DENVER AMENDMENT PROPOSAL FORM
FOR PROPOSALS TO THE 2019 DENVER BUILDING CODE AMENDMENTS AND THE 2021 INTERNATIONAL CODES

2021 CODE DEVELOPMENT CYCLE

1) Name: **Kristen Salinas** **Date:** **9/14/2021**
Email: **ksalinas@noresco.com** **Representing (organization or self): Denver City Staff Proposal (check box):** ☒

2) One proposal per this document is to be provided with clear and concise information.

Is a separate graphic file provided ("X" to answer): ___ Yes or _X_ No

3) Highlight the code and acronym that applies to the proposal

Acronym	Code Name	Acronym	Code Name
DBC-AP	Denver Building Code–Administrative Provisions	**IPC**	International Plumbing Code
IBC	International Building Code	**IRC**	International Residential Code
IECC	International Energy Conservation Code	**IFGC**	International Fuel Gas Code
IEBC	International Existing Building Code	**IMC**	International Mechanical Code
IFC	International Fire Code	**DGC**	Denver Green Code

AMENDMENT PROPOSAL

Please provide all the following items in your amendment proposal.

Code Sections/Tables/Figures Proposed for Revision:
Instructions: If the proposal is for a new section, indicate (new), otherwise enter applicable code section.

Section 601.3.1.2.2
Replacement proposal for Out of DGC into Mandatory Code

Proposal:
Instructions: Show the proposal using ~~strikeout~~, underline format.
Place an "X" next to the choice that best defines your proposal: __ Revision __ New Text _X_ Delete/Substitute _X_ Deletion

(6.3.1.2.2) Controls. ~~Where any~~ Project site irrigation system(s)~~uses an~~ *~~automatic~~* ~~controller~~ shall be controlled by a qualifying *automatic smart controller* that uses *evapotranspiration* (*ET*) and weather data to adjust irrigation schedules and that complies with the minimum requirements. The system shall be controlled by weather-based data or soil moisture sensor that automatically shuts off the system after a predetermined amount of rainfall or sensed moisture in the soil. Qualifying *smart controllers* shall be labeled according to USEPA WaterSense Specification for Weather-Based Irrigation Controllers or tested in accordance with Irrigation Association SWAT Climatologically Based Controllers, 8th Testing Protocol. *Smart controllers* that use *ET* data shall provide the following irrigation amounts:

      a. *Irrigation adequacy*—80% minimum ET_c.

      b. *Irrigation excess*—not to exceed 10% of ET_c.

      Exception: A temporary irrigation system used exclusively for the establishment of new landscape shall be exempt from this requirement. Temporary irrigation systems shall be removed or permanently disabled at such time as the *landscape establishment period* has expired.

The following settings and schedule for the irrigation control system shall be posted on or adjacent to the controller:

      a. Precipitation rate of each *irrigation station*.

      b. *Plant* factors for each *hydrozone*.

    c. Soil type.

    d. Rain sensor settings.

    e. Soil moisture sensor settings, where installed.

    f. Peak demand schedule, including run times, cycle starts, and soak times.

    g. Maximum runtimes to prevent water runoff.

Supporting Information (Required):

All proposals must include a written explanation and justification as to how they address physical, environmental, and/or customary characteristics that are specific to the City and County of Denver. The following questions must be answered for a proposal to be considered.

- Purpose: What does your proposal achieve?

  When irrigation system is used, an automatic smart controller must be installed to sense soil moisture and considers weather data to adjust irrigation schedules. This proposal builds off of the base code requirement to require automatic irrigation when an irrigation system is in place.

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- Reason: Why is your proposal necessary?

Reduces water waste outdoors while keeping landscapes healthy.

- Substantiation: Why is your proposal valid? (i.e. technical justification)

EPA estimates that more than 28 million homes across the United States have in-ground sprinkler systems that typically schedule watering with a clock-based controller. Irrigation schedules are often set to water at the height of the growing season, and the homeowner may not adjust the schedule to reflect seasonal changes or changes in plant watering needs. As an alternative to a clock-based controller, weather-based irrigation controllers can make irrigation schedule adjustments more convenient and water-efficient, by using local weather data and landscape conditions to tailor the amount, frequency, and timing of landscape watering. Weather-based irrigation controllers can be stand-alone controllers or "add-on" or "plug-in" devices that can be used in conjunction with an existing clock-based controller to help it water more efficiently.

Replacing a standard clock-based controller with a WaterSense labeled weather-based irrigation controller can save an average home nearly 7,600 gallons of water annually. If every home in the United States with an automatic sprinkler system installed and properly operated a WaterSense labeled controller, we could save $2.5 billion in water costs and 220 billion gallons of water across the country annually from not overwatering lawns and landscapes.

Proposal 67b- Automatic Irrigation Controls

Bibliography and Access to Materials (as needed when substantiating material is associated with the amendment proposal):

https://www.irrigation.org//IA/FileUploads/SWAT/Climate-Based-Controllers-Testing-Protocol-Version-8-September-2008.pdf
https://www.epa.gov/watersense/weather-based-irrigation-controllers

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Other Regulations Proposed to be Affected

*For proposals to delete content from the 2019 Denver Green Code in conjunction with adding it to other mandatory Denver codes and/or regulations, only.

Please identify which other mandatory codes or regulations are suggested to be updated (if any) to accept relocated content.

Referenced Standards:

List any new referenced standards that are proposed to be referenced in the code.

Impact:

How will this proposal impact cost and restrictiveness of code? ("X" answer for each item below)

Cost of construction: _X__ Increase   ___ Decrease   ___ No Impact
Cost of design: ___ Increase   ___ Decrease   __X_ No Impact
Restrictiveness: _X__ Increase   ___ Decrease   ___ No Impact

Departmental Impact (City use only):
This amendment proposal increases/decreases/is neutral to the cost of plans review.
This amendment increases/decreases/is neutral to the cost of inspections.