



E.

**ON & OFF-ROAD
ROUTE
MAINTENANCE
CONSIDERATIONS**

Maintenance Considerations for Off-Road Trails

<p>Immediate (within 24 hours of becoming aware of the situation through a “hotline”, email, other notification or observation)</p>	<ul style="list-style-type: none"> • As a minimum, mark, barricade and sign the subject area to warn trail users, or close the trail completely until the problem can be corrected. • Remove vegetation and/or windfalls, downed branches etc., where traffic flow on the trail is being impaired or the obstruction is resulting in a sight line issue. Remove hazard trees that have been identified. • Repair or replace items that have been vandalized or stolen/removed. This is especially important for regulatory signs that provide important information about trail hazards such as road crossings, steep grades, and sharp curves. • Removal of trash in overflowing containers or material that has been illegally dumped. • Repair of obstructed drainage systems causing flooding that poses a hazard to trail users or that is resulting in deterioration that poses an immediate safety hazard. • Monitor trail areas and structures that are prone to erosion after severe summer storms and repair as required. • Repairs to structural elements on bridges such as beams, railings, access barriers and signs.
<p>Regularly (weekly / biweekly / monthly)</p>	<ul style="list-style-type: none"> • Trail patrols/inspections should review the trail conditions (as often as weekly in high-use areas), to assess conditions and prioritize maintenance tasks and monitor known problem areas. • Mow grass along edges of trails (in open settings only). Depending on trail location this may be done weekly, biweekly or monthly and the width can vary according to the location (typically 0.5 to 1.0m). This helps to keep the clear zone open and can slow the invasion of weeds into granular trail surfaces. Not all trails will have mown edges. In woodland and wetland areas, pruning and brushing is typically the only vegetation maintenance to be undertaken. • Regular garbage pickup (10 day cycle or more frequent for heavily used areas). • Restock trailhead information kiosks with brochures as needed. • Repair within 30 days or less, partially obstructed drainage systems causing intermittent water backups that do not pose an immediate safety hazard, but that if left unchecked over time will adversely affect the integrity of the trail and/or any other trail infrastructure or the surrounding area.
<p>Seasonally</p>	<ul style="list-style-type: none"> • Patching/minor regarding of trail surfaces and removal of loose rocks from the trailbed. • Culvert cleanout where required. • Top up granular trail surfaces at approaches to bridges. • Planting, landscape rehabilitation, pruning/beautification. • Installation/removal of seasonal signage.
<p>Annually</p>	<ul style="list-style-type: none"> • Conduct an annual safety audit. This task is not necessarily specific to trails and may be included with general annual safety audits for parks and other recreation facilities. • Evaluate support facilities/trailside amenities to determine repair and/or replacement needs. • Examine trail surface to determine the need for patching and grading. • Grading/grooming the surface of granular trails, and topping up of wood chip trails. • Pruning/vegetation management for straight sections of trail and areas where branches may be encroaching into the clear zone. This task is more of a preventative maintenance procedure. Cuttings may be chipped on site and placed appropriately or used as mulch for new plantings. Remove branches from the site unless they can be used for habitat (i.e. brush piles in a woodlot setting), or used as part of the rehabilitation of closed trails. Where invasive species are being pruned and/or removed, branches and cuttings should be disposed of in an appropriate manner. • Inspect and secure all loose side rails, bridge supports, decking (ensure any structural repairs meet the original structural design criteria). • Aerate soils in severely compacted areas.

Maintenance Considerations for Off-Road Trails

Every 3 to 5 Years	<ul style="list-style-type: none"> • Cleaning and refurbishment of signs, benches and other trailside amenities.
Every 10 to 20 Years	<ul style="list-style-type: none"> • Resurface asphalt trails (assume approximately every 15 years). • Replace or reconstruct granular trails (assume approximately every 15 years, but this may not be necessary if adjustments/repairs are made on an annual basis). • Major renovation or replacement of large items such as bridges, kiosks, gates, parking lots, benches etc.

Note. A trail maintenance log should be used to document maintenance activities. The log should be updated when features are repaired, modified, replaced, removed, or when new features are added. Accurate trail logs also become a useful resource for determining maintenance budgets for individual items and tasks, and in determining total maintenance costs for the entire trail. In addition, they are a useful source of information during the preparation of tender documents for trail contracts, and to show the location of structures and other features that require maintenance.

Maintenance Considerations for On-Road Routes

Distortions in the road surface that may pose a potential hazard for cyclists	<p>Bumps or depressions causing ponding of water on at least one third of the width of the or cycling surface;</p> <p>Drop-offs at the edges of pavement greater than 5cm in height over a horizontal distance of 20m. Vertical discontinuities greater than 2.5cm;</p> <p>Cracks (especially those running parallel to the path of travel) greater than 5cm wide by 2.5cm deep by 2.5cm long;</p> <p>Potholes greater than 10cm in diameter and 2.5cm in depth</p>
Street Sweeping and Debris Removal	<p>Sand left over from winter road maintenance and leaves allowed to accumulate in bike lanes can be hazardous to cyclists. Sweeping crews should be instructed to pay particular attention to the right edge of the road along designated bikeways.</p> <p>Another useful strategy is to organize the spring sweep so that roads with bike lanes and routes are swept first, recognizing the potential hazard to cyclists of not doing so.</p>
Snow Plowing	<p>On-road routes should be cleared as part of the regular removal and de-icing of roadways. A priority-shift to include roads with bike lanes and routes that serve major origins/designations should be considered.</p>
Catch Basin Cover	<p>Service covers and roadway edges are often the first place where cracking, heaving and breakup of asphalt occurs. A 2cm vertical ridge and a 1cm groove paralleling the direction of travel can be hazardous to cyclists. The condition of road surfaces particularly near the curb and at corners/intersections is one of the most common complaints about on-road cycling facilities. Patching and pavement overlay procedures may have to be increased to meet these tolerances within the traveled portion of the bikeway.</p>

Maintenance Considerations for On-Road Routes

Signing and Pavement Marking	Maintain on-road route and regulatory signs in the same manner that other roadway signs are maintained. Renew lane markings and symbols at the same time that other roadway lane markings are renewed.
-------------------------------------	--