6.0 MAINTENANCE GUIDELINES

The maintenance costs and liabilities involved in the installation of a public cycling network must be acknowledged by the City. The maintenance of cycling facilities was identified as a major priority in the Sault Ste. Marie Visioning exercise for the Cycling Master Plan as poor quality roadways and other infrastructure can present a major risk to cyclists. Though effective bicycle route design can decrease maintenance costs and deter liability risks, cycling routes and their amenities should be inspected on a regular basis as a minimum through an annual audit including structures such as bridges and culverts. These inspections identify hazardous conditions as well as issues related to maintenance, repairs and events of vandalism.

Diligence is required when managing any asset. When possible, especially in the Spring, Summer and Fall months, priority consideration should be given to debris removal on arterial roads with bicycle route facilities. Trails should be inspected each Spring prior to the anticipated peak season when high use is expected. During the Winter, snow and ice should be regularly removed from the cycling route network with a priority placed on primary routes and connections.

The following sections describe more detailed maintenance procedures for on and off-road cycling routes that the City of Sault Ste. Marie should consider for maintaining existing and future cycling facilities. For a sample breakdown of maintenance items and scheduling, please see *Appendix C: Hub Trail Maintenance Calendar* in the *Sault Ste. Marie Hub Trail Concept and Design Study* (2006).

6.1 Maintenance Issues Affecting On and Off-Road Cycling Routes

- **Trash Clean-Up and Grass Cutting:**

Trash cans should be emptied on a weekly basis in conjunction with grass cutting. The grass should typically be cut down to approximately two inches on either side of a trail.

- **Vegetation**

Vegetation should be routinely cut back since overgrown shrubs and low-hanging branches can obscure signs and pose a hazard to cyclists. Adequate clearance and sight distances should be maintained at driveways and intersections so that trail users are visible to motorists. Installing root barriers during trail and sidewalk construction may assist at preventing premature break-up of the surfaces. Maintenance of vegetation originating on private property should be required through local by-laws.

- **Surface Maintenance:**

Asphalt trails are most suitable for intense high traffic multi-use areas. Asphalt has a life span of approximately 8 to 15 years and requires a base of properly compacted granular ‘A’. Asphalt trails must be cross-sloped at a minimum of two percent to allow for drainage. Asphalt should be used on all slopes greater than 10% to prevent erosion. Drainage swales are also required next to asphalt trails. Inspection of asphalt trails should be undertaken once per year, especially for potholes and cracks in the Spring.

Potholes should be fixed immediately or clearly marked

- **Litter Removal:**

Perhaps one of the most difficult tasks in maintenance is collecting the increasing amount of litter in open spaces and along road sides. While the task of litter collection is usually a municipal responsibility, in recent years it has become common practice to encourage community / citizens' groups and corporate sponsors to assist in litter control and vegetation management.

- **Leaf Removal:**

Accumulation of wet leaves presents a serious obstacle to cyclists when encountered on trails or in roadway gutters. It is difficult for cyclists to stop on leaves, and falls can occur. Leaves can also hide potholes, debris and drainage inlets. It is recommended that excessive fallen leaves be removed from the travelled portion of cycling routes and roads as soon as possible to prevent accidents.

Need for Road Debris Removal in Bike lanes and Paved Shoulders

- **Sign Maintenance:**

Bicycle route sign markers and other cycling facility signing should also be properly maintained throughout the year and as frequently as other regulatory signs in Sault Ste. Marie. Signs that have gone missing or have been damaged should be replaced without delay in order to ensure the continuity of the cycling route network.

- **Liability:**

Through the implementation of an asset replacement program, the risk of liability can be significantly reduced if the City provides adequate resources and co-ordinated programs for good bicycle route design, construction, monitoring, maintenance and repairs.

A well-constructed bicycle route that is free of potholes, ruts and obstructions allows the bicycle route user to travel safely. Regular inspection and repair will keep the surface in a smooth and level condition. Routine maintenance schedules include the removal of vegetation that obstructs visibility or clearance on the trail. Signing, as a warning mechanism, could also reduce liability concerns.

Signing throughout the Sault Ste. Marie Cycling Route Network should be designed to warn the trail users of road crossings, steep grades and low clearance underpasses. The ultimate goal for limiting liability is to provide a safe cycling network through effective design, construction, monitoring and maintenance techniques.

An annual review and inspection of on-road cycling facilities and off-road trails that comprise part of the cycling network should occur after a major weather event. Off-road trails should be swept once a year, following winter and prior to special events. Trails that are not maintained in the winter should be signed accordingly and spring sweeping should be a major priority for these facilities.

Staff representing the jurisdiction or property owner through which a cycling route passes should be cognizant of potential hazards such as broken tree limbs and vandalized signs. Trail erosion, as a result of high water, frost heaving and heavy usage, should also be tended to as it can lead to deterioration of surfaces and trail alignments, and undermine off-road trail structures. With respect to sight lines, extra care should be taken to ensure they are not compromised. Acts of vandalism should be addressed as soon as possible. Ultimately, ensuring the cycling route network is safe and well maintained will help promote its use to Sault Ste. Marie residents and visitors.

Guideline:

6.1: Establish a program of litter, debris and leaf removal for paved shoulder cycling routes and bike lanes for the Spring, Summer and Fall months.

6.2 Snow Clearing

Bicycle Lanes should be kept clear of snow

Cyclists ride year round in Sault Ste. Marie, though their numbers are typically reduced during winter months. Nevertheless, measures should be taken to ensure that cycling in the winter can remain a realistic transportation alternative, especially as the Sault Ste. Marie cycling network is expanded.

In winter months, the City of Sault Ste. Marie should continue its practice of clearing roads of snow as soon as possible after a snowfall. The main outcome for snow and ice control of roads is to make roads safe and passable by reducing the hazards caused by snow and ice accumulation on the road surface. This recommendation applies to all City roads including adjacent shoulders and bicycle lanes designated as City cycling routes. As the cycling network is expanded, roads with designated on-road cycling facilities or signed-only cycling routes that are part of the Sault Ste. Marie cycling network

should receive priority for snow clearing and removal with priority given to roads that have been designated as the "spoke" routes of the network. This means that paved shoulders or bike lanes on these roads should be cleared of snow to accommodate cyclists.

In terms of on-going maintenance during the winter months, snow and ice should be regularly removed from the on-road cycling network system with a priority placed on the primary routes of the network. Liability is limited when ice is eliminated due to good drainage design and efficient snow removal schedules.

Currently, the priority of snow clearance in the City of Sault Ste. Marie is based on the classification of the road being cleared (e.g. major arterial, collector roadways and local roadways). Major arterials receive first priority for snow clearance followed by collector roads and local roadways. Primary "spoke" route segments of the Sault Ste. Marie cycling network in the majority of cases are located on major arterial roads, which already receive top priority for snow removal. Therefore, these roads should continue to receive top priority for snow removal, especially if they have designated cycling facilities that comprise part of the "spoke" route network. Consideration should also be given to clearing lower priority roads (e.g. local collectors) that make up segments of the "spoke" network.

Following the end of winter, bicycle-use can be delayed due to accumulated piles of snow that may still be present in locations where the sun does not reach until later in the season. Should a small section of the cycling network be blocked by snow and debris accumulation, it could affect an entire link. Several weeks, possibly an additional month of trail use could be added to the year with one well-timed snow and debris cleaning per year. Although it may not be feasible or necessary to clear all multi-use trails in the winter, consideration should be given to clearing trails that provide key connections or links to "spoke" route segments of the Sault Ste. Marie cycling network.

Guideline:

6.2: "Spoke" routes that serve as part of the primary Sault Ste. Marie cycling network will receive priority for snow clearing and removal during the Winter months, followed by key cycling route connections or cycling links to "spoke" route segments.