

CITY OF TWO RIVERS

SIDEWALK REPAIR & REPLACEMENT POLICY



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1 OBJECTIVES

The program is intended to provide a safe walkway for pedestrians and to protect the interests of both the Property Owner and the City of Two Rivers.

This program includes the systematic review of public sidewalks, drive approach aprons, and carriage walks within the public right-of-way to identify sidewalk sections not in conformance with accepted standards or which contain defects as herein described and as decided by the City Engineer. The program is intended to correct non-conforming sidewalks that may be observed in the course of periodic sidewalk inspections throughout the City or as complaints arise.

This program does not include curbs within the public right-of-way.

At intersections, the walk extensions to the curb from the public walks not across property frontage are included in the program. These walks will be repaired/replaced by the City of Two Rivers at the City's expense.

Should you have any additional questions or desire further information concerning the City of Two Rivers Sidewalk Repair and Replacement Policy, please contact the City Engineer's office at the Engineering Department, City Hall, 1717 East Park Street, Two Rivers, WI, telephone number(920) 793-5539, on Monday through **Thursday 7:30 A.M. to 5:00 P.M., and Friday 7:30 A.M. to 11:30 A.M. between the hours of 8:00 A.M. and 4:30 P.M.**

2 GENERAL DESCRIPTION OF SIDEWALK REPAIR PROGRAM

2.1 Introduction

The City of Two Rivers ~~has~~ initiated an annual program for the repair or replacement of defective or damaged public sidewalks. This program ~~is will-be~~ part of a citywide program to bring all sidewalks up to current standards. This does not mean that all of the sidewalks will be replaced. Each year, ~~the~~ sidewalks in a selected area of the City will be inspected in accordance with the criteria contained in this manual. The objective of this program is to restore the sidewalks throughout the City to an overall good condition.

This manual has been prepared to explain the purpose and details of the program and answer questions regarding the sidewalk repairs.

The City of Two Rivers, like most municipalities in colder climates, has a major problem with maintaining sidewalks in good condition. Sidewalks are subject to a number of deteriorating influences. Because of our geographic location, concrete sidewalks are subjected to severe freezing and thawing conditions. Not only will concrete crack, chip and deteriorate faster in our climate, but also sidewalk slabs will move as the ground below moves due to the freeze and thaw action. Sometimes this displacement will cause sidewalk sections to be offset at a joint. Other factors causing problems are tree roots, poor subsoil conditions, utility trench settlement and the use of materials to control ice and snow. Broken, raised or settled sidewalks create hazards for pedestrians. The number of persons utilizing sidewalks continues to increase and the potential for tripping and falling is a concern.

The primary benefits of a sidewalk repair program include improved pedestrian safety and the enhancement of area neighborhoods.

2.1 Required Work

The owner of any parcel of land that is adjacent to a City street is responsible for maintaining the sidewalk in front of his property in good condition in accordance with the criteria set forth in this manual and as described in the City Ordinances (see Section 4-1-4). The criteria for the replacement of sidewalk is based on evidence of deterioration to concrete sections such as sidewalk which is cracked, tilted, raised, badly chipped, spalled, settled, etc.

On corner lots, any repair or replacement required within the pie shaped slab or handicap ramp at the corner will be paid for by the City and will not be charged to the property owner.

2.2 Property Owner Responsible For Repairs

Property owners are responsible for maintenance/repairs/replacement to sidewalks fronting their property in accordance with City Specifications. Property owners may hire a private sidewalk construction contractor to repair or replace the defective walk. All financial arrangements will be between the property owner and their his/her contractor should the property owner choose to have a private contractor do the work. The property owner can perform the sidewalk construction them/himself without hiring a contractor provided that the applicable City ordinances and standard specifications are met. The sidewalk repair requirements are available for distribution at the City Engineers office. The Property Owner choosing to replace their his own walk or hiring a contractor to replace the walk must obtain a permit from the City Engineering Department and upon completion of the work must call the Engineering Department to inspect and approve the construction in conformance to the City Standards. Owner constructed walks that do not meet City specifications may be ordered removed and replaced.

The property owner will have a minimum forty-five (45) day period from the date of issuance of the notice to inform the City of their his plans for the sidewalk repair/replacement work. The property owner shall provide notice to the City by obtaining a Sidewalk Permit from the City Engineer's office indicating their his intent to either complete the work on their his own or to default to the work being performed by the City at their his expense.

In instances where the property owner fails to respond, the City of Two Rivers will replace sidewalks that are not repaired/replaced in compliance with the Notice to Repair/Replace Sidewalk. The cost of walks replaced by the City in this situation will be charged under the Special Assessment Program.

There will be no charge for sidewalk permits if the City repairs/installs the sidewalk under the City's contract.

2.3 City Performance of Of Repairs

The City will perform repair/replacement of the defective walk under a City Contract at the expense of the property owner. All sidewalk replacement work by the City of Two Rivers will be concrete construction only.

The City of Two Rivers will prepare and bid a contract for the construction of concrete sidewalks. Property Owners who elect to have the City replace their walk will have their work assigned to the contractor for construction in the most efficient manner possible. Property Owners who do not respond by the date on the Notice will be assigned to the contractor for construction as well.

Sidewalk repaired / installed by the City shall have an expected service life of ten (10) years. Should the concrete sidewalk require replacement before the end of the ten (10) year expected

service life, the abutting property owner shall be assessed on a prorated basis. For example, should sidewalk require replacement after five (5) years, the abutting property owner would only be assessed at one-half (1/2) of the applicable rate. The prorated assessment policy shall only apply if the work is done through the City and the City's contractor, or authorized by the City, and noted on the sidewalk permit.

2.5 Payment For City Performance of Repairs

The City of Two Rivers will have available a Special Assessment Program for sidewalk repairs.

Following completion of defective sidewalk repair/replacement by the City via its contract, a bill will be sent to the property owner by the City Engineering Department. The Property owner will have the option at that time to pay the amount in full or to participate in the Special Assessment Program. All sidewalk repairs in the amount of \$200.00 or less will be required to be paid in full.

The Special Assessment Program will allow the repayment of the cost of the sidewalk replacement over a five (5) year period at the interest rate the City Council set that year. The annual cost will be billed to the property owner at the time taxes are sent. Prepayment of the Special Assessment will be allowed by the City with no pre-payment penalty.

2.6 Obstruction Notice

The property owner is responsible for all objects that are on the property that encroach upon the public right-of-way adjacent to the sidewalk to be replaced, i.e., fence, retaining wall (brick, block, concrete stone, and railroad ties), vegetation (trees, flowers, shrubs) etc. All objects that the property owner has placed within the public right-of-way are subject to removal by the City without replacement by the City if necessary for construction, repair, replacement and/or maintenance of publicly owned and operated facilities.

Any damage done to these private encroachments into the public right-way will not be repaired or replaced by the City or the City's contractor. This includes damages resulting from the installation of concrete forms to establish the back of walk.

2.7 Sidewalk Widths

The standard minimum width for sidewalks in the City of Two Rivers is 5'-4". Walks that are constructed at the back of curb and gutter shall have a minimum width of 6'-4". Any exceptions to this requirement must be approved by the City Engineer.

2.8 Alignment And Grade Of Replaced Walks

Sidewalks will be replaced to the line and grade established by the City Engineering Department. In general, walks will be replaced so that the back of walk is 20" from the street right-of-way line. The back of walk grade will be established to preserve as much as possible the standard cross section for City streets.

2.9 Grass Area Repair

When the defective sidewalk is removed, removal of the soil and grass along both sides of the walk is expected. Hedges or other vegetation within area needed for walk construction (including installation of forms) in the region is subject to removal without replacement.

In the event the work is done by the City, all removed materials will be hauled from the site.

The disturbed areas along each side of the walk are to be restored with topsoil, seed and mulch within ten (10) days ~~as soon as possible~~ following placement of the new walk. Each property owner is expected to water and maintain the new seed.

In the event the work is done by the City, the disturbed areas along each side of the walk are to be restored with topsoil, seed and mulch ~~and seed installed~~ within ten (10) days ~~as soon as possible~~ following placement of the new walk. Each property owner is expected to water and maintain the new ~~seed~~ seed.

2.10 Driveway Area Repairs

At locations where replacement walks are constructed across existing driveways, pavements will be saw cut to allow a neat and workmanlike repair to the driveway pavement to be made. This rule will not apply where the existing driveway pavement is to be replaced.

2.11 Sidewalks Adjacent To Trees

Replacement of sidewalks adjacent to trees may require that tree roots be sawed off to provide for installation of the new sidewalk to the proper grade and alignment. (See section 4.0 Tree Roots and Root Cutting) Under certain circumstances, root sawing may severely damage the tree, necessitating its removal. Trees located within the City right-of-way which are severely damaged or compromised by the sidewalk replacement or by other causes, as determined by the official City Forester or Designee, will be removed by the City at no expense to the property owner. The City will not be responsible for damage to, or removal of, trees located beyond the limits of the public right-of-way.

A property owner may request the removal of a tree by the City, provided that the tree is located within the public right-of-way, in an attempt to prevent future damage to the adjacent sidewalk caused by tree roots. If you request that a street tree be removed, the City Forester or Designee will evaluate the tree to determine whether or not removal of the tree is warranted. If the City Forester or Designee determines that removal is justified it will be done at the City's expense.

The City of Two Rivers is not obligated to replace street trees that are removed as provided above. Such trees may be replaced at the discretion of the City.

When it is determined by the City Engineer that sidewalk is impacted by street trees, trees within the public rights-of-way, the repairing or replacement of the impacted sidewalk will be done at the City's expense (2023).

2.12 Repairs To Defective Sidewalks

The City may allow repairs to defective sidewalk either by the Property Owner or by the Property Owner's private contractor.

The types of authorized repair options include mud jacking, ~~beveling, epoxy crack filling,~~ sawcutting repairs and total sidewalk replacement. The City Engineer prior to doing the repair shall approve mud-jacking, ~~beveling, epoxy joint filling~~ and sawcutting repairs.

Total sidewalk replacement would be considered by the City as the preferred repair option. This may be the only option if sidewalk panels are severely damaged and/or broken since it is the only method of repair that fully removes and replaces the damage with a completely new sidewalk panel and looks at the soils beneath the sidewalk panel being replaced. This can be done by a licensed contractor hired by the homeowner or the property owner can perform the sidewalk construction

themselves without hiring a contractor provided that the applicable City ordinances and standard specifications are met as previously stated in Section 2.2 above.



Mud jacking repairs to sidewalk sections are considered by the City to be temporary in nature. Mud jacking repairs made to defective sidewalk slabs will be allowed once. Mud jacking is mainly used to raise existing sidewalks that have sunken below adjacent sidewalk panels so that the entire panel does not need to be removed and replaced with an entirely new one. If the City determines that the attempt at mud jacking fails or if the sidewalk is cracked, broken or otherwise damaged during mudjacking or such other authorized repair, or if the sidewalk remains defective in any other manner after the attempt at repair, the sidewalk shall be immediately removed and replaced in accordance with City Ordinances and procedures described in this program.



Sawing repairs to sidewalk sections are considered by the City to be temporary in nature. Sawing repairs made to defective sidewalk slabs will be allowed once. If the City determines that the attempt at sawing fails or if the sidewalk is cracked, broken or otherwise damaged during sawing or such other authorized repair, or if the sidewalk remains defective in any other manner after the attempt at repair, the sidewalk shall be immediately removed and replaced in accordance with City Ordinances and procedures described in this program.

For sawing to be considered successful, the following criteria must be accomplished; each trip hazard must be corrected in accordance with the requirements of ADA. Each offset will be tapered to at least a 1:8 slope and will have a smooth, uniform, slip-resistant finish. All saw cutting will be taken to a zero point of differential and extend fully to both edges of the sidewalk.

Epoxy Crack Filling of sidewalk sections is considered by the City to be temporary in nature. Epoxy cracking filling is usually used to fill cracks or depressions in sidewalk panels so that the entire panel does not need to be removed and replaced with an entirely new one. The cracks have to be relatively narrow is width, less than one half (1/2) inch [and the cracked panel shall not be offset by more than one-quarter (1/4) of an inch without other repair options to be implemented]. If the surface of the sidewalk has minimal spalling, flaking or chipping, epoxy concrete patching may be considered with the approval of the City Engineer. Epoxy can be found in most local and chain hardware stores. If the product states “Epoxy Concrete Patch”, it is deemed acceptable for you to use by the City.



Beveling or Diamond Grinding of sidewalk sections is considered by the City to be temporary in nature. Beveling or diamond grinding is usually used to “grind” off the edge of an existing sidewalk that has risen above adjacent sidewalk panes. For sidewalk panels, or cracks within a sidewalk panel, that are offset one-quarter (1/4) of an inch to one-half (1/2) of an inch can be beveled at a forty-five (45) degree angle to remove the tripping hazard. For changes in level greater than one-half (1/2) inch to three-quarters (3/4) of an inch the diamond grinding needs to be completed at an 8.3-percent slope per Federal Register requirements ($\frac{3}{4}$ ” elevation change x 8.3% = 9” beveled length).



All repairs done by property owners must be approved in accordance with all City of Two Rivers Engineering Department.

2.13 Handicap Ramps

In conjunction with work done in front of privately-owned properties, the City will also evaluate existing and be constructing new handicapped curb ramps at street intersections. In accordance with the Americans with Disability Act, Uniform Federal Accessibility Standards, the City is obligated to construct handicap ramps at locations where sidewalks intersect curbs to provide access for handicapped persons. The property owner will not be charged for the construction of these handicap ramps. The property owner will need to keep the ramps clear of debris and snow accordingly.

2.14 Parking During Construction

If the sidewalk portion of your driveway is removed, it is important that vehicles are not driven over the newly poured portion of the driveway for at least seven (7) days after the concrete is poured. Barricades shall be placed around the new concrete and should remain in place during that week. Driving over newly poured concrete before the concrete has cured properly could cause damage to the new sidewalk. Damage from this cause is the responsibility of the property owner and could be cause for replacing the new sidewalk damaged sections. If the access to your parking area is cut off by the construction, you will be allowed to park on the street in areas where parking is allowed until access is restored.

2.15 Exceptions

Where there are exceptions to the specifications in this document, the decision of the City Engineer will govern. For example, there are sidewalks with pitch greater than allowed in these specifications that were designed that way because the ground elevations or because narrowness of the walk/grass plot area made it necessary. As a general rule, sidewalks that are more than 50% out of compliance with the applicable codes may be ordered replaced in their entirety. Sidewalks that are less than 50% out of compliance may shall be allowed to have the out of compliance sections remain if they are otherwise in good condition.

3 PUBLIC SIDEWALK - REPAIR/REPLACEMENT CRITERIA

In general, any sidewalk defects that could be considered a hazard to the public shall be considered as a basis for requiring repair or replacement of a sidewalk or a part thereof. This rule shall apply regardless of the walks specifications that follow.

As a guide, the following is a list of criteria that can be used to determine which sidewalk slabs will require repair work up to and potentially including the total replacement of the impacted sidewalk panels.

3.1 Vertically Misaligned Slabs

Where there is differential settlement or heaving of up to three quarters of an inch (3/4") or more between two adjacent sections of sidewalk.

3.2 Sidewalk Having Excessive Slope

Sidewalk having longitudinal slope greater than one inch (1") per foot, or transverse slope greater than (1/2") per foot.

3.3 Cracked Slabs

3.3.1 Where crack(s) which have resulted in a difference of elevation of three quarters inch (3/4") or greater.

3.3.2 Where there is more than one crack in a slab.

- 3.3.3 Where the sidewalk is cracked and the crack(s) have horizontal separations equal to one half of an inch (1/2") or more.
- 3.3.4 Where the sidewalk is cracked and such cracking has resulted in or has the potential to result in breaking out and/or settling.

3.4 Loose Or Spalled Slabs

- 3.4.1 Loose or spalled sidewalks are defined as walks that have a surface with irregularities greater than one-half inch (1/2") in depth relative to the sidewalk surface.
- 3.4.2 A sidewalk slab has spalled over twenty five percent (25%) of its surface will be replaced.

3.5 Structures With The Sidewalk

Any underground vault covers, ground level service accesses, drainage grates, window well grates, water valves, manholes, or other similar structures which are defective.

Sidewalk which ~~is~~ are defective because of water valves, manholes, or other utilities will be repaired by the City at no cost to the property owner.

Sidewalks which are defective from other causes not specified above will be the responsibility of the property owner.

3.6 Temporary Sidewalk Repairs

Any type of wedge, crack fillers, surface treatments, or other applications using materials of any nature constituting a ~~the~~ temporary elimination of defective sidewalk, which has failed for a second time, shall require that the sidewalk be removed and replaced. Temporary repairs may be approved by the City Engineer in a case by case basis if it is known that future street projects will require replacement of existing sidewalks.

3.7 Sidewalk Drainage Problems

Settled sidewalk creating a drainage problem. Sediment collection on the settled walk may indicate poor drainage. Settled sidewalk may not be considered a problem if there is drainage out of the settled area.

3.8 Excess Joint Width

Walks having open walk joints of ~~one-half three-quarters~~ of an inch (1/2" ~~3/4"~~) or more at any location will require the ~~for~~ full width of the walk ~~will~~ to be replaced or repaired.

3.9 Drive Or Drive Apron Material Used For Sidewalk

Any sidewalk across drive that is not constructed of concrete materials approved for sidewalk construction will be replaced.

3.10 General Deterioration

A sidewalk slab that has multiple defects, even if the limits of the individual criteria are not met, will be replaced.

4 TREE ROOTS AND ROOT CUTTING

Sidewalks that are determined to be impacted due to street / terrace trees, will be deemed the City's responsibility. Sidewalks that are impacted due to trees outside of the public rights-of-way are the responsibility of the property owner. The Contractor shall take any necessary precautions to protect trees at the work site which are not to be removed. Tree roots interfering with the work shall be completely severed with a clean sharp tool and removed so that no portion of the root is within five

inches (5") of new concrete. An approved mechanical root cutter shall be used to saw any roots that interfere with the proposed sidewalk construction. In those situations with limited and/or restricted access for mechanical root cutting equipment, hand implement usage, i.e., axe, chain saw, etc., is permissible.

The distance between the sidewalk and a tree shall be two feet (2') or more for mechanical root grinding to be done.

When tree roots are cut, the following provisions shall apply:

- Roots below the proposed walk shall be removed only to a depth of nine inches (9") below the proposed elevation of the new walk.
- The root system on the walk side of the tree shall not be cut deeper than nine inches (9") below the proposed elevation of the new walk and not more than five inches (5") from the edge of the proposed walk.
- If, in the opinion of the City Forester or Designee, the root cutting will seriously injure or weaken the tree, the tree will be considered for removal or allowances made as noted below to minimize the impact of the sidewalk replacement. Removal of City owned trees shall be the responsibility of the City.
- Walk slabs may be arched or re-routed around larger trees as required to protect the tree and minimize root cutting. This option is available on the judgment of the City Engineer and may require access easements to be executed to allow the sidewalk to be placed on private property.
- Where walk slabs are heaved less than three inches (3"), the roots may be root sawed along the edge of the sidewalk in an effort to impede further heaving.
- Flexible walk forms may be required to provide minimum clearance around tree roots at some locations.
- Caution shall be used during root cutting operations so as to not cause unnecessary damage to the tree or its root system. ROOT SAWING SHALL BE DONE ON ONLY ONE SIDE OF A TREE.
- All debris from the root sawing operations shall be removed from the sidewalk area and root sawing trenches must be filled with approved topsoil before the end of the work day.
- All exposed and severed tree roots shall be immediately covered with a mulch and watered to prevent drying until such time that the concrete work is complete, the form removed and the area between the tree and concrete work backfilled with approved topsoil. The time duration for completion of the backfilling operations shall not exceed 72 hours from the time the concrete was placed.
- In areas where walk replacement is required and where street trees are present, structural soil may, at the discretion of the City Engineer, be utilized to permit the future growth of tree

roots in a manner that will not disrupt the new sidewalk. Structural soil if utilized should be utilized on all sidewalk blocks within 3 feet of any existing tree.

- Structural soil is a mixture of 15-20% soil, 85-80% crushed stone and a hydrogel; Gelscape or approved equal. Structural soil may be utilized in place of crushed stone backfill under new walk slabs that are within four feet either way from the tree trunk.

Please see the City of Two Rivers Street Tree Ordinance, [Chapter 7-4](#), for additional information.

5 OTHER CONSTRUCTION ISSUES

5.1 Time Limit on Removals of Materials

All excess materials shall be removed from the site of each operation, residential and/or commercial, within three (3) days after the material has been deposited. No material shall be placed in the [street gutter pan](#) so as to block drainage.

5.2 Barricades

All areas where the sidewalk has been removed shall be properly protected by barricades until the concrete has been poured, cured and backfilled.

6 SPECIFICATIONS FOR REPLACEMENT OF WALKS

6.1 General

This work shall consist of concrete walkway construction in accordance with these specifications and in close conformity with the lines and grades of the existing sidewalks being replaced unless other lines and grades are established by the City Engineering Department. The Property Owner shall obtain a Sidewalk Permit, [if they are doing the work or their contractor shall obtain](#), from the City Engineering Department following receipt of the letter of Notice and the hiring of a contractor. Permit fees will double if the permit is not taken out before the work begins.

6.2 Sidewalk Specifications

6.2.1 Sidewalk Sub-Base:

All sidewalk shall be constructed on a granular sub-base material. Topsoil or any other type of unsuitable material will be required to be removed and a minimum of four (4) inches of granular material placed for sub-base. The granular material can consist of either sand or gravel. All sub-base material shall be compacted and moistened prior to placement of concrete.

6.2.2 Sidewalk Forms:

Forms for concrete sidewalks shall be set to the line and grade as established by the City Engineer.

Forms shall be set so as the finished slab shall pitch toward the street $\frac{1}{4}$ " per 1 foot of sidewalk width.

In general, [sidewalks 5'-4"](#) wide shall be 4 inches thick. Walks that are constructed at the back of curb and gutter shall have a minimum width of [6'-4"](#). In places where sidewalks cross existing driveways, the slab shall be 6 inches thick. The entire thickness shall be made in one monolithic pour.

The preferred form material is metal with metal spreaders to maintain full dimensions. The type of form used, whether metal or wood, shall be of proper dimensions to provide the required depth for the full width of the slab. Wood forms shall be of sound lumber. Forms shall be properly anchored and braced to prevent any movement or bowing of the forms during pouring.

Expansions joints of the type specified shall be placed along all curbs or structures, and transversely across the slab at each property line as determined by the Engineer. Joints shall extend for the full depth of the slab.

In addition, transverse control joints shall be scored on the surface of the walk at 5 foot intervals. Scoring shall be done with an approved edging tool of ¼ inch radius. The joints shall be at least 1-inch deep. Sawcutting the joints will be acceptable.

6.2.3 Concrete:

Concrete for sidewalks shall be ready mix Portland Cement air entrained concrete. It shall meet the requirements of State Wisconsin Department of Transportation Grade A concrete. The coarse aggregate shall conform entirely to Size No. 1. Ready mix concrete will have a minimum compressive strength of 4000 psi. No other concrete mixes will be allowed.

Concrete shall be mixed with clean water, free from mud, oils, grease, or other deleterious matter. The amount of water used per batch shall be the minimum amount necessary to produce a concrete of workable consistency and in general the amount of water used shall be such that in no batch shall the slump be less than 2" or more than 4".

Re-tempering or remixing of concrete, with or without additional cement, aggregates or water will not be permitted.

6.2.4 Placement of Concrete:

All forms shall be inspected by the City's Engineering Department prior to placement of any concrete. All forms, unless oiled, shall be thoroughly wetted. The sub-grade shall also be thoroughly wetted.

Concrete shall be placed immediately after mixing and in no case shall concrete be used which does not reach its final position in the form within one and one half (1-1/2) hours (~~1-1/2~~) after the time that the water is first added to the batch. The method and manner of placing of concrete shall be such as to minimize the possibility of segregation of the aggregate. Concrete re-tempered by adding water, or by any other means, shall not be used.

The placement of concrete shall be as continuous as possible.

Concrete shall be placed in the forms as near to the final position as possible in order to avoid re-handling.

6.2.5 Joints:

Dummy groove joints are to be placed at 5-foot intervals as contraction joints. The joints shall be at least one (1) inch deep. The joints can be tooled in or sawcut. In some cases these joints may need to be spaced further or closer apart to fit the existing conditions.

Deviating from the 5-foot joint spacing needs to be approved the City's Engineering Department. In no case shall joint spacing be less than foot intervals.

When making sidewalk repairs, felt joints (1/2 inch asphaltic expansion material) or other materials approved by the City Engineer are required at driveways and ramps, and where other sidewalk sections such as carriage walks meet. Expansion joints shall be of the pre-molded type and not less than 1/2" thick. The joint filler shall consist of cane or other long fibers of cellular nature, uniformly impregnated with asphalt. The asphalt content shall be between 35 and 50 percent by weight.

Expansion joints shall be constructed where walks are built up to the curb, either at crosswalks or in front of private property. A one-half inch (1/2") thick asphalt impregnated fiber expansion joint, the minimum width to be equal to the thickness of the walk, shall be installed between the curb and the walk.

For new sidewalk installation, felt joints are required at driveways, ramps, and carriage walks. Expansion joints will be placed at fifty-foot (50') intervals. In addition, where new walk abuts concrete walks or drives to the curb or to the house, a one-half inch (1/2") expansion joint shall be placed between the new frontage walk and the abutting pavement to the curb and to the house. Where it is necessary to use fractional lengths, they shall be accurately cut and no piece shall be less than thirty inches (30") long.

6.2.6 Surface Finish

The surface of concrete sidewalks shall have a light broom finish parallel to the contraction joints. Care shall be taken that the surface is not over floated. All edges and joints shall be finished with an approved edging tool of 1/4" radius. The light broom finish shall be done before the mortar has set. Coloring, stamping, cutting or placing designs in sidewalks is not permitted except as specified in Section 7 of this Policy.

6.2.7 Curing and Sealing:

The concrete shall be protected following the completion of concrete finishing and throughout the curing period for a minimum of three days. This will prevent the surface from spalling. Waterproof paper blankets, quilted covers, polyethylene coated burlap blankets, polyethylene curing covers, and membrane curing compounds are acceptable for curing.

Concrete needs to cure for a minimum of 7 days before it has enough strength to allow most traffic on it.

6.2.8 Cold Weather Curing

At any time of the year, when the weather forecast for the construction area predicts freezing temperatures or below within the next 24 hours, all concrete placed within the preceding 72 hours shall be covered with curing paper. The paper shall remain in place until at least seven but not more than fourteen days have expired from the date of the placement of the concrete.

Heating of cement will not be permitted. The addition of salt or chemical admixtures to the concrete to prevent freezing will not be permitted.

Concrete shall not be placed on frozen ground.

6.2.9 Concrete Protection

The new concrete shall be protected at all times from damage by pedestrian traffic, vehicle traffic, or other causes.

Barricades shall be erected to keep traffic from the newly constructed sidewalk across driveways for a period of seven days or unless evidence is shown to the City Engineer that the concrete has attained a compressive strength of at least 3,000 pounds per square inch in an earlier period of time.

Any new concrete that has been damaged shall be replaced, at no additional cost to the City.

6.3 Finish Grading And Seeding

After the sidewalk is poured and the forms removed, the ground on each side of the walk shall be graded to the satisfaction of the City Engineer. In general, this will involve cutting away or filling the area between the sidewalk and street or curb to provide for an even slope; also, cutting away or filling the area in back of the sidewalk to a slope not to exceed 3 horizontal to one vertical. The top 3" of any fill necessary shall be of an approved topsoil. All areas, whether cut or fill, shall be sodded or seeded with an approved grass seed and mulched.

6.4 Other Requirements

The property owner shall replace removed walk within fourteen (14) calendar days following its removal. Walk shall be backfilled with topsoil within three (3) calendar days of form removal. Barricades shall remain in place until backfilling is complete.

The construction of sidewalks without forms is prohibited.

The property owner will be required to remove all broken concrete, excess dirt, debris and the like created by his work and dispose of it with his own resources. **Broken concrete, excess dirt, construction debris and the like will not be picked up by City refuse crews.**

In the case where sidewalk is installed or repaired and does not meet the City of Two Rivers specifications, the City will order the work to be redone and costs shall be assessed against the property as per Section 4-1-4C(e)(2) of the City of Two Rivers Code of Ordinances.

7 COLORED, STAMPED OR PATTERNED CONCRETE

7.1 Permitted Locations

Colored, stamped or patterned concrete as specified below may be installed in the following designated area and only under the conditions specified.

1. The Central Business District

Defined as the area between Jefferson and Adams Streets extending from 22nd Street south to the West Twin River, including parcels fronting along both sides of Jefferson, Adams and 22nd Streets.

7.2 Colored Concrete

In an attempt to maintain a uniform appearance, the following conditions shall be met to install colored concrete

1. Colored concrete will only be allowed in terrace areas, and in locations where concrete is allowed in terrace areas per City Ordinance
2. The installation of colored concrete will only be allowed if installed as part of a City directed project or by petition of the property owners of a minimum of one side of an entire block from intersection to intersection and then shall be installed by City contract or by a contractor approved by the Director of Public Works or City Engineer.
3. The color of the concrete shall be approved by the Director of Public Works or City Engineer.
4. All colored concrete installed in the terrace areas shall be stamped/patterned with a design approved by the Director of Public Works or City Engineer.
5. Regular maintenance of the colored stamped concrete shall be required and performed by the adjacent property owner and shall include but not be limited to; semi annual pressure washing and sealing

7.3 Patterned or Stamped Concrete

In attempt to maintain a uniform appearance and safe conditions for pedestrians, the following conditions shall be met to install stamped or patterned concrete

1. The installation of stamped or patterned concrete will only be allowed if installed as part of a City directed project or by petition of the property owners of a minimum of one side of an entire block from intersection to intersection and then shall be installed by City contract or by a contractor approved by the Director of Public Works or City Engineer.
2. Stamped patterns will only be allowed in the terrace areas
3. Patterns, such as window pane shall be installed during the finishing process of sidewalk installation and shall not be applied after the concrete has cured.
4. The design of the pattern applied to the concrete sidewalk shall be approved by the Director of Public Works or City Engineer.

8 SIDEWALK INSPECTION STANDARDS – REFERENCED IN APENDEX A

Use sidewalk inspection standards – reference exhibits for assistance.

- 8.1 To aid the determination of need for repair/replacement, the following pages contain exhibits:
 - 8.1.1 The page that is titled “NOTICE TO PROPERTY OWNERS” is intended to summarize each type of criteria for determination of the need to repair/replace a sidewalk section. This notice is sent to property owners who receive notice that they have defective sidewalk.
 - 8.1.2 The page that is titled “SIDEWALK STANDARDS” is intended to summarize the City’s sidewalk standards. This is given to the property owners who choose to repair their own sidewalk or have their own contractor repair the sidewalk.
 - 8.1.3 The page that is titled “DRIVEWAYS” is intended to the City’s standards for constructing sidewalk through a driveway. This is given to the property owners who choose to repair their own sidewalk or have their own contractor repair the sidewalk.
 - 8.1.4 The page that is titled “SIDEWALK DETAILS” is intended to summarize the City’s sidewalk layout on various street section throughout the City. This is given to the property

owners who choose to repair their own sidewalk or have their own contractor repair the sidewalk.

- 8.1.5 The page that is titled "TREE ROOTS" is intended to summarize the City's sidewalk standards as it pertains to sidewalk repairs where damage to the sidewalk is caused by trees. This is given to the property owners who choose to repair their own sidewalk or have their own contractor repair the sidewalk.

9 SELECTED SECTIONS FROM THE CITY OF TWO RIVERS CODE OF ORDINANCES

The following are selected references from the City of Two Rivers Code of Ordinances.

SEC. 4-1-2 OBSTRUCTIONS OF PUBLIC WAYS

(a) **PROHIBITED.** No person shall obstruct or encroach upon any street, alley, sidewalk, dock, or wharf or any other public place in the City without the approval of the City Manager, provided goods, wares and merchandise may be loaded and unloaded which do not extend more than three feet on one sidewalk and do not remain thereon more than two hours, unless this is not physically possible.

(b) **MOVING BUILDINGS.** A permit may be granted under the building code provisions of this Municipal Code to temporarily obstruct a street by the moving of a building thereon.

(c) **WIRES OVER PUBLIC WAYS.** Except as authorized by the City Manager, no person shall erect a wire, device, equipment over a public right of way.

SEC. 4-1-4 CONSTRUCTION AND REPAIR OF SIDEWALKS

(a) **WHERE SIDEWALKS REQUIRED.**

(1) Concrete sidewalks shall be constructed in the right-of-way as set forth herein where the following conditions exist:

- a. Along the street or streets adjacent to a lot on which a building is constructed.
- b. On both sides of a public street in blocks where at least seventy five percent (75%) of the lots are developed or seventy five percent (75%) of the frontage is on lots that are developed.
- c. At other locations along public streets, irrespective of whether the abutting or surrounding lands have been improved, whenever in the judgment of the City Council and safety and welfare of the public requires it.

(b) **EXEMPTIONS.**

(1) Other than where sidewalks are ordered by the Council, the following exemptions to the sidewalk requirement are established:

- a. Vacant land extending outward to the City limits, and any vacant land where there are no developed lots for five hundred (500) feet or more and lands which extend to the City limits and are utilized for commercial or industrial purposes.
- b. Areas where land is intermittently in the township and City so as to make impossible the construction of a continuous sidewalk for at least five hundred (500) feet.
- c. Cemeteries, parks, fairgrounds and golf courses.
- d. Outlying industrial zones where workers generally reach their place of employment by motor vehicle.
- e. On sides of streets where there are no buildings fronting or there is no destination for pedestrian traffic (e.g., park, school).
- f. The Director of Public Works is empowered to exempt properties from such construction when upon investigation he determines that sidewalk construction is physically impossible due to the following circumstances:
 1. Nature of terrain.
 2. Insufficient right-of-way.
 3. Insurmountable engineering problems.
 4. Safety hazards that would arise by encouraging pedestrian traffic in dangerous areas such as along railroad tracks.
- g. On streets or parts of streets where in the opinion of the City Council the need for sidewalk does not exist.

(c) LOCATION AND CONSTRUCTION.

(1) The property owner or his agent shall obtain from the City Engineer the necessary location and grade upon which the sidewalk is to be built, the construction standards to use, and the sidewalk shall be constructed to meet the specifications provided.

(2) If the property owner fails to construct a sidewalk as required, the City will cause the work to be done and the cost shall be assessed against the property.

(3) The Director of Public Works may delay construction of a sidewalk temporarily until the time of street construction when the street is expected to be scheduled

for improvement in the future and when such delay would be necessary or desirable from an engineering standpoint.

(d) **TIMING OF INSTALLATION.**

(1) All properties shall be brought into conformance with this section within six months of its adoption.

(2) Sidewalks shall be constructed as required within six months of the completion of any new building or at any time upon reaching level of development set forth in this Section, or within six months of an order to install a sidewalk unless a shorter period is specified.

(3) Upon annexation of new areas all affected properties will be brought into conformance within six months of their annexation.

(e) **VARIANCE.** The Council is empowered to hear and decide requests for temporary variances to the sidewalk requirements where, owing to special conditions peculiar to a specific lot or tract of land, a literal enforcement will result in practical difficulty or unnecessary hardship, so that the spirit of the Section shall be observed, public safety and welfare secured and substantial justice done. A public hearing shall not be required and there is no fee for the review. If a temporary variance is granted, the minutes shall clearly show in what particular and specific respects an unnecessary hardship or practical difficulty has been established. The Council may cancel temporary variance when conditions change, removing the reason for the variance, or where other compelling factors are found to exist.

(f) **MAINTENANCE.** Property owners shall maintain their sidewalks in good repair and in a safe condition. If the property owner fails to maintain a sidewalk as required, the City will cause the work to be done and the cost shall be assessed against the property.
(Proposed revision/alteration)

(g) **PERMIT REQUIRED.**

(1) No person shall repair, replace or construct any sidewalk in the City without first obtaining a permit to do so from the Director of Public Works or his authorized representative.

(2) Applicant shall be required to pay a fee for such permit. See Schedule of Fees in Title 1 for fee amount.

SEC. 4-1-6 SNOW AND ICE REMOVAL

The owner of every building, lot or part of a lot within the City fronting upon a public sidewalk shall remove or cause to be removed all snow and ice from such sidewalk within 24 hours from the time when the snow ceases to fall. If such snow or ice is not removed, the City Manager may cause such to be removed and shall report the cost of such removal to the City Clerk-Treasurer who shall insert such cost in the tax roll as a special tax and lien against the premises.

SEC. 4-1-7 TRAP DOORS

(a) **APPROVAL REQUIRED.** No trap door or opening in any sidewalk shall be permitted to extend beyond the lot line into the highway right-of-way unless approval shall have been obtained from the City Engineer.

(b) **CONSTRUCTION OF SIDEWALK OPENINGS.** All trap doors and openings in sidewalks shall be substantially constructed and no portion of the same shall extend unnecessarily above the level of the sidewalk.

(c) **REMOVAL FOR NONCOMPLIANCE.** If the owner of such trap door or opening in sidewalk, shall fail to apply for such approval, or if the same does not comply with standards established by the Department of Public Works, he shall be obliged to remove such trap door or sidewalk opening upon ten (10) days notice from the City Engineer and such owner shall not be entitled to any damages on account of such removal; and if he shall not remove it upon due notice, it shall be removed at the applicant's expense by the City and the cost assessed against the property.

SEC. 4-1-10 REGULATION OF TERRACE AREAS

(b) **NOXIOUS WEEDS; PAVING.** All that part of the terrace not covered by sidewalk shall be kept free and clear of all noxious weeds and rank growth and shall not be paved, surfaced or covered with any material which shall ultimately prevent the growth of plants. Existing paved or surfaced areas will be permitted to remain. Except where there is no curbing, the part of the terrace not covered by a sidewalk shall be maintained as a lawn, other than areas specifically approved in writing by the City Manager or his designee where maintenance of a lawn is not feasible.

APPENDIX

1. Notice to Property Owners
2. Sidewalk Standards
3. Driveways
4. Sidewalk Details
5. Tree Roots



**TWO
RIVERS**
WISCONSIN

PUBLIC WORKS
Engineering Division
1717 E. Park Street
P.O. BOX 87
Two Rivers, WI 54241-0087



The City of Two Rivers has established standards for the construction of public sidewalks on public street right-of-way. If a sketch titled "Sidewalk Details" is included with this letter, use that sketch. The sketch explains how to measure from an existing curb to locate your sidewalk. If curb doesn't exist, grade stakes are placed by this office and indicate the location and height of the sidewalk as follows:

- The near edge of the walk is to be 20 inches from the line of these stakes.
- The grade as marked indicates how far below or above the top of the stake the finished surface of the walk is to be placed. The letter "C" means cut or below and "F" means fill or above the top of the stake.

The City will construct curb ramps and sidewalk corner sections. Please notify this office when the adjacent sidewalk is completed.

The construction specifications for the sidewalk are:

1. Width shall be 5 feet 4 inches.
2. Thickness shall be 4 inches. Thickness in driveway sections of sidewalk shall be 6 inches.
3. The sidewalk shall be pitched down towards the street 1-1/4 inches across the width (1/4 inch per foot).
4. Where tree roots have caused damage to sidewalk, roots must be removed before placing of new sidewalk. SEE ATTACHED INFORMATION REGARDING REMOVAL OF TREE ROOTS.
5. The sub-base under the concrete shall consist of a minimum of 2-inch granular base (sand or gravel) which has been compacted and moistened prior to placement of the concrete.
6. Ready-mix Portland Cement air-entrained concrete is to be used. It shall meet the requirements of State of Wisconsin Department of Transportation Grade A concrete. The coarse aggregate shall conform entirely to Size No. 1.
7. Dummy groove joints are to be placed at 5-foot intervals as contraction joints. The joints shall be at least 1 inch deep.



www.two-rivers.org



920.793.5539



920.793.5537



8. When making sidewalk repairs, felt joints (2-inch asphaltic expansion material) are required at driveways and ramps as shown on the attached drawing, and where other sidewalk sections such as carriage walks meet. For new sidewalk installations, felt joints are required at driveways, ramps, and carriage walks. Felt joints are also required every 50 feet.
9. Before the mortar has set, the surface of the new sidewalk shall be brushed or lightly broomed.
10. As soon as the concrete has set sufficiently, it shall be covered with plastic, burlap, or approved curing compound to allow the concrete to cure instead of drying out. This will prevent the surface from spalling. The concrete shall remain covered for 3 days.
11. In the case where a sidewalk is installed or repaired and does not meet City of Two Rivers specifications, the City will order the work to be redone and costs shall be assessed against the property as per Section 4-1-4(c)(2) of the City of Two Rivers Code of Ordinances.

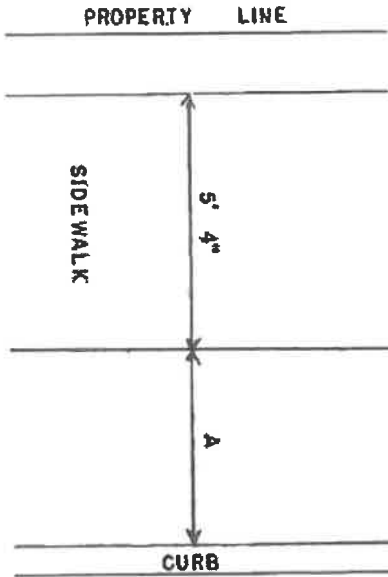
After 7 days, concrete should achieve enough strength to be opened to most traffic.

If you have any questions, please call the Engineering Office at 793-5539.

City of Two Rivers
James J. Mc Donald, P.E.
City Engineer / Director of Public Works

SPECIFICATIONS FOR CONCRETE WALKS AND DRIVE APPROACHES

TREE ROOTS: Tree roots that have raised a sidewalk slab to be replaced shall be cut by the Contractor/Homeowner at six (6) inches outside of the sidewalk area, using a root cutting machine. Cuts shall be made perpendicular to the length of root and shall be done in a manner so as not to splinter the wood. Cutting depth is not to exceed nine (9) inches from the proposed sidewalk surface. All roots within two inches of the bottom of the proposed sidewalk must be removed. The Contractor/Homeowner shall make every effort to safeguard and preserve all trees and tree roots.



TABLE

PAVEMENT	ROW	A	B
30	60	7' 6"	2"
32	60	6' 6"	1-3/4"
36	60	4' 6"	1-1/4"
36	66	7' 6"	2"
40	66	5' 6"	1-1/2"
44	66	3' 6"	1"

NOTE: 45th Street and north of 45th Street
 Increase "A" by 1' and "B" by 1/4"



SIDEWALK DETAILS
 CITY OF TWO RIVERS

