

CITY OF MOAB ORDINANCE #2023-08

**AN ORDINANCE AMENDING THE TEXT OF THE MOAB MUNICIPAL CODE (MMC),
SECTIONS 17.06 DEFINITIONS, 17.09 SUPPLEMENTARY REQUIREMENTS AND
PROCEDURES APPLICABLE WITHIN ZONES, AND CREATING CHAPTER 17.10
LANDSCAPING STANDARDS, SUCH AS TO INCLUDE WATER EFFICIENT
LANDSCAPING STANDARDS FOR NEW DEVELOPMENTS.**

WHEREAS, the City of Moab via the General Plan commits to preventing the waste of resources by promoting the conservation and efficient use of water; and

WHEREAS, the Utah Division of Water Resources Regional Water Conservation Goal for the “Upper Colorado River” (Carbon, Emery, Grand, and San Juan Counties) is 20% by 2030, from an average of 333 gallons per capita per day (GPCD) to 267 GPCD; and

WHEREAS, the City’s Water Conservation Plan proposes to meet and exceed the Regional Goal by setting a new baseline of 250 GPCD by 2030, down from its 2020 estimated use of 263 GPCD, with additional decreases to 230 GPCD based on State participation in conservation efforts, which in total would represent a 50% decrease in outdoor landscape irrigation; and

WHEREAS, landscapes are essential to the quality of life in the City of Moab by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, mitigating urban heat island effect, managing stormwater, offering fire protection, and replacing ecosystems lost to development; and

WHEREAS, the City finds that there is a compelling need and public purpose for adopting updated development standards due to current conditions and factors that require more efficient landscaping standards for water conservation and resource management; and

WHEREAS, the City has coordinated and contracted with WaterNow Alliance and Western Resource Advocates, environmental nonprofits, to provide pro-bono technical assistance to the City in researching, developing, and implementing robust water wise landscaping standards that promote water resiliency in Moab even in the face of growth and climate change; and

WHEREAS, from time to time the City undertakes revisions in its zoning ordinances to improve the quality of land development and align the Code with state law and contemporary planning concepts; and

WHEREAS, The City of Moab has the authority to adopt this ordinance pursuant to Utah Code Annotated (2010) § 10-3-702, and hereby exercises its legislative powers in doing so.

WHEREAS, the Moab Municipal Code Chapter 17.04, Zoning Map Amendments and Text Amendments, permits the Zoning Text Amendment process to allow amendments to the development standards within zoning districts; and

WHEREAS, this ordinance shall apply to all properties or developments where landscaping or landscaped spaces are required; and

WHEREAS, the purpose of this ordinance is to update the required landscaping development standards with water efficient techniques and regulations that will apply proportionately to the scale of development proposed; and

NOW, THEREFORE BE IT ORDAINED that the Moab City Council hereby approves the Text Amendments as follows:

PASSED AND APPROVED in open Council by a majority vote of the Governing Body of Moab City Council this

12th day of September 2023.

SECTION 1. AMENDMENTS TO MMC CHAPTER

DEFINITIONS ADDING OR MODIFYING DEFINITIONS OF:

- A. “Active rainwater catchment” means water harvesting tanks, cisterns, barrels and/or similar equipment that capture and store water during a rainfall event.
- B. “Active recreation area” means an area that is dedicated to active play where turf grass or artificial turf may be used as the playing surface. Examples of active recreation areas include sports fields, play areas, and other similar uses. Areas with different uses near active recreation areas are not considered active recreation areas. For example, the spectator seating next to a sports field is not considered an active recreation area.
- C. “Application rate” means the depth of water applied to a given area, usually expressed in inches per hour.
- D. “Applied water” means the portion of water supplied by the irrigation system to the landscape (supplemental to precipitation).
- E. “Artificial plants” means synthetic fibers or synthetic polymers that simulate the appearance of natural plants, including trees, shrubs, turf, and other plants. See “Turf, artificial.”
- F. “Automatic controller” means a mechanical or solid state timer, capable of operating landscape irrigation stations and setting the schedule (days and length of time) for water application.
- G. “Backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- H. “Bare root” means nursery stock which has been removed from the growing site with the root system substantially free of soil.
- I. “Berm” means an earthen mound designed to provide visual interest on a site, screen undesirable views, reduce noise or provide buffering from adjoining properties.
- J. “Buffer” means a horizontal distance between adjacent uses or properties occupied by landscaping elements (excluding pools and spas), berms, swales, underground utilities, retention areas, screening, sight obscuring fences, walls, landscaped screening, or other features that individually or in combination reduce impacts on adjacent land areas or uses.
- K. “Buffering” means the use of a horizontal buffer and vertical screening to reduce impacts on adjacent land areas or uses.
- L. “Canopy tree” means a tree, usually with a one (1) vertical stem or main trunk, which naturally develops a more or less distinct crown approximately 6’ above ground and provides at maturity a minimum shade crown of twenty-five feet (25’) in diameter or greater.
- M. “Check valve or anti-drain valve” means a valve located under, or often incorporated within, a sprinkler head or other location within the irrigation system, to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads when the system is off.
- N. “Distribution uniformity” means the measure of the uniformity of irrigation water over a defined area.
- O. “Drip irrigation” means any non-spray low volume irrigation system utilizing emission devices

with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

- P. “Ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- Q. “Effective Precipitation (EP)” means The amount of rain that enters the soil and is available to plants. It is the difference between total rainfall and actual evapotranspiration. The EPA WaterSense Water Budget Tool estimates effective precipitation as 25% of average peak monthly rainfall.
- R. “Evapotranspiration” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time. See below for “Reference evapotranspiration or ET.”
- S. “Flow rate” means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.
- T. “Graywater” means untreated wastewater that has not been contaminated by a toilet/urinal discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. “Graywater” includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.
- U. “Hardscapes” mean a landscape feature that is made of any durable material (pervious and non-pervious).
- V. “Hydrozones” means the landscape design practice of clustering plants with similar water, sun and soil requirements to conserve water and improve plant health. A hydrozone may be irrigated or non-irrigated.
- W. “Landscape water meter” means an inline device installed at the irrigation supply point that measures the volume of water into the irrigation system by using a flow totalizing device to record water use.
- X. “Landscaped area” means the area within the parcel with landscaping.
- Y. “Landscaping” means some combination of planted trees, shrubs, vines, groundcover, flowers, or lawns. In addition, the combination or design may include rocks, mulch, and structural features such as water features, art works, screens, walls, fences, raised planters, or benches, but such objects alone shall not qualify as landscaping. Landscaping does not include the building footprint, driveway, non-irrigated portions of parking lots, hardscapes- such as decks and patios, other non-porous surfaces, or portable furniture and plant containers.
- Z. “Maximum Applied Water Budget” means the upper limit of annual applied water (supplemental irrigation water) for the established landscaped area as specified in Appendix A. It is based upon the area’s reference evapotranspiration and is adjusted for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.
- AA. “Mulch” means any organic material such as wood chips, bark, straw, compost, pine needles or

inorganic mineral materials such as rocks, gravel, or decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

- BB. “Operating pressure” means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
- CC. “Overhead irrigation” means the use of equipment and devices which deliver water under pressure, through the air, above the level of the plant being irrigated.
- DD. “Overspray” means the irrigation water which is delivered beyond the target area.
- EE. “Pervious” means any surface or material that allows the passage of water through the material and into the underlying soil.
- FF. “Personal Agriculture Cultivation” means private, non-commercial agricultural activities with plantings limited to the cultivation and maintenance of fruits, vegetables, herbs, plants, and flowers. Purposes of growing and harvesting legal plants for donation, personal use, or off-site incidental sales.
- GG. “Public right-of-way” means the area of real property in which the city has a dedicated or acquired right-of-way interest in the real property.
- HH. “Reference evapotranspiration or ETo” means standard measurement of environmental parameters which affect the water use of plants. ET is typically expressed as the depth of water in inches or the volume of water in gallons used by an irrigated landscape area over a period of time, as represented in Appendix A, and is based on an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the maximum applied water budget so that regional differences in climate can be accommodated.
- II. “Runoff” means Irrigation water that is not absorbed by the soil or landscape area to which it is applied, and which flows onto other areas.
- JJ. “Screening” means a vertical barrier, including opaque fences/walls, sight obscuring fences, or landscaped screening, situated between adjacent uses or properties, or maintenance, trash, storage or loading areas, constructed or planted to reduce impacts on adjacent land areas or uses. Where there is a difference in elevation on the opposite sides of the screen, the height shall be measured from the highest elevation.
- KK. “Screening, Landscaped” means evergreen shrubs, ornamental walls/planters, berms, or other densely planted shrubs or vegetation, closely spaced and maintained at substantially the specified height of said required screening. When not otherwise specified, natural screening shall be maintained at a height from four (4) feet to six (6) feet.
- LL. “Secondary water” means non-potable or non-culinary, untreated water that is designated for irrigation
- MM. “Shut-off valve” means an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system.
- NN. “Slope” means a vertical rise measured over a horizontal distance, expressed as a percentage, measured generally at right angles to contour lines.

- OO. “Smart irrigation controller” means an automatic timing device with nonvolatile memory used to remotely control valves that operate an irrigation system. Smart irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based), soil moisture data or flow data or a combination of methods.
- PP. “Turf Grass” means a ground cover surface of mowed grass.
- QQ. “Turf Grass, cool season” means grasses that withstand cold winters but often go dormant in hot, dry weather. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are examples of cool season grasses.
- RR. “Turf Grass, warm season” means grasses that do well in warmer environments and often tolerate drought but often go dormant in cooler weather. Kikuyu grass, seashore paspalum, St. Augustine grass, zoysia grass, and Buffalo grass are examples of warm-season grasses.
- SS. “Turf, artificial” means a surface of synthetic fibers, often composed of polypropylene, polyethylene, polyamide, or a blend of these materials, treated and tufted on a porous backing manufactured to simulate the appearance of turf grass.
- TT. “Water feature” means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, streams, spas, and swimming pools where water is artificially supplied. This includes water features supplied by raw water.

SECTION 2. ADD CHAPTER 17.09 SUPPLEMENTARY REQUIREMENTS REQUIRED IN ZONES, AS FOLLOWS:

- 17.09.660. Indoor Water Conservation Standards.
- A. Special Water Standards:
1. All new and remodeled lodging units and new residential dwelling units shall:
 - a. Install WaterSense-labeled fixtures, including, but not limited to, faucets, showerheads, toilets, and urinals.
 - b. Install Energy Star-qualified appliances.
 2. Legal, non-conforming status
 - a. Legal, non-conforming status shall be determined and processed consistent with the provisions in MMC Chapter 17.12. General Provisions.
 - b. For remodeled or refreshed lodging units, any modifications to the fixtures or appliances shall come into compliance with this section.

SECTION 3. ADD CHAPTER 17.10 LANDSCAPING STANDARDS, AS FOLLOWS:

- 17.10.20. Intent.
- The intent of the landscaping requirements in this title shall be to enhance and preserve the community quality of life and property values by enriching the visual environment, supporting public safety, and contributing to a resilient and sustainable environment.
- 17.10.30. Scope and applicability.
- In landscaped areas or where landscaping is required, such landscaping shall comply with the requirements set forth in this title for the specific use and location. The specific requirements relating to landscaping standards shall comply with the level of associated requirements based on scale of development, outlined in the Review and Procedures section of this title. Exemptions and exceptions are outlined in the review procedures.
- A. Required Landscaping
1. In addition to the specific sections of the Moab Municipal Code requiring landscaping, screening, or buffering, the requirements and regulations specified in this title shall apply to all provisions and processes requiring landscaping, including:
 - a. Permitted Residential Uses, including Single-Household Dwellings, Two-Household Dwellings, and Multi-

Household Dwellings between three (3) and six (6) units, shall require at least seventy percent (70%) of the area contained within a required front or side yard adjacent to a street in any residential or residential-agricultural zone shall be landscaped.

B. Reserved Landscaping Standards

1. Where specific landscaping standards apply through requirements of a particular use or approval criteria, the more direct requirements of that section shall apply in addition to the standards included in this chapter relating to water conservation methods.
2. Any governing documents, such as bylaws, operating rules, covenants, conditions, and restrictions that govern the operation of a common interest development, are void and unenforceable if they:
 - a. Prohibit, or include conditions that have the effect of prohibiting, the use of water-conserving plants as a group; or
 - b. Have the effect of prohibiting or restricting compliance with this ordinance.

17.10.010 Landscaping—Maintenance.

Required landscaped areas shall be maintained in a live, clean, orderly, and healthful condition. This is meant to include proper pruning, mowing lawns, weeding, removal of litter, fertilizing, and replacement of dead plants. (Prior code § 27-3-24(B))

17.10.020 General Standards.

A. Landscape Material

1. Plant Material
 - a. A minimum of twenty-five percent (25%) of the landscaped area coverage must be living plant materials, measured by the spread of plants at maturity. Tree canopies can be included as up to fifteen of the required twenty-five percent.
 - b. Right-of Way and Private Street Trees
 - I. A minimum of one tree for every forty linear feet (40') of street frontage is required in the right-of-way or adjacent to the private street except as outlined in this section.
 - II. Required trees shall be a minimum of one and one-half inch (1-1/2") diameter measured six inches (6") above the soil surface or bare root. Bare root trees may be 2-1, 2-2, P-1

and P-2 stock types.

- III. Trees planted in park strips shall be from among those identified as appropriate for the location on the Approved Plant List.
- IV. All trees planted in the right-of-way with medium or higher water requirements must be irrigated. Trees in the right-of-way with low water requirements can be hand watered until maturity.
- V. Standard planting areas for trees shall be no less than eight feet (8') in width.
- VI. There shall be no gap between trees greater than one hundred and twenty feet (120'), trunk-to-trunk.
- VII. Trees may not be planted in a way that interferes with public safety, including the visibility of pedestrians, oncoming traffic, traffic control devices, or regulatory signs.
 - i. Planting within ten feet (10') of another tree, building, fence, streetlight, water infrastructure, wastewater infrastructure, stormwater infrastructure, wet utility easement, alley, driveway, or fire hydrant is not permitted.
 - ii. Planting within twenty feet (20') of stop signs is not permitted.
 - iii. Planting within twenty-five feet (25') of streetlights is not permitted.
 - iv. Planting in the corner triangle formed by the first thirty feet (30') along the right-of-way in each direction from the corner is not permitted.
- VIII. A tree planted, either new or existing, within the front yard of a private property may be counted toward the minimum tree requirement according to the following:
 - i. For streets with attached sidewalks, a tree planted within sixteen feet (16') from the back of the street curb.
 - ii. For streets with detached sidewalks, a tree planted within twelve feet (12') from the back of the sidewalk.
- IX. In cases where neither the right-of-way nor private property

can meet the standards of this section, the permittee shall sign an agreement to plant or compensate the city for the planting of each affected required tree.

X. Private street trees shall be included in improvements agreements and maintenance agreements.

2. Artificial Plants

a. Artificial plants do not count toward the required landscape area and do not figure into the water budget calculation.

3. Approved Plant List

a. At least ninety percent (90%) of all forbs, shrubs, and trees and one hundred percent (100%) of groundcovers and ornamental grasses used to landscape each site regulated by this section shall be selected from the City of Moab Approved Plant List, as calculated by applicant's choice of quantity or percent spread at maturity. Plant material that is not on the Approved Plant List must meet the other requirements within this section.

b. Spring bulbs that do not require additional irrigation are exempt from the Approved Plant List requirement.

c. Plants may be added to the Approved Plant List by meeting the criteria and following the process in Appendix C.

d. Pursuant to the Utah Noxious Weed Act, Section 7, no plants shall be planted from the Grand County Noxious Weeds List (Available here: <https://www.grandcountyutah.net/168/Noxious-Weeds>)

4. Cool Season Turf Limits

a. Cool season turf areas shall be composed of grasses found on the City of Moab Approved Plant List.

b. Cool season turf shall not be used in more than ten percent (10%) of total landscaped area or two hundred (200) square feet of turf, whichever is greater. In any landscaping plan including a water budget, turf may exceed cool season turf limits if additional turf fits within the budget. Turf still must meet the other requirements in this section.

c. Areas with slopes greater than twenty-five percent (25%) shall be landscaped with deep-rooted water-conserving plants for erosion control and soil stabilization. No turf grasses or overhead irrigation is allowed on slopes greater

than twenty-five percent (25%).

- d. Park strips and other landscaped areas less than eight feet (8') wide shall be landscaped with water-conserving plants that do not include cool season turf.

5. Mulch

- a. Shall be applied at a minimum depth of two inches to three inches (2" - 3") and as appropriate to each species. Non-porous material shall not be placed under the mulch.
- a. Shall be applied to the soil surface, not against the plant stem, or high against the base of trunks to minimize disease.
- b. Because mulching can limit the successful propagation of some native plants, native plants, when appropriate, are exempt from these mulching requirements
- c. To provide habitat for beneficial insects and other wildlife, up to five percent (5%) of the landscape area may be left without mulch.

6. Water features

- a. Recirculating water systems shall be used for water features.
- b. Wind shut off devices are required for waterfall features and vertical fountains.
- c. Pool and spa covers are highly recommended.
- d. For purposes of the water budget calculation, the surface area of a water feature shall be included as a high water use hydrozone with a seventy-five percent (75%) irrigation efficiency.

7. Hydrozoning

- a. The City of Moab Approved Plant List is categorized by non-irrigated/very low, low, medium, and high-water use plants. Each hydro-zone shall have plant materials with similar water use (for example, low with low; very low with very low).
- b. Plants of a very low hydrozone are not to be planted in a moderate to high hydrozone.
- c. Temporarily irrigated areas of the landscape during the establishment period shall be included in the low water use

hydrozone for the water budget calculation.

B. Irrigation System Criteria

1. This section applies to landscaped areas that are required to have permanent irrigation. For landscape areas that do not require permanent irrigation, these are recommendations for irrigation systems. For commercial and large-scale developments:
 - a. Smart irrigation controllers (i.e., weather-based controllers and soil moisture-based controllers) and spray sprinkler bodies labeled by the U.S. Environmental Protection Agency's WaterSense Program or with published reports posted on the Smart Water Application Technologies website are required.
 - b. Dedicated landscape water meters/sub-meters shall be installed for all non-residential irrigated landscapes of 5,000 sq-ft or more.
 - c. The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
 - d. Minimum pop-up height for sprinklers in turfgrass areas shall be six inches (6").
 - e. Check valves or anti-drain valves are required on all sprinkler heads.
 - f. The irrigation system shall be designed to ensure that the operating pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
 - g. Sprinklers within a zone shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations. Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations. Spacing must achieve head-to-head coverage.
 - h. A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe,

and shall be set at the manufacturer's recommended pressure for the sprinklers.

- i. Overhead irrigation shall not be permitted within 24 inches of any non-pervious surface. Allowable irrigation within the setback from non-pervious surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material.
- j. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turfgrass to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.
- k. Narrow or irregularly shaped areas less than eight feet (8 ft) in dimension in any direction shall not utilize overhead sprinkler irrigation.
- l. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.
- m. Backflow prevention devices shall be required to protect the potable water supply from contamination by the irrigation system and comply with local plumbing codes.

C. Landscape Water Budget

1. All irrigated landscaped areas must be included in the water budget calculation. See Appendix A for details regarding the Maximum Applied Water Budget calculation.
2. The total irrigation water needed for all hydrozones cannot exceed a Maximum Applied Water Budget of 15 gallons/season/sq-ft (24in/season) of irrigated landscape area unless special features are included or the landscaped areas only use plants designated as low listed on the Approved Plant List.
3. Special features include:
 - a. Ecological restoration projects
 - b. Bioretention areas
 - c. Non-irrigated pervious areas
 - d. Stormwater conveyance infrastructure (vegetated swales)
 - e. Graywater applied to the landscape according to relevant regulations (% based on % living plant material primarily

watered with graywater)

- f. Native Plants selected from Approved Plant List
 - g. Secondary water irrigation
4. If any combination of the special feature areas totals to at least 5% of the total irrigated hydrozone area, then the Maximum Applied Water Budget increases by 1 gallon/season/sq-ft.
 5. If any combination of the special feature areas totals to at least 10% of the total irrigated hydrozone area, then the Maximum Applied Water Budget increases by 2 gallon/season/sq-ft.
 6. Active rainwater catchment systems, including rain barrels or cisterns, are also incentivized in the calculation through a reduced overall irrigation water need.

17.10.030 Buffering and Screening requirements.

- A. Zone Boundary Buffering
 1. Zone Boundary Buffering shall be installed and maintained along Non-Residential Zoning District boundaries (other than streets) that abut residential zones. Zone Boundary Buffering shall consist of, at minimum:
 - a. One (1) Canopy tree per fifty (50') linear feet.
 - b. One (1) Ornamental/ Evergreen trees per fifty (50') linear feet.
 - c. One (1) shrub per every fifteen (15') linear feet.
 - d. The maximum spacing between plants shall not exceed twenty (20') feet at maturity.
 - e. Screening shall be installed and maintained at eight (8') feet minimum.
 - f. A Buffer shall be installed and maintained at ten (10') feet in width.
 - g. Reference: Table 17.10.030 Buffer Landscape Specification, Figure 17.10.030.A, and Figure 17.10.030.B.

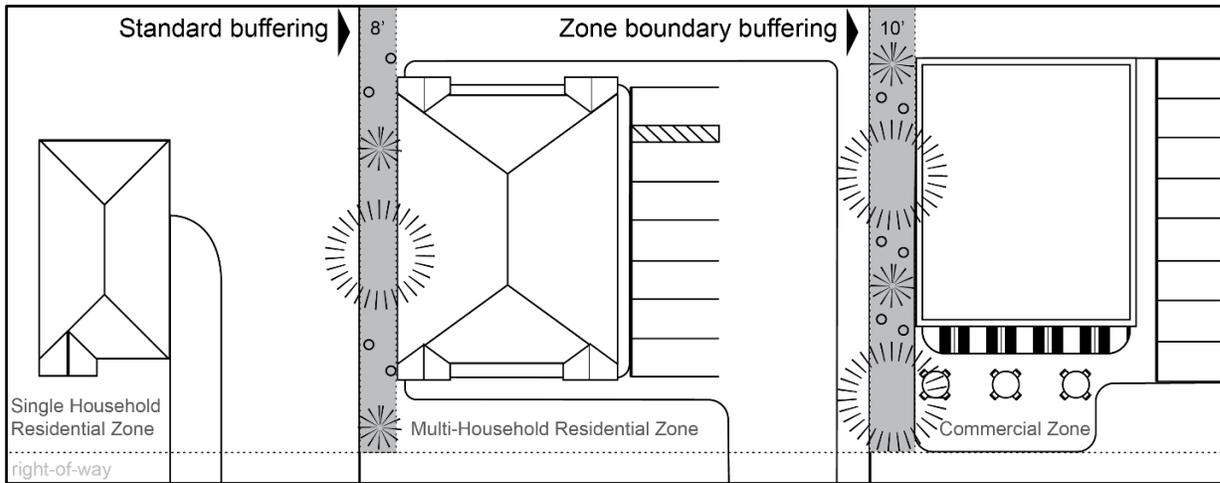


Figure 17.10.030.A

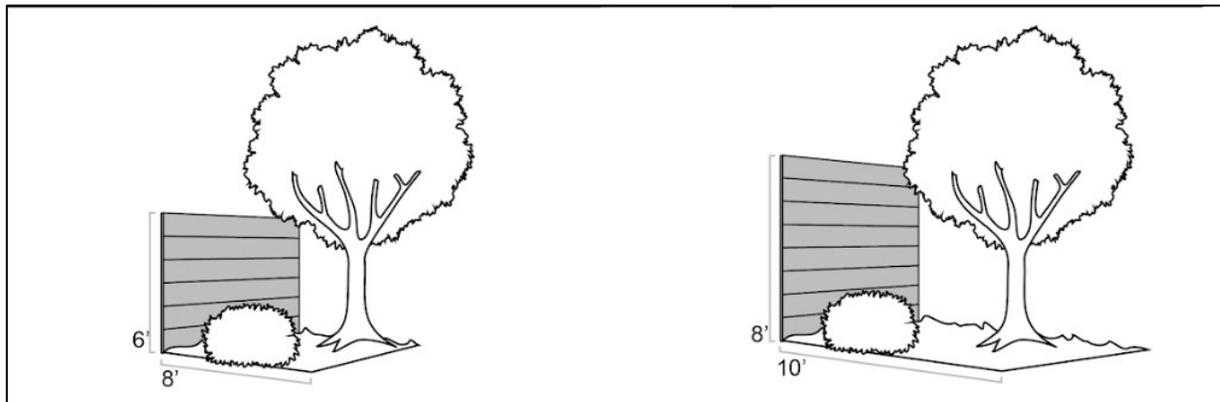


Figure 17.10.030.B

B. Standard Buffering

1. Standard Buffering shall be installed and maintained where specifically or otherwise required within the Moab Municipal Code (MMC). Standard Buffering shall consist of, at minimum:
 - a. One (1) Canopy tree per one hundred (100') linear feet.
 - b. One (1) Ornamental/ Evergreen trees per fifty (50') linear feet.
 - c. One (1) shrub per twenty-five (25') linear feet.
 - d. Maximum spacing between plants shall not exceed twenty-five (25') feet at maturity.
 - e. Screening shall be installed and maintained at six (6') feet minimum.
 - f. A Buffer shall be installed and maintained at eight (8') feet

in width minimum.

- g. Reference: Table 17.10.030 Buffer Landscape Specification, Figure 17.10.030.A, and Figure 17.10.030.B.

C. Buffer Landscape Requirements

1. Landscaping specifically required within Zone Boundary Buffering and Standard Buffering shall be regulated and maintained as follows:
 - a. Trees shall be a minimum of one and one-half inch (1-1/2") diameter measured six inches (6") above the soil surface or bare root at time of installation. Bare root trees may be 2-1, 2-2, P-1 and P-2 stock types.
 - b. Clustering of plant material is allowed if the maximum spacing requirement is not exceeded.
 - c. Each existing shrub preserved may count towards the required shrub amount if it is identified on the Approved Plant List.
 - d. Existing trees that are preserved may count as two new trees towards the required tree amount if it is identified on the Approved Plant List.
 - e. Fractional landscaping quantities shall be rounded to the nearest whole number.
 - f. Required buffering trees and shrubs shall be maintained as provided in 17.10.010 Landscaping-Maintenance.
 - g. The developing land use is responsible for the creation and maintenance of the landscape buffer yard. Including, but not limited to, the trimming of canopy trees that may encroach onto neighboring property that becomes a nuisance or hazard.

D. Screening Required

1. Screening shall be required as follows, unless provided specifically elsewhere in this title:
 - a. Six (6') fence screening shall be required around mechanical equipment, outdoor storage areas, loading/unloading areas visible from an adjoining street or parking area, heating or cooling units for all non-residential uses, dumpsters or structures built to accommodate the storage of trash and garbage.
 - b. Screening shall be enclosed on all sides and not contain any

openings other than a gate for access which shall be closed at all times when not in use. This full enclosure requirement shall not apply to screening of loading/unloading areas.

- c. When a screen wall or fence has both a finished side and an unfinished side, the finished side shall face the adjoining property or, if on the interior of the site, shall face outward toward the perimeter of the site.

Table 17.10.030 Example Landscape and Buffer Requirements		
Requirements (Minimum plants per 100 linear feet)	Standard Buffering	Zone Boundary Buffering
Canopy Tree	1	2
Ornamental/ Evergreen Trees	2	2
Shrubs	4	6
Maximum Spacing at Maturity	25'	20'
Screen Height Minimum	6'	8'
Buffer Depth Minimum	8'	10'

E. Exceptions to Buffering and Screening Requirements

- 1. The Land Use Authority may grant an exception to the Zone Boundary Buffering and Standard Buffering where the Land Use Authority determines that existing natural conditions are such that a lot cannot reasonably accommodate the required buffering or where existing natural conditions on the lot act as sufficient buffering. Alternatively, where the Land Use Authority determines that Landscaped Screening is inappropriate for a lot, they may require the installation of a fence or wall to meet the buffering requirements. The following factors shall be considered when evaluating any request for exception:
 - a. Physical characteristics of the site and surrounding area such as topography, vegetation, water features, etc.
 - b. Views and noise levels;
 - c. Proximity or potential proximity to residential uses;

- d. Building and parking lot placement; and
 - e. Location of outdoor storage, display, or sales areas.
2. The Land Use Authority may grant exceptions to screening requirements if existing conditions are such that a lot cannot accommodate the required screening standards. The Land Use Authority may modify the screening requirements based on the following factors:
- a. Proximity or potential proximity of residential uses;
 - b. Sight lines from parking areas, adjacent properties or roadways;
 - c. Noise levels generated by the facility to be screened; and
 - d. Physical characteristics of the site and surrounding area such as topography and vegetation may mitigate the need for screening.

17.10.040 Submittal requirements.

A. Landscaping plan required.

- 1. Where landscaping is required in this title, in addition to the specific sections of the Moab Municipal Code requiring landscaping, screening, or buffering, a Landscaping Plan, providing sufficient materials for review and approval, shall be submitted in accordance with the appropriate review procedures as outlined in this chapter.

B. General Standards are numbered as follows for Landscaping Plans:

- 1. Plant material
- 2. Artificial plants
- 3. Plant list
- 4. Cool Season Turf Limits
- 5. Mulch
- 6. Water Features
- 7. Hydrozoning
- 8. Irrigation System Criteria
- 9. Water Budget

C. The scale of development, redevelopment, or improvement shall determine the level of required landscaping General Standards 17.10.040, as follows:

- 1. General Standards 1-3 apply to all Landscaping Plan Levels.
- 2. General Landscaping Plan
 - a. Development, Redevelopment, or Improvements requiring Building Permit Approval.

- b. General Standards 4-7 or 9, shall also apply.
 - 3. Level I Landscaping Plan
 - a. Development, Redevelopment, or Improvements requiring Level I Site Plan Approval.
 - b. General Standards 5-9 shall also apply.
 - 4. Level II Landscaping Plan
 - a. Development, Redevelopment, or Improvements requiring Level II Site Plan, Condominium Plat or Townhome Plat, PUD, PAD, MPD, or Subdivision Approval.
 - b. General Standards 4-9 shall also apply.
 - D. Landscape & Irrigation Documentation Requirements
 - 1. All projects that are designated by the Planning and Zoning Department as applicable to the provisions of this chapter will require a submittal of a Landscape Documentation Package. This plan will be reviewed by the Development Review Team to ascertain if the design complies with this chapter.
 - 2. General Landscape Documentation Package must follow the template in Appendix B. If the applicant elects to use the landscape water budget approach, they must also complete Appendix A: Landscape Water Budget Calculation Spreadsheet.
 - 3. Level I and Level II Landscape Documentation Package shall be prepared by a licensed landscape architect. "Working drawings" or a "landscape documentation package" shall include, but are not be limited to, the following elements:
 - a. Project Data Sheet, which shall contain the following:
 - I. Project name;
 - II. Project address, parcel and/or lot number(s);
 - III. Checklist or index of all documents in the landscape document package;
 - IV. Applicant or applicant agent's name, address, phone number, and email address;
 - V. Landscape architect's name, address, phone number, and email address; and
 - VI. Landscape contractor's name, address, phone number and email address, if available at this time;
 - b. The Planting Plan shall be drawn to scale, including a north arrow, indication of scale, and any off-site design influencing features. The Planting Plan shall contain:

I. Plant material calculations:

- i. Total landscape area (square feet);
- ii. area in landscaped with live plant material and the percentage of the total landscaped area;
- iii. Total area in native plant material and its percentage of the total landscaped area;
- iv. Total area in special features as they pertain to the water budget and the percentage of the total landscaped area;
- v. Location of all plant materials, a legend with botanical and common names, and size of plant materials. If abbreviations or symbols are utilized for call outs, a legend shall be provided on each page of the planting plans;
- vi. Existing trees and plant materials to be removed or retained;
- vii. Identify any applicable rain catchment technologies (e.g., cisterns or rain barrels) as they pertain to the water budget.
- viii. The location, types and depth of mulch used, noting areas excluded as pollinator habitat or native plantings.
- ix. Property lines and street names;
- x. Existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements;
- xi. Scale: graphic and written;
- xii. Date of design; and
- xiii. Details and specifications for tree staking, soil preparation, and other planting work.

c. The Irrigation Plan shall be drawn at the same scale as the planting plan and shall contain the following information:

- I. Location and size of separate water meters from the landscape with the designation of the type (e.g. potable, recycled, well);
- II. Layout of the irrigation system and a legend summarizing the type and size of all components of the system (including backflow prevention assembly (for systems supplied with potable water), flow sensor, master valve, smart irrigation controllers, main and lateral lines, manual valves, remote control valves, sprinkler heads, moisture sensing devices, rain switches, on-site weather monitoring sensors, quick couplers, pressure regulators) and including manufacturer name and model numbers;
- III. Designation of all hydrozones and a hydrozone information table contained in Appendix A;
- IV. Static water pressure in pounds per square inch (psi) at the

- point of connection to the public water supply;
- V. Flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers, and
- VI. Installation details for irrigation components.
- VII. A recommended irrigation schedule and maintenance schedule;
- d. A completed Landscape Water Budget Calculation Spreadsheet that meets all requirements stipulated in 17.10.030.

17.10.050 Review procedures.

A. Approval Procedures.

1. The Zoning Administrator shall determine sufficiency and compliance of the submitted Landscaping Plan. The Land Use Authority responsible for the type and process of development under which landscaping is required (e.g. Building Permit Approval, Site Plan Approval, Townhome Plat or Condominium Plat Approval, Subdivision Approval, etc.), shall review and approve the submitted Landscaping Plan as a part of the proposed development plan. Process, Review, and Approval procedures for each type of development approval shall be determined by its specific MMC provisions; the Landscaping Plan shall be supplementary to the development approval.

B. Legal, Non-Conforming Landscaping.

1. Legal, non-conforming status shall be determined and processed consistent with the provisions in MMC Chapter 17.12. General Provisions.
2. Upon review of a sufficiently complete Landscaping Plan, the Zoning Administrator shall determine the ability to continue or expand legal, non-conforming landscaping, given the following parameters:
 - a. The proposed change to the required landscaping area/yard, shall not be greater than the following, based on the smaller calculation:
 - I. Two thousand square feet (2000 sf) or more of change to non-exempt landscaped area; or
 - II. Fifty percent (50%) or more of change to non-exempt landscaped area;
3. Any modifications to the required landscaping shall come into greater compliance with general standards that are required for all Landscaping Plan Levels.

C. Exemptions.

1. Except as noted otherwise by special circumstances, the provisions of the general standards 17.10.040 shall not apply to:
 - a. Interior remodels;
 - b. Tenant improvements;
 - c. Demolitions;
 - d. Change of use;
 - e. Repair of irrigation systems in conjunction with routine maintenance; and
 - f. Ecological restoration projects that do not require a permanent irrigation system.
2. Except as noted otherwise by special circumstances, only the provisions of 17.10.040, general standard 8: Irrigation System Criteria shall apply to:
 - a. Replacement of irrigation systems;
 - b. Active recreational areas;
 - c. Cemeteries;
 - d. Registered local, state or federal historical sites; and
 - e. Existing plant collections, as part of botanical gardens and arboretums open to the public.
3. Upon review of a sufficiently complete Landscaping Plan, the Zoning Administrator shall determine qualifying exemptions from the General Standards and Legal, Non-Conforming Landscaping provisions of this chapter. Exemptions include:
 - a. Personal Agriculture Cultivation
 - b. Permitted and Approved Areas under Chapter 17.52:
Keeping Limited Numbers of Fowl for Food Production
 - c. Permitted and Approved Agricultural Uses
4. For properties located in the defined USGS geo-hazard, shallow soluble-soil zone, the Landscape Material, Plat Material, minimum percentage requirement shall not apply.

D. Exceptions

1. The City may grant exceptions to the Landscaping Standards when practical difficulties or unnecessary hardships exist that cause inconsistencies with the purpose and intent of the standards.
2. Requests for exceptions from the standards, policies, or submittal requirements of this document shall be submitted in writing with appropriate documentation and justification to the Zoning Administrator. Exception requests must, at a minimum, contain the following:
 - a. Standards under which the applicant seeks an exception;

- b. Justification for not complying with the standards;
 - c. Proposed alternate criteria or standards to comply with the intent of the standards;
 - d. Supporting documentation, including necessary calculations;
 - e. The proposed exception's potential adverse impacts for adjacent landowners; and
 - f. An analysis of the exception request, signed by a qualified landscape professional or qualified irrigation design professional, depending on the topic of the request.
3. Upon receipt of a complete application for an exception, the Zoning Administrator shall prepare a statement to recommend that the exception be approved or denied or to request a modification of the proposed exception.

17.10.060 Enforcement.

In addition to any other legal or equitable remedies available to a municipality, the City may pursue enforcement and compliance for Landscaping Standards in violation, or if the owner of the property violates any of the provisions of this section.

A. Violation

- 1. The requirements and regulations set forth herein regulating Landscaping Standards shall apply to all properties, developments, and development standards where landscaping and landscaped spaces are required:
 - a. The required Landscaping Standards shall be maintained and remain consistent with the plans and conditions approved during the appropriate review and approval procedures; or any subsequent review and approval process. The following conditions of violation shall impose the following penalty:
 - I. The property will be in violation if the Landscaping Standards for an approved plan are altered or amended without appropriate approval, as outlined in the Review Procedures of this Chapter, 30 days after notice from the City.
 - II. The property will be in violation if landscaping is developed without the appropriate approval, as outlined in the Review Procedures of this Chapter, 30 days after notice from the City.
 - III. In the event of violation, penalties may be assessed by the

City against the owner of the subject property, as determined by the Moab Municipal Code Chapter 17.78. Zoning Violations--Penalties.

B. Process of Violation

1. If the owner of the property violates any of the provisions of this Chapter, the City may pursue the violation for noncompliance in accordance with established processes outlined by Moab Municipal Code Chapter 17.78. Zoning Violations-- Penalties.

PASSED by the City Council in a public meeting on _____ by the following vote:

MOAB CITY COUNCIL:

Those voting aye: _____

Those voting nay: _____

Those abstaining: _____

Those absent: _____

Joette Langianese, Mayor

Date

ATTEST: _____

Sommar Johnson, Clerk/Recorder

Appendix A: Water Budget

Maximum Allowed Landscape Water Budget

Reference Evapotranspiration (ET_o) = 49.8 inches/season (Mar – Oct) ¹

Effective Precipitation (EP) = 1.7 gal/sf/season (Mar – Oct) ²

Irrigated Area = hydrozone area in sq-ft

Water Use Category	Plant Factor ³
High (including Cool Season Turf & Water Features)	0.8
Medium	0.5
Low	0.2
Very Low / Non-Irrigated ⁴	0.0

Irrigation Method	Default Efficiency
Overhead	70%
Drip	90%
Water Feature	75%

Special Features to Incentivize Healthy Landscapes (% of irrigated landscape)	Maximum Applied Water Budget (gal/sf/season)
At least 15%	+3 gal / sf / season
At least 10%	+2 gal / sf / season

Special Features include:

- Ecological restoration projects
- Bioretention areas
- Non-irrigated pervious areas
- Stormwater conveyance infrastructure (vegetated swales)
- Graywater applied to the landscape (percent special features based on percentage of living plant material primarily watered with graywater in the overall landscape area)
- Native vegetation areas
- Secondary water irrigation

¹ Moller, Alan L., Robert R. Gillies, Utah Climate 2nd Edition, 2008, Utah Climate Center at Utah State University. Note data timeframe is 1889 – 2007.

² Utah Climate 2nd Edition. Precipitation during irrigation season = 6.87 in (Mar – Oct); effective precipitation is equal to 25% of total precipitation during irrigation season.

³ Figures based on EPA WaterSense Water Budget tool designations, plus an additional VL/Non-Irrigated category to incentivize VL hydrozone plants.

⁴ VL/Non-Irrigated refers to plants that require very little if any supplemental irrigation once the plant has been established (within 2-3 years of planting).

Active Rainwater Catchment

Amount of Rainwater Catchment Capacity	Reduction in Calculated Irrigation Water Need (gallons)
1 x 50 gallon rain barrel	100
2 x 50 gallon rain barrel (100 gal)	200
101 - 500 gallon-cistern	1,000
501 - 1000 gallon-cistern	2,000
1,001 – 1,500-gallon cistern	3,000
1,501 – 2,000 gallon cistern	3,750
2,001 – 2,500 gallon cistern	4,500

Sample Hydrozone Tables

Irrigation Water Budget = [(ETo × Plant Factor) – EP] × Irrigated Area ÷ Irrigation Efficiency

Example 1: 1/3 of H,M, L Hydrozones

Hydrozone	ETo	Plant Water Use Category	Plant Factor	EP (in/season)	Irrigation Method	Irrigation Efficiency	Hydrozone Area (sq ft)	Irrigation Water Need (gal/season)
Zone 1	49.8	H	0.8	1.7	Overhead	0.7	1,000	33,945
Zone 2	49.8	M	0.5	1.7	Drip	0.9	1,000	16,059
Zone 3	49.8	L	0.2	1.7	Drip	0.9	1,000	5,718
TOTAL							(c) 3,000	(d) 55,722

Avg. irrigation water need all zones = (d / c) = **18.6 gal/sf/season**

Example 2: 1/4 H and M, 1/2 Low Water Hydrozones

Hydrozone	ETo	Plant Water Use Category	Plant Factor	EP (in/season)	Irrigation Method	Irrigation Efficiency	Hydrozone Area (sq ft)	Irrigation Water Need (gal/season)
Zone 1	49.8	H	0.8	1.7	Overhead	0.7	1,500	50,917
Zone 2	49.8	M	0.5	1.7	Drip	0.9	1,500	24,089
Zone 3	49.8	L	0.2	1.7	Drip	0.9	3,000	17,153
TOTAL							(c) 6,000	(d) 92,168

Average irrigation water needs = **15.4 gal/sf/season**

Example 3: 1/4 H, M, L, VL/Non-irrigated

Hydrozone	ET _o	Plant Water Use Category	Plant Factor	EP (in/season)	Irrigation Method	Irrigation Efficiency	Hydrozone Area (sq ft)	Irrigation Water Need (gal/season)
Zone 1	49.8	H	0.8	1.7	Overhead	0.7	1,000	33,945
Zone 2	49.8	M	0.5	1.7	Drip	0.9	1,000	16,060
Zone 3	49.8	L	0.2	1.7	Drip	0.9	1,000	5,718
Zone 4		VL	0				1,000	0
TOTAL							(c) 4,000	(d) 55,722

Average irrigation water needs = **13.9 gal/sf/season**

Example 4: 10% H and, 1/4 M, 1/2 L, 15% VL w/ a 2,500 gallon cistern

Hydrozone	ET _o	Plant Water Use Category	Plant Factor	EP (in/season)	Irrigation Method	Irrigation Efficiency	Hydrozone Area (sq ft)	Irrigation Water Need (gal/season)
Zone 1	49.8	H	0.8	1.7	Overhead	0.7	600	20,367
Zone 2	49.8	M	0.5	1.7	Drip	0.9	1,500	24,089
Zone 3	49.8	L	0.2	1.7	Drip	0.9	3,000	17,153
Zone 4	49.8	VL	0	1.7			900	0
Subtotal							(c) 6,000	(d) 61,609
Rainwater Capture								- 0 4,50
TOTAL							6,000	57,109

Average irrigation water needs w/out cistern = **10.3 gal/sf/season**

Average irrigation water needs w/ cistern = **9.5 gal/sf/season Special**

Features

Special Feature	Special Feature Response
Total area of Special Features (sq-ft)	600
Total percent of Special Features	10%
Maximum Applied Water Budget (gal/sf/season)	+ 2 gal/sf/season

Appendix B: General Template

Level 1 Landscape Plan Requirements

Submissions must comply with the standards in Chapter 17.10. This template is for assistance in creating a General Landscape Plan, as described in section 17.10.040.

1. Applicants' Landscape Plans must comply with General Standards 1-3.
2. Then, applicants may choose between the following options:
 - a. Prescriptive Option Landscape Plans shall also follow General Standards 4-7. Continue to section I. of Appendix B.
 - b. Water Budget Landscape Plans shall also follow General Standard 9. Continue to section II. of Appendix B.

Total Landscaped Area = _____ sq. ft.

I. Landscape Plan General: Prescriptive Option

Submittal Requirement		Requirement summary	Submittal	
Number	Name		I verify that this landscape contains...	
1	Plant Material	Living Plant Material Minimum $\geq 25\%$ <ul style="list-style-type: none"> • Measured by the estimated spread at maturity • Tree canopy may count as up to 15% or the 25% requirement. 	sq. ft	living plant material at maturity
			%	live plant material <i>(Divide sq. ft. of living plant material by total landscaped area and multiply by 100)</i>
				Check here if the complete plant list worksheet is attached.
			linear feet	of street frontage of the property
			trees	Are required <i>(Divide linear feet of street frontage by 40.)</i>
				Trees are planted so the number is greater than or equal to one tree for every 40 feet of street frontage.
			trees	in the right-of-way
			trees	on private land meeting code requirements
	trees	planted in an agreement with the city. Please describe in comments.		
2	Artificial Plants	Artificial plants, including artificial turf, do not count toward the required landscape.		Check box if required landscape does not include artificial plants.
3	Approved Plant List	Ninety percent (90%) of forbs, shrubs, and trees shall be selected from the Approved Plant List. See 17.10.020 and Approved Plant List.	%	Of plant material is on the Approved Plant List.
			Quantity	As measured by (circle one)
			Spread	
		One-hundred percent (100%) of groundcovers and ornamental grasses shall		Check box if 100% of ground covers and ornamental grasses are on the Approved Plant List.

		be selected from the Approved Plant List. See 17.10.020 and Approved Plant List.		
4	Cool Season Turf Limits	Max. = 10% of landscaped area or Max. = 200 sq. ft., whichever is greater. See 17.10.020 and Approved Plant List.	sq. ft.	in cool season turf
			%	of landscape in cool season turf <i>(Divide sq. ft. turf by total landscaped area and multiply by 100)</i>
			Circle the number that confirms cool season turf is either 1. Less than or equal to 200 sq. ft. OR 2. Less than or equal to 10%	
5	Mulches	Mulch shall be a minimum of 2"-3" in landscaped area, except when including pollinator habitat or native planting. See 17.10.020.	”	mulch over the landscape
				Check box if landscape contains an exception to the 2" min. of mulch. Please describe in comments.
6	Water Features	Water features shall recirculate water and have wind shut-off devices. Pool and spa covers and recycled water are recommended. See 17.10.020 for details.		Check box if the landscape contains no water features
				Check box if the landscape contains water features with recirculated water and wind shut-off devices, as applicable. Please list devices in comments.
7	Hydrozoning	The City of Moab Approved Plant List is categorized by non-irrigated/very low, low, medium, and high-water use plants. Each hydro-zone shall have plant materials with similar water use. See 17.10.020 for details.		Check box if plants are grouped by water use in hydrozones.

II. Landscape Plan General: Water Budget Option

Submittal Requirement		Requirement summary	Submittal	
Number	Name		I verify that this landscape contains...	
1	Plant Material	Living Plant Material Minimum >= 25% <ul style="list-style-type: none"> Measured by the estimated spread at maturity Tree canopy may compose up to 15% 	sq. ft	living plant material at maturity
			%	live plant material <i>(Divide sq. ft. of living plant material by total landscaped area and multiply by 100)</i>
				Check here if the complete plant list worksheet is attached.
			linear feet	of street frontage of the property
			trees	Are required <i>(Divide linear feet of street frontage by 40.)</i>
		Trees are required on street frontage, one for every 40 feet. <ul style="list-style-type: none"> Alternatives include trees located within allowed areas of private property or an agreement to plant or pay a fee in lieu. See 17.10.020. Required trees are no more than 120 ft. apart. 	Trees are planted so the number is greater than or equal to one tree for every 40 feet of street frontage.	

			trees	in the right-of-way
			trees	on private land meeting code requirements
			trees	planted in an agreement with the city. Please describe in comments.
2	Artificial Plants	Artificial plants, including artificial turf, do not count toward the required landscape.		Check here if required landscape does not include artificial plants.
3	Approved Plant List	Ninety percent (90%) of forbs, shrubs, and trees shall be selected from the Approved Plant List. See 17.10.020 and Approved Plant List.	%	Of plant material is on the Approved Plant List.
			Quantity	As measured by (circle one)
		Spread		
		One-hundred percent (100%) of groundcovers and ornamental grasses shall be selected from the Approved Plant List. See 17.10.020 and Approved Plant List.		Check box if 100% of ground covers and ornamental grasses are on the Approved Plant List.
9	Water Budget	See 17.10.020 and Appendix A for details.		Check here to indicate a complete water budget is attached.

Appendix C: Approved Plant List Criteria

Installation of plants that are not on the Approved Plant List must be pre-approved by the City and are up to the discretion of the Zoning Administrator. To obtain approval, the applicant must demonstrate that the plant meets these requirements:

1. The plant cannot exist on the Grand County Noxious Weeds List: <https://www.grandcountyutah.net/168/Noxious-Weeds>
2. The plant must be appropriately adapted to Moab's Plant Hardiness Zone 7 (0° - 10°): <https://planthardiness.ars.usda.gov>
3. The applicant must provide a source or sources to confirm the plant is appropriately adapted to the environmental conditions, i.e. soil type, rainfall, temperature, pest conditions, elevation. See resource list of *Water-Wise Plants for Utah Landscapes* for examples: <https://extension.usu.edu/cwel/water-wise-plants>