#### 4-1.3 Tree Preservation

# A. POLICY AND REGULATION.

It is the Policy of Arapahoe County, as adopted and expressed in this Section, to recognize that trees contribute beneficially to the character of a community and surrounding areas and provide habitat for wildlife, as well as aesthetic, health, and other benefits to the community. It is the intent of this Section to implement such Policy within unincorporated Arapahoe County to facilitate to the extent reasonable, the preservation of desirable trees on developing or re-developing land, to protect wildlife habitat as is provided by a healthy tree or tree canopy, and to preserve the character of the community from the impacts associated with the loss of desirable trees to development or redevelopment.

- **B.** In accordance with this County policy, all development applications for a new Specific Development Plan, Administrative Site Plan (PUD and non-PUD), Use by Special Review, Location and Extent, Preliminary Plat, and Final Plat, shall comply with the following requirements for the preservation of trees:
  - All existing trees within areas proposed to be disturbed by development on-site and in the adjacent right-of-way shall be surveyed by a certified/registered forester, arborist, or a Colorado licensed landscape architect and have the location, species, size (caliper/height), and condition or health noted in a tree preservation plan. See the Development Application Manual for further details.
  - 2. No trees 2-inch caliper or larger shall be removed from a property in the six months preceding the submission of a qualifying development application pertaining to that property unless deemed by a certified arborist that the risk of potential harm can be documented, and tree removal deemed necessary for safety. If evidence is provided that trees were removed within the six months prior to the submission to the County of a qualifying development application, the property owner and/or applicant will be required to replant 200 percent of the removed tree caliper.
  - 3. The Planning Division Manager may grant a waiver where the Manager finds adding trees is not feasible. If a waiver is granted, the Division Manager will issue a letter of confirmation.
  - 4. Landscape plans shall be designed to preserve existing mature trees to the extent reasonable and at a minimum a landscape plan must meet the specified tree and shrub ratios as specified in Tables xxxx and xxxx, whether by preservation or replacement.
  - 5. As used herein the determination of whether a tree is desirable shall be made in the survey specified in 1. above.
  - 6. This section of the code will be more applicable to the urban portions of the county that the eastern portions.

#### C. TREE REMOVAL AND REPLACEMENT

- 1. Existing desirable trees (see Definitions) shall be incorporated into new developments in their existing location whenever possible.
- 2. Existing desirable trees may be used to satisfy the quantity requirements of landscape standards. Existing trees that are of a two-inch caliper (deciduous) or six feet tall (coniferous) or greater shall be counted as one required tree.
- 3. Trees that meet one or more of the following removal criteria shall be exempt from the requirements of this Subsection:

- a. Dead, dying, or naturally fallen trees, or trees determined by the County to be a threat to public health, safety, or welfare.
- b. Trees that are determined by the County to substantially obstruct clear visibility at roadways, intersections, alleys, and driveways.
- c. Trees that are determined by the County to obstruct utilities.
- d. Trees included on the Colorado Department of Agriculture noxious weed list, unless the tree is deemed a significant specimen tree by the Planning Division Manager.
- 4. If the site design precludes incorporation of some or all existing desirable trees, then replacement shall be made as follows:
  - a. For any desirable trees that cannot be incorporated or are lost due to or prior to construction, the applicant shall provide the corresponding caliper lost on-site and, in the right-of-way, in addition to meeting the minimum tree planting requirements.
- 5. The replacement trees shall be at least equal to the total number of caliper inches removed from the site. For example, the removal of a 10-inch caliper tree would be satisfied by five two-inch caliper or five six-foot tall coniferous replacement trees or a combination thereof. A two-inch caliper tree is equivalent to a six-foot-tall coniferous tree. These replacement trees are in addition to the minimum number of trees required for a site. As per Section 4-1.4, Landscaping and Screening.

# D. TREE PROTECTION

All existing desirable trees that are incorporated into the design shall be adequately protected in the tree protection zone from damage during construction. The tree protection zone shall be equal to the tree's dripline or 1.5 feet radially from the tree for every one inch of trunk diameter at breast height.

- 1. Prior to and during construction, barriers shall be erected around all protected existing trees with such barriers to be of orange fencing a minimum of four feet in height, secured with metal T-posts, no closer than six feet from the trunk or one foot for every inch of diameter, whichever is greater (for example, a 10-inch diameter tree will have a fence no closer than 10 feet from the trunk). There shall be no storage or movement of equipment, material, debris, or fill within the fenced tree protection zone unless previously approved by the Planning Division Manager.
- 2. During the construction stage of development, there shall be no 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 within the fenced tree protection zone.
- 3. No damaging attachment, wires, signs, or permits may be fastened to any protected tree.
- 4. Large property areas containing protected trees and separated from construction or land clearing areas, road rights-of-way, and utility easements may be "ribboned off," rather than erecting protective fencing around each tree. This may be accomplished by placing metal T-post stakes at six feet on center and tying ribbon or rope from stake to stake along the outside perimeters of such areas being cleared.

## 4-1.4 Landscaping and Screening

## A. PURPOSE AND INTENT

#### 1. Intent

The purpose and intent of these regulations is to establish water-efficient landscape standards that will enhance the environmental, economic, aesthetic, and recreational

resources of the County and to promote sustainable management of the County's water resources. All landscape plans shall be designed for optimum site accessibility and visibility; safe pedestrian and traffic circulation; compatibility with adjacent land uses; enhancement of outdoor recreational opportunities; protection of endangered and significant ecotypes, soils, and wildlife habitat; climate resilience; prevention of the spread of invasive species; and the reduction of water consumption.

## 2. Applicability

These landscape standards shall apply to:

- a. Open space areas.
- b. New development or redevelopment unless otherwise exempted.
- c. Expansions of existing sites:
  - 1) A non-residential project requiring a building permit that cumulatively increases a structure's square footage by 25 percent or more.
  - A non-residential project that has previously increased square footage by less than 25 percent and applying for a new building permit that cumulatively triggers the 25 percent or more threshold.
  - 3) Expansion of a parking lot by 20 spaces or more.

# 3. Compliance

a. All development or new development to which these landscape standards apply must submit Landscape and Irrigation Plans that demonstrate compliance with the minimum water efficiency and landscape standards outlined in Section 4-1.4.

# 4. Alternative Compliance

- a. If a proposed Landscape or Irrigation Plan can meet the objectives of this Section through alternative or creative methods, an applicant may request approval of such alternative method of compliance through the following process:
  - i. Attend a pre-application meeting to discuss the request with Planning Division staff. The pre-application meeting material shall include a written request explaining the applicant's rationale and a site plan. This meeting must occur before the submittal of an application.
  - ii. Provide an application that shall include:
    - a) A description of site conditions, including topography, soils, existing vegetation, environmental values, and identification of limitations.
    - b) An explanation of methods and techniques in the alternative design and how they will achieve the desired objectives and otherwise meet the waterefficiency objectives of these regulations.
    - c) The alternative landscape and/or irrigation plans.

## **B. LANDSCAPE PLAN**

## 1. Landscape Plan Submittal Requirements

a. See the Development Application Manual.

#### C. IRRIGATION PLAN

### 1. Irrigation Plan Submittal Requirements

a. See the Development Application Manual.

## D. GENERAL LANDSCAPE REQUIREMENTS

#### 1. Selection and Installation of Plant Materials

- a. Plant Material Selection
  - i. All installed plants shall be selected from the approved Arapahoe County plant list (see link in the Development Application Manual) unless an alternative plant species is approved through County review of the proposed design.
  - ii. Applicable Water Quality Control Measures shall use the vegetation specified in the Arapahoe County Stormwater Management Manual.
  - iii. All plants shall meet or exceed the plant quality and species standards of the American Standard for Nursery Stock.
  - iv. Plants shall be grouped by soil suitability and water use in distinct hydrozones (very low, low, medium). No combining of hydrozones is permitted except between low and very low.
  - v. A minimum of 75 percent of plants shall be native and/or drought-tolerant species selected from the plant list low to very low categories.
  - vi. Plants listed as noxious species by Arapahoe County Weed Control or on the Colorado Department of Agriculture Noxious Weed lists are prohibited.
  - vii. Plant substitutions may be made provided that the substituted plants are from the same hydrozone and of similar plant type (shrub for shrub, tree for tree, etc.) as the plants originally specified in the approved landscape plan.
  - viii. Plants shall be selected and planted appropriately based on their adaptability to the climatic, geologic, and topographical conditions of the project site including solar orientation for plant placement to maximize summer shade and winter solar gain. Trees shall be planted to maximize summer shade and minimize winter shade.
  - ix. Planting of evergreen trees on the south or west sides of a roadway shall be reviewed for potential impacts to the road right-of-way, such as, but not exclusive of increasing shading and icing conditions.
  - x. Evergreen and deciduous shrubs planted within sight triangles and sight line areas shall be kept below 36 inches in height from the existing roadway flowline or 30 inches from the top of the existing curb.

## 2. Plant Size and Installation

- a. All plants shall equal or exceed the measurements specified in Table 4-1.4.1, Plant Specifications.
- b. The following minimum sizes apply wherever landscaping is required:

TABLE 4-1.4.1 - PLANT SPECIFICATIONS							
Plants Minimum Size							
Deciduous Trees	2-inch caliper						
Ornamental Trees	1.5-inch caliper						
Evergreen Trees	8 feet height adjacent to the public right-of-way						
Evergreen mees	6 feet height in other locations						

Shrubs	5-gallon container				
Ornamental Clump Grass	5-gallon container grasses will be counted as 1 shrub.				
Ornamental Clump Grass	1-gallon container grasses may be counted as 1/3				
	shrub. <sup>1</sup>				
Groundcover	No minimum size				

<sup>&</sup>lt;sup>1</sup> Small growing ornamental grass (i.e., Elijah blue fescue or similar) is only acceptable in gallon containers due to their size and coverage.

#### 3. Groundcover

All landscaped areas shall consist of 100 percent ground coverage in living vegetation, organic mulch, rock mulch, or paving in the case of patios, walks, paths, and similar non-roadway or driveway applications.

- a. A minimum of 65 percent of the landscape area shall be covered by living plants at maturity. Vegetative cover may consist of ground covers, perennials, shrubs, ornamental grasses, bulbs, turf, and native grass mixes selected from the Arapahoe County Plant List.
- b. Remaining coverage may be achieved through the application of decorative non-living material including organic mulch, ornamental paving, or rock mulch.
- c. Water infiltration, heat transfer, and soil improvement shall be considered when selecting a mulch.
- d. Organic mulch shall consist of shredded cedar, pole peelings, or wood chip mulch.
- e. Rock mulch shall consist of one of the following: squeegee rock, pee gravel, or ½ inch rock.
- f. Stones greater than ½ inch in diameter do not function well as mulch but can be effectively used as garden borders and accents in conjunction with other materials.

## 4. Turf Limitations

Arapahoe County recognizes that while turf (Kentucky Blue grass and other high water use turf) has practical benefits in a landscape, the extent of and the location impacts of a site's total irrigation requirements is considered a high-water use plant material. Turf is generally considered nonfunctional since it is decorative and not used for recreational purposes or civic or community events, except for in parks and other gathering areas. Turf shall be limited as follows:

- a. Turf sod or turf grass seed shall be selected from the Arapahoe County-approved plant list. Kentucky bluegrass and other high water use turf that requires over 18 gallons per square foot, or 29 inches of irrigation annually are prohibited except as approved by Arapahoe County on a case-by-case basis for limited uses such as high pedestrian traffic areas, sports fields, or water quality control measures.
- b. Turf shall be installed as a unique hydrozone and be irrigated separately from other hydrozones.
- c. In public and private parks, turf shall be restricted to park and open space areas intended for passive or active recreation. Turf in accordance with water quality control measures in the Arapahoe County Stormwater Management Manual is allowed.
- d. In single-family detached, single-family detached cluster, two-family, and townhome

- residential development, turf shall be limited to 25 percent of the total combined yard area or a maximum of 500 square feet on a lot, whichever is less.
- e. In single-family attached developments on one lot and multi-family development (e.g., triplex, fourplex, multi-family or condominium) turf shall not exceed 20 percent of the required common area and shall be only used in high-traffic or active/passive recreation areas
- f. In industrial and commercial development, turf is prohibited, except in water quality control measures as described in the Arapahoe County Stormwater Management Manual.
- g. Turf is prohibited in buffers, parking lot islands, street medians, curbside landscapes, subdivision entries, and shopping centers, except in water quality control measures as described in the Arapahoe County Stormwater Management Manual.
- h. Turf shall not be used on slopes greater than 4:1.
- i. Turf shall not be installed for the development of new golf courses.
- j. Water quality control measures, such as grass swales and grass buffers, shall comply with vegetation specified in the Stormwater Management Manual.

# 5. Plant Diversity

To reduce the risk of tree loss due to diseases and pests, not more than 30 percent of trees and shrubs installed on a site shall be of a single genus, and not more than 20 percent of trees and shrubs shall be of a single species.

## 6. Existing Trees and Vegetation

- a. The landscape design should promote and preserve climate-adapted native species, trees, and natural areas and eliminate, where possible, the need for irrigation after landscaping is established.
- b. Where there is significant existing vegetation on a site, Planning Division staff may require an inventory of plant material and submission of a tree preservation plan in accordance with Section 4-1.3.
- c. Undeveloped areas with native vegetation or undisturbed areas of quality may be allowed to count toward the minimum requirement, as determined by the Planning Division Manager. The percentage of these areas eligible to partially satisfy the minimum requirement will be determined based on their effectiveness in functioning as a buffer and enhancing the visual and natural attributes of the site.

## 7. Topsoil Preservation

Topsoil preservation shall follow the Grading, Erosion, Sediment Control (GESC) Manual.

## 8. Soil Amendments and Mulch

- a. All landscape areas shall be tilled to a minimum depth of six inches and amended with approved soil amendments with a minimum of three cubic yards per 1,000 square feet.
- b. Most native plants and grasses can be grown successfully in well-drained soil and no soil amendments are necessary.
- c. The soil amendment shall be inspected and approved by the Applicant's landscape architect.

- d. All planting beds, raised beds, and plant containers shall be mulched with a minimum of four-inch depth of, pole peelings, shredded cedar, or wood chipped mulch or a 2-inch depth of rock mulch. Stained wood mulch is prohibited.
- e. Non-organic mulch application around the base of plants is discouraged.
- f. In native plant beds, squeegee, crusher fines, or fine gravel may be used.
- g. Weed barrier fabric is prohibited.
- h. Existing topsoil shall be stockpiled during construction for use in landscape areas before planting.
- i. No topsoil shall be removed from the subject property unless the County approves the transfer of the soil to a County-owned Park or open space area, or to another approved location.
- j. The use of weed-free seed, gravel, or fill dirt is required.

## 9. Water Efficient Irrigation Systems

- a. Hydrozones: Irrigation systems should be designed for plants of similar hydrozones. The turf shall be designated as its own hydrozone. Turf irrigation zones should be further separated by slope, soil type, exposure, and turf-type water needs.
- b. Water Quality Control Facilities shall comply with the Arapahoe County Stormwater Management Manual irrigation requirements.
- c. Irrigation System Requirements:
  - i. Automatic Controllers.
    - All landscaped areas shall be served by a functioning automatic irrigation system that includes a battery backup, a weather-based smart controller (WaterSense labeled), and a rain sensor to override the irrigation cycle when sufficient rainfall has occurred. Multi-program controllers shall be used when the landscape design contains more than one hydrozone and shall be designed to irrigate hydrozones separately.
  - ii. Temporary irrigation methods are permitted where native seed mixes or other low-water plantings will require water until established.
  - iii. Sprinkler systems shall be designed to not exceed a precipitation rate of 1.2 inches per hour.
  - iv. Sprinkler Head Layout.
    - a) Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
    - b) Sprinkler head spacing for turf must achieve head-to-head coverage unless native grasses are used in which case sprinkler head spacing should be designed for 80 percent coverage.
  - v. Pressure Control.
    - a) The irrigation systems shall be designed to ensure that the operating pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
  - vi. Equipment Selection.
    - a) All non-residential sprinkler irrigation systems shall be equipped with master shut-off valves which are accessible from the County right-of-way.

- b) All sprinkler heads shall include check valves, pressure regulating devices, and flow sensor valves.
- c) Pop-up spray heads for all turf areas shall have a minimum height of sixinches. For irrigated native grasses, a minimum height of 12 inches is recommended.
- d) WaterSense-labeled sprinkler bodies and controllers are required for trees, shrubs, groundcovers, and turf.
- e) Trees shall be placed on separate valves from shrubs, groundcovers, and turf grass.
- f) All landscape irrigation systems on municipal, water and sanitation districts, and well water shall install a backflow preventer.
- g) Drip irrigation (above ground and sub-surface) is required.
- Drip irrigation shall be applied to all landscapes except turf and areas requiring temporary irrigation (germination of seed and establishment of vegetation).
- d. Watering Schedule.

All automatically irrigated landscape areas shall be scheduled for no more than three days per week and irrigation between the hours of 6:00 p.m. and 10:00 a.m. An exception shall be given for new turf, seeded, and native grass areas being established whereby additional watering can occur but not for more than 21 days after installation.

- e. Narrow strips, parking lots, curbside areas, and medians.
  - i. Overhead spray irrigation is not permitted in areas less than 10 feet in width.
  - ii. Overhead spray irrigation is not permitted in parking lot islands, or medians.
  - iii. Turf areas shall be sized and shaped for efficient irrigation and elimination of water waste with a minimum turf area width of 10 feet.
- f. Water Waste.

The irrigation system shall be designed to prevent water waste, overwatering, overspray, and drainage of water onto any paved or unplanted surface.

- g. Irrigation Design.
  - Irrigation plans shall be designed by a Certified Professional Landscape Irrigation Designer.
- h. Irrigation Installation.

Irrigation systems shall be installed by a Qualified Water Efficient Landscaper (QWEL) - certified contractor.

i. Irrigation Audit.

Following construction, a landscape irrigation audit shall be conducted by a third-party Certified Landscape Irrigation Auditor (CILA). Irrigation audits shall not be conducted by the person or company who installed the irrigation system. The irrigation audit report shall be submitted prior to a certificate of occupancy.

- j. General Requirements for Irrigation Plan.
  - The irrigation plan shall be submitted concurrently with the final landscape plan and shall be approved before any irrigation construction and issuance of a certificate of occupancy.

ii. The irrigated areas shall be shown on the irrigation plan and correspond to the hydrozones on the landscape plan. The irrigation zones shall be labeled by precipitation rates and method of water application.

#### E. LANDSCAPE DESIGN STANDARDS AND GUIDELINES

# 1. General Landscape Design

- a. Areas to be landscaped include all portions of a site not occupied by structures, water bodies, sidewalks, streets, roads, driveways, parking areas, or other vehicle use areas.
- b. All development sites, excluding single-family detached development, shall feature consistently landscaped areas along the front, sides, and rear property lines.
- c. Plants shall be distributed throughout the landscaped areas to avoid overly dense concentrations of plant materials or obstructing views determined important through the development review process. Trees and shrubs shall be configured in appropriate groupings.
- d. Landscaping shall be protected from vehicles by the placement of wheel stops, curbs, or other acceptable means.

# 2. Buffers and Screening

- a. General Buffer Standards In general, if a less intense use is developed adjacent to an existing, higher-intensity use that does not have the required buffer yard, the new, less intense use must provide the buffer yard entirely on-site.
  - i. Buffers may be interrupted for necessary pedestrian and vehicle access.
  - ii. Buffers may contain a combination of landscaping, berms, walls, and fences.
  - iii. Landscaping provided in buffer areas shall be located on the outside of walls or fences to maximize the intent of the screening and buffering.
  - iv. Buffers in areas that have a mixture of residential and commercial uses on the same property may include hardscape as part of buffer design.
  - v. Buffers between two business and industrial uses shall be one-half the width in Tables 4-1.4.2 and 4-1.4.3 below.
- b. Buffer Types and Where Required The types of buffers listed in Table 4-1.4.2 below shall be provided according to the locations specified in Table 4-1.4.3 Uses in the far-left column of Table 4-1.4.3 shall provide landscape buffers on the property where the use is located. The landscape buffer shall be located adjacent to the frontages and uses that are to be buffered.

Table 4-1	Table 4-1.4.2 Types of Landscape Buffers						
Buffer Type	Minimum Width	Planting Requirements					
Α	Building Setback	As per landscape requirements.					
В	20 feet	As per landscape requirements.					
С	30 feet	As per landscape requirements.					
D	50 feet	As per landscape requirements.					

Table 4-1.4.3 Required Buffer Type by Adjacent Land Use									
	Existing Adjacent Uses								
New Uses Providing Buffer	Arterial Streets	Other Streets	Public Parks and Nature Areas	Single- Family Detached	Other Residential	Mixed-Use Development (residential and nonresidential on the same lot)			
Mobile home park or Multi- family (three or more stories)	А	А	С	С	А	А			
Non-Residential Use – Commercial (less than 25,000 square feet and less than three stories in height)	А	А	В	В	А	А			
Non-Residential Use – Commercial (25,000 square feet or more or three or more stories in height)	А	А	В	С	А	А			
Non-Residential Use – Light and Heavy Industrial	А	А	D	D	D	С			
Parking areas and drive- through facility lanes	В	В	С	В	В	В			

# c. Exceptions

- In situations where an existing parcel has insufficient area for a landscape buffer as identified above, the Planning Division Manager, shall determine the amount of landscape buffering to be applied.
- ii. Parcels within the Strasburg overlay district are exempt from the Buffer and Screening requirements of this Section.

## 3. Urban and Rural Areas

The urban and rural areas of Arapahoe County are defined by the Urban Area Boundary (see Exhibit 4-1.x.x), and planting ratio requirements differ between these areas due to water source and availability. Since the rural areas are typically on well water, plant ratios are lower than in the urban areas.

#### a. Residential.

Within a required landscape area for residential development, the following ratios of trees and shrubs, or an acceptable combination, shall apply for single-family detached, single-family attached, and multi-family development. For mixed-use developments with mixed densities, the ratio of trees and shrubs shall be determined on a case-by-case basis. The number of trees and shrubs shall be calculated on a fractional basis. For example, if 1.5 trees are required it is rounded up to two trees.

i. Urban Areas.Urban areas are defined as land west of the Urban Area Boundary.

TABLE 4-1.4.4 - URBAN RESIDENTIAL PLANT REQUIREMENTS								
Development Type	Trees Shrubs		Turf <sup>1</sup>	Per Square Feet of Landscape Area <sup>2</sup>				
Single-Family Detached	Min. 1 shade tree and 4 shrubs in front yard		Restriction applies	N/A				
Single-Family - Two-Family								
• Units on separate lots <sup>3</sup>	1	10	Restriction applies	800				
Multiple units on one lot	1	10	Restriction applies	800				
Single-Family Attached, Townhome								
<ul> <li>Units on separate lots<sup>3</sup></li> </ul>	1	10	Restriction applies	800				
Multiple units on one lot	1	10	Restriction applies	1,000				
Multi-Family	1	10	Restriction applies	1,000				
Development with Open Space Areas <sup>3</sup>	1	10	Restriction applies	1,000				

<sup>&</sup>lt;sup>1</sup>See Section 4-1.4.D.4

# ii. Rural Areas.Rural areas are defined as land east of the Urban Area Boundary.

TABLE 4-1.4.5 - RURAL RESIDENTIAL PLANT REQUIREMENTS								
Development		Shrubs Turf <sup>1</sup>		Per Square Feet of Landscape Area <sup>2</sup>				
Single-Family Detached	Min. 1 shade tree and 3 shrubs in front yard		Restriction applies	N/A				
Single-Family - Two-Family								
Units on separate lots <sup>3</sup>	1	10	Restriction applies	1,000				
Multiple units on one lot	1	10	Restriction applies	1,000				

<sup>&</sup>lt;sup>2</sup> See - Definitions

<sup>&</sup>lt;sup>3</sup> Applies to parcels with individual lots and common open space areas.

Single-Family Attached, Townhome						
• Units on separate lots <sup>3</sup>	1	10	Restriction applies	1,000		
Multiple units on one lot	1	10	Restriction applies	1,500		
Multi-Family	1	10	Restriction applies	1,500		
Development with Open Space Areas <sup>3</sup>		10	Restriction applies	1,500		

<sup>&</sup>lt;sup>1</sup> See Section 4-1.4.D.4

## b. Non-Residential.

Non-residential consists of commercial, industrial, institutional, civic, and public land uses. The purpose of internal landscaping requirements is to visually soften the mass of buildings and visually separate building areas from motor vehicle lots. Within a required landscaped area for non-residential development, the following ratios for landscape materials apply. Alternative plant ratios may be considered if there are site constraints created by utilities, reliance on an individual well, easements, width of landscape areas, topography, and other similar limitations.

## i. Urban Areas.

Urban areas are defined as land west of the Urban Area Boundary.

TABLE 4-1.4.6 - URBAN NON-RESIDENTIAL PLANT REQUIREMENTS							
Development Type  Trees Shrubs Turf¹  Per Square Feet of Landscape Area²							
Commercial, Industrial, Institutional, Civic, and Public land uses	1	10	Restriction applies	1,000			

<sup>&</sup>lt;sup>1</sup>See Section 4-1.4.D.4

## ii. Rural Areas.

Rural areas are defined as land east of the Urban Area Boundary.

TABLE 4-1.4.7 - RURAL NON-RESIDENTIAL PLANT REQUIREMENTS								
Development Type  Trees Shrubs Turf¹  Per Square Feet of Landscape Area²								
Commercial, Industrial, Institutional, Civic, and Public land uses	1	5	Restriction applies	2,500				

<sup>&</sup>lt;sup>1</sup> See Section 4-1.4.D.4

<sup>&</sup>lt;sup>2</sup> See Definitions

<sup>&</sup>lt;sup>3</sup> Applies to parcels with individual lots and common open space areas.

<sup>&</sup>lt;sup>2</sup> See Definitions

<sup>&</sup>lt;sup>2</sup> See Definitions

#### 4. Public and Private Parks

- a. Design.
  - i. Natural and/or human-made landscaping features shall be identified on the landscape plan, see Development Application Manual.
  - ii. The County may additionally require trails, lights, parking lots, playgrounds, play courts, benches, signs, and other amenities suitable for the developed open space.
  - iii. In instances where parks are in the 100-year floodplain, landscaping requirements may be adjusted to the specific requirements of the Mile High Flood District and the Arapahoe County Engineering Services Division.
  - iv. All parks shall be designed to blend with and enhance the adjacent areas.
    Slopes shall not exceed 4:1 unless specifically allowed by the Public Works and Development Department.

## b. Landscaping.

- i. Public Parks.
  - a) Public Park requirements for landscaping improvements will be established during the development review process, in coordination with and subject to the approval of the agency/district receiving the park.
- ii. Private Parks.
  - a) Private parks shall be located and configured to serve as useable park areas with the following improvements:
    - 1) A minimum of one tree and 10 shrubs, or five trees and no shrubs, for every 5,000 square feet of area.
    - A functioning automatic irrigation system. Natural and/or man-made landscaping features including turf grass sod, grass seed mix, or other ground cover, of types, sizes, quantities, and in locations approved by the development process.

## c. Installation.

- i. Public and Private Parks
  - a) The landscaping of all parks within a residential development project shall be completed prior to the issuance of building permits for more than 50 percent of the dwelling units approved in the project unless otherwise approved by the Board of County Commissioners. Any failure to complete the required landscaping by the deadlines specified herein shall result in the withholding of Certificates of Occupancy until compliance with the requirement occurs.

# 5. Parking Area Landscaping

- a. Buffering and Screening.
  - Trees and shrubs shall be planted within the landscaped buffer, see Table 4 1.4.3. In addition, one or more of the following shall be required to reduce off-site headlight glare:
    - 1) A minimum three-foot-high earthen berm with average side slopes no greater than 3:1.

- 2) An opaque fence or a wall with a minimum of 4.5 feet in height; or,
- 3) A shrub hedge, three feet in height at the time of planting.
- ii. For all parking lots or vehicle circulation/storage adjacent to a public right-ofway, a berm, fence, wall, or hedge (as stated in i. 1) through 3) above) shall be required in the setback between the right-of-way and the parking lot.
- iii. Where planting is prohibited by the existence of an easement, additional setbacks for the parking lot will be required to provide for the landscaped buffer.
- iv. Drive-through.
  - i. For drive-through aisles that are adjacent to a public right-of-way, wall, fence, plantings, or some combination of those or similar solutions must be provided to minimize the visual impact of reader board signs, directional signs, headlight glare, and the queued vehicles. The screening must be no less than three feet high and no more than four feet high. Shrubs used for screening shall be evergreen and the screen wall shall match the building onsite.
  - ii. If the service window, remote teller, menu board, or similar components of a drive-through facility are adjacent to and/or facing a residential use, a 20-foot buffer with a six-foot solid fence or wall must be provided along the entire length of the property line(s) closest to the residential district.

# b. Interior Parking Lots.

These landscape requirements apply to <u>all</u> parking lots, in accordance with the standards described herein.

i. Landscape Islands.

Landscaped islands within parking lots shall meet the following requirements:

- a) Be located within and at the end of each parking row so that there are no more than 15 consecutive parking spaces in urban areas and 20 spaces in rural areas without a landscape island separating them.
- b) Be a minimum of 18 feet wide, measured from the inside of the curb to the inside of the curb, and be the length of the adjacent parking space, with a minimum area of 324 square feet.
- c) Contain mulch with at least six shrubs per single parking row or 12 shrubs per double parking row. See detail below.

Insert detail.

d) Contain at least one tree per single parking row and two trees per double parking row. All trees shall be deciduous canopy trees. See detail below.

Insert detail.

- e) No tree shall be planted in the landscape island if a light pole is required. No landscaping within landscaped islands shall obstruct the visibility of vehicles entering, maneuvering in, or exiting the parking lot.
- f) Plantings or other landscape elements in the sight distance triangle shall comply with Section xxx.

- g) Consider if landscape islands are appropriate for curb cuts to allow for stormwater infiltration into the landscape islands.
- h) Other stormwater techniques, such as rain gardens, grass swales, and bioretention may be incorporated into parking lots in accordance with the County's Stormwater Management Manual.
- ii. Landscape Medians.

Landscape medians shall provide the following:

- a) Parking lots with more than three drive aisles require landscape medians between parking stalls and shall meet the following standards:
  - Rows of parking spaces shall be divided by landscape medians parallel
    to the parking rows so that there are no more than three drive aisles
    between landscape medians and a required parking lot buffer or
    landscape median. See the example below.

Insert Example

- 2) Landscape medians in parking lots shall promote some stormwater benefits such as reducing runoff or filtering pollutants.
- 3) Landscape medians shall be a minimum of 10 feet wide. If the landscape median contains a water-quality swale, the width needs to accommodate both the swale and landscaping and follow the County's Stormwater Management Manual.
- 4) Landscape medians shall have at least one deciduous canopy tree and six shrubs for every 40 linear feet along the length of the median.
- 5) Plantings with a mature height of six inches or more shall not be planted in the vehicle overhang area (30 inches from the front of the curb into the landscape median). See the example below.

Insert Example

- 6) Other stormwater management techniques, such as rain gardens and grass swales may be incorporated into parking lots in accordance with the County's Stormwater Management Manual.
- iii. Exceptions.

If the parking lot cannot meet landscaping requirements due to unique site constraints or conditions, the Planning Division Manager may approve alternative designs that meet the overall intent of this Section.

## 6. Rights-of-Way and Medians

a. General.

The landscaping of any County right-of-way or medians associated with a residential development project based upon an approved landscape plan shall begin before the issuance of building permits for 20 percent of the dwelling units approved in the project.

- b. Landscape Criteria.
  - i. No turf grass shall be planted in medians. Hardscape in medians shall be minimized.
  - ii. Landscape elements placed adjacent to existing and proposed roadways (in the

right-of-way) shall be designed to minimize conflicts between vehicular and pedestrian traffic while providing an aesthetic landscape environment that is relatively easy to maintain. The placement of trees and shrubs in the County rights-of-way shall be as required in Table 4-1.4.8, Tree and Shrub Right-of-Way Requirements:

TABLE 4-1.4.8 - TRI	TABLE 4-1.4.8 - TREE AND SHRUB RIGHT-OF-WAY REQUIREMENTS									
Item	Setback from the edge of	Canopy to maintain								
	pavement, sidewalks, and back	clearance from								
	of curbs	pedestrians and vehicles								
		(vertical distance)								
		6 feet from								
Canopy		pedestrians/11 feet from								
Deciduous Tree	3 feet	vehicles								
		Canopy not to overhang								
Evergreen Tree	10 feet	sidewalks or streets.								
		Canopy not to overhang								
Ornamental Tree	4 feet	sidewalks or streets.								
Deciduous and										
Evergreen Shrubs	18 inches	N/A								

- \* Centered trees in a landscape strip between the back of the curb and sidewalk.
- \*\* Placement of trees to be kept out of the clear zone as defined by the AASHTO Roadside Design Guide.
- iii. Center trees in the curbside landscape area between the back of the curb and sidewalk
- iv. The placement of trees to be kept out of the clear zone as defined by the AASHTO Roadside Design Guide.
- v. No tree shall be planted closer than eight feet from any driveway or alley.
- vi. Deciduous tree canopies should not conflict with the safe movement of pedestrians and vehicles.
- vii. Ornamental tree canopies often cannot meet the above clearance criteria, and their use and placement must be carefully considered.
- viii. Evergreen trees, when incorporated into a landscape design, should not be planted along the immediate west and south edges of roadways. Evergreen trees promote shading of roadways in the winter months and permit ice build-up during freeze-thaw cycles.
- ix. All shrubs placed within sight triangles and sight line areas shall be kept below 36 inches in height from the existing roadway flow line or 30 inches from the top of the existing curb, whichever results in a shorter plant height.
- x. The above-referenced landscape criteria are required for Arapahoe County rights-of-way only. Landscape criteria governed by other jurisdictions (i.e., CDOT, municipalities, etc.) will be governed by that agency.
- c. Design Requirements.
  - i. Landscaping of curbside landscape areas and medians in the rights-of-way are as required below:

TABLE 4-1.4.9 – RI	GHT-OF-WAY	' LANDSCAPI	NG				
Road Type	Minimum Curb Landscape Width (back of curb to sidewalk)	Tree Spacing in Curbside Landscape	Curbside Landscape Understory	Minimum Median Width	Median Planting	Median Tree Spacing (Formal)	Median Tree Spacing – (Informal)
Private Alley	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Roadway Alternative Parking Both Sides	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Roadway Parking One Side (with detached sidewalk)	6 feet	30 ft. to 40 ft dictated by species	Low-water grass <sup>1</sup> , shrubs, ornamental grass, perennials	N/A	N/A	N/A	N/A
Private Roadway Parking One Sides (with attached sidewalk)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Roadway Rural	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rural Public with and Without Bike Accommodations	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public Urban Local (with attached sidewalk)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public Urban Local (with detached sidewalk)	6 feet	30 ft. to 40 ft dictated by species	Low-water grass <sup>1</sup> , shrubs, ornamental grass, perennials	N/A	N/A	N/A	N/A
Two-Lane Collector (with detached sidewalk)	7 feet	30 ft. to 40 ft dictated by species	Low-water grass <sup>1</sup> , shrubs, ornamental grass, perennials	N/A	N/A	N/A	N/A

Four-Lane Collector (with detached sidewalk)	7 feet	30 ft. to 40 ft dictated by species	Low-water grass <sup>1</sup> , shrubs, ornamental grass, perennials	N/A	N/A	N/A	N/A
Four-Lane Arterial (with painted median)	10 feet	30ft. to 40 ft dictated by species	Low-water grass, shrubs, ornamental grass, perennials	N/A	N/A	N/A	N/A
Four-Lane Arterial (with raised median)	10 feet	30 ft. to 40 ft dictated by species	Low-water grass, shrubs, ornamental grass, perennials	14 feet	No turf allowed	30 ft. to 40 ft dictated by species	Small trees, shrubs, ornamental grass, and perennials
Six-Lane Principal Arterial (with painted median/left turn lane)	10 feet	30 ft. to 40 ft dictated by species	Low-water grass, shrubs, ornamental grasses, perennials	N/A	N/A	N/A	N/A
Six-Lane Principal Arterial (with raised median/left turn lane)	10 feet	30 ft. to 40 ft dictated by species	Low-water grass, shrubs, ornamental grasses, perennials	N/A	No turf allowed	N/A	N/A
Eight-Lane Urban Expressway (with raised median/left turn lane)	10 feet	30 ft. to 40 ft dictated by species	Low-water grass, shrubs, ornamental grasses, perennials	26 feet	No turf allowed	30 ft. to 40 ft dictated by species	Small trees, shrubs, ornamental grass, and perennials

<sup>&</sup>lt;sup>1</sup> The landscape area shall be to be 10 feet in width for low-water grass to be installed.

- d. Maintenance of Landscape and Irrigation in the Right-of-Way.
  - i. For all proposed landscape improvements and related appurtenances placed within Arapahoe County rights-of-way, the applicant needs to develop a Landscape Maintenance Agreement with the County. Arapahoe County will not be responsible for maintaining landscape improvements and related appurtenances placed within the Arapahoe County rights-of-way.
  - ii. Landscaping in the right-of-way shall be maintained so that it does not encroach onto sidewalks, ADA ramps, side paths, trails, or traffic lane, is free of noxious weeds, does not impede or have the potential to impede

- stormwater drainage, does not impair visibility of street signs/markings/traffic signals, and does not impair visibility within sight triangles/intersection sight distances.
- iii. A master control value for the irrigation is required to be located within the right-of-way.
- iv. Vegetation that is deemed to be a traffic or safety hazard may be removed by the County.
- v. Table 4-1.4.10 identifies who is responsible for vegetation maintenance in public rights-of-way:

TABLE 4-1.4.10 – RIGHT-OF-WAY MAINTENANCE		
Road Type	Maintenance Responsibility	
Private Roadway Rural	Adjacent property owner	
Rural Public	Adjacent property owner	
Public Urban Local (with	Adjacent property owner	
attached sidewalk)		
Public Urban Local (with	HOA, metro district, or if no HOA/metro district, adjacent property	
detached sidewalk)	owner	
Collector/Arterial	HOA, metro district, or if no HOA/metro district, adjacent property	
	owner	

#### 7. Stormwater Facilities

- a. Detention and Water Quality Areas.
  - All improvements within a detention area shall be approved by the Engineering Service Division to ensure compliance with approved drainage plans. Regional and sub-regional detention facilities are exempt from these requirements unless otherwise determined by the Board of County Commissioners. Within detention areas, the following types and quantities of plant materials and other improvements shall be required in accordance with the Public Works and Development Department review:
  - i. Drainage easements and portions of the detention ponds above the 100-year water surface elevation can be counted towards minimum landscape/open space requirements found in Section x-xxx.
  - ii. Detention ponds with earthen sides shall meet the requirements of the County's Stormwater Management Manual. However, when required by site constraints, other design solutions may be submitted to the Public Works and Development Department for approval.
  - iii. Detention ponds with water quality components shall be planted in accordance with the Stormwater Management Manual. Trees or shrubs shall be planted in accordance with the Stormwater Management Manual.
  - iv. A functioning, automatic irrigation or a temporary irrigation method is required when native seed mixes or other low-water plantings are utilized.
     In addition, the County's Stormwater Management Manual also has irrigation requirements.
  - v. In instances where in-line detention areas are located in the 100-year floodplain, landscaping requirements may be adjusted to the specific requirements of Mile High Flood District and/or Arapahoe County Engineering

Services Division.

vi. All detention ponds shall provide access for maintenance per the County's Stormwater Management Manual.

# b. Bioretention Facilities.

- i. See the County's Stormwater Management Manual Section for requirements for the growing media and vegetation.
- ii. A permanent irrigation system shall be provided in accordance with the County's Stormwater Management Manual.
- iii. This facility shall be included as landscaped or other open space.

#### c. Sand Filter.

This control measure cannot be included as landscaped or other open space and must meet the requirements of the County's Stormwater Management Manual.

- d. Grass Swales and Buffers.
  - i. Shall be vegetated in accordance with the County's Stormwater Management Manual.
  - ii. These facilities can be included as landscape or other open spaces.
  - iii. A permanent irrigation system shall be provided.
- e. Major Drainageways.

Drainageways (drainage flow path with a tributary area of 130 acres or more) shall be preserved in their natural state, to the extent possible, and stabilization measures shall be designed to complement and enhance the natural character. Major drainageway flows shall comply with the County's Stormwater Management Manual.

## 8. Utility Setbacks

Landscape and utility plans shall be coordinated. The following are the minimum horizontal dimension requirements for separation between trees and a utility.

TABLE 4-1.4.11 – UTILITY SETBACKS	
Item	Separation Distance of Tree from Utility Line
Utility Line	
(underground)	10 feet
Utility Line (overhead)	Check with the electric company
Utility Pole or Pedestal	20 feet
Water Line	10 feet
Sanitary Sewer Line	10 feet
Stormwater	No trees or shrubs within the easement
Gas Line	10 feet
	Trees shall not be planted in parking landscape islands
Parking Lot Lights	that have parking lot lights.
Streetlight	Deciduous Canopy Tree – 40 feet
	Ornamental Tree – 15 feet

# 9. Artificial Turf

a. Artificial turf is prohibited in all nonresidential and residential zone districts, except as allowed through the County development review process for designated sports fields and sports facilities on public and private property.

- b. Artificial turf shall be pervious and installed according to industry specifications and maintained in a manner to mimic a healthy living turf.
- c. Artificial turf is prohibited within five feet of a building.

## 10. Weed Control

- a. The use of weed-free seed, gravel, or fill dirt is required.
- b. The use of competitive grasses, shrubs, or trees that provide sufficient ground cover may be required where weed problems already occur or may occur in the future.
- c. Plant species that appear on the Colorado Department of Agriculture Noxious Weed lists are unacceptable for use in proposed landscaping.
- d. For landscape areas that are presently bare and susceptible to erosion and runoff, the property owner shall be required to revegetate the area.
- e. Notice of Violation and Penalty as per Ordinance No. 2021-001.

# 11. Wildfire Defensible Space

Colorado's population is growing, its urban and rural areas are rapidly expanding, and landowners need to know how to correctly landscape their property to reduce wildfire hazards. The following standards apply to all structures.

- a. Gravel or crushed rock not less than ¾-inch in diameter or other non-combustible material applied at least two inches thick must be installed beneath decks, unenclosed floors, and around the perimeter of the building to extend at least three feet beyond the exterior walls and at least five feet beyond the driplines of decks, bay windows, and other eaves and overhangs. Non-combustible surfaces, such as poured concrete or asphalt, or other approved non-combustible materials, such as brick, concrete, or stone pavers, may satisfy this requirement.
- All building exterior walls, fences, and retaining walls within five feet of a building or other appurtenances that connect to buildings must be constructed of noncombustible materials or ignition-resistant materials.
- c. Plant low-growing, non-resinous shrubs near structures.
- d. Keep grass mown around structures to a maximum height of four inches.
- e. Provide a well-irrigated area and hardscape that encircles the structure on all sides including decks and fences and provides space for fire suppression equipment in the event of an emergency.

## 12. Maintenance, Installation Assurances, and Warranties

- a. Maintenance Required.
  - All landscaping shall be maintained to support healthy and thriving conditions. Irrigation systems and their components shall be maintained to sustain water efficiency consistent with the originally approved design.
- Replacement of Plant Material.
   Plants that die or are unhealthy shall be replaced according to the approved landscape plan within six months.
- Pruning and Trimming.
   Regular plant maintenance shall be performed to maintain plant health, support plant growth, and achieve design and aesthetic goals.
- d. Grounds Keeping.

- All landscaped areas shall be kept clean and free of invasive plant species.
- e. All water quality facility maintenance shall be in conformance with the applicable operations and maintenance manual.

## 13. Qualifications and Certifications

- a. The landscape plan shall be prepared by a Colorado-licensed landscape architect.
- The irrigation system plan shall be completed by a Certified Irrigation Association
   Designer and installed by a Qualified Water Efficient Landscaper (QWEL)-certified professional.
- c. The irrigation audit shall be conducted by a third-party Certified Landscape Irrigation Auditor (CLIA).
- d. The consulting arborist shall be certified by the International Society of Arboriculture.

## 14. Landscape Installation and Inspections

- a. The landscape architect of record shall inspect and certify that the landscape area has been constructed as depicted on the approved landscape plan.
- b. Prior to the issuance of a certificate of occupancy, the landscape architect of record shall submit a Certification of Landscape Installation to the County Planning Division.
- c. A third-party certified landscape irrigation auditor shall conduct an audit and submit a report to the Planning Division prior to certificate of occupancy.
- d. If the Developer has not completed all the installation of the landscaping and irrigation and wishes to obtain a temporary certificate of occupancy, a landscape agreement and collateral (check or letter of credit) must be provided to the County Planning Division.
- e. Upon installation of the landscaping required by the approved landscape plan and inspection by the landscape architect of record to confirm compliance with said plan, and irrigation audit has been submitted and approved, the County shall release the collateral provided by the developer.

## **DEFINITIONS**

Area of Quality: Area(s) within a site or parcel that consists of native vegetation that is in good health.

Backflow preventer: A mechanical device installed at the beginning of the irrigation system to prevent a reverse water flow and contamination of the potable water supply.

Bioretention Facility (also known as Rain Gardens and Porous Landscape Detention): An engineered, depressed landscape area designed to capture and filter or infiltrate the water quality capture volume.

Buffer Yard: Is a landscape area between two different land use types and is designed to provide a transition between the uses, mitigate or minimize potential nuisances such as noise, light, and glare, protect the character of an area, and protect natural resources from impacts of nearby development and does not include grass buffers in accordance with the Arapahoe County Stormwater Management Manual.

Caliper: The diameter (expressed in inches) of a tree trunk measured 4.5 feet above the ground level.

Certified Landscape Irrigation Auditor (CLIA): A person who has completed formal training, certification,

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licensing, or other similar qualifications by the Irrigation Association or Qualified Water Efficient Landscaper (QWEL) to perform irrigation audits.

Certified Professional Landscape Irrigation Designer: A person who has completed formal training, certification, licensing, or similar qualifications by Irrigation Association.

Climate Resilience: The ability to recover from or to mitigate vulnerability to, climate-related incidents such as floods, droughts, and wildfires.

Curbside Landscape: The landscape area between the sidewalk and the curb.

Desirable Tree: A tree that is in good health, with good form, and with minimal to no disease or decay as determined by a certified arborist.

Diameter at Breast Height (DBH): The tree diameter (expressed in inches) measured 4.5 feet above the ground level.

Ecotypes: a group of organisms, normally a subdivision of a species, that is adapted to a specific environment. It is sometimes called ecospecies, describing a genetically distinct geographical variety, population, or race within a species, which is adapted to specific environmental conditions.

Extended Detention Basin: A sedimentation basin designed to detain stormwater for many hours after storm runoff ends.

Grass Buffer: Densely vegetated strips of grass designed to accept sheet flow from up-gradient development.

Grass Swale: Densely vegetated trapezoidal or triangular channels with low-pitched side slopes designed to convey runoff slowly. Grass swales have low longitudinal slopes and broad cross-sections that convey flow in a slow and shallow manner, thereby facilitating sedimentation and filtering (straining) while limiting erosion.

Hydrozone: Plants grouped together by soil suitability and water use in distinct hydrozones. Hydrozones are divided into three categories:

- Very Low Hydrozone: Plant materials that require 7 gallons per square foot or less per season of supplemental water applied during the growing season.
- Low Hydrozone: Plant materials that require 14 gallons per square foot per season of supplemental water applied during the growing season.
- Moderate Hydrozone: Plant materials that require 18 gallons per square foot per season of supplemental water applied during the growing season.
- High Hydrozone: Plant materials that require over 18 gallons per square foot per season of supplemental water applied during the growing season are prohibited.

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Irrigation Audit: A procedure to collect and present information concerning the uniformity of application, precipitation rate, and general condition of an irrigation system and its components. This procedure, according to the Irrigation Association includes a visual site inspection of the installed irrigation system for performance according to design criteria.

Landscape Area: The treatment of pervious surfaces with organic/inorganic plant materials such as grass, ground cover, trees, shrubs, vines, and other horticultural materials. Landscaping may also include other decorative surfacing such as wood chips, crushed stone, or other mulch materials. Not all water quality control measures can be considered landscaped areas.

Landscape Islands: A landscaped area enclosed by raised curbs and typically located within a parking lot.

Low Water Grass: County-approved grass seed mix that requires less water.

Nonfunctional turf: Turf that is solely decorative and not regularly used for human recreational purposes or civic or community events. Nonfunctional turf grass does not include sports fields and turf that is regularly used for human recreational purposes or civic or community events.

Open Space: All portions of a site not occupied by structures, water bodies, streets, roads, driveways, parking areas, and other vehicle-use areas. Other areas that may consider open space include plazas, patios, pathways, detention basins above the 100-year flood elevation, grass swales, grass buffers, and bioretention facilities (rain gardens).

Qualified Water Efficient Landscaper (QWEL): An individual who has successfully completed the Qualified Water Efficient Landscaper training and certification program. The QWEL program is a comprehensive indepth training and certification program, emphasizing irrigation, landscape, water management, and horticultural best management practices.

Recreation – Active: recreation activities of a more structured nature often requiring equipment and taking place at prescribed places, sites, or fields.

Recreation – Passive: recreational activities that do not require prepared facilities like sports fields or pavilions.

Sand Filter: A water quality facility that collects runoff during storm events and gradually infiltrates the stormwater into the underlying sand bed.

Significant Specimen Tree: A tree that is unique in its size, shape, color, or texture.

Tree Protection Zone: A defined area above and below grade around each tree where construction activities are limited or restricted to prevent injury to preserved trees.

Turf: Turf grass, lawn, or sod shall mean any cool season turf species, variety, or blend, including but not limited to Kentucky bluegrass and Fescue.

Undisturbed Areas of Quality: Areas that haven't been disturbed and can be used for water quality and/or storage, wildlife habitat, or buffer.

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Urban Area Boundary: The urban area boundary, as shown on the Development Framework Map contained in the Arapahoe County Comprehensive Plan and other County maps, designates the extent of the Urban Area. It is the boundary between the urbanized area in the county and the rural agricultural, ranching, and natural areas, and establishes the limit on the expansion of urban-type development.

WaterSense: A voluntary partnership program sponsored by the U.S. Environmental Protection Agency (EPA), that provides both a label for water-efficient products and a resource for helping you save water.

Weed: Shall be defined as "any unsightly, useless, troublesome, or injurious plant, including grasses and/or all vegetation which has grown to maturity or a height over six inches, including but not limited to, Field Bindweed, Leafy Spurge, Canada Thistle, Russian Knapweed, Perennial Sowthistle, Puncturevine, Silver-leaf Povertyweed, Mouseear Povertyweed, Fanweed, Mustards, Purpleflowered Groundcherry, Russian Thistle, Fireweed, Redroot Pigweed, Smooth Pigweed, Prostrate Pigweed, Sandbur, Hairy Stickseed, Buffaloburs, White Horsenettle and Carolina Horsenettle, Common Ragweed, cocklebur, and dandelion. This definition shall not include flower gardens, shrubberies, vegetable gardens, small grain plots, successional grasses utilized for erosion control, and pastures used for feed, fodder, or forage, provided the same are adequately weeded and maintained." Ordinance No. 2021-01.