VILLAGE OF LITTLE CHUTE

ORDINANCE NO. 3, SERIES 2021

AN ORDINANCE AMENDING CHAPTER 40 STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES, ARTICLE III SECTION 40-64 (K) CONSTRUCTION AND REPAIR OF THE VILLAGE OF LITTLE CHUTE MUNICIPAL CODE

Be it hereby ordained, by the Village Board of the Village of Little Chute, Outagamie County, Wisconsin that the Village of Little Chute Ordinance Chapter 40, Streets, Sidewalks, and Other Public Places, Article III Section 40-64 (K) Construction and Repair be amended as follows:

Standard specifications for sidewalks.

(1) Generally. Concrete sidewalk construction shall meet the specifications and provisions set forth in this section and shall be constructed in locations and to line and grade as established by the village engineer.

(2) Construction. All new sidewalks hereafter constructed or old sidewalks which are relaid or reconstructed on any street shall be of concrete construction.

(3) Location and width of sidewalk. In any business district in which the zoning ordinance or official map does not require any building or off-street parking setbacks from the property line, sidewalks shall be laid from the lot line to the curb. Sidewalks in all business districts shall be a minimum of five feet wide. All sidewalks hereafter constructed in areas other than business districts shall be five feet in width and six inches from the inner edge thereof shall be on the lot line. These requirements may be waived or modified by the director of public works.

(4) Grading. Prior to construction, ground on which sidewalks are to be placed shall be brought to within three inches of subgrade by the contractor. Unsuitable sub-base material shall be removed and replaced with granular fill. Soft subgrade shall be thoroughly and uniformly compacted to meet 95% compaction effort for the modified proctor (ASTM D1557).

(5) Granular Base. Three inches of 3/4-inch (19.0 mm) base aggregate gradation (Wis-DOT 305) shall be thoroughly and uniformly compacted and brought to correct grade. Wet granular base prior to concrete placement.

(6) Concrete. The minimum quantity of cement per cubic yard shall be six 94-pound sacks. Gravel shall be of good quality and washed. Concrete shall test 3,000 pounds per square inch (psi) compression in 28 days.

(7) Jointing. Expansion joints one-half inch thick shall be placed at 100-foot maximum intervals. At all places where a walk intersects another walk or curbline, a one-half inch expansion joint shall be placed.

(8) Cross slope. To provide adequate drainage, the sidewalk shall slope toward the curb at a rate not to exceed one-fourth inch per foot of width of sidewalk or 2% maximum cross slope. A minimum of 1% shall be provided for all sidewalk cross-slopes. All joints and edges shall be finished with a one-fourth-inch radius edging tool. Sidewalks shall be constructed within the limits of the street right-of-way.

(9) Thickness. Residential walks shall be not less than four inches thick except within driveway approaches where the minimum thickness shall be six inches. Sidewalks in front of commercial or industrial establishments shall be not less than four inches in thickness, except within driveway approaches where the minimum thickness shall be seven inches. One-half-inch reinforcement rod shall be used when replacing or repairing sidewalks over alley entrances.

(10) Finishing. The concrete shall be struck off true to grade, finished smooth and given a broom finish. All edges shall be rounded. No tool marks shall be left on exposed surfaces. In case of rain, the walk shall be covered to protect the surface from being damaged. Walks shall be kept free from all traffic at normal temperatures for 48 hours and in cold weather (below 50 degrees Fahrenheit) for 96 hours. No concrete shall be poured when the temperature may be expected to fall below 35 degrees Fahrenheit in any 72-hour period or upon frozen subgrade.

(11) Curing. Concrete shall be kept moist by sprinkling, covering or a combination of both for a minimum of five days, or a curing compound may be used in place of the curing procedure.

(12) Higher standards. Where deemed necessary by the village, higher sidewalks standards may be required by the director of public works.

(13) Warranty. Any sidewalk, which was installed by the contractor which fails for any reason within 12 months following installation shall be replaced at no cost to the village.

Standard specifications for two-way shared use path located in street right of way.

(1) General. A two way shared use path located in the street right of way shall meet the specifications and provisions set forth in this section and shall be constructed in locations to the line and grade established and approved by the village engineer. This section has been developed in accordance with the "Wisconsin Bicycle Facility Design Handbook", with minor updates through 2018 and prepared by the Wisconsin Department of Transportation.

(2) Definition. Shared paths are off-road facilities designed for travel by a variety of non-motorized users, including bicyclists, pedestrians, skaters, joggers, and others. If a two-way shared-use path must be located adjacent to a roadway, a separation between the path and the adjacent street is required to demonstrate that the path functions as an independent facility for bicyclists and pedestrians. Additionally, the inside bicyclist will be riding directly opposed to oncoming motor vehicle traffic. This often increases average closing speeds by up to 30 mph (compared to bicyclists riding with traffic).

(3) Subgrade. The subgrade shall be excavated and compacted in fill areas to the optimum moisture content for the native soil. Soft subgrade material shall be excavated and dried to the optimum moisture content for the native soil and re-placed in six inch lifts (maximum) using a minimum compaction effort of 95 percent of the modified proctor (ASTM D1557). Granular replacement material may also be used and placed in 6-inch lifts (maximum) and uniformly compacted to meet 95% compaction effort for the modified proctor (ASTM D1557). Prior to placement of base material the subgrade shall be brought to within three inches of the final subgrade elevation by the contractor and shall not be consistently high to reduce the average thickness of the granular base material.

(4) Granular Base. The Contractor shall use 3/4-inch (19.0 mm) base aggregate gradation (Wis-DOT 305) for the shared use path including shoulders and granular surface. The thickness of base aggregate shall be 5-inches for both asphalt and concrete surfaces. Granular base shall

be placed in 6-inch lifts (maximum) and uniformly compacted to meet 95% compaction effort for the modified proctor (ASTM D1557).

(5) Asphalt pavement. Binder: 3LT 58-28 S (2.25-inches thickness)
Surface: 5LT 58-28 S (1.75-inches thickness)

(6) Concrete. The minimum quantity of cement per cubic yard shall be six 94-pound sacks. Gravel shall be of good quality and washed. Concrete shall test 3,000 pounds per square inch (psi) compression in 28 days. Concrete shared use paths shall be not less than four inches thick except within driveway approaches where the minimum thickness shall be six inches. Shared use paths in front of commercial or industrial establishments shall be not less than four inches in thickness, except within driveway approaches where the minimum thickness shall be seven inches. One-half-inch reinforcement rod shall be used when replacing or repairing sidewalks over alley entrances or new utility trench work.

(7) Jointing. Expansion joints one-half inch thick shall be placed at 100-foot maximum intervals. At all places where a concrete path intersects another concrete path, sidewalk or curbline, a one-half inch expansion joint shall be placed.

(8) Finishing. The concrete shall be struck off true to grade, finished smooth and given a broom finish. All edges shall be rounded. No tool marks shall be left on exposed surfaces. In case of rain, the concrete path shall be covered to protect the surface from being damaged. The concrete shall be kept free from all traffic at normal temperatures for 48 hours and in cold weather (below 50 degrees Fahrenheit) for 96 hours. No concrete shall be poured when the temperature may be expected to fall below 35 degrees Fahrenheit in any 72-hour period or upon frozen subgrade.

(9) Curing. Concrete shall be kept moist by sprinkling, covering or a combination of both for a minimum of five days, or a curing compound may be used in place of the curing procedure.

(10) Higher standards. Where deemed necessary by the village engineer, higher standards may be required, as needed, due to estimated increased user capacity for the shared use path.

(11) Warranty. Any improvements that have been constructed by the contractor which fails for any reason within 12 months following installation shall be replaced at no cost to the village.

(12) The minimum separation. Five (5) feet is the minimum distance required between the edge of the street pavement/curb and the path. The path should be located outside of the roadway's clear zone. When the 5-feet of separation is not possible, a suitable physical barrier is recommended with a minimum height of 42-inches. Such barriers prevent path users and motorists from making unwanted movements between the path and the street (and vice versa) and reinforce the concept that the path is an independent facility. Where a barrier or a space separation is not possible narrowing the 5 feet of separation area to 3-feet for a short distance (several hundred feet) is acceptable. [This may be necessary at intersection approaches.] Three (3) feet of separation for a longer stretch would be permitted if the path is next to a wide shoulder or bike lane.

(13) Priority. The path should have the same priority through intersections as the parallel street. A path next to an arterial street, bicyclists on the path are required to stop at each minor cross street or driveway. Excessive and improper traffic controls breed disrespect for ALL traffic controls on trails, even where clearly warranted.

(14) Path width. The paved width required for a shared-use path is a primary design consideration. Under most conditions, the paved width for a two-way shared-use path is 10 ft.

(15) Shoulders. A minimum 2-foot wide graded shoulder flatter than 1:6 (16.67%) slope should be maintained on both sides of the path. Such shoulders provide a measure of safety, in case a bicyclist drifts off the side of the path. The shoulder surface should be level with the edge of pavement, to prevent crashes caused by an uneven pavement edge.

(16) Clearances. Clearances are important for two reasons. The first is to provide adequate clearance from trees, posts, abutments, piers, poles, box culverts, guardrails, or other potential hazards. The second reason is to make maintenance (e.g., mowing) easier. A clear zone of 3-feet or more is desirable on each side of a shared-use path.

a) However, a 1 to 2-foot clearance may be used where the obstruction is continuous, as with a long section of wall, a railing, or a fence. The ends of continuous obstructions or barriers should be flared at either end, especially where there is less than 3-feet of clearance from the path to the obstruction/barrier.

b) If adequate clearance cannot be maintained between the path and vertical obstructions or other features that narrow the clear zone, a warning sign should be used in advance of the hazard with a Type 1, 2, or 3 object marker at its location. This treatment should be used only where the hazard is unavoidable, and is by no means a substitute for good design.

c) Where the path is next to a canal or ditch, with a sloped drop-off steeper than 3:1 a wider separation should be considered. A minimum 5-foot separation from the edge of the path pavement to the top of the slope or a safety rail should be provided where the slope/drop conditions cannot be met. Depending on the height of embankment and condition at the bottom, a physical barrier, such as a safety railing, dense shrubbery, or a chain link fence, may be needed at the top of the slope.

d) The vertical clearance to obstructions should be 10-feet for bicyclists' comfort and to allow access for maintenance and emergency vehicles. In only exceptional cases where the 10-foot standard is unattainable, can 8 ft (2.5 m) be used; while uncomfortable for some users, this height allows bicyclists to go under without hitting their heads. The Wisconsin Department of Natural Resources uses a 12-foot vertical clearance on state trails to accommodate maintenance and snow grooming equipment.

(17) Americans with Disabilities Act (ADA) requirements. Shared-use paths built in the United States must also meet the requirements of the Americans with Disabilities Act (ADA). ADA guidelines require that cross slopes not exceed 2% to avoid the severe difficulties that greater cross slopes can create for people in wheelchairs or using walker or canes.

(18) Design speeds. In general, a design speed of 18 mph should be used for level areas. For paths on long downgrades (i.e., steeper than 4% and longer than 500-feet, a design speed of 30 mph is advisable. Although bicyclists can travel faster than these speeds, to do so would be inappropriate in a mixed-use setting that includes young bicyclists, pedestrians, wheelchair users, and others.

a) Warning signs can be used to deter excessive bicyclist speed; and faster cyclists can be encouraged to use the roadway system. For example, a "Fast Bicyclist Bypass" can be developed on a nearby through street.

b) Unpaved Surfaces, Bicycles have a higher tendency to skid on unpaved surfaces. Horizontal curvature design should take into account lower coefficients of friction in using this type of surface material.

c) Extrapolating from values used in highway design, friction factors for paved shared-use paths can be assumed to vary from 0.31 at 12 mph to 0.21 at 30 mph. Although there is no data available for unpaved surfaces, reducing friction factors by 50% should allow a sufficient margin of safety.

(19) Path Allowable Surface Material Summary

Surface Material	*Advantages*	*Disadvantages*
Crushed Aggregate	Soft but firm surface, natural material, moderate cost (varies regionally), smooth surface, accommodates multiple use.	Surface can rut or erode with heavy rainfall, regular maintenance to keep consistent surface, replenishing stones may be a long-term expense, not for steep slopes.
Asphalt	Hard surface, supports most types of use, all weather, does not erode, accommodates most users simultaneously, low maintenance.	High installation cost, costly to repair, not a natural surface, freeze/thaw can crack surface, heavy construction vehicles need access.
Concrete	Hardest surface, easy to form to site conditions, supports multiple use, lowest maintenance, resists freeze/thaw, best cold weather surface.	High installation cost, joints must be sawn for smooth ride, costly to repair, not natural looking, construction vehicles will need access to the trail corridor.

(20) Slope or grade. One percent slopes are recommended on shared use paths where practical, because they are easier to navigate for people using wheelchairs. The maximum grade recommended for shared-use paths is 5%. Sustained grades should be limited to 2 or 3%.

a) The shared-use path may also match the roadway grade. When the roadway grade exceeds 5%, the path grade is to be less than or equal to the roadway grade. Refer to the U.S. Access Board for information on accessibility provisions for shared-use paths covered by ADA.

b) As a general guide, where steeper or longer grades cannot be avoided, the design speed should be increased and additional width should be provided for maneuverability.

(21) Curve radius. In most cases the lean angle formula (see Wisconsin Bicycle Facility Design Manual, page 4-14) should be used when determining the minimum radius of a horizontal curve, due to the need for relatively flat cross slopes and the fact that bicyclists lean when turning (regardless of their speed or the radius of their turn). The curve radius should be based upon various design speeds of 18 to 30 mph and a desirable maximum lean angle of 20 degrees. Lower design speeds of 12 to 16 mph may be appropriate under some circumstances (e.g., where environmental or physical constraints limit the geometrics). Minimum radii of curvature for a paved path can be selected from Table 1.

Table 1: Desirable Minimum Radii for Paved Shared Use Paths

Based on 20° Lean Angle Design

Design Speed mph	Minimum Radius feet
18	60
20	74
25	115
30	166
Special conditions (e.g., topography constraints)	
12	27
14	36
16	47

(22) Sight distance. Shared-use paths should be designed with adequate stopping sight distances to let bicyclists see and react to the unexpected situations. The distance required to bring a bicycle to a full controlled stop is a function of the bicyclist's perception and brake reaction time; the initial bicycle speed; the coefficient of friction between the tires and pavement; and the braking ability of the bicycle and the bicyclist. Refer to the Wisconsin Bicycle Facility Design Manual, beginning on page 4-19, to determine the minimum stopping sight distance required.

Where adequate sight distance cannot be provided, mitigation measures like those described below can help:

- widen the path through the curve;
- Install a solid yellow center line stripe;
- Install a "Curve Ahead" warning sign; or
- Some combination of the above.

(23) Signing and marking. These elements fall into the same three main categories found in roadway signing and marking: regulatory, warning, and informational devices. Each category is associated with certain colors. Regulatory controls are associated with red, black, and white*; warning devices with yellow and fluorescent yellow-green; informational devices with blue, green and brown. *In striping, however, yellow is also a regulatory color. Signs for exclusive use of bicyclists should be located so that drivers are not confused by them. If necessary, shielding should be used to keep motorists from seeing these type of signs. If the sign applies to drivers and bicyclists, then it should be visible from both perspectives.

(24) Warning devices. Shared use paths are designed for bicycle traffic and therefore, need to alert users to hazardous (or potentially hazardous) conditions on or adjacent to the path. They are also used to let others (e.g., motorists on a cross street) know about the presence of the path and the potential for conflicts. Warning devices require caution on the part of users and may require them to slow. If used, advance bicycle warning signs should be installed no less than 50-feet in advance of the beginning of the condition. Warning signs and markings let path users know about problems like tight curves, low clearances, obstacles, and other hazards. Typically, these are permanent conditions that cannot be easily corrected.

(25) Parallel path crossing. A parallel path is one that is adjacent to a roadway. Because of this relationship, the path typically intersects most of the same streets and driveways that the road, itself. Wisconsin State Statute 346.803(b) requires bicyclists to "obey each traffic signal or sign facing a roadway which runs parallel and adjacent to the bicycle way." As a result, stop or yield conditions for bicyclists on parallel side paths should generally be consistent with the traffic controls imposed upon traffic of the adjacent roadway.

(26) Maintenance. Similar to streets, it shall be the Village's responsibility to maintain this facility for the public's use and benefit. It is also at the discretion of the Village Board to determine when the shared use path shall be open for use. It shall be the responsibility of the village staff to clear snow from the path if it is determined to remain open for pedestrian use during the winter. The shared use path may also be designated for winter sports (snow show or cross-country skiing) if not required for pedestrian use. The path may not be closed and the snow must be cleared by village staff if it is the only route for pedestrian access during the winter (no sidewalk on the opposite side of the street).

Adopted and passed by requisite vote of the Village Board of Trustees this 17th day of March 2021.

VILLAGE OF LITTLE CHUTE

BY: Michael R Vandenberg

Michael Vandenberg, Village President

ATTEST:

Laurie Decker

Laurie Decker, Village Clerk