

## CHAPTER 7 - MAINTENANCE AND RISK MANAGEMENT

The ongoing operation and management of the trail network is essential to its long-term success and includes ongoing trail maintenance, ensuring the safety of trail users, and minimizing the liability of the township.

### SHARED USE / RAIL TRAIL MAINTENANCE

#### Trail Maintenance Program and Tasks

The quality, condition, and safety of the trails are all essential to the long-term success of a trail network. To ensure successful operation of the trail, and to assist in minimizing risk both to trail users and the township, a maintenance plan is necessary. A well-designed and executed maintenance program will:

- Reduce long-term costs by extending the costs of trail components
- Help win the continued support of residents, homeowners, and businesses, which may translate into lower operating costs if residents feel pride in the trail and donate volunteer time to assist in its upkeep
- Ensure a quality recreational or travel experience for the trail user

Sufficient manpower and resources must be devoted to a regular maintenance schedule in order to meet these goals.

The Northeast Regional Office of the Rails-to-Trails Conservancy, has published an excellent guidebook entitled Rail-Trail Maintenance & Operation. The 43-page book may be downloaded, in pdf format, from the American Trails web site at this location:

<https://www.americantrails.org/images/documents/railtrailmaint.pdf>.

Key elements of the maintenance and management program should:

- Include a system through which trail users can contact the township with concerns regarding trail maintenance and safety
- Specify a frequency for the inventory of all trails and facilities
- Identify specific maintenance goals and standards for each type of trail
- Provide a list of the tasks necessary to achieve maintenance quality levels
- Clearly delineate which maintenance tasks are designated to specific departments or individuals
- Provide a control system for tracking accomplishments and relevant costs

The frequency of the maintenance tasks to be performed would vary based on the type of trail surface, the surrounding landscape character, and the particular segment of trail. Important short and long-term maintenance tasks that need to be addressed in the maintenance program are shown in Table 25.

TABLE 25 – RECOMMENDED TRAIL MAINTENANCE SCHEDULE

Frequency	Task
Weekly	Litter Pickup and Trash Removal (Can also implement a Carry in / Carry out policy)
	Restocking of any dog waste bag dispensers or receptacle stations, if provided
Monthly	Shoulder Mowing - 4-foot minimum on each side of trail (where applicable)
	Pavement Sweeping to remove gravel, wet leaves, broken glass and other debris
Annually	Pruning - 4 feet back from sides of trails and vertically to maintain needed clearance
	Fencing maintenance
	Evaluation and removal of unhealthy or dead trees and limbs
	Maintenance of drainage features including culvert and inlet clean out
	Inspection of trail surfaces to determine need for patching / regrading
	Bridge Inspection (Inspect every two years by professional engineer)
2-years	Replace on-street pavement markings (bicycle sharrows)
5-years	Sealcoat asphalt trails
10-years	Resurface and/or regrade trails
20-years	Replace / reconstruct trails
As required	Signage - Maintain and replace as necessary
	Gates / Bollards - Inspect and repair
	Removal of fallen trees and limbs
	Graffiti control and vandalism repair
	Address any maintenance problems and hazards reported by trail users
	Patching and minor pothole repair
	Trail Surface (on local roads) - Resurface
	Trail Surface (gravel road) - Repair surface damage from vehicles, erosion, etc.
	Trail Surface (boardwalk) - Repair and replace damaged areas

## Estimated Maintenance Costs

The costs associated with the repair and maintenance of the trails should be considered an ongoing expense and should be reflected in the township's annual budget. Costs will vary dependent on maintenance capabilities already in place, the type of trails, and the extent to which volunteer labor is used.

Based on data from other existing trails, annual maintenance costs range from approximately \$2,000-\$7,500 per mile as shown below. As the township currently has some trails already in place, the township should review its current maintenance expenses as a potential source for estimating future maintenance costs. Once the trail is open, future budgets should be based on actual costs from the first few years of operation.

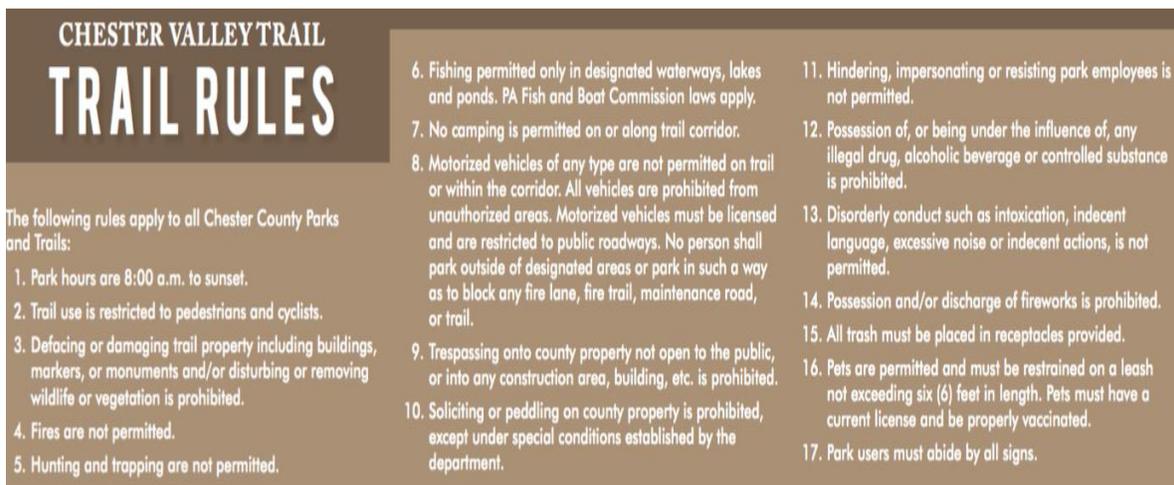
TABLE 26 – ESTIMATED MAINTENANCE COSTS

Trail Type	Trail Length	Estimated Maintenance Costs per Mile	Source of Cost Estimate
Bicycle Lanes	1 mile	\$7,400	Tri-Municipal Master Trail & Greenway Plan (2010) <a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004949.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004949.pdf</a>
Off-Road Trails	1 mile	\$3,000	Tri-Municipal Master Trail & Greenway Plan (2010) <a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004949.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004949.pdf</a>
Off-Road Trails	1 mile	\$1,000 - \$5,000	Destination Peace Valley Feasibility Study (2011) <a href="http://www.doylestownpa.org/wp-content/uploads/2013/09/Destination-Peace-Valley-Feasibility-Study-final-1-2011.pdf">http://www.doylestownpa.org/wp-content/uploads/2013/09/Destination-Peace-Valley-Feasibility-Study-final-1-2011.pdf</a>
Conewago Rail-Trail	5.5 miles	\$2,750	Lebanon Valley Rail-Trail and Conewago Recreation Trail 2011 User Survey (2011)_ <a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_009851.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_009851.pdf</a>
Lebanon Valley Rail-Trail	15 miles	\$2,000	Lebanon Valley Rail-Trail and Conewago Recreation Trail 2011 User Survey (2011)_ <a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_009851.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_009851.pdf</a>
Off-Road Trails	1 mile	\$2,000	Rail-Trail Maintenance and Operations (2005)_ <a href="http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_002300.pdf">http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_002300.pdf</a>
Off-Road Trails	1 mile	\$5,000 - \$7,000	Cresheim Trail Feasibility Study (2008) <a href="http://www.cheltenhamtownship.org/files/documents/plans_studies_drafts-Cresheim-Trail-Final-Report-05-23-08-R.pdf">http://www.cheltenhamtownship.org/files/documents/plans_studies_drafts-Cresheim-Trail-Final-Report-05-23-08-R.pdf</a>

## RISK MANAGEMENT

Similar to maintenance, the ongoing operation of trail and bicycle facilities in the township should seek to minimize the possibility of injuries on the trail. As such, risk management strategies should be taken to provide ensure safe operation of the trail. These strategies include:

- Identify and, to the extent possible, remove hazardous conditions and attractive nuisances during the original construction of the trail.
- Conduct public educational and informational programs relative to safe trail usage as it applies to various user groups including bicyclists, dog walkers, in-line skaters, etc.
- Use prominent signage to warn users of potentially dangerous areas.
- Regularly inspect the trail and correct any unsafe conditions and keep written records of inspections and maintenance activities performed.
- Develop procedures for handling medical emergencies.
- Prominently post hours of operation and other rules and regulations, along with emergency contact information. Below is an example of trail rules for the Chester Valley Trail in Chester and Montgomery counties.<sup>1</sup>



**CHESTER VALLEY TRAIL**  
**TRAIL RULES**

The following rules apply to all Chester County Parks and Trails:

1. Park hours are 8:00 a.m. to sunset.
2. Trail use is restricted to pedestrians and cyclists.
3. Defacing or damaging trail property including buildings, markers, or monuments and/or disturbing or removing wildlife or vegetation is prohibited.
4. Fires are not permitted.
5. Hunting and trapping are not permitted.
6. Fishing permitted only in designated waterways, lakes and ponds. PA Fish and Boat Commission laws apply.
7. No camping is permitted on or along trail corridor.
8. Motorized vehicles of any type are not permitted on trail or within the corridor. All vehicles are prohibited from unauthorized areas. Motorized vehicles must be licensed and are restricted to public roadways. No person shall park outside of designated areas or park in such a way as to block any fire lane, fire trail, maintenance road, or trail.
9. Trespassing onto county property not open to the public, or into any construction area, building, etc. is prohibited.
10. Soliciting or peddling on county property is prohibited, except under special conditions established by the department.
11. Hindering, impersonating or resisting park employees is not permitted.
12. Possession of, or being under the influence of, any illegal drug, alcoholic beverage or controlled substance is prohibited.
13. Disorderly conduct such as intoxication, indecent language, excessive noise or indecent actions, is not permitted.
14. Possession and/or discharge of fireworks is prohibited.
15. All trash must be placed in receptacles provided.
16. Pets are permitted and must be restrained on a leash not exceeding six (6) feet in length. Pets must have a current license and be properly vaccinated.
17. Park users must abide by all signs.

Implementation of both the maintenance and risk management strategies outlined will assist in limiting the liability of government entities in the event of a personal injury lawsuit.

<sup>1</sup> <http://www.chesco.org/DocumentCenter/View/25344>. Accessed 10/1/19.