot. We don't work with trail conversions, so that's a tough one to answer without kind of maybe seeing that situation in person. But if you're looking at grade, like I said, you have those tools available. From what I can -- from what it sounds like to me, it sounds like it needs more armoring, maybe. I guess it's a little hard to tell. I can't quite visualize that in my mind. I would think some pretty heavy-duty armoring in that situation would more than likely be your best bet and figure out why is the water washing out that section of trail? Where is it coming from? How can we armor this assuming you can't move the trail.

**Marc answered:** I think going back to the app thing is that we've encountered many land managers who set up collector accounts for their clubs and their volunteers so that they can collect, you know, those attributes in the field for problem areas and give measurable data to the land manager. You know, it's something that it's not a super easy program, but I can generally get around through it and I'm not that great. So, you know, it's been used by a lot of different clubs and, you know, nonprofits that are serving as volunteers can purchase relatively cheap licenses to get that. And, you know, we're not advocating

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for any particular GIS program, but anything you can do to collect that data, again, like Geoff said earlier, with the attributes is really going to help prove your point and give people data to look at. You know, they don't have to imagine, they've got ability to create charts and graphs that shows how steep those portions are and where the problem areas are.

**Kim asks:** It was discussed that if possible in a NEPA permit get a corridor included in the permit, not just the trail width that will allow you to move the trail within the corridor that is permitted. Is there a recommended width to include as the corridor?

As wide as you can get away with, but often 100 foot from centerline is attainable.

**Kyle asks:** Do you have an example Trail Assessment document that you can share?

See above

**Laura asks:** What is a good way to collect feedback from out-of-town trail users (without standing at the trailhead with a clipboard)

Trailhead surveys (digital or paper, digital can be accessed by QR code), social media polls, If trail permits are required collect e-mail addresses as part of the permit.

**Lex asks:** When and where do you typically do workshops?

Wherever and whenever makes sense for our partners. Please reach out to [trailhead@nohvcc.org](mailto:trailhead@nohvcc.org) if you are interested in a workshop in your area. We do post workshop announcements on our website [www.nohvcc.org](http://www.nohvcc.org) so you can keep an eye on that to see if there are opportunities in your area.

**Mark asks:** Do you use GPS to document issues?

Yes we often use both GPS and GIS to have backup documentation.

**Naomi asks:** With the popularity of e-mountain bikes, is there things and conflicts we need to be aware of?

This is still a new issue, and something we don't have a firm grasp on yet.

**Nolan asks:** When first assessing the land to put a trail on, what is the most valuable thing to look for in choosing the design and layout? Topographic changes, landmarks, etc.?

Control points can include the areas where you want to go like lookouts, scenic areas, historical or interpretive sites, etc., or the areas you don't want to go like excessively steep side slopes, wet areas, wildlife habitat areas, cultural sites, etc. Identify these control points and then try and come up with a concept line that connects the areas you want to go to and avoids the areas you don't want to go to. You may have to sacrifice some positive points to avoid the negative. It has to be a comprehensive approach.

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**Paige asks:** I would love to see an example of what you use for documentation or process for trail assessment.

See above

**Paul asks:** What are some of the time and effort-saving trail assessment tools and tech (like drones) that we can expect to see used more often in the future?

GIS continues to grow and improve, drones are huge, and improved satellite imagery has been a huge help.

**Pauline asks:** What is the best way to invite "fresh eyes", free and paid?

Both are helpful and valuable. If you can't afford to pay someone collect all the free feedback you can.

**Paz asks:** Can you use a soil compactor for problem spots - have you used this and is it a good long term solution?

**Marc answered:** Anything you can do to compact your trail especially with OHV trails is going to help your long-term sustainability. Again, that's oftentimes to get way back where we find OHV trails which are typically farther out than other types of trails. The thing is that they have to be given time to set up. There's no time of compaction that will hold up if the trails not given time to settle. If you're talking, like, you know, the chemicals that bind the soil and hold them up on top, those don't really work on OHV trail systems. The rotational force of the tires tend to break those chemicals or agents up pretty fast. Mechanical compaction does last longer and make the trail sustainable, but it's not something that's a one time and it's done kind of thing. So if you're going to invest resources in that, you have to think that something's going to have to be done again. Just the wait and forces imposed by the OHV machines themselves have to be accounted for and so that compaction won't always last as long as some other trails.

**Prairie asks:** Are you guys familiar with TRACS surveys? If so, how do you think they compare to the way you perform trail assessment surveys on the ground?

We use many of the TRACS guidelines and approaches in our assessments including TMO's and much of the terminology. However, we don't typically go into as much detail using the standardized forms and codes.

**Rhonda asks:** Is there a good checklist to use for the trail assessments?

Your trail management objective (TMO) document should serve as the basis of your assessment. If you don't have or utilize TMO documents, you should definitely start. There are all sorts of TMO documents out there, but make sure you adopt one that works for you and is available in a medium that makes sense for your trail system.

**Richard asks:** Where we are stuck in a trail corridor of a given width, how can we make re-routes happen without the whole NEPA action cost?

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**Marc answered:** Short answer, you can't. [Laughter] Unfortunately, I mean, unless that language is already existing in your planning, you're kind of stuck to what's already cleared. You have to hope for another NIPA process or hopefully, you know, sometimes you can get in on like a timber sale or forest stewardship project where you can share that NIPA with a section of the forest that might be more well-funded and have that going. So partnering with the other departments in the managing agency to try to get that NIPA through, because it's a lot easier to get that approved when it's part of a bigger project than just looking at one little section of trail.

**Robin asks:** Is there a good template you use for trail assessments. Do you recommend a phone based document?

I recommend what works for you and makes sense. We like to use ipads to collect our data, but it does require some up front set-up and mapping. If you don't have the capacity for that make sure that you utilize a program or medium that is easy for you to use, is accurate, and is consistent.

**Ryan asks:** Do you have any suggestions for criteria for evaluating a trail or trail system to reduce user conflict?

Find out what the real issue is. Why is there conflict? Are people's expectations being set appropriately. Often times we see that conflict is caused when people expect one experience and encounter something different. If they don't think they are going to be sharing a trail with other user types when they leave home, they can be very upset when it happens. Make sure your map, website, social media, and kiosks provide accurate descriptions of your trails and what experience they can expect.

**Sarah asks:** Have you found any good wording that works to stop users from going down an area of trail that has been closed and rehabbed? We have people going down rehabbed/closed areas because they have done it for years and don't want to stop even though the new trail is much better.

Stay on trail or stay home is pretty effective. Sometimes you can't be nice, and really we aren't asking people to stay on trail we are telling them. Be direct. Peer enforcement is also very effective. Let your local clubs know what they stand to lose if the unauthorized use continues. They will help bring their friends in line. We also recommend removing the "closed" signs after the area has rehabilitated as signs draw attention to an area.

**Scott Johnson asks:** Has NOHVCC used drone photogrammetry or LIDAR as a layer in GIS to help with layout? If so did you contract and what was the price?

Not yet but if we had more time and staff to do so we would like to.

**Todd asks:** What do you pick up at the trailhead, as in features? Signage, parking, etc...

Signage, parking, facilities, drainage issues, parking flow issues.....

What kind of Data, if any, do you collect, as in length, grade, cross slope tread width?



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All of the above. As well as trail width, open uses, seasonal use, what type of issue, recommended fix, etc.

**Vance asks:** What method is used to track past solutions that were implemented with future assessments of the same locations? Specifically, the solution implemented previously and information with respect to how well the solution worked, how it can be improved etc.?

Visual observation, user feedback, drone imagery, among others

**Does using blowdowns to cut a zig zag route to transform a straight route not open up a liability issue?**

If you lead a long straight fast section into a curved section suddenly without notice, then maybe. But if you can create a consistent flow throughout the section or slow the riders down naturally before the new curved section then probably not. The key is making sure that your design is consistent with your plan (TMO).

**Vernon Huffman asks:** Have the presenters ever heard/used a construction planning tool called 'Field wire'?

**Geoff answered:** I have not. I have some CAD experience, mostly like auto CAD and BWE files. But we don't do a lot of civil-level design work. I don't have that strong of background in it, I have a little bit. But that's not something I'm super familiar with. I wish I had more of a civil engineering background a lot of times.

**You mentioned a tool called 'Collector'. I can't find it on a web search. Can you provide a link?**

Look for ArcGIS collector on your preferred app store. You need to have a ArcGIS license to utilize it.