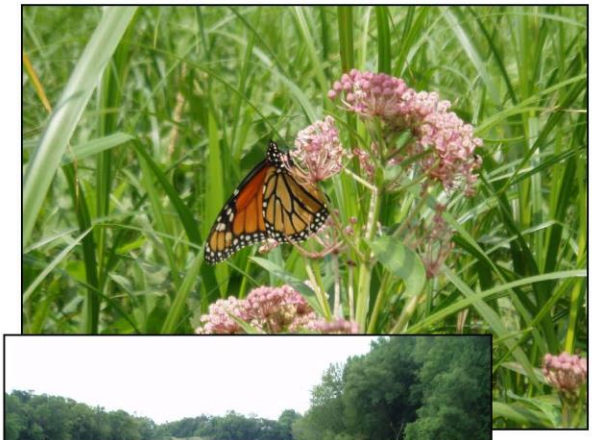
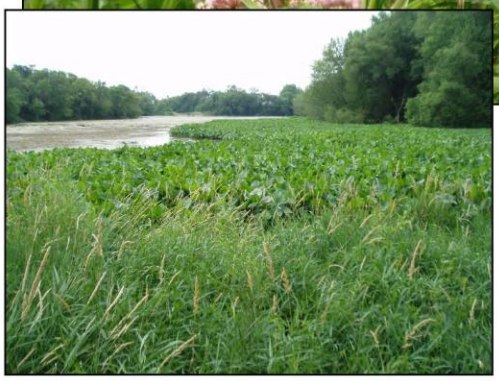
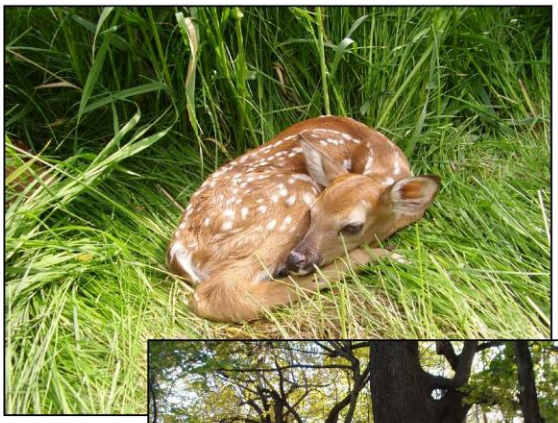
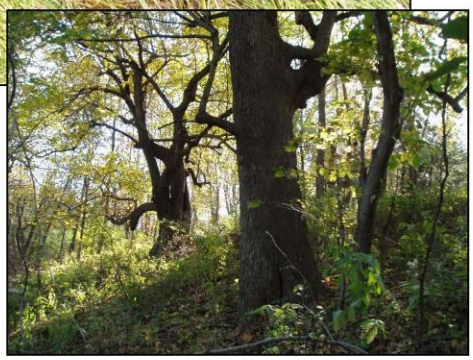
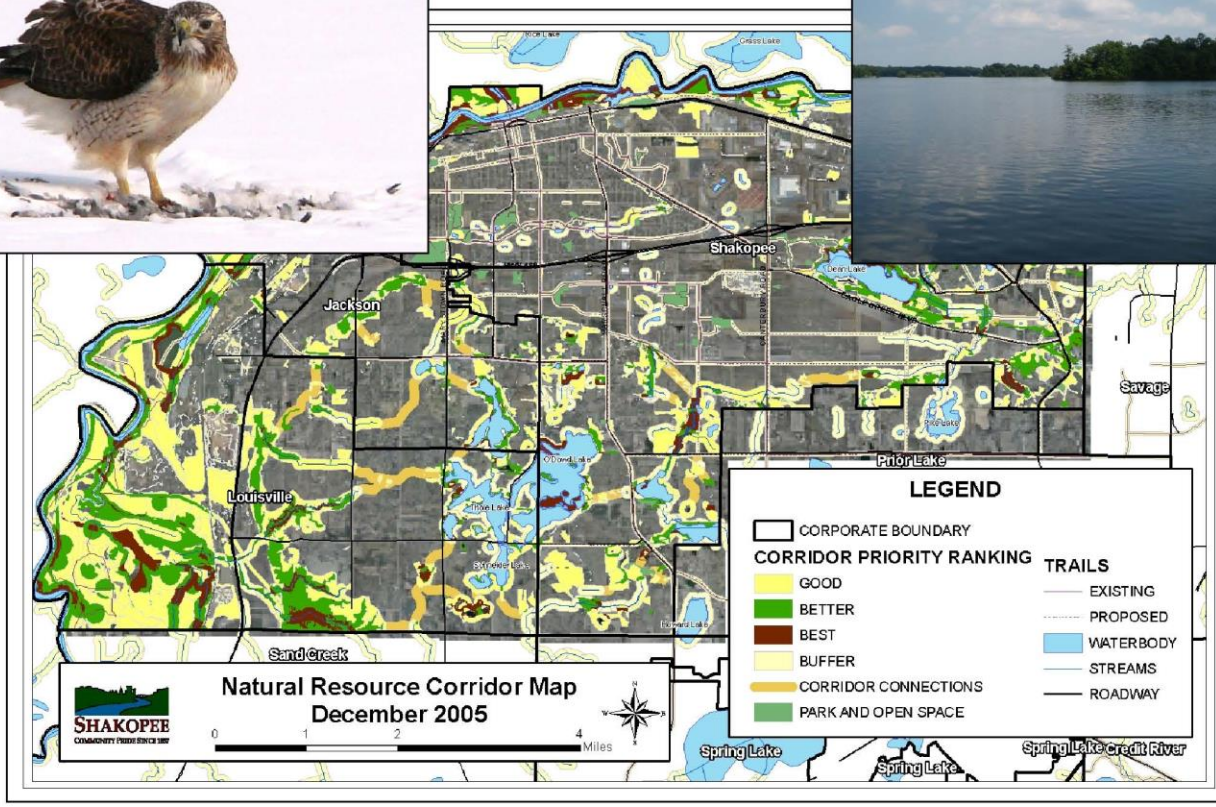








Natural Resources Corridor Design Criteria
City of Shakopee



Last Updated: May 20th, 2014 through Resolution No. 7442

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Executive Summary

The City of Shakopee has a diversity of high quality natural resources, natural systems and natural features that serve as the City's "green infrastructure." These resources comprise Shakopee's natural heritage, provide critical functions that sustain the developed portions of the City and shape the character of the City. While infrastructure sustains the community, it is not inherently self-sustaining. Like the rest of Shakopee's infrastructure (roads, water and wastewater systems, public buildings) green infrastructure must be considered within the subdivision and development process, and maintained via routine public investment.

The following Natural Resources Corridor Design Criteria are divided into sections addressing specific natural features that were the basis for the composite Natural Resources Corridor map:

Section 2: Lakes and Streams – Conserve water quality, provide flood control, retain and enhance the plant and animal communities associated with these ecosystems, and provide recreation and open space for people.

Section 3: Wetlands – Conserve wetlands and the critical functions they provide in the ecosystem for water quality, flood control, habitat, recreation, and open space.

Section 4: Woodlands – Conserve the various size woodland patches and reduce woodland fragmentation to better sustain ecosystem functions.

Section 5: Upland Vegetation – Conserve the remaining native upland vegetation areas and encourage restoration efforts to take place to connect isolated, naturally vegetated locations.

Section 6: Wildlife Habitat – Conserve existing wildlife habitat corridors and allow restoration efforts to connect these isolated areas.

Section 7: Endangered and Threatened Species – Conserve the ecosystem upon which species classified as endangered, threatened, or of special concern depend for survival.

Section 8: Steep Slopes and Bluffs – Conserve steep slope and bluff areas that help shape the community character for future generations.

Section 9: Recreation – Enhance recreation to allow residents an opportunity to gain an appreciation for natural resources.

Section 10: Accessibility/Infrastructure – Utilize existing infrastructure components of the City as part of the Natural Resources Corridor system.

Section 11: Connectivity – Ensure recreational or natural resource connections between areas that do not have connections with natural features.

The Design Criteria are intended to address connectivity issues. This requires conserving or restoring natural features and the functions and connections they have to other natural features.

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Section 1 Definitions

For the purposes of the Natural Resources Corridor Design Criteria the following definitions apply. Nothing in these definitions is intended to modify other terms used in any other City code or City ordinance.

1. **Applicant** means any person submitting an application to the City for Woodland Alteration or any activity for which a preliminary plat, final plat, minor subdivision, building permit, demolition permit, conditional use permit, variance, or grading permit is required on land containing a Significant Tree.
2. **Buildable area of land** means the minimum contiguous area remaining on a lot or parcel of land after all setback requirements and buffers, bluffs and restricted steep slopes, easements and rights-of-way, historic sites, wetlands, and land below the ordinary high water level of public waters are subtracted for the purpose of placement of structures.
3. **Bluff** means a topographic feature such as a hill, cliff, or embankment having the following characteristics:
   a. The slope rises at least 25 feet in elevation above the toe of the bluff;
   b. The grade of the slope from the toe of the bluff to a point 25 feet or more above the toe averages 18percent or greater.
   c. A distance of 50 feet or more as measured vertically along the bluff face.
   d. A distance equal to or greater than 660 feet as measured horizontally along the most direct route of the top of bluff in the bluff face. The horizontal distance can extend beyond property lines.
4. **Bluff face** means the area between the toe of the bluff and top of the bluff.
5. **Bluff impact zone** means a bluff and land located within 50 feet from the top or the toe of a bluff.
6. **Buffer** is an area of natural, unmaintained, vegetated ground cover abutting or surrounding a wetland, watercourse, waterbody, habitat area, or other natural feature.
7. **Common Tree** is considered any of the following trees; box elder, poplar, silver maple, red maple, ash, elm, cedar, willow, mulberry, balsam fir, birch, pine, spruce, tamarack, black locust or other fast growing deciduous trees not listed as an Exceptional Tree.
8. **Conservation Easement** is an easement granted in favor of the City and recorded with the County over, above, and below a parcel of land to permanently protect the environmental value of the land.
9. **Conventional subdivision** means a pattern of subdivision development that permits the division of land in the standard form where lots are spread evenly throughout a parcel with little regard for natural features or common open space as compared to a conservation subdivision where lots are clustered and common opens space is provided.
10. **Conservation subdivision** means a method of subdivision characterized by common open space and clustered compact lots, with the purpose of creating greater community value through open space amenities for homeowners and protection of natural resources, while allowing for the residential densities consistent with prevailing densities. Site designs incorporate standards of low impact development, such as the use of some single-load roadways and narrower rights-of-way, looped road-ways versus cul-de-sacs,

maximum road setbacks for structures, and preservation of trees, shoreline, unique resources, and scenic vistas, and these developments use stormwater designs that emphasize on-site retention and infiltration through the preservation of native vegetation within the shore impact zone, use of pervious surfaces, rain gardens, and swales.

11. **Core habitat area** means the central area of a patch of habitat which maintains the habitat's pre-fragmentation conditions.
12. **Corridor Connections** means a corridor that provides residents and natural resources an opportunity to travel between natural resource areas identified on the Natural Resources Corridor map.
13. **Critical Root Zone**, or **CRZ** is a radius of 1.5 feet for every 1 inch of DBH for the tree trunk of the tree being preserved.

    Example: If a tree's DBH is 10 inches, its CRZ is 15 Feet (10 x 1.5 = 15)
14. **Diameter at Breast Height**, or **DBH**, means the length of a straight line through the trunk of a tree (in inches) measured at 54 inches above the ground from the uphill side of the tree.
15. **Development** means any activity for which a preliminary plat, minor subdivision, conditional use permit, variance, building permit, or grading permit is required.
16. **Dripline** means an imaginary vertical line that extends from the outermost branches of a tree's canopy to the ground.
17. **Easement** means a limited property right to make use of a parcel or lot owned by another person, such as a drainage and utility easement or conservation easement.
18. **Ecosystem** means the whole of the environment (physical, chemical, and biological) and the organisms which interact within that system.
19. **Edge habitat** means the outlying areas of a patch of habitat which may be disturbed by human activities and may have different wind, sun, and rain exposure than core habitat areas.
20. **Endangered Species** is a species threatened with extinction throughout all or a significant portion of its range in Minnesota.
21. **Exceptional Tree** is considered any of the following trees; oak, hickory, basswood, sugar maple, black maple, cherry, catalpa, walnut, hackberry, hornbeam, coffeetree, butternut, buckeye, or horse chestnut.
22. **Fragmentation** means the process that occurs as people use the land resulting in the natural landscape being divided into ever-smaller pieces by transportation and utility corridors and residential, commercial and industrial land uses. The remaining natural areas, or fragments, are reduced in size and degraded in quality, resulting in a decline in plant and animal populations, and the disappearance of sensitive plant and animal communities.

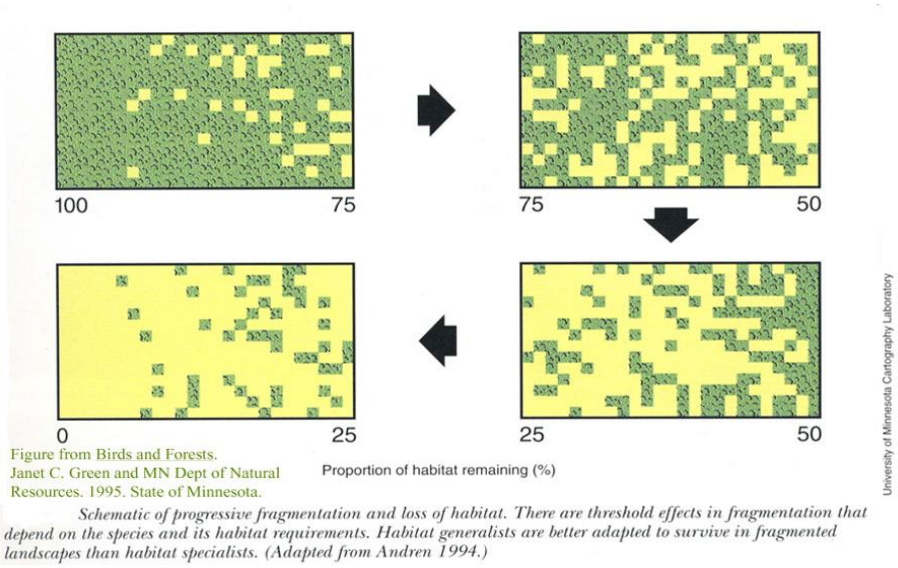


Figure from Birds and Forests.
Janet C. Green and MN Dept of Natural Resources. 1995. State of Minnesota.

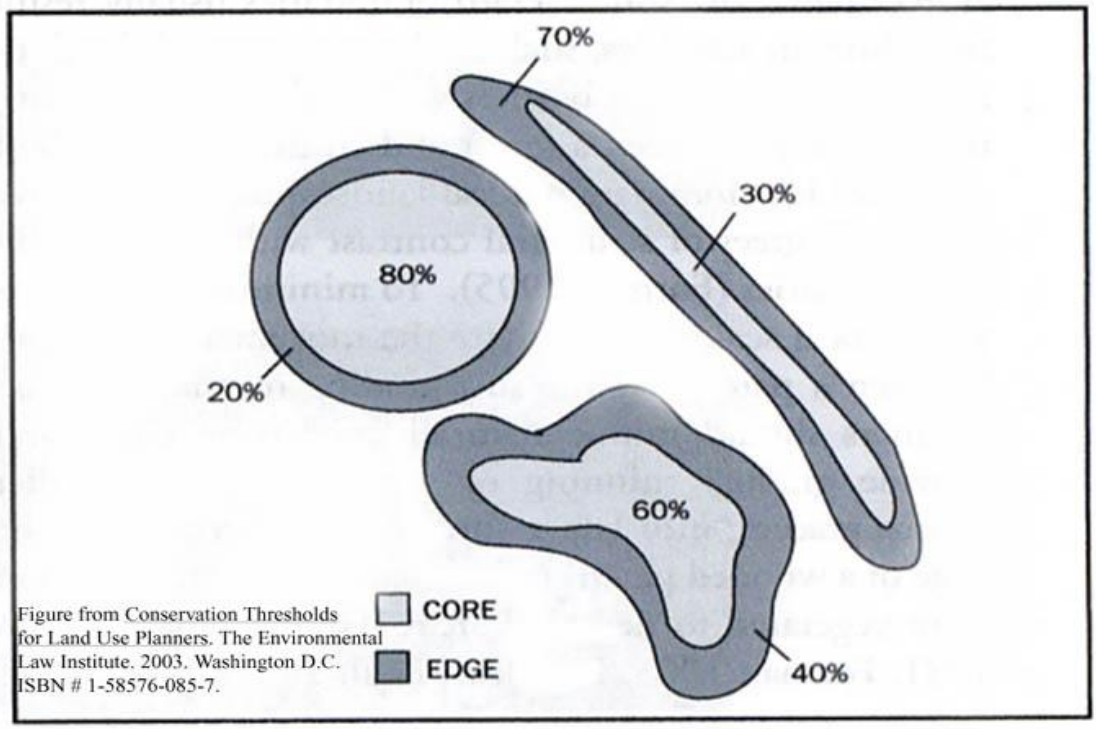
Schematic of progressive fragmentation and loss of habitat. There are threshold effects in fragmentation that depend on the species and its habitat requirements. Habitat generalists are better adapted to survive in fragmented landscapes than habitat specialists. (Adapted from Andren 1994.)

23. **Habitat** means areas that sustain native species of plant or animal by providing necessary resources which may include shelter, food, protection, or reproduction areas.
24. **Habitat buffer zone** means undeveloped or agricultural areas surrounding a wildlife corridor or habitat area intended to provide edge habitat and protect the wildlife corridor from human disturbances.
25. **High Priority Tree** is a healthy Exceptional Tree 15 inches DBH or greater, or any tree the City has a strong desire to preserve.
26. **High quality vegetation** means those areas identified in the Scott County MLCCS land cover survey with native vegetation and rated as “better” or “best” sites in the Shakopee Natural Resources Corridor maps.
27. **Highly erosive soils** means those soils designated as highly erosive in the Scott County Soils Survey database and maps.
28. **Infrastructure** includes; roads, streets, sidewalks, right of ways, sanitary sewer, storm sewer, septic tanks, drain fields, water, natural gas, electric, cable television service, drainage ways and storm ponds.
29. **Intensive vegetative clearing** means the removal of trees or shrubs, or perennial native grasses in a contiguous patch, strip, row, or block.
30. **Minnesota Land Cover Classification System (MLCCS)** means the land cover classification system created by the Minnesota Department of Natural Resources and the completed land cover survey data collected and mapped by Scott County consistent with the MLCCS. The classification system consists of five hierarchical levels. Levels 1, 2, and 3 are a hybrid based on the National Vegetation Classification System and the Minnesota Natural Heritage plant communities data. Levels 4 and 5 use the Minnesota Natural Heritage system to more explicitly identify plant community types.
31. **Minnesota Routine Assessment Method (MnRAM)** is a wetland functions assessment tool created in Minnesota by an interagency workgroup in 1991 to help local officials make sound wetland management decisions based on data gathered in the field. This tool evaluates the following functions of a wetland and establishes a value of

exceptional, high, medium, or low for each function (MnRAM Comprehensive General Guidance document, Board of Water and Soil Resources):

1. Vegetative Diversity/Integrity
2. Maintenance of Characteristic Hydrologic Regime
3. Flood/Stormwater/Attenuation
4. Downstream Water Quality
5. Maintenance of Wetland Water Quality
6. Shoreline Protection
7. Maintenance of Characteristic Fish Habitat
8. Maintenance of Characteristic Amphibian Habitat
9. Aesthetics/Recreation/Education/Cultural
10. Commercial Uses
11. Groundwater Interaction
12. Wetland Restoration Potential
13. Sensitivity to Stormwater and Urban Development
14. Additional Stormwater Treatment Needs

32. **Natural Resources Corridor Map** refers to the most recent version of the Shakopee Natural Resources Corridor map approved by the Shakopee City Council. This map is incorporated into the City's Comprehensive Plan through the Natural Resource Plan component. Boundaries on this map are approximations; defined boundaries are determined by the City's Natural Resources Department.
33. **Natural Resource Prioritization Matrix (NRPM)** refers to the matrix system created by the Shakopee Environmental Advisory Committee to evaluate natural features for the creation of the Natural Resources Corridor map. The NRPM is included in the Natural Resources Plan component of the Comprehensive Plan.
34. **Native vegetation** means plants and plant communities that occur naturally in the Shakopee area.
35. **Patch** means a relatively homogeneous type of habitat that is spatially separated from other similar habitat and differs from its surroundings. (Forman, R. 1995. Land Mosaics: The Ecology of Landscape and Regions. Cambridge University Press, Cambridge.)

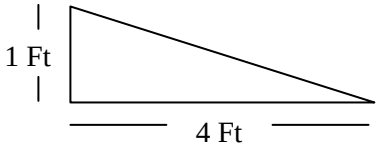


Patch shape and edge. *The edge to interior ratio of a habitat patch is affected by patch shape. A more convoluted, irregular, or linear patch will have a higher proportion of edge, thus, increasing the number of edge species and decreasing the number of interior species.*

36. **Recreation opportunities** means an area that provides residents recreating an opportunity to interact with natural resources in the Natural Resources Corridor.
37. **Ridgeline/Viewshed** means an area with a slope that is equal or greater than 18 percent that has a length of more than 660 feet as measured horizontally along the most direct route of the area that would be considered the bluff face.
38. **Right-of-way** is a narrow length of land used for the route of a railroad, electric power line, or public road.
39. **Riparian** refers to living or being located on the bank of a natural watercourse or sometimes of a lake.
40. **Riparian Rights** are the legal rights of a landowner owning riparian land.
41. **Setback** is the minimum horizontal distance between a structure or other specified item such as a wetland boundary.
42. **Slope** refers to the continuous inclination of the land surface for a distance of at least 50 feet, when measured perpendicular to the contour line. Most often slope is defined as the percentage related to the inclination. For example, a 25percent slope would have a one foot rise in land for every four feet of horizontal distance (see diagram below).

1 ft rise/4 ft distance = 0.25

0.25 *100 = 25percent slope



Not to Scale

43. **Special Concern Species** is a species not listed as endangered or threatened, but is considered extremely uncommon in Minnesota or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations.
44. **Steep slope** means lands with the following characteristics:
    a. Average slopes equal to or greater than 18percent.
    b. A distance of 50 feet or more as measured vertically along the bluff face.
    c. A distance equal to or greater than 660 feet as measured horizontally along the most direct route of the top of bluff in the bluff face. The horizontal distance can extend beyond property lines.
45. **Threatened Species** is a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range within Minnesota.
46. **Toe of the bluff** means the lower point of a 50 foot segment with an average slope exceeding 18percent.
47. **Top of the bluff** means the higher point of a 50 foot segment with an average slope exceeding 18percent.
48. **Tree** means a living specimen of a woody plant species that is either an Exceptional Tree whose diameter is 4 inches or greater DBH; a Common Tree whose diameter is 6 inches or greater DBH.
49. **Wetland** means the lands transitional between terrestrial and aquatic systems as defined in the Minnesota Wetland Conservation Act (WCA).
50. **Wetlands, Exceptional Value** are exceptional and highest functioning wetlands or those sensitive wetlands receiving conveyed storm water runoff that have yet retained a medium level of vegetative diversity/integrity according to the MnRAM 3.0 evaluation. These wetlands are most susceptible to human impacts, are most unique, have the highest community resources significance such as rare species habitats, and similar characteristics.
51. **Wetlands, High Value** are high quality wetlands according to the MnRAM 3.0 evaluation. These wetlands are relatively undisturbed but exhibit evidence of more disturbance or degradation than Exceptional Value wetlands. High Value wetlands have conditions and functions that are susceptible to human impacts, are connected to other wetlands or watercourses, and may contain locally significant or rare wetland types.
52. **Wetlands, Medium Value** are wetlands that provide medium functional levels according to the MnRAM 3.0 evaluation. These wetlands typically provide a diversity of habitats, are connected to other wetland or upland habitats to provide wildlife habitat, and often provide the optimal restoration opportunity.
53. **Wetlands, Low Value** are wetlands that have been substantially disturbed according to the MnRAM 3.0 evaluation. These wetlands tend to be less susceptible to further impacts than the other wetland management classifications. They also have low vegetative diversity/integrity and no connectivity to other wetlands and watercourses.

54. **Wetland Boundary** is the delineation between upland and wetland determined according to the United States Army Corps of Engineers Wetland Delineation Manual (January 1987). The wetland type must be determined according to United States Fish and Wildlife Service Circular No. 39 (1971 edition).
55. **Wetland Conservation Act (WCA)** became effective January 1, 1992, to A) achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands; B) increase the quantity, quality, and biological diversity of Minnesota's wetlands by restoring or enhancing diminished or drained wetlands; C) avoid direct or indirect impacts from activities that destroy or diminish the quantity, quality, and biological diversity of wetlands; and D) replace wetland values where avoidance of activity is not feasible or prudent (Minnesota Rules Chapter 8420).
56. **Wetland Delineation Report** is the proof submitted to the local government unit in compliance with Chapter 8420.0225 of the WCA identifying the wetland boundary.
57. **Wetland Replacement Plan** is an application form supplied by the applicant proposing wetland impacts. The components of the plan must be in compliance with the requirement of Chapter 8420.0530 of the WCA.
58. **Wildlife corridors** are linear landscape features composed of native vegetation that connect two or more habitat patches to allow for the movement of animals, birds and other species.
59. **Wildlife habitat areas** means areas identified as better or best wildlife habitat on the Natural Resources Corridor Wildlife map.
60. **Woodland** means the area within the contiguous dripline created by a grouping of woody plant species if the grouping contains at least 1 tree.

Section 2 Design Criteria for Lakes and Streams

A. Areas Subject to the Design Criteria. The Design Criteria for lakes and streams address all waters and drainageways within the Natural Resources Corridor map regulated by the Minnesota Department of Natural Resources, local watershed districts, local watershed management organizations or City of Shakopee.

B. Principles for Design Criteria. The **minimum** Design Criteria for lakes and streams are created to meet the following criteria:

1. Ensure the ongoing functioning of natural systems to manage stormwater.
2. Protect habitat areas at the critical water/land juncture.
3. Require minimum primary and secondary buffers to lakes and streams
4. Protect existing vegetation and require vegetation restoration where warranted.
5. Protect opportunities for public access, trails, and other recreation.

C. Minimum Design Criteria for Lakes and Streams. The following minimum Design Criteria are derived from the Department of Natural Resource's 2005 Alternative Shoreland Management Standards. The Alternative Standards incorporate the most current natural resource science research on protecting natural shoreland functions while still allowing development along lakes, rivers, and streams. The standards shall apply to lake and stream shoreland areas identified on the Natural Resources Corridor map.

1. **Suitability Design Criteria**. Subdivision of land within lake and stream shoreland areas must ensure that each proposed lot meets suitability design criteria.
   a. Sewered lots shall have a minimum of 8,400 square feet of buildable area per dwelling unit.
   b. Unsewered lots shall have a minimum buildable area of 17,400 square feet per dwelling unit.
   c. Proposed subdivisions that include stream or river shoreland areas must also meet the above design criteria for lots that are within 300 feet of the OHWL.
2. **Primary and Secondary Buffers**. The total buffer (building setback) between OHWL and any building in the shoreland area shall be no less than100 feet and shall be greater as described below, or when the Shoreland Overlay requires a larger setback. The buffer shall include a minimum of 50 feet for the primary buffer (shore impact zone), and 25 feet of secondary buffer. For shoreland areas within the Natural Resources Corridor map designated as Better or Best, the following buffer requirements shall be met:
   a. Better shoreland areas shall have a total buffer of at least 100 feet, including at least 50 feet of primary buffer.
   b. Best shoreland areas shall have a total buffer of at least 150 feet, including at least 60 feet of primary buffer.
      i A conservation easement shall be placed on the primary buffer, and the primary buffer must be monumented to identify the border of the easement.

ii A larger primary buffer is, at the City of Shakopee's discretion, a mitigating factor for reducing the total buffer/setback distance, if also allowed under the Shoreland Overlay. In no case shall the buffer/setback be less than 100 feet.

c. For shoreland with either the Better or Best designations the City of Shakopee may, at its own discretion, use buffer averaging to modify buffer requirements in order to best protect the shoreland and water resources.

3. **Open Space Requirements for Lakeshore Subdivisions**. All subdivisions that will result in five or more development lots shall include open space areas to be permanently protected.

   a. Conventional subdivisions shall provide for open space by increasing the lot size to be a minimum of 50percent larger than the minimum lot size allowed in Shakopee's shoreland overlay.

   b. Conservation subdivisions shall retain the full development rights of the shoreland overlay, provided that development site has enough buildable land to meet suitability requirements. Conservation subdivisions shall meet the open space design and protection requirements and the vegetation management standards of the Department of Natural Resource's 2005 Alternative Shoreland Management Standards, or most recent version.

4. **Vegetation Management Requirements**. No vegetation removal is allowed in the primary buffer (the shore impact zone), except as approved by the City of Shakopee in a vegetation management plan for shoreland restoration. Each riparian lot may also clear a 20-foot wide access area at the shore, not more than 15 feet long, and a path area not more than six feet wide through the primary buffer. For shoreland areas designated better or best the following additional design criteria shall apply:

   a. New riparian lots shall have restored primary buffers, if the existing shore impact zone is disturbed or vegetated with turf grass or non-native vegetation. The shore restoration shall meet the requirements of the Scott County Soil and Water Conservation District or Minnesota DNR standards for shoreland restoration.

   b. Approvals for variances, rezonings, or conditional uses for existing riparian lots shall include shoreland restoration for the primary buffer.

5. **Low Impact Development Preferred**. Low impact development methods are the preferred form of development in all shoreland areas. The City shall, at its discretion, require low impact techniques to be incorporated into subdivision design, landscaping, street and stormwater infrastructure design, and building construction in approving rezonings, conditional uses, or variances. Low impact development techniques include:

   a. Minimizing impervious surfaces through the use of narrower rights-of-way and narrower streets, looped road-ways versus cul-de-sacs, shorter building setbacks from the road to minimize driveway length, and use of pervious parking surfaces.

   b. Stormwater management and infrastructure that emphasizes on-site retention and infiltration through the preservation of native vegetation within the shore impact zone, preservation of wooded shoreline, and use of rain gardens, swales, and other small infiltration areas where soils are appropriate.

6. **Visual Impacts to be Mitigated**. Building location, design, and buffer landscaping shall minimize the building profile as seen from the closest shoreland point.
    a. Existing trees shall be maintained to screen 50percent of buildings in leaf-on conditions.
    b. Break up building mass using methods such as broken planes, varying rooflines, stepping back (from the shoreline perspective) of upper stories.
    c. Use materials and colors that blend with the setting; avoid the use of reflective materials.
    d. Buildings on riparian lots should not exceed 30 feet in height. Buildings higher than 30 feet must require additional setback distance.

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Section 3 Design Criteria for Wetlands

A. Areas Subject to the Design Criteria. The Design Criteria for wetlands addresses all wetlands within the Natural Resources Corridor map as defined in the Minnesota Wetland Conservation Act (WCA).

B. Principles for Design Criteria. The **minimum** Design Criteria for wetlands are created to meet one the following criteria (Scott County WMO):

1. **No Net Loss**. Achieve no net loss of wetlands in Shakopee, in conformance with the Minnesota Wetland Conservation Act (WCA).
2. **Maximize Avoidance**. Maximize wetland avoidance for all new developments and land disturbing activities.
3. **Mitigation Required**. Require mitigation of wetland disturbance or risk of degradation by replacing the lost or at risk wetland functions and values in the same major watershed with equal or greater wetland function or value.
4. **Require Transportation Project Compliance**. Require transportation projects to pursue wetland mitigation projects along the transportation corridor. (This does not preclude the use of the BWSR Replacement Program.)
5. **Recognize Multiple Functions**. Identify and preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.
6. **Stormwater Impacts**. Manage changes in volume and quality of local stormwater systems to minimize negative impacts to existing wetland functions, value, or biological diversity.
7. **Replacement**. Replace affected wetlands where avoidance is not feasible and prudent in order to sustain Shakopee's urban setting.

C. Minimum Design Criteria for Wetlands. Following are the minimum Design Criteria that shall apply to wetland areas:

1. **Wetland Application**. A wetland assessment and delineation report, the most recent version of the MnRAM assessment, and replacement plan shall be submitted to the City when required by Chapter 16 of the City Code The submittals must be performed by a qualified wetland specialist and the wetland boundary in the report shall be shown on a scaled drawing

2. **Wetland Impacts and Replacement Requirements**. The guidelines for proposed wetland impacts and replacement requirements will be based on the approved Minnesota Routine Assessment Method (MnRAM) assessment and are as follows:

MnRAM Management Class	Impacts and Mitigation Criteria
Exceptional	No impact allowed
High	No impact allowed
Medium	1)Avoidance 2)On-site
Low	1)Avoidance 2)On-site 3)Minor-watershed 4)Upstream minor-watershed

3. **Wetland Buffer Setbacks**. For any parcel created or redeveloped, all new structures are required to have a setback from the wetland buffer as defined in this section. The wetland buffer setback shall be measured from the outer edge of the wetland buffer as defined in this section. For residential parcels, a 30 foot front and rear yard wetland buffer setback and a 10 foot side yard wetland buffer setback is required. All nonresidential parcels shall be required to provide a 10 foot structure setback for the front, rear and side yards. If a wetland buffer is not required, a wetland setback is not required.

4. **Wetland Buffers**. For any parcel created or redeveloped, a buffer from the wetland boundary is required.
    a. **Required Wetland Buffer Dimensions**. Wetland buffer dimensions are based on the approved MnRAM assessment and are as follows:

MnRAM Management Class	Average Buffer Width (feet)	Minimum Buffer Width (feet)
Exceptional	65	25
High	50	25
Medium	35	25
Low	25	25

    The required area of the wetland buffer shall be calculated using the average buffer width as measured from the delineated wetland boundary.

    b. **Minimum Buffer Increased When Slopes are Present**. The average and minimum buffer width for areas with continuous slopes over 10percent from the edge of the wetland boundary and extending at least 20 feet from the wetland boundary shall be increased by 25 feet.

    c. **Wildlife Habitat and Corridor Protection**. The average minimum buffer width for wetland areas with rare, threatened, or endangered species shall be

increased to 200 feet, and for wetlands with an exceptional MnRAM classification for habitat function the minimum buffer shall be 100 feet.

d. Wetland Buffer Vegetation. Buffer vegetation must be established and maintained as follows:

i **Protection during Construction**. The first 25 of the wetland buffer must not be disturbed during project construction with the exception of public road and utility construction.

ii **Retain Natural Vegetation**. Where acceptable natural vegetation exists in buffer areas as determined by the City, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer has acceptable natural vegetation if it has a continuous, dense layer of perennial grasses and/or an overstory of trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years. The City of Shakopee may determine existing buffer vegetation unacceptable if the buffer has undesirable characteristics such as noxious or invasive plant species or topography that channelizes the flow of runoff.

iii **Restoration with Native Vegetation**. Where buffers are not vegetated or have been cultivated or otherwise disturbed within 5 years of the application, such areas shall be replanted with approved native seed mix and maintained. The buffer plantings must be identified on the application. Any vegetation planted within the buffer are independent of any landscaping required elsewhere by the City. During the first 2 full growing seasons, the owner must replant any buffer vegetation that does not survive. The owner shall be responsible for reseeding/or replanting if the buffer changes at any time through human intervention or activities.

iv **Address Adjacent Wetlands**. Buffers shall apply whether or not the wetland boundary is on the same parcel as a proposed development. An applicant is required to delineate the boundary for any wetland on the project land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.

e. Wetland Buffer Recording and Monumentation. When a buffer is required the applicant shall, prior to issuance of any building permit by the City, complete the following:

i **Conservation Easement or Outlot**. Submit to the City for its approval a conservation easement for protection of buffers and wetlands on the property, or include the buffer and wetland in an outlot dedicated to the City in the plat. The easement shall legally describe the boundaries of the wetland or public waters wetland and buffer, identify the monuments and monument locations, and refer to the allowable wetland buffer uses as defined in this section.

ii **Record Easement or Plat**. Record the approved easement or final plat with the County and submit evidence thereof to the City.

iii **Provide Monuments to Identify Buffer**. Buffers shall have monuments installed to clearly designate the boundaries of all buffers within new developments. A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer. Additional monuments shall be placed as necessary to accurately define the edge of the buffer. A monument shall consist of a post and a buffer sign. The signs shall be consistent with the current signage used as part of the park, open space, and conservation easement boundary marking program (Resolution 6417) and shall be securely mounted on a post to a minimum height of 4 feet above grade.

f. Wetland Buffer Alterations

i **Alterations Prohibited**. Alterations including building or placement of structures, storage of materials, paving, mowing, plowing, introduction of noxious vegetation, cutting for non-management purposes, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within the wetland buffer.

ii **Allowed Activities.** The following activities shall be permitted in the wetland buffer and shall not constitute prohibited alterations:

1. Removal of noxious vegetation such as European buckthorn, purple loosestrife and reed canary grass.
2. New plantings that enhance the natural vegetation.
3. Selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.
4. Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the wetland. Access strips within shoreland areas is governed under Design Criteria for Lakes and Streams.
5. Clearing, grading and seeding are allowed as part of a Local Government Unit approved Wetland Replacement Plan.
6. Placement, maintenance, repair or replacement of trails, as long as the area of the trail is not counted as wetland buffer area.
7. Placement or maintenance of ponds or other stormwater treatment facilities, so long as the area of the pond is not counted as wetland buffer area and the embankment of the pond is located 35 feet from the wetland boundary.
8. Construction of an individual sewage treatment system (ISTS) so long as the vegetation growing on the system is maintained in accordance with the City Code, the area for the ISTS is not credited as a wetland buffer area and the edge of the ISTS is located at least 35 feet from the delineated wetland edge.
9. Construction, maintenance, repair, reconstruction or replacement of existing and future public roads, utilities or drainage systems within a wetland buffer so long as any

adverse impacts of the construction and installation on the function of the wetland buffer have been avoided or minimized to the extent practical and the activity has been approved by the City.

Section 4 Design Criteria for Woodlands

A. Areas Subject to the Design Criteria. The Design Criteria for woodlands in this Section shall apply to all woodland areas within the Natural Resources Corridor map.

B. Principles for Design Criteria. The minimum Design Criteria for woodlands are created to meet one the following criteria:

1. **Large Wooded Areas**. Protects wooded areas that are large relative to all local tracts of remnant wooded areas; or
2. **Proximity**. Protects wooded areas that are in relative proximity to other wooded areas.

C. Minimum Design Criteria for Woodlands. The following are the minimum Design Criteria that shall apply to woodland areas:

1. **Tree Removal Prior to Development Application is Prohibited**. The deliberate removal of any tree on any parcel of land containing a tree that is currently under subdivision review by the City prior to approval of a management plan per City Code Section 11.60, Subdivision 9, is prohibited except for the removal of individual dead, diseased, or hazard trees for safety purposes.
2. **Site Design**. Structures, driveways, and parking facilities shall be located in such a manner that the maximum number of trees should be preserved.
3. **Tree Preservation Plan Requirements**. Any Applicant must submit a Tree Preservation Plan per City Code Section 11.60, Subdivision 9, prepared by a forestry specialist to the City and must demonstrate that there are no feasible or prudent alternatives to removing any tree. Alternatives such as; decreased setbacks, minimized grading, reduction in the number of proposed dwelling units, reduction in street width or design, or other design modifications shall be considered. Increased costs alone shall not be sufficient proof of lack of feasible or prudent alternatives. An applicant for a residential building permit must complete the City's "Residential Building Permit Tree Preservation Plan" as their Tree Preservation Plan. The City must also be provided with a certificate of survey that contains all of the information requirements listed for a Tree Preservation Plan.
    a. **Pre-plan Meeting**. The applicant is encouraged to meet with City of Shakopee staff prior to the creation of a preservation plan per City Code Section 11.60, Subdivision 9, to discuss subdivision design alternatives that meet the requirements of this section.
    b. **Proof Required for Requesting Tree Removal**. The proof required for an assertion that no feasible or prudent alternative to tree removal exists shall include, at a minimum, information on the following:
        i A description and site design of alternatives considered prior to the assertion of no feasible or prudent alternative;
        ii Cost estimates of alternatives that were considered; and
        iii Other information requested by the reviewing authority.
    c. **Review by Expert**. The City may engage one or more experts to assist in the evaluation of an assertion that there are no feasible or prudent

alternatives to removing any tree. An expert may be engaged to review biological information, cost estimates that are provided as proof of feasibility or prudence, or other reviews deemed necessary by the City to evaluate. Full costs of engaging such experts shall be charged to the applicant.

d. Final Determination of Feasibility or Prudency. The City of Shakopee shall make the final determination of whether or not feasible and prudent alternatives exist to tree removal.

e. Information required in the Tree Preservation Plan. The preservation plan per City Code Section 11.60, Subdivision 9, must consist of the following:

i **Tree Inventory**

The tree inventory must include every Significant Tree on Buildable Land on the property where the permit is being applied for. In addition to trees on said property, Significant Trees on adjacent property which have CRZ overlapping onto said property must be inventoried. In special circumstances, the Applicant may request alternative boundaries for the tree inventory rather than property lines. Each inventoried tree must be tagged with a unique identification number. The Applicant must provide a working digital copy and hardcopy spreadsheet displaying the following information for each inventoried tree:

In circumstances where larger areas of the site are not being altered/graded or have no flexibility in planning around Significant Trees, the Applicant may request permission from the City's Natural Resources Department to use a stratified random sample with a fixed area plot to calculate an estimated tree DBH and species for each stratum. The survey results must be within ≤10% of standard error for each stratum. Plots must be marked to allow for replication of survey if necessary. Trees do not need to be tagged with this method.

1. Identification number;
2. Tree size (DBH or DRC);
3. Tree species;
4. Tree Type (Common, Exceptional, or High Priority);
5. Onsite or offsite (adjacent property);
6. Critical Root Zone;
7. Removed or preserved;
8. If tree is within the Natural Resources Corridor as identified on the Natural Resources Corridor Map; and
9. Whether the tree within a Contiguous Woodland or High Priority Area.

Additional requirements:

1. The total diameter inches of both High Priority Trees and Significant Trees inventoried must be displayed on tree inventory.

ii **Site Plan**

A scaled drawing of the site including:

1. The location, identification number, and tree type (Common, Exceptional, or High Priority) of all trees inventoried;
2. Proposed trees to remove and preserve;
3. High Priority Areas and Contiguous Woodland Area;
4. Critical Root Zones of all trees being preserved along with any area within Critical Root Zone that will be impacted;
5. Proposed construction/grading limits, lot lines, Building Parameter, Basic Infrastructure, Buildable Land, parking areas, and building footprint/elevation;
6. Locations of Tree Protection Fence and silt fence; and
7. Soil stockpile and parking locations during construction.

Additional requirements:

1. A lot survey meeting all the possible requirements of the tree inventory and site plan must be provided to the builder of the lot.
2. Note areas with oak wilt, Dutch elm disease, emerald ash borer, invasive plants such as buckthorn or others listed on the current years Minnesota Department of Agriculture's Noxious Weed List.

iii **Tree Replacement Sheet**

The Tree Replacement Sheet is a scaled drawing of the site depicting where the Replacement Trees will be planted. The plan must include:

1. Calculations for determination of required Replacement Trees and landscaping required by Subdivision 8. of this Section;
2. Plant list including species, size, and stock type of Replacement Trees;
3. Planting details that meet the City's tree planting specifications; and
4. Easements, right-of-ways, construction limits, roads, driveways, and building pads.

4. Tree Removal The following conditions shall apply to an applicant proposing to remove trees from any parcel of land within the Natural Resources Corridor map:

a. If over 50 percent of the High Priority Tree diameter inches are removed for any reason, they shall be replaced at a ratio of 1:1.5 DBH (remove:replace).

b. Tree removal on the parcel shall not have the effect of reducing a woodland area, partially or entirely located on the parcel, to less than 5 acres.

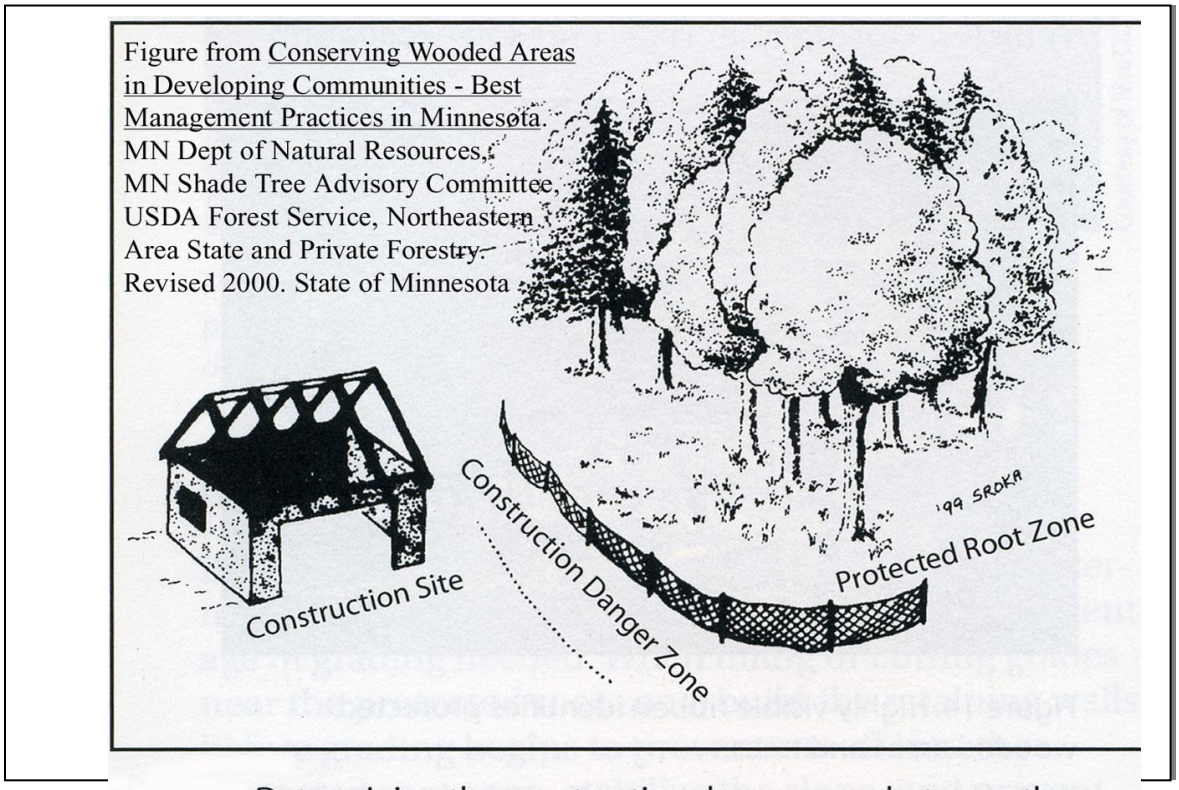
Site Inspections Required. Site inspections to ensure compliance with the Tree Preservation Regulations must occur prior to the issuance of any permit for the development. The applicant must survey and stake all platted property lines, streets, parks, open spaces, building pads and install tree protection prior to site

inspection. At least two additional site inspections shall occur during site preparation and construction of the development to ensure compliance with the approved preservation plan per City Code Section 11.60, Subdivision 9. Additional site inspections necessary because the applicants requested revisions to the approved management plan per City Code Section 11.60, Subdivision 9, will be completed by the City and the costs shall be charged to the Applicant and reimbursed from the construction security.

5. **Design Criteria for Tree and Woodland Protection during Grading, Contouring, and Construction**

   a. All development activities, including grading and contouring, must take place in such a manner that no more than one third of the area within the Critical Root Zone of any tree to be preserved is impacted.

Figure 3.3: Tree protection fence installation



Determining the construction danger zone between the protective fence and the building site assists with final site and building design and selection of equipment to be used. Note that the tree protective fence is placed in front to prevent access and disturbance to the protected root zone.

b.

   c. The applicant and the applicant's contractors shall take steps to prevent the change in soil chemistry due to concrete washout and leakage or spillage of toxic materials, such as fuels or paints. Washout areas must be identified on site and signage of those areas should be provided in the construction area.

   d. Best management practices shall be followed for tree protection during site grading and construction. The City adopts by reference the best management practices in the most current version of *Conserving Wooded*

Areas in Developing Communities – Best Management Practices in Minnesota, Minnesota Department of Natural Resources, Minnesota Shade Tree Advisory Committee, USDA Forest Service, Northeastern Area State and Private Forestry. State of Minnesota, Department of Natural Resources.

6. **Dead or Diseased Trees**. Trees determined to be dead or diseased by the City of Shakopee will be required to be removed in accordance with City Code Section 10.70 and such removals will not require replacement or count towards the approved removal quantity.

7. **Woodland Design Criteria in Shoreland Areas**. Tree removal in Shoreland areas is subject to the provisions of this Section with the following additional requirements:

   a. A tree preservation plan per City Code Section 11.60, Subdivision 9, shall not allow tree removal within the shore and bluff impact zones and on steep slopes or bluffs in shoreland areas as defined in the Natural Resources Corridor Design Criteria.

   b. Intensive vegetation clearing for forest land conversion to another use is prohibited.

   c. In shore and bluff impact zones and on steep slopes or bluffs as defined in the Natural Resources Corridor Design Criteria, limited clearing of shrubs and cutting, pruning, and trimming of trees is allowed to provide a view to the water from the principal dwelling site and to accommodate the placement of stairways and landings, picnic areas, livestock watering areas, access paths, beach and watercraft access areas, and permitted water-oriented accessory structures of facilities, provided that:

      i the access path is consistent with Lakes and Streams Design Criteria;

      ii the screening of structures, vehicles, or other facilities as viewed from the water, assuming summer, leaf-on conditions, is not substantially reduced;

      iii along rivers, existing shading of water surfaces is preserved; and

      iv the above provisions are not applicable to the removal of trees, limbs, or branches that are dead, diseased, or pose safety hazards.

8. **Financial Security Required**. Security shall be provided by the applicant to guarantee compliance with this chapter.

   a. The Applicant shall provide the City with a cash deposit, a letter of credit or escrow, in favor of the City, in the amount of 150% of the total Tree Replacement Estimate. Formula: Number of Replacement Trees x Tree Replacement Estimate x 150%= financial security due.

   b. The financial security required for the Replacement Trees is due prior to the issuance of the grading permit or the commencement of any Woodland Alteration activity.

   c. All Replacement Trees must be warrantied to guarantee survival. The warranty period shall begin upon inspection and acceptance by City staff of the installed trees for proper planting, size, species, health, and location. If at any time during the warranty period Replacement Trees are found to be unhealthy by City staff they are required to be replaced with the same size and species by the applicant at the soonest appropriate planting time.

i For commercial/industrial and residential developers, up to 75% of the financial security may be returned upon inspection and acceptance by the City of installed trees and the submittal of a City approved two year warranty from the landscape contractor who installed the trees. This warranty must cover tree health issues relating to excess or insufficient water. The remaining financial security will be held by the City for two years.

1. When reducing the financial security, 75% will be returned unless City staff feels the trees have a heightened risk of failure.

ii For builders of individual residential lots within a subdivision who receive a one year warranty from the landscape contractor who installed the trees, 100% of the financial security will be returned upon:

1. Inspection and acceptance of installed trees by the City; and
2. Providing the lot buyer with the copy of the one year warranty from the landscape contractor and contact information to make a claim on the warranty.

d. If the financial security has not been returned in full after the inspection of the installed trees, at the end of a two year warranty period the Applicant shall schedule a final inspection with City staff. Prior to scheduling the inspection the Applicant shall confirm the following conditions are met:

i. All trees have one dominate leader, are free of deadwood, and injured branches;

ii. All tree wrap is removed;

iii. All stakes and wires are removed; and

iv. Trees are in leaf.

At the time of final inspection the City shall decide to:

i. Refund the financial security in full; or

ii. Require the planting of new trees to replace the Replacement Trees which do not survive or are declared unhealthy by City staff. If 25% or more of the Replacement Trees are required to be replaced, the appropriate amount of financial security will be held for an additional two years for said trees.

e. The financial security will be used by the City only if the applicant does not install the initial or subsequent Replacement Trees required in this subdivision.

f. Any trees required to be removed per Section 10.70 of the City Code from a site shall be removed and disposed of according to Section 10.70 of the City Code prior to release of the financial security.

g. The City shall be exempt from the financial security requirement of this Section.

9. Penalty for Unauthorized Tree Removal. Any person, firm, or corporation who removes or causes the loss of a Significant Tree identified to be preserved on an approved Tree Preservation Plan or if the property does not have the required permit

allowing Woodland Alteration shall be required to complete one of the following as determined by the City:

a. Installation of Replacement Trees within the same development at a 1:2 DBH (remove:replace); or

b. Payment to the City of $500.00 for every 1 inch of Significant Tree removed that was unauthorized. Measurement of each tree will be DBH or diameter of the stump, whichever is readily available. This amount may be taken by the City from the financial security posted, if any, by the Applicant for Tree Replacement. A minimum of $15,000 payment will be required if measurements are unavailable.

10. **Plan is a Continuing Requirement**. The tree preservation plan per City Code Section 11.60, Subdivision 9, shall be a continuing requirement on publicly owned or managed property.

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Section 5 Design Criteria for Upland Vegetation

A. Areas Subject to the Design Criteria. The Design Criteria for areas with upland vegetation address those areas mapped on the Natural Resources Corridor map. Evaluation of these areas will be based on the Minnesota Land Cover Classification System (MLCCS) information and the Natural Resource Prioritization Matrix (NRPM).

B. Principles for Design Criteria. The **minimum** Design Criteria for high quality upland vegetation areas include the following :

1. **Protect and Connect High Quality Vegetation**. Protect high quality upland vegetation areas, and other vegetated, undeveloped areas connecting the high quality upland vegetation, within the Natural Resources Corridor.
2. **Protect Isolated Areas**. Protect high quality vegetation areas outside the Natural Resources Corridor to the maximum extent practicable, requiring delineation of high quality vegetation and retaining 100percent of sites smaller than five acres or less than 20percent of the development site, plus a minimum of 50percent of contiguous vegetation for that portion of the site beyond the five acre/20percent threshold.
3. **Encourage Restoration**. Encourage (working with other organizations and willing landowners) or require restoration of high quality upland vegetation areas consistent with an approved management plan.

C. Minimum Design Criteria for Upland Vegetation Areas. Following are the minimum Design Criteria that shall apply to the upland vegetation areas.

1. **Upland Vegetation**. In all zones, high quality upland vegetation shall be protected or incorporated into new development or infrastructure so as to retain the integrity of Shakopee's heritage habitat areas, encourage restoration of those areas, and provide for connections between distinct areas consistent with the needs of habitat maintenance.
2. **Delineation Required for High Quality Upland Vegetation Areas**. Applications for any development on or adjacent to parcels that include designated high quality upland vegetation must include a delineation of any high quality upland vegetation areas on the development parcel. The application shall also note the location of mapped high quality upland vegetation areas on adjacent parcels.
3. **High Quality Upland Vegetation Areas within the Natural Resources Corridor**. development is regulated in the following manner:
    a. **Development Prohibited**. No development, intensive vegetative clearing, or grading is allowed on any area within the Natural Resources Corridor evaluated and determined to be better or best upland vegetation except for vegetative restoration under a vegetative management plan approved by the city.
    b. **Edge Habitat Buffers Required**. Within 100 feet of the delineated high quality upland vegetation sites:
        i All buildings and roads are excluded.
        ii Vegetative clearing is prohibited except for vegetative restoration that is described in a vegetative management plan approved by the City.

c. **Restoration**. Restoration of native habitat may be required, if determined by the City to be necessary for sustaining the high quality upland vegetation area.

4. **Other Areas with Upland Vegetation Designations**. Development is regulated in the following manner:

   a. **Protection of Good Upland Vegetation**. No more than 50percent of the areas evaluated and determined to be good upland vegetation areas shall be cleared or graded for development or infrastructure.

   b. **Exceptions**. The City may allow more than 50percent of the good upland vegetation to be developed if restoration of remaining areas is completed and connectivity is maintained between high quality vegetation areas or to the Natural Resources Corridor.

5. **Restoration**. Restoration of native upland vegetation areas, consistent with *A Prairie Restoration Handbook for Minnesota Landowners*; Minnesota Department of Natural Resources Ecological Services, is highly encouraged in the following areas.

   a. High quality upland vegetation sites within the Natural Resources Corridor.

   b. All vegetated areas connecting high quality upland, wetland, or shoreland vegetation areas within the Natural Resources Corridor.

   c. Edge habitat areas and buffer areas around high quality upland vegetation areas.

6. **Conservation Easements Required**. Conservation easements shall be placed on delineated high quality upland vegetation areas, as determined by the City, which are required to be protected under this design standard.

Section 6 Design Criteria for Wildlife Habitat

A. Areas Subject to the Design Criteria. The Design Criteria for wildlife habitat address those areas mapped on the Natural Resources Corridor map.

B. Principles for Design Criteria. The **minimum** Design Criteria for high quality wildlife habitat include the following :

1. **Protect Habitat Function**. Protect the habitat function of areas identified as Better or Best on the Natural Resources Corridor map.
2. **Ensure Barrier-free Movement**. Ensure barrier free movement between wildlife habitat within the Natural Resources Corridor map.

C. Minimum Design Criteria for Wildlife Habitat Areas. Following are the minimum Design Criteria that shall apply to wildlife habitat.

1. **Site Survey Required**. Where the development site includes or abuts an area identified as Better or Best on the Natural Resources Corridor map a habitat site survey shall be conducted and identify:
   - **a.** The type of habitat and species likely to utilize the habitat, and;
   - **b.** The necessary conditions to maintain the habitat function including protection of core area and edge vegetation or other buffer, corridor width and configuration and other elements of barrier-free movement, and any other functions specific to the habitat.
2. **Protect Functioning of Delineated Areas**. Site configuration, preparation, and development must protect the functioning of the site as wildlife habitat as identified in the habitat site survey. In order to protect the habitat functions, site configuration, preparation or clearing, and development shall:
   - **a.** Maintain a diversity of habitat by preserving the range of existing foliage height including ground covers, shrubs and trees
   - **b.** Identify habitat buffer areas to the designated wildlife area, and identify provisions for maintaining the habitat buffer over time. The habitat buffer shall:
     - i Be a minimum of 40 feet wide, unless otherwise identified in the habitat site survey.
     - ii Be consistent with the edge habitat conditions identified in the habitat site survey, such as the need for native vegetation of differing heights, including grasses, shrubs and trees
   - **c.** Minimize the amount of area within the habitat buffer that is converted to lawn from existing vegetation.
3. **Barrier-free Movement Required**. The subdivision of any land within Better or Best areas identified on the Natural Resources Corridor map shall make provisions for barrier-free movement of wildlife across the site and maintain barrier-free movement to Natural Resources Corridor areas abutting the development site.

   a. Road and other above ground infrastructure shall not cross corridors unless mitigating steps, meeting the approval of the City of Shakopee and consistent with the findings of the habitat site survey, are taken.
   b. Corridors connecting wildlife habitat areas shall be a minimum of 100 feet wide. Additional width may be necessary if warranted by the habitat site survey.
   c. Corridors shall be marked with signage indicating that the area should not be disturbed and vegetation should not be cut.

4. **Lights must be Shielded**. Lights shall be fully shielded and directed so as not to shine into the wildlife habitat or associated connecting corridor unless required for a trail.
5. **Conservation Easements**. Conservation easements on wildlife habitat or corridors within the Natural Resources Corridor may be required, at the discretion of the City, as a condition of subdivision approval.

Section 7 Design Criteria for Endangered and Threatened Species

A. Areas Subject to the Design Criteria. The Design Criteria for endangered and threatened species in this Section shall apply to all areas within the Natural Resources Corridor map.

B. Principles for Design Criteria

1. **Consistent with DNR Rules**. The Minnesota Department of Natural Resources is required to adopt rules designating species meeting the statutory definitions of endangered, threatened, or species of special concern. The design standard applies to the species on this list, which is codified as Minnesota Rules Chapter 6134.
2. **Consistent with Minnesota Statute**. The Minnesota Endangered Species Statute authorizes the Minnesota Department of Natural Resources to regulate the treatment of species designated as endangered and threatened (Minnesota Rules Chapter 6134).
3. **DNR Permit Required**. The Minnesota Department of Natural Resources prohibits taking, purchasing, importing, possessing, transporting, or selling endangered or threatened plants or animals, including their parts or seeds, without a Minnesota Department of Natural Resources permit. This regulation is set forth in Minnesota Rule 6212.1800.
4. **Habitat is Protected**. Habitat is critical to sustaining any species, and in many instances habitat destruction is the greatest risk to endangered, threatened or special concern species. Such habitat within the Natural Resources Corridor map needs to be identified and protected or mitigated.
5. **Natural Heritage Database**. Few requirements exist for documenting the existence of endangered, threatened or special concern species habitat. Within the Natural Resources Corridor, the DNR Natural Heritage database indicates the need for investigation of existing habitat conditions.

C. Minimum Design Criteria for Endangered and Threatened Species. Where the development site includes an area covered or immediately abutting a site noted on the most recent version of the DNR Natural Heritage database, a habitat site survey completed as part of the Environmental and Park Plan Review shall be conducted to determine if the site includes any endangered, threatened, or at risk species. The survey shall also determine if there are any ecologically sensitive resources not in the DNR database.

1. **Existence of Protected Species**. If the site survey determines that endangered, threatened, or at risk species or other ecologically sensitive resources are present, all activities on the site, including application process and site design, shall:
   - **a.** Utilize appropriate mitigation measures that include avoiding, minimizing and compensating for impacts. Examples include landscaping or revegetation with plant species of value to wildlife, retaining wooded travel corridors (especially along waterways), and construction or restoration of wetlands
   - **b.** Comply with the Federal Endangered Species Act of 1973, as amended (16 USC 1531-1544), including acquisition of appropriate permits from the U.S. Fish and Wildlife Service.

c. Comply with the Minnesota's Endangered Species Statute (Minnesota Statutes Section 84.0895) and associated rules (Minnesota Rules Chapters 6212 and 6134), including acquisition of appropriate permits from the DNR.

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Section 8 Design Criteria for Steep Slopes and Bluffs

A. Areas Subject to the Design Criteria

1. **Natural Resources Corridor Map**. The Design Criteria for steep slopes and bluffs address all slope areas within the Natural Resources Corridor map.
2. **All Slopes Greater than 10 Percent.** All areas with slopes greater than 10 percent in the Natural Resources Corridor map and having moderately or highly erodible land, as identified on the Scott County Soils Survey.

B. Principles for Design Criteria. The **minimum** Design Criteria for steep slopes and bluffs are created to meet the following criteria:

1. **Erosion, Landslides, Sedimentation**. Prevent erosion and landslides, limit increased sedimentation and impacts to water quality.
2. **Aesthetic Integrity**. Maintain the aesthetic integrity of a community by protecting hillsides and ridgelines.
3. **Protect Habitat**. Protect habitat that needs undisturbed slopes to allow for propagation and sustainability of plant or animal communities.
4. **Minimize Maintenance and Replacement Costs**. Ensure that development of infrastructure on slopes minimizes long-term maintenance or replacement costs.

C. Minimum Design Criteria for Steep Slopes and Bluffs. Following are the minimum Design Criteria that shall apply to steep slope and bluff areas:

1. **Slopes**. In all zones, slopes in excess of 10 percent shall be protected or incorporated into new development or infrastructure so as to limit erosion, manage storm water runoff, and protect natural features using best management practices (BMP's).
2. **Bluffs.** Development is regulated in the following manner:
    a. **Development Prohibited**. No development or vegetative clearing is allowed on any bluff impact zone except for vegetative restoration or management under a vegetative management plan approved by the City
    b. **Protection of Prominent Natural Features**. Within the bluff impact zone:
        i All buildings are excluded.
        ii Vegetative clearing is prohibited except for vegetative restoration that is described in a vegetative management plan approved by the City.
        iii Conservation easements shall be granted in favor of the City for all bluff areas and bluff impact zones. The edge of the easement area shall be identified with monuments.
        iv Buildings on slopes greater than 10 percent uphill from the bluff impact zone shall be designed and positioned so as to blend into the slope rather than sit on top of the slope.
3. **Steep Slopes.** Development is regulated in the following manner:

a. **Shoreland and Wetlands.** Minimum buffers and setbacks around all waterbodies shall be increased by 25 feet for slopes that are at least 50 feet in length and greater than 10 percent.

b. **Protection of Ridgeline/Viewshed.** Ridgeline/viewshed areas shall be subject to the following minimum design criteria:

   i All buildings and infrastructure, other than driveways, must be designed to blend into the slope rather than sit on top of the slope.

   ii All high quality native vegetation, as identified in the Minnesota Land Cover Classification System (MLCCS) shall be protected.

4. **Building Design Considerations.** Buildings on slopes that exceed 10 percent and are longer than one-eighth of a mile shall be designed to blend into the slope. Design considerations include the following:

   a. Locate and design buildings so that they do not loom over the bluff

   b. Break up building mass using methods such as broken planes, varying rooflines, stepping back (from the downhill perspective) of upper stories, minimizing mass near waterbodies.

   c. Use materials that blend with the setting; avoid the use of reflective materials.

   d. Use suitable colors; subtle, subdued colors are best.

   e. Buildings within 50 feet of the bluff impact zone and within 100 feet from the top of a steep slope should not exceed 30 feet in height. Buildings higher than 40 feet should be set back from the bluff impact zone an additional 25 feet.

Section 9 Design Criteria for Recreation Opportunities

A. Areas Subject to the Design Criteria. The Design Criteria for recreation opportunities in this Section shall apply to all areas within the Natural Resources Corridor map.

B. Principles for Design Criteria. The **minimum** Design Criteria for recreation opportunities are created to meet one the following criteria:

1. **Sufficient Quantities**. Provide for fully developed parks, trails, facilities, and open space in sufficient quantities to meet the needs of the City.
2. **Enhance Natural Resources**. Preserve and enhance the natural resources of the community and provide residents an opportunity to interact with the natural resources.

C. Minimum Design Criteria for Recreation Opportunity. Following are the minimum Design Criteria that shall apply to recreation areas:

1. **Comprehensive Plan**. Conformance with the goals and policies of the most recent version of the Shakopee Comprehensive Plan adopted by City Council.
2. **Ensuring Public Access**. Provide public access to public land and utilize the Natural Resources Corridor map when evaluating the location of public land in the development and redevelopment review process.

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Section 10 Design Criteria for Accessibility/Infrastructure

A. Areas Subject to the Design Criteria. The Design Criteria for accessibility/infra-structure in this Section shall apply to all areas within the Natural Resources Corridor map.

B. Principles for Design Criteria. The Design Criteria for accessibility/infra-structure are created to meet the following criteria:

1. **Utilize Easements**. Utilize publicly owned or managed easements, outlots, and unused right-of-way in the Natural Resources Corridor.
2. **Accessibility**. Provide accessibility to Natural Resources Corridor areas by the public.

C. Minimum Design Criteria for Accessibility/Infrastructure. Following are the minimum Design Criteria:

1. Conformance with the Americans with Disabilities Act.
2. Conformance with the most recent version of the Comprehensive Water Resource Management Plan adopted by City Council.
3. Conformance with the most recent version of the City of Shakopee Engineering Design Criteria adopted by City Council.

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Section 11 Connectivity

A. Areas Subject to the Design Criteria. The Design Criteria for connectivity shall apply to all areas within the Natural Resources Corridor map.

B. Principles for Design Criteria

1. The **minimum** Design Criteria for connectivity are created to meet one the following criteria:
    a. Provide for fully developed parks, trails, facilities, and open space in sufficient quantities to meet the needs of the City.
    b. Preserve and enhance the natural resources of the community and provide residents an opportunity to interact with the natural resources.
2. The Design Criteria are to ensure compliance with the existing planning documents:
    a. **Shakopee Parks, Trails, and Open Space Plan.** The City of Shakopee Parks, Trails, and Open Space Plan (2004) includes goals, objectives, and policies. This plan outlines the direction for parks, trails, and open space in the City of Shakopee.
    b. **Scott County Parks, Trails, and Open Space Plan.** The vision statement for the plan states "The vision for parks, trails, and open space in Scott County is a coordinated system of natural resource based parks, open spaces, and trails that enhance the quality of life for present and future generation by acquiring, preserving, developing, maintaining, and managing important natural, historic, and/or cultural areas and landscapes; providing opportunities for the recreational enjoyment and education of the public; and complimenting the opportunities offered by other outdoor education and recreation providers." This plan also contains goals and policies for the creation of a park, trails, and open space system.
    c. **City of Shakopee Design Criteria.** The City of Shakopee Design Criteria and General Plan Requirements for Grading, Street, and Utility Improvements was created by the Engineering Department. This document provides information and design criteria for sidewalks and trails (Section 9). Sidewalks are important lateral connections for the trails system and provide residents with safe access to trails, parks, and the open space system.

C. Minimum Design Criteria for Connectivity. Following are the minimum Design Criteria that shall apply to connectivity:

1. Conformance with the goals and policies of the most recent version of the Shakopee Comprehensive Plan adopted by City Council.
2. Provide connections between natural resource features where a Corridor Connection is identified on the Natural Resources Corridor map in one of the following procedures:
    a. 20 foot wide trail easement granted to the City.
    b. An outlot dedicated to the City on the final plat which will contain a 20 foot wide trail .
    c. A conservation easement granted to the City that allows for a 20 foot wide trail to be constructed within the easement area.

    Native planting consisting of native seed mixtures, native shrubs, or native trees are to be used in Corridor Connection areas.