

FLMSP

Root cutter project action plan

OVERVIEW

Purpose: Adopt a *strategic* approach to prevent further mechanical degradation of the Trail's surface caused by infiltration of tree roots encroaching under the Trail, causing the asphalt to buckle upwards as the roots' diameter inexorably increase over time due to continuation of root growth.

Premise: Sever roots beginning to grow under the Trail BEFORE they can inevitably grow to a diameter which will cause the problems noted above.

Means: Employ a proven device to accomplish the above. Such a tractor-drawn device* is currently available on a no cost, short term** loan basis from a sister trail preservation group which fabricated and successfully used it early in the 2015 season on the Prairie Grass Trail in Madison Co., Ohio.

* Specifically, a **Howard** "V chisel" subsoiler farm implement modified to utilize only one blade, and supplementary braced accordingly.

** A maximum loan duration of one week has already been discussed. An extension may (or may not) be negotiable.

Equipment operating rate: The unit described above has successfully been used at a towing speed of 5 MPH, though to minimize surface disruption the person most familiar with its use has recommended operating at no more than 3 MPH. Regardless of operating speed, inevitably / occasionally it will encounter roots too large (or tough) for its blade to cut -- or some other immovable impediment. In such cases the tractor's wheels will spin, and forward progress will cease. When this occurs, the tractor will be obliged to back up, lift the blade over the impediment, and then carefully move forward over the impediment before again lowering the blade into the ground. Thus, since there is no way to determine in advance how often these situations will occur, the resulting NET operating rate is presently an unknown, and will have to be determined in the field. As another consequence, just how much of the Trail we shall actually be able to treat during the available loan duration is also an unknown. (Also see **Priorities**, below)

Scope: Ideally, both sides of the Trail's 50+ mile length should be addressed whenever trees are growing within (arbitrarily) 50 feet of the Trail. While such proximity is obviously applicable to most of the Trail, realistically not all qualifying areas are viable candidates for treatment; inhibiting factors include issues such as large trees growing within two or feet of the asphalt paving, and narrow/steep banks adjacent to the edge(s) of the Trail.

Priorities: As it is quite possible (however regrettably) that it will prove unfeasible to treat the entire Trail during the time we shall have the Howard unit, there thus needs to be an initial consensus as to which portions of the Trail should be accorded primary, secondary and tertiary attention. While there are any number of ways to approach this issue, perhaps the most objective would be to rank segments of the Trail according to documented levels of usage. As a generalization, this would *probably* accord the highest priority to those sections closest to Loveland -- and then diminish as distances increased from that point.

Impact: Although effective duration has yet to be specifically determined, it is anticipated that use of the cutter would -- *hopefully* -- yield an effective window of at least three years before a given section of the Trail would have to again be "treated" for encroaching root growth. Obviously, the only means of specifically determining the duration of such "immunity" will be to actually **USE** the cutter -- and then closely monitor the results over an extended period.

Timing/weather constraints: The Howard unit can be used up until such time as there is a deep freeze of the ground. However, once *that* occurs, operations would have to be postponed until early spring -- when, unfortunately, typically soggy ground and slippery surface conditions would make operations more difficult, and possibly even more hazardous. Accordingly, it is deemed *imperative* that the project be implemented and concluded during the fall of 2015. To minimize exposure to Trail users, operating solely on a Monday through Friday basis would be optimal.

Costs: While the Howard cutter unit itself has no financial requirements, a suitable tractor to tow it must be procured and fueled. Renting such a tractor locally would be the least complicated and most expedient approach, particularly if the vendor is willing to deliver it to the Trail, and retrieve it subsequently. (This pre-supposes that the Howard unit can be independently brought to the operating area from Madison County.)

Staffing: The Howard unit has been successfully operated on the Prairie Grass Trail by just one person. While this is *not* ideal from a safety standpoint, it obviously minimizes the number of people necessary to implement the project -- which is an absolutely *critical* issue; some volunteer tractor operators have already stepped forward, but we may be fortunate to even identify a total of as many as four or five. **IF** sufficient additional "non-tractor" volunteers come forward, the optimum operating mode would be to have two person teams: One person would operate the tractor; the other would follow in a personal vehicle. The "follower" would serve to (1), provide an obvious warning to bicyclists, etc. of equipment being used on the Trail; (2), make a record of specifically which portions of the Trail have been treated; (3), mark the Trail whenever the cutter encounters an impediment it can't overcome (for possible subsequent removal); and -- finally -- (4) possibly "trade off" with the person operating the tractor/cutter.

Coordination: A project leader needs to be identified to co-ordinate ALL aspects of the operation.

PREPARATION

SELECT a one week "operations window" ASAP:

- **Disseminate** this information to all interested/concerned parties
- **Ensure** the time frame selected either will not conflict with remediation activities at Grandin Road, **or** -- if it will -- plan around such
- **Apprise** Jerry Miller at Prairie Grass, and confirm he is amenable to the associated time frame for borrowing the Howard unit (AKA "root cutter," or RC)
- **Solicit** Jerry's counsel as to (1), the expected fuel consumption by a tractor used to power the RC; (2), the realistic "treatment distance" his experience has shown to be expected when using the RC over (arbitrarily) a 4 or 6 hour period; and (3), how best to deal with potentially changing a damaged blade.
- **Identify** two people willing to drive an appropriate vehicle to Jerry's house with the FLMSP trailer in tow, load the RC onto the trailer, and return it to a suitable local location
- **Contact** EZ Rental and commit to procurement / delivery of a 30 HP Kabota tractor with a 3 point hitch for the intended period. Request an extra key for the tractor (to be retained by the Project Co-ordinator) -- and consider having more made as needed once the tractor has been received.
- **Locate / reserve** sufficient portable gasoline tanks adequate to support a minimum of a full day of tractor operation, based upon consumption information previously supplied by Jerry Miller
- **Appeal** for volunteers capable of and willing to support project activities -- either as tractor drivers or "follower vehicle" drivers
- **Assemble** a roster of such volunteers
- **Synchronize / sequence** all the above

DOCUMENT a daily profile of those portions of the Trail to be "treated" by the RC:

- **Decide** (as outlined in Part I, "**Overview**") the prioritization to be accorded to the various portions of the Trail, and document such for subsequent dissemination
- **Share** this information with the appropriate PUCO entity (i.e., "Call before you dig!") to avoid any potential problems with underground cables, pipelines, etc. (Note to them that the root cutter blade only penetrates the ground to perhaps 14" to 16" at most. Thus, there may not be any issue whatsoever -- but, "***FAR better we check, rather than we merely assume!***")
- **Develop** a means of logging specifically which / when portions of the Trail have been treated by the RC -- both for project control purposes AND for archiving (the latter existing so that in *future* years we can know how much time has elapsed before re-treatment becomes necessary.)
- **Estimate** -- based on Jerry Miller's experience, as referenced above -- how many linear miles of Trail can realistically be treated in a day by the RC
- **Translate** the above into a specific daily targets for use of the RC

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- **Distribute** the assembled profile to all interested parties

DEVELOP a staffing roster:

- **Assign** specific individuals to specific portions of the Trail for specific durations on specific days, using the information developed above
- **Disseminate** these assignments to personnel involved, and obtain each person's verbal commitment to *each* of his/her assignment(s)

- **Ensure** all personnel understand that they need to apprise the Project Co-ordinator of successful completion -- on a daily basis -- of their assignments, so that (1), their hours can be reported; and (2), the "treatment log" (see above) can be created/maintained.
- **Provide** tractor keys to these individuals, and develop / distribute a protocol for "handing off" keys from one person to his/her "relief"
- **Create** appropriate contingency plans to compensate for unexpected deviations from the planned assignment of personnel
- **Confirm** that all personnel need to directly contact the Project Co-ordinator whenever unexpected situations arise

IMPLEMENTATION

- **Connect** the rental tractor to the root cutter
- **Ensure** all personnel who have volunteered to operate the tractor are familiar with its operation, and are aware of the desired distance to be maintained between the edge of the Trail and the path of the root cutter's blade
- **Communicate** the daily operating roster to all concerned personnel
- **Establish** a system whereby operating crews understand how the tractor is to be "handed off" from one crew to another, including where the tractor will be left overnight (i.e., leave it -- locked -- on the Trail, or truck it back to a secure area?)
- **Determine** a means by which fuel for the tractor will be continually available, and those obtaining it can be reimbursed
- **Select** a means to identify and mark roots which could NOT be cut, and obtain suitable supplies for such (spray cans designed to spraydown?)
- **Assign** responsibility for the above to either the tractor driver (if working solo) or the person driving "follower vehicle" (if working in teams)
- **Ensure** all involved personnel are aware of the daily need to inform the Project Co-ordinator of (a) the specific portions -- and sides -- of the Trail which have been "treated" by the root cutter and (b) the working hours expended in conjunction with such activity
- **Take** photographs of the root cutter in operation for subsequent inclusion in an article in the FLMSF newsletter
- **Locate** a person willing and capable of writing such an article

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CONCLUSION

- **Disconnect** the root cutter from the rental tractor
- **Arrange** for pick-up of the rental tractor, and payment for the rental; obtain reimbursement for such charges
- **Return** the root cutter to Jerry Miller at Prairie Grass

- **Archive** data associated with the project (time expended, specific areas of the Trail treated, costs incurred, etc.) so that in future years this information is available when **re**-treatment of the Trail becomes necessary