

Chapter 19. 01 Landscape Standards

19.01.1 General Provisions

19.01.1.1 Organization **New**

- A. General Provisions
- B. Water Efficiency Requirements
- C. Landscape Design and Installation Standards
- D. Tree Preservation Standards
- E. Screening and Buffering
- F. Commercial, Mixed-Use, Multi-Household Development Landscaping Standards
- G. Industrial Development Landscaping Standards
- H. Single-household and Duplex Residential Development Landscaping Standards
- I. Streetscape Design Standards
- J. Parking Lot Landscaping
- K. Park and Open Space Landscape Standards
- L. Stormwater Detention and Retention Facilities
- M. Landscaping Along Natural Waterways
- N. Landscape Plan Submittal Requirements
- O. Construction Inspection and Compliance Requirements
- P. Post Construction Verification of Compliance

19.01.1.2 Purpose

- A. The landscape design and development standards set forth in this chapter are intended to facilitate water conservation and promote the following:
1. More efficient use of water resources;
 2. Preservation and enhancement of the City's environmental and aesthetic character;
 3. Promotion of design continuity between adjacent land uses;
 4. Protection of the urban tree canopy;
 5. Improved management of stormwater runoff;
 6. Reduction in the absorption and re-generation of heat from paved vehicular parking areas and other impervious surfaces;
 7. Promotion of screening and buffering between land uses by way of providing adequate vegetation;
 8. Re-introduction of native and low water use plant species into the developed environment;
 9. Reduction of landscape maintenance responsibilities and costs.

19.01.1.3 Applicability

- A. All land development applications shall be accompanied by a landscape plan prepared by a licensed Landscape Architect. Building permit applications for individual single-family residences require a landscape plan but are exempt from the requirement that it be prepared by a licensed Landscape Architect unless applying for rebate program. All landscaping within the City shall comply with **Section 19.77**.
1. New Development. These landscape standards shall be applied to all new development in the City including surface or at-grade parking areas and the exterior perimeter of parking structures
 2. Existing Development. Development in existence at the effective date of this chapter shall be brought into compliance with these provisions if:
 - a. Commercial, Mixed-use, Multi Household, Industrial: The gross floor area of improvements are changed, modified, or expanded by more than twenty percent (20%),
 - b. Single household and/or duplex developments: The gross floor area of improvements are changed, modified or expanded by fifty percent (50%).
 - c. An existing off-street parking area is expanded by ten (10) parking stalls.
 3. Exemptions. The provisions of this chapter do not apply to the following:

- a. The interior undercover portions of parking structures;
 - b. The interior undercover portions of carports containing ten (10) parking spaces or less;
 - c. The interior display areas of vehicle and equipment sales lots;
 - d. The interior areas of vehicle and equipment storage lots;
 - e. Properties listed on the national, state, and local historic registers.
 - f. Sports fields and cemeteries are exempt from the landscape water allowance limitations of this chapter.
- B. Certificate of Occupancy. All required landscaping shall be installed in accordance with this Chapter prior to issuance of Certificate of Occupancy. Installation that is delayed due to seasonal implications shall post surety per **Section ##**.

19.01.2 Water Efficiency Requirements

19.01.2.1 Purpose.

- A. To ensure more efficient water consumption in the establishment and long-term maintenance of landscape improvements.

CONTEXT INFORMATION

Applicability aligns with rebate program requirements for the Central Utah Water Conservancy District

19.01.2.2 Landscape Hydrozones.

- A. Plants with similar water needs shall be grouped together in hydrozones per the following structure¹ with no more than ten percent (10%) of plants to be identified as zones 3 and 4:

HYDRO ZONE	IRRIGATION FREQUENCY	NOTES
Zone 0	Little or no water needed	Plant material in hydrozones 0 & 1 with water use requirement, as noted in the City of Millcreek Approved Plant List, shall be used at the interface between urban areas and natural (nonirrigated) open space
Zone 1	Plants require supplemental irrigation once per month	
Zone 2	Plants require supplemental irrigation twice per month	
Zone 3	Plants require supplemental irrigation once per week	No more than ten percent (10%) of plant material may fall under zone 3 and/or 4 watering frequency
Zone 4	Most intensive water-use zone, plants require supplemental irrigation twice per week	

¹ Guidance from USU extension

- B. Plant Material Requirements. All plant material used on a site shall be water conserving and adapted to the local climate, per the City of Millcreek Approved Plant List.

19.01.2.3 Water Efficient Irrigation System Requirements.

- A. Designer Qualifications. All landscape irrigation plans required with development applications shall be designed by a qualified professional who is licensed under **Utah Code Title 58** or by a person who is exempt from professional licensure requirements for the scope of work performed. Single household residential development is exempt from the designer qualification requirement, however, it is highly encouraged to comply with this section.
- B. Design Standards. Irrigation design standards applicable to this chapter shall be as outlined in the latest version of the minimum standards for efficient landscape irrigation system design and installation prepared by the Utah Irrigation Association, subject to the following modifications and additions:
 - 1. Drip Irrigation. Drip technology shall be used to the furthest extent possible.
 - 2. Overhead Sprinklers. Overhead sprinklers shall only be used for turf grass areas. Stream rotary nozzles are to be used for the most efficient watering and shall not be scheduled to operate between the hours of ten a.m. to seven p.m.
 - 3. Automatic Controller. All irrigation systems shall include an electric automatic controller capable of utilizing an automatic rain shut-off device and shall not be scheduled to operate between the hours of ten (10) a.m. to seven (7) p.m. to reduce water loss from wind and evaporation.
 - 4. Slope Adjustments. On slopes exceeding thirty percent (30%), the irrigation system shall consist of low angle spray heads, drip emitters, or bubblers.
 - 5. Elevation Adjustments. Check valves, pressure regulating valves, and pressure compensating heads shall be required where elevation differences will cause low-head drainage.
- C. Operational Efficiency. The minimum efficiency required for irrigation systems established in accordance with the requirements of this chapter is as follows:
 - 1. The minimum efficiency required for the irrigation system is seventy-five percent (75%) for the distribution efficiency for all fixed spray systems and seventy percent (70%) distribution efficiency for all rotor systems.

19.01.3 Landscape Design and Installation Standards

19.01.3.1 Applicability.

- A. All required site landscape improvements shall be provided in accordance with the following standards.

19.01.3.2 Retention of Significant Natural Features.

- A. Features that are unique to a property, such as but not limited to that property's natural topography, existing vegetation, or riparian features shall be taken into consideration in the planning and design of landscape improvements for that property.
- B. Priority is to be given to the preservation or protection of existing, mature trees and wooded riparian areas that are a part of a proposed development site per **Section 19.77.050**.

19.01.3.3 Plant Material Specifications.

- A. The measurements and specifications for all plant material shall be as set forth in the American Standard for Nursery Stock (ANSI Z60.1-204) as published and periodically amended by the American Nursery and Landscape Association.
- B. Plant Quality. All plant material shall be healthy, well branched, and well rooted, formed true to variety and species.
- C. Prohibited plant material. The following trees are prohibited in the City:
 1. Russian Olive (*Elaeagnus angustifolia*)
 2. Siberian Elm (*Ulmus Pumila*)
 3. Tree of Heaven (*Ailanthus Altissima*)
- D. Plant Coverage and Growth Rate. The quantity and size of materials planted shall be sufficient to cover seventy-five percent (75%) of designated landscape areas within three years of initial planting.
- E. Species Diversity. A variety of plant species shall be utilized in all site landscaping. No one species may make up more than twenty-five percent (25%) of the total non-turf plant material within the landscaped area including a diverse range of tree species. Additionally, tree species shall vary per the table below:

TOTAL NUMBER OF TREES ON SITE	MAXIMUM PERCENT OF ANY ONE SPECIES
10—19	50%
20—39	33%
40—59	25%
60 or more	15%

- F. All trees shall be provided a plant-free mulched area with a minimum radius of four feet (4') around the trunks in order to expedite tree root establishment.

- G. Lawn and Turf Areas. Areas proposed for planting in turf or lawn shall be a minimum of ten feet (10') in width.
 - 1. Drought-tolerant grass varieties shall be established and maintained.
 - 2. The use of artificial turf shall comprise a maximum of ten (10) percent of any single-household residential landscape area. Artificial turf is prohibited for use in all other land use types.
- H. Mulch. All landscape areas planted with trees, shrubs, perennials, or other groundcover shall be covered with a minimum three-inch (3") layer of mulch to retain water, inhibit weed growth, and moderate soil temperature.
 - 1. Newly planted trees in areas predominantly improved with turf shall be provided a plant-free mulched area with a minimum radius of four feet (4') around the trunks in order to protect the trunks from turf-maintenance operations and expedite tree root establishment.
 - 2. Nonporous materials (e.g., plastic) shall not be placed under the mulch. Bare soil is not permitted.
- I. Tree Placement. Trees shall be located to provide summer shade and limit winter shade on walks, parking lots, and streets.
- J. Root Accommodation. Root barrier collars and root path trenches shall be installed around trees within three feet (3') of sidewalks to protect the pavement and to ensure healthy tree root growth.
- K. Plant Size Requirements at Planting. All new and replacement plant material shall meet the following minimum size requirements at planting:

Table 19.77.1 Plant Size Requirements	
Deciduous Trees	two-inch (2") caliper
Ornamental and flowering Trees	two-inch (2") caliper
Evergreen Trees	six feet (6') tall
Shrubs	five (5) gallon container
Perennials and Ornamental Grasses	one (1) gallon container

- L. Applicability. In all zones where a front yard is required the entire frontage and depth of that yard area and any side yard area abutting a street shall be landscaped. Visibility at intersecting streets shall be maintained as set forth in MKZ 19.76.160. Parking areas shall not encroach on these minimum required setbacks except as herein authorized.

19.01.3.4 Installation Specifications

- A. Irrigation System Installer Qualifications. Irrigation Association (IA) certification shall be required for all contractor-installed landscape irrigation systems except where construction observation services are provided by a licensed landscape architect or other qualified professional under Title 58 of Utah Code.
- B. License, Insurance and Bonding Requirements. All installers, designers, and auditors shall meet state and local license, insurance, and bonding requirements and be able to show proof of such.
- C. Plant Delivery and Installation.
 - 1. Plants shall be protected during delivery to prevent leaf desiccation.
 - 2. Upon delivery, unplanted trees, shrubs and other live plants shall be kept in shade, well protected with soil, mulch or other acceptable material and appropriately watered. Plants that have died or show signs of serious deterioration prior to planting shall be replaced.
 - 3. All trees and shrubs shall be planted in such a manner as to ensure their survival and to prevent girdling of trunks. This shall include the planting of intact balls, planting at proper depth, properly backfilling, mulching and watering, and construction of a planting saucer.
 - 4. In order to protect plantings from traffic, de-icing salts, and snow plowing operations, landscaped areas with tree or shrub plantings within six feet (6') of a paved vehicle parking area or access way shall be raised above such areas by use of curbing or edging or, where depressed for stormwater collection and aquifer recharge, clearly posted for protection during periods of inclement weather.
- D. Excavation. Site excavation shall be accomplished in accordance with industry standards and applicable ordinance requirements.

19.01.3.5 Setback Reduction

- A. The land use authority may approve reductions to setbacks for residential and commercial properties only when the action will not be materially detrimental to the public welfare or injurious to the property or improvements in the vicinity in which the property is located
 - 1. No setback reductions shall be granted for property that is part of a town center, urban transit center, or village center.

2. No setbacks shall be granted for property that is zoned light manufacturing or mixed use.
- B. In no event shall the front yard setback be less than the average of the front yard setbacks of neighboring structures, located on the same side of the street, that are located within a three hundred (300) foot distance of the nearest property line of the subject property.
 - C. Where a setback reduction is provided by this section, the Land Use Authority shall consider the following factors in review of the setback reduction:
 1. Where applicable, the setback reduction results in a building site that accommodates a wider buffer between the use and adjacent R-1 or R-2 zones than what is required by this Title.
 2. The setback reduction does not create a situation where the development will result in an increase in the number of residential dwelling units than would occur if the development was built without the reduction.
 3. The setback reduction does not create a situation where the proposed development will cause objectionable noise, odors, trespass lighting, or similar adverse impacts on adjacent properties.
 4. The setback reduction does not create a situation where the proposed development substantially reduces the amount of privacy that would be enjoyed by nearby residents any more than would be available if the development was built without the reduction.
 5. The setback reduction does not create a situation where the proposed development will create an obstruction of site triangles.
 6. The setback reduction does not create a situation where it is reasonably anticipated that the proposed development will result in vehicle stacking on a public right-of-way where that right-of-way intersects with the driveway of the proposed development.
 - D. Setback reductions along a streetscape shall still meet the landscape requirements set forth in Section 19.01.9.
 - E. Encroachments to Within Twelve Feet. Off-street parking areas may encroach into required front and street side setback areas such that a minimum depth of not less than twelve feet is maintained.
 - F. Encroachments to Within Eight Feet. Off-street parking areas may encroach into required front and street side setback areas such that a minimum depth of not less than eight feet is maintained subject to provision of the following:
 1. A decorative wall is placed along the interior edge of the setback area. Wall shall have a minimum height of thirty-six (36) inches, a maximum height of forty-eight (48) inches as measured from the adjacent paved parking area.

19.01.4 Tree Preservation Standards

19.01.4.1 Purpose.

- A. To maintain the environmental integrity of trees for shade, evapotranspiration, and habitat along with preserving the aesthetic of mature, and healthy vegetation for Millcreek's streetscapes.

19.01.4.2 Applicability.

- A. All healthy trees having a caliper of four (4) inches in size or larger shall be preserved to the maximum extent feasible.

19.01.4.3 Design Standards

- A. Preserved trees shall be credited toward the satisfaction of the tree planting requirements of this chapter at a rate of 1:1 based on size. For example, a six-inch caliper tree preserved shall count toward three two-inch caliper trees.
- B. Where existing trees are to be protected, the following standards shall apply:
 - 1. A fenced tree protection zone shall be established around the dripline of each tree or cluster of trees to be retained with high-visibility materials at a minimum height of four feet (4').
 - 2. The storage or movement of equipment, material, debris or fill is prohibited within the tree protection zone so as to minimize soil compaction.
 - 3. The cleaning of equipment or material or the storage and disposal of waste material such as paints, oils, solvents, asphalt, concrete, motor oil or any other material harmful to the life of a tree is prohibited within the tree protection zone.
- C. No cut or fill is permitted within the tree protection zone unless a qualified arborist, forester or landscape architect has evaluated and approved the disturbance.
- D. All protected existing trees shall be pruned as specified by a qualified arborist or forester.
- E. No damaging attachment, wires, signs, or permits may be fastened to any protected tree.
- F. Trees being preserved that are located further than fifty feet (50') from the primary area being disturbed by construction may be "ribboned off," in lieu of erecting protective fencing. This may be accomplished by placing metal t-post stakes a maximum of fifty feet apart and tying ribbon or rope from stake-to-stake along the outside perimeters of such areas being cleared.
- G. The removal of trees is allowed under the following circumstances by way of a tree removal permit per Section 19.01.4.4:

1. Where trees have naturally fallen or are determined by a licensed arborist to be dead or dying.
 2. Where trees have been diagnosed by a qualified arborist as unhealthy beyond reasonable rehabilitation.
 3. Where trees are determined to be potentially harmful to the public health, safety or welfare.
 4. Where it has been determined by the city that tree removal is necessary to restore clear visibility at driveways and intersections.
 5. Plants listed in the prohibited plant list per Section 19.01.3.3 may be removed without a replacement requirement.
- H. Trees having a caliper of four (4) inches in size or greater which are removed shall be replaced on the development site at the following rate:

Table 19.77.4.1	
Tree to be removed	Replace with
4" to 12" caliper tree	Three trees as 2" caliper min. size
12" to 24" caliper tree	Six trees at 2" caliper min. size
24" or larger caliper tree	Eight trees at 2" caliper min. size

19.01.4.4 Tree Preservation Site Plan Submittal.

- A. All tree removal permits shall submit a tree preservation plan to include the following:
 1. Purpose of the requested permit
 2. Plan showing: existing and proposed land uses, buildings, parking, utilities, and light poles; existing trees over four (4) inch diameter at breast height to be preserved; and other pertinent elements of development.
 3. A boundary survey which shall include the location of all easements, building setback lines, nearby zoning district boundaries;
 4. A location map showing the location of the property within the city.
- B. If a permit is denied, the reason for denial shall be furnished to the applicant in writing, either electronically or by mail.

19.01.5 19.77.050 Screening and Buffering **New**

19.01.5.1 Purpose.

- A. Buffers and screening are intended to minimize conflicts between potentially incompatible, land uses and development on abutting property.

19.01.5.2 General Design Standards.

- A. All required buffers shall be located along the entire property line between the two uses and entirely on the developing property's side of the required buffer.
- B. Parking of vehicles and placement of buildings or structures, except for walls, fences, and landscaping, shall not be allowed in the required buffer.
- C. Under no circumstances shall a fence be the only screening material as a buffer between land uses.

19.01.5.3 Buffer Design Standards.

- A. Buffer Type A shall consist of a mix of evergreen and deciduous trees, shrubs and ornamental grasses at the following rates per one hundred (100) linear feet of buffer:
 - 1. Two (2) trees with a minimum mature height of twenty (20) feet; and
 - 2. Ten (10) shrubs or large ornamental grasses with a minimum height of five (5) feet. If a six-foot (6') high privacy fence or wall is installed, the shrub and ornamental grass requirement can be reduced by fifty percent (50%).
- B. Buffer Type B shall consist of a mix of evergreen and deciduous trees, shrubs, and ornamental grasses at the following rates per one hundred (100) linear feet of buffer:
 - 1. Four (4) trees with a minimum mature height of twenty feet (20) with at least twenty percent (20%) being evergreen;
 - 2. Twenty (20) large shrubs with a minimum mature height of five feet (5'), up to thirty percent (30%) can be large ornamental grasses with a minimum mature height of five feet (5'); and
 - 3. Ten (10) small shrubs or ornamental grasses with a minimum mature height of two feet (2').
 - 4. If a six-foot high privacy fence or wall is installed, the shrub and ornamental grass requirement can be reduced by fifty percent (50%).
- C. Buffer Type C shall consist of a six foot (6') tall solid fence or wall and a mix of evergreen and deciduous trees, shrubs, and ornamental grasses at the following rates per one hundred linear feet (100') of buffer:
 - 1. Three (3) trees with a minimum mature height of twenty feet (20') with at least thirty percent (30%) being evergreen; and

2. Fifteen (15) large shrubs with a minimum mature height of five feet (5'), up to thirty percent (30%) can be large ornamental grasses with a minimum mature height of five feet (5'); and
3. Ten (10) small shrubs or ornamental grasses with a minimum mature height of two feet (2').

19.01.5.4 Buffer Requirements

- A. All multi-household development adjacent to a residential use shall incorporate a Buffer Type A along the perimeter between the two uses.
- B. All industrial and commercial development adjacent to a residential use shall incorporate a Buffer Type B along the perimeter between the two uses.
- C. All outdoor storage, service areas, and on-grade mechanical equipment shall be screened with from public view with a Buffer Type C. Site elements that are subject to this provision include but are not limited to the following:
 1. Air conditioning units;
 2. Electrical transformers;
 3. Loading areas and docks;
 4. Mechanical equipment;
 5. Outdoor storage areas;
 6. Public utility transformers;
 7. Service yards;
 8. Telephone transformers;
 9. Trash collection areas;
 10. Trash dumpsters.

19.01.6 Commercial, Mixed Use, and Multi-Household Development Landscape Standards **New**

19.01.6.1 Purpose.

- A. To ensure water conscious landscape improvements that are designed to enhance the overall appearance of the development and integrate the project with adjacent land uses and in the surrounding neighborhood.

19.01.6.2 Applicability.

- A. All development in the R-M, ORD, RMH, MD, MD-3, IF, C-1, C-2, C-3, M, and CCOZ in addition to the General Landscape Standards outlined in this Chapter.

19.01.6.3 General Design Standards.

- A. Landscaping is required around the perimeter of the building along facades that face public streets, transportation corridors, or public open space. Additionally, these design standards are applicable to building entrances, drop off and pick up areas, and outdoor dining areas.
 - 1. A minimum of one (1) tree shall be provided for every forty linear feet (40') of building perimeter landscape area.
 - 2. A minimum of one (1) shrub or ornamental grass shall be provided for every ten (10) linear feet of building perimeter landscape area.
- B. Landscaping is required around the perimeter of the site, along all side and rear property lines, and around the perimeter of drive-through service facilities at the following rates:
 - 1. Consistent with Buffer Type A, per Section 19.01.5.4, when adjacent to another commercial, mixed-use or multi-household use; or
 - 2. Consistent with Buffer Type B, per Section 19.01.5.1, when adjacent to a single-household detached, duplex, or attached use.
- C. Parking lots shall be landscaped per Section 19.01.10.
- D. Turfgrass shall only be allowed as functional space for mixed-use and multi-household developments, is prohibited for ornamental or aesthetic purposes and may not exceed twenty percent (20%) of total landscaped area, outside of active recreation areas.

CONTEXT INFORMATION

General Design Standards align with rebate program requirements for the Central Utah Water Conservancy District

- E. These standards are not intended to conflict with other landscaping requirements as defined by Utah law, including stormwater retention requirements and low-impact development guidelines. Notwithstanding these outdoor standards, whenever any requirement may conflict with Utah law, such conflicting requirements shall not apply.

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19.01.7 Industrial Development Landscape Standards **New**

19.01.7.1 Purpose.

- A. To ensure landscape improvements are designed primarily at the public facing building entry to be consistent with commercial landscape standards and at the perimeter for purposes of screening industrial activities from the exterior of the property.

19.01.7.2 Applicability.

- A. All developments of industrial uses as listed in the Use Table in Section XXXX shall meet the following standards:

19.01.7.3 General design standards:

- A. Turfgrass is prohibited for use in industrial developments.
- B. The perimeter of the property shall be landscaped one (1) tree per forty (40) linear feet.
- C. The area between the primary building façade and the public right of way shall meet the commercial design standards detailed in Section 19.01.6 with all landscape areas including a minimum of seventy-five (75%) live plant cover.
- D. Parking lots shall be landscaped per Section 19.01.10.
- E. These outdoor standards are not intended to conflict with other landscaping requirements as defined by Utah law, including stormwater retention requirements and low-impact development guidelines. Notwithstanding these outdoor standards, whenever any requirement may conflict with Utah law, such conflicting requirements shall not apply.

CONTEXT INFORMATION

General Design Standards align with rebate program requirements for the Central Utah Water Conservancy District

19.01.8 Single-Household and Duplex Residential Landscaping Standards **New**

19.01.8.1 Purpose.

- A. To provide the opportunity for property owners to apply for Landscaping Rebate Programs as outlined by the Central Utah Water Conservancy District.

19.01.8.2 Applicability.

- A. The following provisions apply to all new single-household residential development and any redevelopment of single-household residential properties in addition to the General Landscaping Requirements outlined in this Chapter.

19.01.8.3 LocalScape Design Standards.

- A. If size permits, the landscaped areas of the front yard and back yard shall include a designed central open shape created by using turfgrass, hardscape, groundcover, gravel, or mulch.
- B. Gathering areas shall be constructed of hardscape and placed outside of the central open shape. In a landscape without lawn, gathering areas may function as the central open shape.
- C. Activity zones shall be located outside of the central open shape and shall be surfaced with materials other than lawn.
- D. Paths shall be made with materials that do not include lawn, such as hardscape, mulch, or other groundcover.
- E. Turfgrass areas shall not exceed the greater of two hundred fifty (250) square feet, or 35% of the total landscaped area.
- F. Small residential lots, which the total landscaped area is less than two hundred fifty (250) square feet, and which the front yard dimensions cannot accommodate the minimum eight (8) feet wide lawn area requirement of the landscaping requirements, are exempt from the eight (8) feet minimum width lawn area requirement.

19.01.9 Streetscape Design Standards **New**

19.01.9.1 Purpose

- A. All streetscapes shall be tree lined and include a waterwise and balanced approach to design of plant material for year-round visual interest.

19.01.9.2 Applicability

- A. The following requirements shall apply to all development along collector and arterial streets as well as any single-household subdivisions with tree lawns along local streets in addition to the General Landscape Standards throughout this Chapter.

19.01.9.3 General Design Standards

- A. Plant Quantities. All landscape areas adjacent to a street (including required park strips) shall be planted and maintained with the following:
 - 1. One shade tree per forty (40) lineal feet of street frontage
- B. Street trees shall be planted within the right-of-way. If the width of the park strip within the right-of-way is less than six (6) feet wide, street trees shall be planted within a right-of-way, or within 10 feet of a right-of-way line.
- C. Street trees shall be watered via drip or deep root irrigation system with irrigation lines sleeved under sidewalks and pavement for ease of maintenance.
- D. Street trees shall be limbed up to maintain a minimum eight-foot (8') clearance above all sidewalks.
- E. Tree species planted under or within ten (10) feet of overhead powerlines shall have a mature height of no more than twenty-five (25) feet.
- F. A minimum of seventy five percent (75%) of the understory shall be planted in live plant material.

19.01.9.4 Specific Street Type Design Standards

- A. Residential and commercial streetscapes shall be designed per the following dimensions to include landscaping per Section 19.01.9.3:
 - 1. Include curb and gutter per City of Millcreek Engineering Design Standards.
 - 2. Include a park strip with a minimum width of six (6) feet.
 - 3. Include a detached sidewalk per City of Millcreek Engineering Design Standards.

B. Urban Streetscape

1. Include curb and gutter per City of Millcreek Engineering Design Standards.
2. Include continuous hardscape surface between the curb and the building. Hardscape can include standard concrete or pervious pavement per Low Impact Development Standards.
3. Trees shall be included at the rate specified in Section 19.01.9.3 and placed in tree grates with a minimum dimension of five (5) feet square.

C. Rural Streetscape

1. Curb and gutter are not required.
2. A drainage swale sufficient to convey stormwater shall be incorporated on each side of the street per City of Millcreek Engineering Design Standards.
3. No street trees are required

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19.01.10 Parking Lot Landscaping

19.01.10.1 Purpose.

- A. Parking lot landscaping is intended to break up large expanses of pavement, create shade, screen headlights, and enhance the overall appearance of the site.

19.01.10.2 Applicability.

- A. All parking lots with ten (10) spaces or more shall be subject to the following requirements.

19.01.10.3 General Design Standards.

- A. Interior Parking Lot Landscape.
 - 1. A landscape island with a minimum width of eight (8) feet in width shall be provided at the end of each row of parking spaces.
 - 2. A landscape island with a minimum width of eight (8) feet shall be provided per every twelve (12) parking spaces.
 - 3. Each island shall contain one (1) shade tree and understory plantings no taller than three (3) feet in height to cover a minimum of seventy-five (75) percent of the island.
 - 4. Double rows of parking spaces shall include one (1) shade tree for every three stalls either placed in five foot by five foot (5'x5') planter diamonds or in a planted median between parking rows.
 - a. Planted medians shall be a minimum of eight (8) feet wide and contain understory plantings no taller than three (3) feet in height to cover a minimum of seventy-five (75) percent of the median.
 - b. If a sidewalk is incorporated into the landscape median, the width of the median shall be as follows:
 - i. Sidewalk down the middle. The planting area shall be five (5) feet wide on either side of the median with trees staggered on either side of the sidewalk.
 - ii. Sidewalk down one side. The planting area shall be a minimum of eight (8) feet wide with one (1) shade tree for every three (3) parking spaces.
- B. Perimeter Parking Lot Landscape.
 - 1. A minimum eight-foot (8') wide landscape area shall be provided at the perimeter of surface parking lots abutting any public right-of-way containing a minimum of one (1) tree per thirty (30') linear feet of required perimeter landscape area.

2. Parking spaces facing the public right-of-way or an institutional or residential use shall screen headlights from view by one of the following methods:
 - a. A hedge of shrubs and ornamental grasses with a minimum height of three (3) feet for a minimum of seventy-five (75) percent of the length of the parking lot;
 - b. A berm with a minimum height of three (3) feet; or
 - c. A masonry wall with a height between three and four feet (3-4') paired with landscape material for at least fifty percent (50%) of the length of the landscape area placed on the street side of the wall.
- C. Pedestrian Accommodation.
 1. Stepping stones or graveled pathways shall be dispersed across and along landscape medians to minimize soil compaction and protect plant root zones from pedestrian traffic.
- D. All landscaped areas adjacent to parking spaces shall be constructed of a continuous concrete curb in accordance with applicable standards and of no less than six (6) inches in height.
 1. Landscape areas used for collection of stormwater runoff shall be constructed of a continuous concrete curb with curb cuts at regular intervals to allow stormwater to flow into the planter.
 2. Where vehicular parking stalls abut landscaping that is not protected by a curb, wheel stops shall be installed at a minimum of two feet (2') from the edge of that landscape area.
- E. Tree and Shrub Distribution.
 1. Within landscape islands and medians:
 - a. Trees shall not be planted closer than three feet (3') to top back of curb or exterior edge of depressed parking lot landscaped planters.
 - b. Shrubs shall be situated such that they remain within the confines of the planter at maturity.
- F. Mulch Required. Organic mulch shall be spread to a minimum depth of three inches (3") and rock to at least two and one-half (2 1/2") inches in depth in all parking lot landscaped planters. Bare dirt is prohibited.
- G. Irrigation. Landscape planters within parking areas shall be irrigated with drip emitter or bubbler type irrigation systems only.
- H. Maintenance of all landscaping within and adjacent to parking lots shall be the responsibility of the landowner

19.01.11 Park and Open Space Landscape Standards **New**

19.01.11.1 Purpose

- A. Landscaping in park and open space areas that are commonly used by the public for passive and active recreation shall be appropriate to the use and function of the area, respectful of water conservation practices, and include trees, shrubs, ground cover, and site furnishings appropriate to the use.

19.01.11.2 Applicability

- A. The following requirements shall apply to all new development of public parks, pocket parks, detention ponds, trail connections, and common open space areas for public use.

19.01.11.3 General Design Standards

- A. All parks shall be landscaped and programmed to create a balance of plant material with no more than thirty percent (30%) of the total landscaped area comprised of plant species falling in hydrozones 3 and 4.
- B. All park and open space areas shall include site trees at a rate of a minimum of one (1) tree per five thousand (5,000) square feet of landscaped area, distributed appropriately throughout the site.
 - 1. Required trees shall be placed in upland areas, above the anticipated high-water mark or floodway of detention ponds or drainage ways.
- C. Only high traffic areas such as sport fields and informal play space adjacent to playgrounds shall contain turfgrass.
- D. Park periphery and detention pond areas shall consist of low water or native plant material and grass seed mix.
- E. Common open spaces and trail connections shall be landscaped with a balance of low water or native plant material and grass seed mix to reduce the need for supplemental irrigation in hard to reach areas.
- F. The retention of native areas for purposes of maintaining viewsheds or healthy existing ecosystems are highly encouraged.
 - 1. Existing plant material shall be identified on the landscape plan with a statement explaining how the native area will be protected from construction.
 - 2. These areas shall be excluded from the landscape area used to calculate required site trees per subsection C.1 above.
- G. Greenroofs, garden decks, planted building step backs, and other similar landscape elements can count toward overall open space requirements
- H. Parking lots shall be landscaped per Section 19.01.10.
 - 1. Development shall provide a mechanism such as a homeowners' association and covenants for long-term maintenance of parks, detention ponds, and common open space, in order to ensure the continued upkeep of the property.

19.01.12 Stormwater Detention and Retention Facilities **New**

19.01.12.1 Purpose

- A. Stormwater facilities shall be installed to serve a development to promote innovative and effective land and water management techniques that protect and enhance water quality.

19.01.12.2 Applicability

- A. All required stormwater detention and retention facilities.

19.01.12.3 General Design Standards

- A. Landscaping is required around detention/retention basins and ponds at the following rate:
 - 1. One (1) tree per five thousand (5000) square feet of detention area, located above the anticipated high-water mark.
 - 2. This requirement is in addition to any site perimeter or street tree requirements herein.
- B. Minimum storm drainage improvements shall be constructed such that:
 - 1. Landscape improvements enhance the function of the facility.
 - 2. All facilities shall be seeded with grass appropriate to the function of the area.
 - 3. Detention areas may be used for passive and active recreation.
 - 4. Areas to be maintained for habitat enhancement shall be seeded to native grasses and wildflowers.

19.01.12.4 Low Impact Development

- A. Low impact development (LID) techniques may be used to further manage stormwater and reduce the size of required detention and retention ponds per the City of Millcreek Engineering Standards.
- B. Low Impact Development can include but is not limited to the following:
 - 1. Permeable pavement. Permeable pavement can consist of porous concrete or permeable concrete pavers.
 - 2. Bioswales. Bioswales are vegetated swales planted with a variety of plant species that can tolerate occasional water inundation and serve to transport, store, and allow infiltration of water.
 - 3. Grassed swales: Grassed swales are designed to convey water over the surface of the ground to a point of disposal and serve to slow the flow of water allowing some particulates to drop out before the water reaches the disposal point.

4. Rain Gardens. Rain gardens are small shallow, depressions planted with a variety of native or ornamental plants that can treat small amounts of runoff to improve water quality.

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19.01.13 Landscaping Along Natural Waterways

19.01.13.1 Purpose.

- A. Riparian buffers are essential to mitigate urban runoff from entering natural waterways and provide wildlife corridors. Vegetation can act as a natural barrier that infiltrates excess nutrients.

19.01.13.2 Applicability.

- A. The following provisions apply to all properties within one hundred feet (100') of a natural waterway.

19.01.13.3 General Design Standards

- A. Utilization of native riparian plants shall be required within fifty feet (50') of waterways.
 1. Plant selection shall be made from Salt Lake County's Stream Care Guide. Specifically, plant selection shall correlate with the Foothill and Valley elevations (4,200-6,000).
 2. Retention of existing plants shall be the preferred landscaping method unless further restoration of native species is deemed necessary due to:
 - a. Existing plants being unhealthy or invasive.
 - b. Existing plants not meeting the selection guidance of Salt Lake County's Stream Care Guide.
 3. Apply multiple vegetation layers to enhance the habitat and attractiveness of the buffered area.
 4. Decomposed granite, gravel, or other permeable soft surface path material shall be used for pedestrian access paths in the riparian buffer to minimize impact in the riparian zone.
 5. Consider the needs of the water and shade tolerance of the species planted.

19.01.14 Landscape Plan Submittal Requirements

19.01.14.1 General Provisions.

- A. All applications for site development plan approval shall be accompanied by a landscape plan package prepared in accordance with the requirements of this chapter.
- B. Submitted landscape plan packages shall be prepared and certified for compliance with all requirements of this chapter by a Landscape Architect licensed to practice in the state of Utah under Title 58 of Utah Code. A landscape designer certified by the Utah Nursery and Landscape Association may submit a landscape plan package if the certified designer is employed by the contractor installing plantings of the specific project submitted.
- C. All submitted irrigation plans shall be prepared by a qualified professional who is licensed under Utah Code Title 58 or by a person who is exempt from professional licensure requirements for the scope of work performed.

19.01.14.2 Landscape Plan Package Contents.

- A. The landscape plan package shall include the following at a minimum:
 - 1. A landscape plan to include the following information:
 - a. Layout of all plant material representing the size of the plants at maturity.
 - b. Detailed plant list identifying common and botanical names of plant species, specified size of plant material, quantity, and water usage based on the landscape hydrozones detailed in Section 19.01.2.2.
 - c. Planting notes and detail drawings illustrating methods of installation.
 - 2. An irrigation plan to include the following information
 - a. Layout of point of connection, mainline, laterals, spray heads or drip irrigation area.
 - b. Irrigation notes and detail drawings illustrating methods of installation specifications
 - 3. Soils Report. A soils report is required in all cases. Special procedures or requirements shall be incorporated in the preparation and recommendations of the soils report where the past use of a site has resulted in soil contamination or where difficult soil or landscaping conditions are known to exist.

19.01.14.3 Alternative Compliance

- A. As authorized by this chapter, an alternative landscape plan may be substituted in whole or in part for a landscape plan prepared in strict compliance with the chapters requirements.
 - 1. Alternative Plan Preparation and Submittal. Alternative landscape plans shall be prepared and submitted in accordance with submittal requirements for a landscape plan package.
 - 2. The submittal shall clearly identify and discuss the modifications and alternatives proposed and the ways in which the plan will better accomplish the purposes and intent of this chapter than would a plan which strictly complies with the chapter's specified standards.
- B. Alternative Plan Review Criteria. The qualified professional who prepared the plans shall clearly demonstrate how the alternative plans will:
 - 1. Provide exceptional preservation and incorporation of existing site vegetation;
 - 2. Provide significant protection of natural areas and features;
 - 3. Provide for maximum retention of existing tree canopy cover;
 - 4. Create exceptional enhancement of neighborhood continuity and connectivity;
 - 5. Provide for extensive accommodation of nonvehicular access and use;
 - 6. Represent greater innovation in site design and plant use.
- C. Alternative Plan Approval. Final approval shall be as granted by the director upon completion of review to assure satisfaction of the above criteria.

19.01.14.4 Plan Revisions.

- A. Any revisions to the landscape plan package shall be reviewed and approved in writing by the director prior to commencement of construction. Re-certification of compliance with the requirements of this chapter shall be provided by the qualified professionals who prepared and submitted the plan revisions. Site development plans that are substantially revised may require commensurate revisions to associated landscape plans.

19.01.14.5 Phasing.

- A. Landscape plans for projects proposed for development in multiple phases shall clearly specify the landscape improvements required in conjunction with each phase.

19.01.15 Construction Inspection and Compliance Requirements

19.01.15.1 Construction Verification

- A. Construction observation and monitoring of all required landscape improvements shall be provided by a licensed landscape architect so as to ensure compliance with the approved landscape plans for the site.
 1. A letter of compliance with the landscape plan shall be submitted to the Director to verify installation prior to issuance of a certificate of occupancy and bond release.
 2. A disclosure document shall be filed with the county recorder's office clearly indicating that the property is subject to the requirements of this chapter and that any re-landscaping per the thresholds listed in Section 19.01.1.3.2 shall be in accordance with the certified landscape plan for the property.
- B. Following construction and prior to issuing an approval for occupancy, a water audit shall be conducted by an IA certified landscape irrigation auditor. Irrigation system improvements required to achieve compliance with the requirements of this chapter shall be provided by the property owner as necessary. The following will be verified by the performance audit:
 1. The irrigation system complies with the minimum standards of this chapter;
 2. The minimum efficiency required for the irrigation system is seventy-five percent (75%) for the distribution efficiency for all fixed spray systems and seventy percent (70%) distribution efficiency for all rotor systems;
 3. Copies of the auditor's certification of compliance shall be provided to the director for retention in the project file as well as to the irrigation system designer, installer, and owner/developer of the property; and
 4. Compliance with this provision is required before the City will issue a letter of final acceptance.
- C. The director reserves the right to perform site inspections at any time and to require corrective measures regarding the installation of site landscaping and irrigation system improvements found not to comply with the requirements of this chapter.
- D. Multi-Phase Projects. Projects approved for development in multiple phases shall be inspected and certified to be in compliance with the approved plans for each respective phase prior to the occupancy or use of the development associated with that phase. Permits shall not be issued for subsequent phases without prior director approval until this requirement has been satisfied.

19.01.15.2 Long-Term Viability of Established Landscapes

- A. Plant Maintenance. The owner, tenant, and any agent shall be jointly and severally responsible for the maintenance of all landscaping in good condition and free from refuse and debris to present a healthy, neat, and orderly appearance.
- B. Plant Survival. All plant material shall be regularly maintained in a healthy condition and shall be guaranteed for survival for two years from planting.
 - 1. During this period, each plant shall show at least seventy-five percent (75%) healthy growth and shall have the natural characteristic of the plant of its species.
 - 2. Any plant found dead or unsatisfactory by the director during the guarantee period shall be replaced until it has lived through the required two-year survival period.

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19.01.16 Definitions

For the purposes of this chapter, the following terms shall have the meanings herein prescribed:

"Drought-tolerant plant" means a plant that can survive without irrigation throughout the year once established, although supplemental water may be desirable during drought periods for improved appearance and disease resistance.

"Groundcover" means material planted in such a way as to form a continuous cover over the ground that can be maintained at a height not more than twelve inches.

"Hardscape" means elements of the landscape such as sidewalks, pathways, benches, patios, decks, seating areas, drives, and areas for vehicular parking typically constructed from nonliving materials like concrete, boulders, brick, blacktop and lumber.

"Hydrozone" means the grouping of plants with similar water requirements so that they can be irrigated with a common zone.

"Landscaped area" means an entire parcel of real property minus that area encompassed by building footprints, driveways, and the nonirrigated portions of parking lots. Water features and areas improved with walkways, benches, seating areas and similar improvements are included in the calculation of the landscaped area.

"Mulch" means any organic material such as leaves, bark, wood chips, straw, or inorganic material such as crushed stone or gravel, or other materials left loose and applied to the soil surface for the beneficial purpose of weed suppression and the conservation of soil moisture.

"Pervious surface" means a layer through which water and air may freely migrate.

"*Activity Zones*" Portions of the landscape designed for recreation or function, such as storage areas, fire pits, vegetable gardens, and playgrounds.

"*Active Recreation Areas*" Areas of the landscape dedicated to active play where lawn may be used as the playing surface (ex. sports fields and play areas).

"*Central Open Shape*" An unobstructed area that functions as the focal point of Localscapes and is designed in a shape that is geometric in nature.

"*Gathering Area*" Portions of the landscape that are dedicated to congregating, such as patios, gazebos, decks, and other seating areas.

"*Hardscape*" Durable landscape materials, such as concrete, wood, pavers, stone, or compacted inorganic mulch.

"*Localscapes®*" A landscaping approach designed to create locally adapted and sustainable landscapes through a basic 5-step approach (central open shape, gathering areas, activity zones, connecting pathways, and planting beds).

"Park Strip" A typically narrow landscaped area located between the back-of-curb and sidewalk.

"Paths" Designed routes between landscape areas and features.

"Planting Bed" Areas of the landscape that consist of plants, such as trees, ornamental grasses, shrubs, perennials, and other regionally appropriate plants.

Total Landscaped Area: Improved areas of the property that incorporate all the completed features of the landscape. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, and other non-irrigated areas intentionally left undeveloped.

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