

## Planning Commission Staff Report

# **SUSTAINABILITY ORDINANCE – WATER CONSERVING LANDSCAPING AND TREE PROTECTION**

PLNPCM2009-00322

Hearing date: November 10, 2010



Planning Division  
Department of Community  
& Economic Development

### **Applicant**

SLC Corp., Mayor Ralph Becker

### **Staff**

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### **Current zone**

N/A

### **Current master plan designation**

City-wide

### **Council District**

City-wide

### **Community Council**

City-wide

### **Affected Ordinance Sections**

- 21A.48 Landscaping and Buffers
- 21A.62 Definitions

### **Notification**

- Notice mailed October 28, 2010
- Published in newspaper October 31, 2010
- Posted to Planning Dept and Utah State Public Meeting websites October 28, 2010.

### **Attachments**

- A. Proposed Ordinance Changes
- B. Department Comments

## ***Request***

Mayor Ralph Becker has initiated a request to amend the Salt Lake City Zoning Ordinance to include regulations promoting sustainable urban living. The proposed Sustainability Code Amendment project includes many aspects and this petition is focused on regulations to specifically encourage water conservation and also initiate protection for important trees.

## ***Recommendation***

**PLNPCM2009-00322 – Sustainability Ordinance for Water Conserving Landscaping**

**PLNPCM2009-00322 – Sustainability Ordinance for Tree Protection**

Based on the findings in the staff report, it is the Planning Staff's opinion that the Planning Commission transmits a favorable recommendation to the City Council to adopt the proposed sustainability ordinance text amendments related to water conserving landscaping and tree protection.

## **Background**

In November 2009, Mayor Becker initiated a petition for the purpose of amending the Salt Lake City Zoning Ordinance to encourage practices of sustainable living. The City hired Clarion Associates as a consultant on the project, with the goal of creating appropriate zoning, subdivision and site development regulations that will establish Salt Lake City as a sustainable community. A portion of those regulations pertains to water conserving landscaping and tree protection.

The amendments for water conserving landscaping and tree protection are primarily incorporated into section 21A.48. Landscaping and Buffers

## **Initial Summary**

Following are the concepts covered in this package of sustainability proposals:

Water conservation:

These changes focus on two major themes for reducing water consumption

1. Grouping plant of similar watering needs together in order to prevent unnecessary watering.
2. Insuring efficiencies in the irrigation system design upon installation, in order to insure that the correct amount of watering

Tree protection:

This acknowledges the importance of trees and requires the protection of existing trees in the landscaping when designing large projects. This does not affect single-family homes or small projects.

## **Public Participation**

The proposed amendments were presented and available for review at an open house on September 16, 2010. No public comments were received.

Between August and October of 2010, staff sought comments from numerous City departments and met with representatives from the Business Advisory Board to discuss the amendments. They have provided technical input regarding the proposed amendments. The comments were implemented in the proposed amendments and the most recent comments are included as *Attachment B*.

## **Analysis**

The proposed text amendments focus on *Chapter 21A.48 Landscaping and buffers*. A definition for new terms is also included in Chapter 21A.62.

The only significant variation from Clarion suggestions was the removal of language regarding the collection of rainwater and reuse of grey water. These were removed until such time as State water rights law is clarified for rain collection and there are health standards set for grey water, which will prevent introduction of diseases, etc. into the ground water supply.

The proposed text amendments are outlined in Attachment A. The ordinance location precedes each section. Staff modification from the text provided by Clarion are illustrated in *italics* and underlined, deletions are struck through:

## **STANDARDS FOR GENERAL AMENDMENTS**

A decision to amend the text of the Zoning Ordinance or the Zoning Map by general amendment is a matter committed to the legislative discretion of the City Council and is not controlled by any one standard. However, in making its decision concerning a proposed amendment, the City Council should consider the following factors:

### **1. Whether a proposed text amendment is consistent with the purposes, goals, objectives, and policies of the City as stated through its various adopted planning documents;**

**Analysis:** The executive summary section of the City's Futures Commission Report of 1998 states, "Vibrant neighborhoods are fundamental to the health and vitality of the city and citizens, business owners, and local government each have a role to play in creating and sustaining ideal neighborhoods." Modifications to landscaping allows for more efficient landscaping, which is easier to maintain and more compatible with the climate. The Open Space Plan encourages the conservation of the natural environment. A modification to the landscaping ordinance encourages more climate appropriate landscaping and the tree protection ordinance encourages protection of trees as a natural resource.

**Finding:** The proposed text change is consistent with adopted policy documents.

### **2. Whether a proposed text amendment furthers the specific purpose statements of the zoning ordinance.**

**Analysis:** Chapter **21A.02.030 of the Zoning Ordinance states:**

#### **"PURPOSE AND INTENT:**

The purpose of this title is to promote the health, safety, morals, convenience, order, prosperity and welfare of the present and future inhabitants of Salt Lake City, to implement the adopted plans of the city, and to carry out the purposes of the municipal land use development and management act, title 10, chapter 9, of the Utah Code Annotated or its successor, and other relevant statutes. In addition, the title is intended to:

- a. Lessen congestion in the streets or roads;
- b. Secure safety from fire and other dangers;
- c. Provide adequate light and air;
- d. Classify land uses and distribute land development and utilization;
- e. Protect the tax base;
- f. Secure economy in governmental expenditures;
- g. Foster the city's industrial, business and residential development; and
- h. Protect the environment. (Ord. 26-95 § 2(1-3), 1995)"

The proposed changes to the ordinance will further the purpose statement of the Zoning Ordinance by protecting the environment in various zones throughout the City. Specifically these uses are consistent with intent statement C (tree protection helps protect mature trees that reduce CO2 and promote cleaner air), F (reducing water use, particularly for irrigation, relegates the need to expand the water supply further into the future, allowing for a more sustainable financial investment), and H (landscaping that is more indigenous to the climate is easier to maintain and provides native wildlife habitat).

**Finding:** Staff finds that the proposed changes to the Zoning Ordinance are consistent with the overall purpose of the Zoning Ordinance as stated in Chapter 21A.02.030.

**3. Whether a proposed text amendment is consistent with the purposes and provisions of any applicable overlay zoning districts which may impose additional standards.**

**Analysis:** The proposed text amendments are city-wide and as such will affect properties within the Historic Preservation Overlay District: However the Historic Landmarks Commission is limited to exterior architecture and the Commission does not regulate or review landscaping.

There is no inherent conflict between this ordinance and other overlay zones, such as transitional South State Street Overlay or Groundwater Protection. The tree ordinance has a specific exemption for conflicts in the Airport overlays.

**Finding:** The proposed text amendment meets this standard.

**4. The extent to which a proposed text amendment implements best current, professional practices of urban planning and design.**

**Analysis:** The proposed text amendments mirror current trends in community sustainability, by encouraging landscaping practices that are compatible with the semi-arid climate and also protecting mature trees that contribute to the character of the City, provide shade, reduce the heat island effect and reduce the need for the amount used for heating and cooling of buildings.

**Finding:** The proposed text amendment implements the best current practices in urban planning and design.



The following new definitions will be added to

**Chapter 21A.62 Definitions:**

**“Backflow Preventer”** A mechanical device intended to prevent contamination of a culinary water line that meets the specifications set forth in the Salt Lake City Irrigation and Landscape Design Manual.

**“Ecological restoration project”** A project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

**“Evapotranspiration (ET) Rate”** The quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time. *Reference ET* or *ET<sub>o</sub>* is a standard of measurement of environmental parameters that affect the water use of plants. *ET<sub>o</sub>* is expressed in inches of water per day, month, or year and is an estimate of the evapotranspiration of a large field of four-to-seven inch tall cool-season grass that is well-watered. *Reference ET* is used as a basis for determining the Maximum Applied Water Allowances. *Reference ET* for the Salt Lake City area is defined in the Salt Lake City Plant and Turf Guide.

**“Hydrozones”** A portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated. Hydrozones and applicable plants are further defined in the Salt Lake City Plant and Turf Guide.

**“Irrigation Audit”** An in-depth evaluation of the performance of an irrigation system that includes, but is not limited to an on-site inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

**“Low-Volume Irrigation”** The application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low-volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

**“Mulch”** Any organic material such as leaves, bark, straw, compost or inorganic mineral materials such as rocks, gravel, and 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.

**“Overspray”** Irrigation water that is delivered beyond the target landscaped area.

**“Rainwater harvesting”** Collection of rainwater on site that is used or stored for landscape irrigation.

**“Reuse water”** Treated or recycled waste water of a quality suitable for non-potable uses such as above-ground landscape irrigation and water features. This water is not intended or fit for human consumption.

**“Salt Lake City Irrigation and Landscape Design Manual”** A manual published and maintained by the Salt Lake City Public Utilities Department establishing standards and practices to achieve water-use efficiencies in landscaping.

**“Salt Lake City Plant and Turf Guide”** A guide published and maintained by the Salt Lake City Public Utilities Department setting forth appropriate plants and turf to be utilized in landscape plans and their associated hydrozones.

**“Structured soil”** A combination of amended soil and gravel that allows tree root development while providing the structural strength to hold the weight of hard surface treatments such as sidewalks or parking lot pavement. The specific mix of structural soil is determined by Salt Lake City engineering standards.

**“Soil amendment”** Elements added to the soil, such as compost, peat moss, vermiculite, sand, or fertilizer, to improve its capacity to support plant life.

**“Temporarily irrigated area”** Areas that are irrigated for a limited period only after landscaping installation until plantings become established.

**“Tier 2 Water Target Allowance”** The maximum allowed monthly and annual water use for a specific landscaped area based on the square footage of the area, the ETAF, and the reference ETO.

**“Treasured landscape”** Landscapes associated with designated historic structures and sites, public gardens, and other notable sites and institutions as determined by the city that may be allowed a higher volume of water use.

**“Turf”** Grasses planted as a groundcover and mowed and maintained to be used as an area of landscaping.

**“Water feature”** A design element with open water that performs an aesthetic or recreational function. Water features include but are not limited to ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools where water is artificially supplied. Constructed wetlands used for on-site wastewater treatment or storm water best management practices are not included in this definition.

**“Water budget”** A target amount of water to be used per acre that is established by the public utilities director or his designee each year for each applicant subject to the provisions of this ordinance. The water budget is based on factors including, but not limited to, evapotranspiration rates and efficient water practices. Different target budgets may be established for each month of the year or seasons.

**“Caliper”** shall mean the dimension of the diameter of a tree trunk measured at a distance of 4’ 6” from the ground.

**“Maximum extent practicable”** shall mean no feasible or practical alternative exists, as determined by the Urban Forester, and all possible efforts to comply with the standards or regulations and minimize potential harmful or adverse impacts have been undertaken by the applicant. Economic considerations may be taken into account but shall not be the overriding factor in determining “maximum extent practicable.”

**“Specimen tree”** shall mean a structurally sound mature tree, native or introduced, that is characteristic of the species; with space and essential requirements for its growth both above and below ground compatible with existing and proposed site conditions; whose future vitality can be reasonably expected and maintained with proper protection and regularly scheduled care; whose contributions to carbon sequestration, shade footprint, soil permeability, and aesthetics is high; and whose absence from the landscape would significantly alter the site’s appearance, character or history. See Tree Protection Appendix A for listing of species, sizes, and conditions that are likely specimen trees.

**“Tree protection area”** is the area of a development site that includes the area located within the drip line of specimen trees and also includes the area that supports tree health requirements and interactions as determined by the Urban Forester.

The following section is new and will be added to

## **Chapter 21A.48 – LANDSCAPING AND BUFFERS**

### **21A.48.055: WATER EFFICIENT LANDSCAPING**

#### **A. APPLICABILITY**

##### **1. New Development**

All new development as specified below requiring approval by the city shall comply with the provisions of this ordinance.

##### **(1) Residential**

- (a) Large subdivisions with 10 or more lots (common and public areas and street landscaping only, not individual single-family lots unless greater than ½ acre).
- (b) Multi-family residential, three units or more.
- (c) Planned unit developments that include residential units
- (d) Single-family and twin-family homes on lots greater than ½ acre.
- (e) Common areas of condominium and/or planned developments

##### **(2) Non-Residential**

- (a) Industrial
- (b) Commercial
- (c) Institutional (including public facilities)
- (d) Mixed-use developments including industrial, commercial, or institutional elements
- (e) Developments utilizing city funds or grants.

##### **2. Existing Development**

The regulations in this ordinance shall apply to all existing non-residential and multi-family residential development projects that increase the assessed valuation of the site and/or site improvements by 25% or more.

##### **3. Exemptions**

The following developments and uses are exempt from the provisions of this ordinance unless otherwise specified:

- (1) New single- and twin-family homes on lots one-quarter (1/4) acre or less unless part of a subdivision with 10 or more lots;
- (2) Treasured landscapes.
- (3) Plant collections as part of botanical gardens and arboretums open to the public;
- (4) Community gardens and portions of private gardens dedicated to edible plants;
- (5) Cemeteries;
- (6) Ecological restoration projects that do not require a permanent irrigation system; and
- (7) Similar uses and activities as determined by the planning director in consultation with the Public Utilities Department.

#### **B. SUBMITTAL REQUIREMENTS**

In addition to the submittal requirements set forth in Section 21A.48.030, *Landscape Plan*, the applicant shall complete a water-efficient landscape worksheet. The water-efficient landscape worksheet shall be prepared by a licensed landscaped architect, licensed civil engineer, licensed architect, certified irrigation professional, or other landscape professional appropriately licensed or recognized by the State of Utah or Salt Lake City. It shall contain the following information unless specifically waived in writing by the zoning administrator in consultation with the Public Utilities Department Director:



1. A hydrozone table that contains the following information:
  - a. A listing of each hydrozone that is contained in the landscape plan.
  - b. For each hydrozone listed, the table shall set forth:
    - (1) the plant and turf types to be used as categorized and defined in the Salt Lake City Plant and Turf Guide or other water-efficient plant list approved by the Public Utilities Department.
    - (2) the location, surface area, and type of water features to be installed in that hydrozone,
    - (3) the irrigation methods to be used, and
    - (4) the square footage and percentage of the total landscaped area of the project represented by that hydrozone.
2. Water budget calculations shall:
  - a. Use the formula for water budgets set forth in the Salt Lake City Plant and Turf Guide,
  - b. Use the appropriate plant factor from the Salt lake City Plant and Turf Guide. Any plan that mixes plants with different water requirements in a single hydrozone shall use the plant factor for the plant with the highest water use in the hydrozone.
  - c. Include temporarily irrigated areas in the low-water use hydrozone.
  - d. Set forth the type and surface area of all water features including swimming pools shall be included in the high-water use hydrozone as defined in the Salt Lake City Plant and Turf Guide.
  - e. Calculate the water usage of exempt landscaped areas as defined in Section B.2 above shall be calculated using the formula set forth in the Salt Lake City Plant and Turf Guide.
3. The type, location, and size of exempt landscaped areas as defined in Section B.2 above.
4. A soil report providing information on soil texture, pH, percent organic matter, and other information as specified by the zoning administrator and with areas proposed for soil amendment identified;
5. A planting plan with delineation of areas to be planted with edible plants and areas to be mulched with type of mulch to be used, location, and application depth;
6. An irrigation plan;
7. A backflow prevention plan indicating the type of ~~backflow prevention devices to be installed and their~~ location on the system;
8. A grading plan; and
9. Other documentation as required in the Salt Lake City Irrigation and Landscape Manual.

## **C. REVIEW PROCEDURES**

The following review procedures shall be followed for all landscaping plans and irrigation systems subject to this ordinance:

1. Landscaping plans shall be submitted concurrently with a development application and reviewed by the planning department in consultation with other relevant agencies such as the Public Utilities Department.
2. The Public Utilities Department is authorized to coordinate the production, publication, and maintenance of guides and manuals addressing water-efficient irrigation systems and landscape design for non-residential and residential developments subject to this ordinance. These guides and manuals may include, but are not limited to, information on hydrozones and appropriate vegetation for each, water-wise landscape plant lists, and irrigation system design and components, and landscape design practices that promote water conservation.
3. No certificate of occupancy (CO) for a development subject to this ordinance shall be issued until any required water-efficient landscape plan (including irrigation systems where relevant) has been approved, installed, and fully functioning. An irrigation audit report prepared by an independent certified irrigation auditor shall be required to be submitted to confirm that the irrigation system is functioning as required prior to issuance of a CO.
4. Temporary COs may be issued if seasonal growing conditions are not appropriate for landscape installation provided that the applicant post an acceptable surety with the city as set forth in Section VI to ensure installation within nine months of the issuance of the temporary CO.
5. Backflow prevention plans shall be reviewed by the Department of Public Utilities

#### **D. STANDARDS**

All developments subject to this ordinance shall comply with the following standards:

##### **1. Required Plants**

All landscapes in developments subject to this ordinance shall use plants identified in the Salt Lake City Plant and Turf Guide or plants identified as being water-wise or low-water plants in other guides approved by the Public Utilities Department. Plants not listed in these references shall not exceed ten (10) percent of the total landscaped area. Unlisted plants, water features, and the highest water-demand turf grasses as identified in the Salt Lake City Plant and Turf Guide shall collectively not exceed more than twenty (20) percent of the total landscaped area.

##### **2. Plant Substitutions**

Landscaping shall be installed consistent with the approved planting plans, but plant substitutions may be made provided that the substituted plants are from the same hydrozone and of similar plant type (grass for grass, tree for tree, etc) as the plant originally specified in the approved landscape plan.

### 3. Hydrozones

- a. All landscape plans shall be divided into one or more of hydrozones listed in the Salt Lake City Plant and Turf Guide, and all plants shall be grouped in appropriate hydrozones.
- b. Mixing plants from different hydrozones and with different water demands is strongly discouraged. Landscape areas with a mix of plants from different hydrozones shall be designated as a hydrozone of the highest water-demand plant within that hydrozone
- c. No more than twenty (20) percent of the landscaped area of any landscape plan shall be devoted to the highest hydrozone or highest water-demand turf species as defined in the Salt Lake City Plant and Turf Guide or water features or a combination thereof.
- d. ~~Any landscape area that utilizes recycled water or harvested rainwater for at least seventy-five (75) percent of irrigation requirements shall be counted as the lowest hydrozone as defined in the Salt Lake City Plant and Turf Guide.~~

### 4. Water Budget

- a. All developments with a total landscaped area ~~exceeding 5,000 square feet~~ one-half (1/2) acre or greater must install an irrigation meter at the expense of the applicant and shall be assigned a water budget by the Public Utilities Department as set forth in Section 17.16.680 of the City Code (*Public Services*).
- b. All developments with a total landscaped area of less than one-half (1/2) acre ~~or less~~ will not be required to install an irrigation meter, but may do so at their option. If no irrigation meter is installed, the development will be assigned a water budget by the Public Utilities Department based on average winter water usage during the months of November to March.
- c. ~~Water audits. If a water budget established for a development pursuant to Section 4.a above is exceeded in any billing cycle, the owner may be required by the Public Utilities Department at the owner's expense to undertake an irrigation audit conducted by an independent certified irrigation auditor in a manner consistent with the standards adopted by the Irrigation Association. At the direction of the Public Utilities Department, the owner shall carry out any remedial measures identified in the audit or by the Public Utilities Department to comply with the established water budget.~~

### 5. Small Landscaped Areas

To prevent overspray and water waste, landscaped areas eight (8) feet or smaller in any perimeter dimension, including but not limited to parkstrips, parking lot islands, and landscaped areas separated by walkways from other landscaped areas, shall only be irrigated with micro-emitter systems, MP rotator nozzles, or similar low-flow devices identified in the Salt Lake City irrigations and design manual or approved by the Public Utilities Department. Pop-up spray and rotor heads, impact rotors, gear-driven rotors, large turf rotors, and similar devices are prohibited.

### 6. Soil Amendment/Preparation

Where a soil report documents soil conditions unfavorable for healthy plant growth, soil amendment with organic and/or inorganic materials to provide plant nutrients or a better growing medium shall be required as specified in the Salt Lake City Irrigation and Landscape Design Manual.

### 7. Mulch

Where mulch is required or allowed in a landscape plan by this ordinance, it shall be installed at a minimum depth of three (3) inches. Fiber barriers and plastic sheeting that are not porous to air and water are prohibited.

### 8. Runoff

Irrigation and storm water runoff from a site shall be minimized through the use of swales, rain gardens, terracing, and pervious materials (where approved by the city) and in compliance with existing city

regulations; which includes prohibition of storm water runoff crossing property lines or passing over public sidewalks.

**9. Preservation of Existing Specimen Trees**

All specimen trees located within a landscape plan area shall be protected as provided in Chapter 21A.48.135, *Tree Protection*.

**10. Water Features**

The surface area of a water feature (See definition in Section G.) shall be included in the area calculation and assigned the appropriate hydrozone as specified in the Salt Lake City Plant and Turf Guide. Recirculating systems shall be used for all water features such as fountains, ponds, reflecting pools, etc.

**11. Irrigation Systems**

- a. Irrigation systems shall be designed, installed, and maintained as set forth in the Salt Lake City Irrigation and Landscape Design Manual. At a minimum such systems shall be designed and calibrated that water delivery during irrigation season (April 1 through October 31) does not exceed 80 percent of reference ET or the current Tier 2 Target Budget (City Code Section 17.16.670), whichever is less unless waived by the zoning administrator in consultation with the Public Utilities Department. Such systems must be installed prior to plant materials.
- b. Smart controllers and rain sensors (e.g., weather-based controllers that limit irrigation if raining) shall be installed on all irrigation systems as specified in the Salt Lake City Irrigation and Landscape Design Manual
- c. Micro-emitters, MP rotators, or similar low-flow irrigation devices shall be used in landscaped areas eight (8) feet or smaller in any perimeter dimension to avoid overspray and runoff.
- d. Irrigation systems with a precipitation rate exceeding 0.75 inches per hour shall be prohibited on steep slope areas (slope greater than 30%) exceeding one thousand (1,000) square feet unless (1) infiltration trenches, vegetated swales, bioretention areas, and similar facilities as approved by the city are employed to reduce runoff or (2) the landscape designer specifies an alternative design or technology that clearly demonstrates to the city's satisfaction no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the pre-occupancy irrigation inspection.

**12. Backflow Prevention**

Backflow prevention assemblies shall be designed and installed according to the standards as outlined in the Salt Lake City Irrigation and Landscape Design Manual.

**E. INSPECTION, MAINTENANCE, ENFORCEMENT**

**1. Pre-Occupancy Inspection and Irrigation Audit**

Prior to the issuance of any certificate of occupancy for a development subject to this ordinance, an irrigation audit report shall be submitted to the city as provided in Section D.3. ~~Additionally, a backflow prevention inspection report prepared by a certified backflow technician shall be submitted to the Public Utilities Department and shall include a verification of compliance with the approved landscape plan application and an initial test report.~~ *Backflow prevention inspection report by a certified backflow technician shall be submitted to the Department of Public Utilities, and shall include a verification of compliance to approved submittal packet and an initial test report*

**2. Bonds and Security Requirements**

Where an applicant/developer is required to provide water-efficient landscaping and an irrigation system pursuant to this ordinance, the estimated cost of such landscaping and facilities, as approved by the Zoning Administrator in consultation with the Public Utilities Department, shall be set forth as a

separate figure in a security device acceptable to the city. Upon the completion of such landscaping and facilities, and provided that the city has not received any claims or notices of claim upon the security device, fifty percent (50%) of the money held as security for such facilities shall be returned to the applicant/developer and fifty percent (50%) shall be retained for one (1) growing season to ensure that growth has taken hold and to secure the applicant/developer's other obligations under the landscaping plan. All dead vegetation shall be replaced through replanting at the end of the second growing season. At the end of that one (1) year period, and provided that the city has not received any claims or notices of claim upon the security device and that the landscaping and irrigation system remains acceptable to the city, the city shall release or consent to the release of the final fifty percent (50%) of the security device to the applicant/developer. All sums, if any, held by the city in the form of cash shall be returned to the applicant/developer without interest, the interest on such money being reimbursement to the city for the costs of supervision of the account. If the security device is a corporate surety bond, copies of the partial release from the city shall be sent to the recorder's office for inclusion with and attachment to the bond.

### **3. Maintenance**

- a. **Responsibility:** The owner of the premises shall be responsible for the maintenance, repair and replacement of all landscaping materials and barriers, including refuse disposal areas, as may be required by the provisions of this chapter.
- b. **Landscaping Materials.** Landscape materials shall be maintained to ensure water efficiency. A regular maintenance schedule shall be maintained and available to be viewed by the city. It shall include but not be limited to aerating and de-thatching turf areas (only if needed), replenishing mulch, fertilizing, pruning, and weeding in landscaped areas; checking, adjusting, and repairing irrigation equipment; removing obstructions to irrigation emission device; and resetting automatic controllers.
- c. **Fences, Walls, And Hedges:** Fences, walls and hedges shall be maintained in good repair.
- d. **Irrigation Systems:** Irrigation systems shall be maintained in good operating condition to promote the conservation of water.
- e. ~~Backflow prevention assemblies shall be maintained in accordance with the manufacturer's standards and state regulations. Annual test reports by a certified backflow technician shall be submitted to the Public Utilities Department. Failed devices shall be replaced with comparable assemblies and require reports as set forth in Section F.1. Devices replaced with a different assembly shall meet the submittal requirements as set forth in Section C.7.~~ *Backflow prevention assemblies shall be maintained in accordance with manufacturer's standards and state regulations. Annual test reports by a certified backflow technician shall be submitted to the Department of Public Utilities. Failed devices can be replaced with comparable assemblies and require reports as stated in Section D.12. of this code. Devices replaced with a different assembly type must meet submittal requirements as stated in Section B.7.*

### **4. Enforcement**

- a. **General.** The provisions of this ordinance shall be enforced pursuant to Section 21A.20, *Enforcement*.
- b. ~~Water use that exceeds the water budget established pursuant to Section \_\_\_\_\_ may result in an increase in water rates under Section 17.16.670 of the Municipal Code and remedial action as required by the Public Utilities Department in Section E.4.e above.~~
- c. ~~Failure to comply with the backflow prevention requirements contained in this ordinance shall result in termination of water service. In the case of contamination or a cross-connection incident, the Public Utilities Department may require a backflow prevention and cross-connection inspection and take appropriate measures to ensure utility system integrity and protect the public health and safety. Failure to comply with regulation pertaining to backflow protection and cross connection control shall~~

result in the termination of water service. In the case of a contamination or cross connection incident, the Department of Public Utilities may require a backflow prevention and cross connection inspection and take the appropriate measures to ensure utility system integrity and public health and safety.

- d. Water audits. If a water budget established for a development pursuant to Section D.4.a above is exceeded in any billing cycle, the owner may be required by the Public Utilities Department at the owner's expense to undertake an irrigation audit conducted by an independent certified irrigation auditor in a manner consistent with the standards adopted by the Irrigation Association. At the direction of the Public Utilities Department, the owner shall carry out any remedial measures identified in the audit or by the Public Utilities Department to comply with the established water budget.

The following section is new and will be added to

## **Chapter 21A.48 – LANDSCAPING AND BUFFERS**

### **21A.48.135: TREE PROTECTION**

#### **PURPOSE STATEMENT**

The purpose of these tree protection provisions is to recognize and protect the valuable asset embodied in the trees that exist on private lands within the city and ensure that the existing trees of Salt Lake City continue to provide benefit to its citizens. Essential to effective tree protection is the understanding of tree growth requirements having to do with space, water, and soil quality needs, among other qualities. Good, early planning, site design, and construction management practices are key to allowing trees to prosper. Preconstruction planning and mitigation of potential impacts that development may have on trees is necessary and one of the purposes of this section.

Numerous community and personal benefits arise from the presence of trees in urbanized areas - both on residential and non-residential lands- and it is the intent of this section through the protection of the trees to:

1. Enhance the quality of life in the city and protect public health and safety;
2. Preserve and enhance the visual and aesthetic qualities of the city;
3. Enhance public and private property for greater enjoyment and usability due to the shade, cooling, and the aesthetic beauty afforded by trees;
4. Protect and improve the real estate values of the city;
5. Preserve and enhance air and water quality;
6. Reduce noise, glare, dust, and heat, and moderate climate, including urban heat island effect;
7. Increase slope stability, and control erosion and sediment run-off into streams and waterways;
8. Protect the natural habitat and ecosystems of the city;
9. Conserve energy by reducing heating and cooling costs; and
10. Preserve the function of mature trees to absorb greenhouse gases such as carbon dioxide.

#### **A. APPLICABILITY**

##### **1. General**

The standards in this section shall apply to new development in the city unless exempted in accordance with Section C, Exemptions. The standards in this section shall apply at the time of a development application for “development” as defined in the zoning ordinance.

##### **2. Other Regulations**

Ordinance No. 75 of 1988, the Salt Lake City Urban Forestry Ordinance, addressing the protection of trees located on public property owned by the city and in rights of way, shall remain in effect.

#### **B. EXEMPTIONS**

The following specimen tree removal activities are exempt from the standards of this section upon confirmation and approval by the Urban Forester:

1. The removal of dead, damaged, or naturally fallen trees, or in cases of community emergency;
2. When in conjunction with the construction of a single- or two-family residence not part of a proposed new subdivision;
3. The removal of trees on an existing legal lot when not associated with new development;

4. The removal of trees in such a condition that they pose a threat to structures or natural features on the site, on adjoining properties, or in the public right of way;
5. The removal of diseased trees posing a threat to adjacent trees;
6. The selective and limited removal of trees necessary to obtain clear visibility at driveways or intersections;
7. The removal of trees associated with development at the Salt Lake City Airport only as necessary to provide safe operations;
8. The removal of trees when required by the Urban Forester for the purposes of conflict with utilities or streets.

## C. DEFINITIONS

1. “Caliper” shall mean the dimension of the diameter of a tree trunk measured at a distance of 4’ 6” from the ground.
2. “Maximum extent practicable” shall mean no feasible or practical alternative exists, as determined by the Urban Forester, and all possible efforts to comply with the standards or regulations and minimize potential harmful or adverse impacts have been undertaken by the applicant. Economic considerations may be taken into account but shall not be the overriding factor in determining “maximum extent practicable.”
3. “Specimen tree” shall mean a structurally sound mature tree, native or introduced, that is characteristic of the species; with space and essential requirements for its growth both above and below ground compatible with existing and proposed site conditions; whose future vitality can be reasonably expected and maintained with proper protection and regularly scheduled care; whose contributions to carbon sequestration, shade footprint, soil permeability, and aesthetics is high; and whose absence from the landscape would significantly alter the site’s appearance, character or history. See Tree Protection Appendix A for listing of species, sizes, and conditions that are likely specimen trees.
4. “Tree protection area” is the area of a development site that includes the area located within the drip line of specimen trees and also includes the area that supports tree health requirements and interactions as determined by the Urban Forester.

## D. STANDARDS

### 1. Preservation of Specimen Trees

Specimen trees shall be preserved to the maximum extent practicable as determined by the Zoning Administrator in consultation with the Urban Forester, unless exempted pursuant to Section C, *Exemptions*. In determining if preservation is impracticable, the city shall consider the following criteria, including but not limited to:

- a. Whether an alternative location or configuration of the development including elements such as parking or structures on the site would be feasible to accomplish tree preservation, without negatively impacting adjacent properties
- b. Whether preservation of the specimen tree would render all permitted development on the property infeasible, or
- c. If development of the property will provide significant community benefits that outweigh tree preservation.

### 2. Cutting, Removal , or Harm Prohibited

Specimen trees shall not be cut, removed, pushed over, killed, or otherwise harmed unless approved to Section E.1, above.



**a. Paving, Fill, Excavation, or Soil Compaction Prohibited**

The tree protection area of any protected specimen tree shall not be subjected to paving, filling, excavation, or soil compaction.

**3. Mitigation**

Where the city determines it is not practicable to preserve a specimen tree on the development site, the following mitigation provisions shall apply.

**a. Replacement Tree Required**

Two caliper inches of replacement trees shall be provided for each caliper of specimen tree removed (For example, if a 24" caliper specimen tree is removed, it must be replaced with at least 24 trees of a minimum 2" caliper or eight trees with a 6" caliper). Each replacement tree shall be a minimum of two caliper inches, and shall either be replanted prior to certificate of occupancy or within a conditional timeframe as approved by the Zoning Administrator in consultation with the Urban Forester. Replacement trees shall not be used to meet any other landscape requirements, but be in addition to such requirements.

Replacement trees shall be planted on the lot or site where the specimen tree was removed except where the Zoning Administrator in consultation with the Urban Forester finds the following:

- (1) The site does not provide for adequate landscape surface area to accommodate the total number of replacement trees; or
- (2) That due to unique soil types, topography, or unusual characteristics of the site, the likelihood of successful tree growth is diminished.

In such cases, the applicant shall mitigate for the loss of the specimen tree in the form of payment to the city's tree fund as provided below.

**b. Cash In-Lieu Payment /Tree Fund Contribution**

Applicants who are permitted to remove a specimen tree but not plant a replacement tree on site shall make a cash in-lieu payment into the city's tree fund.

**c. Modification by Zoning Administrator**

The Zoning Administrator may modify any dimensional standard such as setbacks and height limits by up to 20% if such modification will result in preservation of a specimen tree.

**d. Landscape Credit Provided**

Any development that preserves a specimen tree shall be granted credit towards any required landscaping tree planting requirements pursuant to Chapter 21A.48 of the Zoning Ordinance, the Subdivision Code, and Site Development Ordinance on a 2:1 basis (2 inches of caliper credit for every inch of caliper preserved).

**E. SPECIMEN TREE PROTECTION DURING CONSTRUCTION**

**1. Owner's Responsibility**

During construction, the applicant shall be responsible for the ongoing health of specimen trees located on the site. This includes basic tree maintenance and watering throughout the term of construction. The owner shall also ensure the erection of barriers necessary to protect any existing or installed specimen tree from damage during and after construction.

## **2. Tree Protection Fencing**

### **a. When Required**

Specimen trees shall be fenced in accordance with this subsection before any grading, excavating, or other land-disturbing activity begins on a construction site. Fencing shall protect the tree from excavation, fill, compaction, or other impacts that would threaten tree health. No construction, grading, equipment or material storage, or any other activity shall be allowed within the fenced area except in accordance with the standards in subsection 3, below, Encroachments into Tree Protection Areas and Root Zones. Fencing shall be maintained until the land disturbance activities are complete.

The tree protection fencing shall be clearly shown on the required development applications such as a site plan, building permit, or grading permit application.

### **b. Location**

Fencing shall extend at least one foot in distance from the edge of the drip line of a specimen tree or group of specimen trees.

### **c. Type of Fencing**

The developer shall erect a plastic mesh or chain link fence a minimum of four feet in height at the drip line around each specimen tree or group of specimen trees. Such fencing shall be secured to withstand construction activity and weather on the site and maintained in a functional condition.

### **d. Inspection**

All tree protection measures shall be inspected and approved by the Urban Forester prior to the commencement of any land disturbing activities.

## **3. Encroachments Into Tree Protection Areas and Root Zones**

Encroachments into a tree protection area or within the root zones of trees protected in accordance with this subsection shall occur only in rare instances. If such encroachment is anticipated, the following preventative measures shall be employed prior to the action:

### **a. Arborist Report**

Written verification is prepared by a certified arborist of the tree's condition before and after encroachment, including preventative measures that shall be employed prior to, during, and after the encroachment to insure the viability of the tree.

### **b. Soil Compaction**

Where compaction might occur due to planned, temporary traffic through or materials placed within the protection area, the area shall first be mulched with a minimum four-inch layer of wood chips or a six-inch layer of pine straw. Plywood sheet or metal plate coverage of the impacted area may be accepted by the Urban Forester when high moisture conditions warrant. Equipment or materials storage shall not be allowed within the tree protection zone.

### **c. Grade Changes**

Grade changes that alter existing conditions of soil moisture content; historic drainage patterns; and/or diffusion of atmospheric gases entering and exiting the soil profile can injure and/or kill trees. In the event proposed site development requires soil elevation changes tree protection measures designed to mitigate harm to the tree(s) shall be coordinated with the Zoning Administrator and Urban Forester.

### **d. Construction Debris/Effluent**

In no instance shall any debris or effluent associated with the construction process, including equipment or vehicle washing, concrete mixing, pouring, or rinsing processes, drain onto lands within tree protection areas.

## **F. MAINTENANCE**

Any new trees used to replace specimen trees shall be maintained in a healthy condition and cared for pursuant to the standards of the City Forester contained in Appendix B. If in the opinion of the city, replacement trees show signs of decline or mortality within the first two years of planting, they shall be replaced by the applicant.

## **G. REMOVAL PRIOR TO DEVELOPMENT**

If a specimen tree is removed from a site within two years prior to any development application on the site by the applicant or someone associated with the applicant, the applicant shall mitigate for such removal on a 3:1 caliper basis pursuant to the provisions of Section E.3 above.

## **H. ENFORCEMENT**

These tree protection provisions shall be subject to the zoning and development enforcement codes as adopted by the city.

Modification to

**Chapter 21A.48 – LANDSCAPING AND BUFFERS**

**21A.48.090: LANDSCAPE YARDS:**

Landscape yards are yards devoted exclusively to landscaping except, however, that driveways and sidewalks needed to serve the use and buildings on the lot may be located within a required landscape yard. As used in this chapter, the term "landscaping" shall be defined as set forth in section 21A.62.040, "Definitions", of this title. No specific improvements are required within landscape yards, except that all landscape areas shall be maintained with at least one-third ( $\frac{1}{3}$ ) of the yard(s) area covered by vegetation, which may include trees, shrubs, grasses, annual or perennial plants and vegetable plants. ~~Vegetable plants shall be limited to a maximum height of twenty four inches (24").~~ Mulches such as organic mulch, gravel, rocks and boulders shall be a minimum depth of three inches (3") or more, dependent on the material used, to control weeds and erosion in unplanted areas and between plants, and that these aforementioned items at all times cover any installed weed block barriers that cover the ground surface.

**Attachment B**  
Department Comments

## **Public Utilities Justin Stoker**

In Applicability, New Development, Residential: Clarify whether Planned Unit Developments that include single family residential are intended to owner occupied residential units less than ½ acre in property size. This item could include various condo units where the owner of a residential condo unit has ownership over a limited amount of property outside of the building footprint. The exemptions don't address this issue.

In Background/Commentary: A footnote #2 information is provided regarding electricity usage by water treatment plants. The statistic that 4% of electricity usage comes from water treatment is not very relevant statistic. Especially, when considering that the Background doesn't mention key areas of focus. It is estimated that over 50% of our water use comes from the irrigation of artificial landscaping, an area where conservation measures can make the most difference. Reducing electricity usage by treatment plants constitutes to very little overall savings in the gross electrical usage of the country. Point is, more relevant statistics could be used in Footnote #2. If a 4% usage is quoted, it may result in being counterproductive by those who are resistant to conservation measures. Further, we are not sure if this 4% applies to Utah due to the way treatment is handled. We would rather not distract from the goals of this ordinance and draw attention to the treatment plants. Please consider removing the footnote.

In Purposes, Item #6: Consider removing the example "such as energy conservation" and leave the purpose item #6 and generally contributing to other goals. The previously mentioned comment regarding a 4% electrical use by water treatment plants is not a highly relevant figure with little room for significant conservation measures.

In Review Procedures, Item #1: Is it appropriate that the planning department be the lead reviewer or should the application be reviewed by the building department in consultation with other agencies, such as Public Utilities? Or should Public Utilities simply be identified as the reviewer?

In Standards, Item #2 Plant substitutions: Consideration should be given for those that may possibly have an efficient plant use that is not officially on the list. Consider adding language that allows for a plant mix be submitted to Public Utilities for review and approval as an approved plant efficient plant if found that it could be appropriate, but not officially on the list.

In Hydrozones, Item d: This item refers to recycled water and rainwater harvesting. There are significant problems that will impede free use of recycled water. Utah water rights laws do not allow for unlimited use of rainwater harvesting, in fact the amount of water available for harvesting on commercial properties is limited to one underground 2500 gallon container or two above ground 100-gallon containers by state law. It is highly unlikely that a commercial or industrial property will be able to achieve a 75% use using harvested water. State and local health departments take difference to the use of gray water for irrigation use and has been documented to create unhealthy fungal and bacterial blooms in the landscape. Given the significant hurdles regarding gray water reuse and stormwater harvesting, it may be best to either scale back the percentage requirement for credit or eliminate the section all together. If a scaled-back version remains, language should be added to notify readers of state law and health department requirements restricting use. It is understood that some clarification is given in the Definitions section, but further reference in the text is merited to avoid misunderstanding.

In Water Budget: Items (a) and (b) appear to contradict each other. Item (a) says that "all developments with a total landscaped area exceeding 5000 sq-ft must install an irrigation meter." Item (b) says "all developments with a total landscaped area ½ -acre or less will not be required to install an irrigation meter..." It would appear that developments with a total landscaped area between 5000-sqft and 21780-sqft (1/2 acre) would lie in the contradiction zone. It may be the author's intent that total project area less than ½-acre would not have to have the irrigation meter. If this is the case, item (b) must be rewritten to clarify intent. Also, if that is the intent

language should be added to say the policy applies to the entire parcel size or the project disturbance boundaries, whichever is larger, to avoid people piecing together a landscape to skirt around the policy.

Footnote Item #7: Please clarify that the costs are estimates and vary based upon contractor bids and individual lot characteristics and is not meant to be a finite range for all projects. For instance the following represent meter costs alone and do not include installation or construction costs (1" - \$4446.45); (1.5" - \$8591.56); (2" - \$14099.21).

Item #8 Runoff: Please note that existing city ordinance prohibits runoff from being directed onto neighboring parcels in any amount without the legal right to do so. City policy also forbids non-storm related runoff from passing over a public sidewalk. The language "water runoff from a site shall be minimized..." appears to allow more latitude in off property runoff discharges than is currently allowed by the City.

No comment regarding Tree Protection text.

**Transportation** Barry Walsh

The division of transportation review comments and recommendations are as follows:

The Water section indicates no impact to the public transportation corridors or right of ways. The Tree section notes exemptions in section C4, 6, & 8. for Driveways, CSZ, Roads & Public Safety issues.

**Fire** Ed Itchon

No objections