

STAKEHOLDERS COMMENTS
AND
STAFF RESPONSES
since 4/4/2023

RE: Proposed Irrigation code changes

Stacie Greco <sgreco@AlachuaCounty.US>

Thu 4/13/2023 3:30 PM

To: Randy Switt <rswitt@gmail.com>

Cc: Eliana Bardi <ebardi@alachuacounty.us>

Hey Randy! Of course I remember you, thanks for reaching out and for taking the time to provide such thorough and thoughtful comments on the proposed Irrigation Design Code revisions. Our team has provided some initial responses in blue below and we are happy to schedule a time to go over any remaining questions or concerns.

Please let us know if you'd like to schedule a phone or in-person meeting in the near future.

Thank you,

Stacie

I was reading about the special Commission meeting on 4/4 with interest. Obviously, I was well aware of a lot of the supporting information, and not particularly surprised at the lack of the effect of the 2016 codes. All in all, the new ideas seem good, but I do have a couple concerns/comments.

Regarding irrigation controller access, it was noted that:

" For new installations, the controller must be outside and accessible to County staff, and the builder/developer is responsible for ensuring compliance after the inspection and before the sale."

At first, I missed the "before the sale" part, which limits the scope of any issues, but I did want to point out that I think this is making assumptions about irrigation controllers which may cause issues going forward. This assumes that an irrigation controller will be designed to be installed outside, and that the irrigation controller can be usefully inspected manually.

Many modern irrigation controllers are electronic and designed to be installed only in weather protected spaces, like a garage. While some have optional weather protected enclosures, not all do. This doesn't make them any worse of an option, so I don't think they should be penalized. I know the intent here is that they should be inspectable, but that leads to the other issue.

Also, many modern irrigation controllers are **solely** controllable via network access or over the internet. Being network connected means they have access to weather forecasts and local climate conditions, so can adjust irrigation schedules automatically, including skipping irrigation events due to predicted **upcoming** rain events. These are obviously good features, but means that physical access to the controller is useless for inspection. I don't believe you want to penalize those types of systems either. Additionally, given the explosion of Artificial Intelligence, I wouldn't be surprised if we see irrigation controllers controlled by AI systems in the near future, which would also be essentially uninspectable by physical access.

It seems to me the more adaptable approach might be to review the actual irrigation schedule used by the controller, both historical, and, if available, predicted/planned. The newer systems should be able report/predict the total amount of water used as well.

In new construction, we typically inspect irrigation systems for compliance with the design standards prior to the homeowner taking residence. This means that the controller is rarely (if ever) connected to the internet at the time of inspection, and therefore staff would be able to ascertain whether the correct settings have been programmed by the installer. Once the homeowner takes up residence, I agree that access to the controller may not be sufficient to verify settings, and the applicable information would need to be requested directly from the homeowner if staff needed to verify programming. This would only be required if the site were found in violation of irrigation restrictions (times/days of the week) or other applicable codes not related to design standards. If a developer/builder wanted to propose irrigation controllers that do not have an outside, weather protected case or option (and therefore request they be installed indoors), they could request an exception through the

alternative compliance section of the code. Under this scenario, the developer would need to provide assurances that the controllers and programs are accessible to staff for inspection, since certain settings can only be verified at the controller (rain sensor set to active and programs, if not already networked).

A larger concern, and I know one that is fraught, is that residential irrigation overall is a drop in the bucket (I know, groan . . .) compared to agricultural irrigation. I know the agriculture representatives have strong and very public voices, but given the scale, I wish we could bring some of this conservation effort to wise use of agricultural irrigation as well. Just starting with better monitoring and measurement would help, since they are generally sourcing from mostly unmonitored groundwater wells. If nothing else, just pointing out the difference in scale between agricultural irrigation use vs. residential use would be useful when discussing irrigation codes.

In Alachua County, public supply is the largest (measured) water use, and the only type of water use the county can regulate since we are pre-empted from imposing any requirements on agricultural operations. We agree that all users should employ water conservation practices throughout Florida. EPD actively participates in FDEP/Water Management Districts Water Supply Planning workshops and we provide comments on Consumptive Use Permits (CUPs) to encourage fellow agencies to implement water conservation measures to the greatest extent possible. Lastly, I don't know what can be done, but the current practice of residential developers seems to be to strip all ground cover and all but a few trees from an entire development before building. They then lay a couple inches of St. Augustine sod down before sale. I can't think of a worse method for controlling irrigation demand. Nearly 100% of any shade from sun-induced evaporation is removed, most of any water adsorption abilities of the topsoil is gone, and the underlying sand has little water retention capability. And to top it off (literally!), St. Augustine grass is incredibly thirsty! To make matters worse, the sod is laid before the house is sold, so the homeowner doesn't get to choose the type of sod, AND most HOAs will not only require St. Augustine grass, but *require* it to be kept super green by irrigating the heck out of it! Perhaps the county should be looking at requiring developers to allow the homeowner to choose the sod type, or just discouraging St. Augustine sod itself? Limiting the area on a lot that can be permanently irrigated to 50% of the permeable area will hopefully influence some of the landscaping decisions, since at least half of the landscape will not have a permanent irrigation system. The county is in the process of revising the landscaping code (applicable in unincorporated Alachua County) and with those efforts, possibly adding a water conservation element to the land development code that together would address some of the concerns you raised (shade, soil health, plant selection, HOA responsibilities in encouraging water conservation, etc.). The County also has a Homeowners Association Florida Friendly Landscaping Design Standards that states: "A deed restriction or covenant may not prohibit or be enforced so as to prohibit any property owner from implementing Florida-friendly landscaping on his or her land or create any requirement or limitation in conflict with any provision of [Title 7, Chapter 77](#), any provision of part II of Chapter 373, Florida Statutes, or any other provision, of the Alachua County Code." This protects Alachua County residents from unreasonable and unrealistic landscaping requirements dictated by HOAs. Staff routinely reviews HOA documents for new subdivisions to comply with the code, and the prescription for a specific sod is no longer allowed.



Stacie Greco

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All e-mails to and from County Officials and County Staff are kept as public records. Your e-mail

communications, including your e-mail address, may be disclosed to the public and media at any time.

From: Randy Switt <rswitt@gmail.com>
Sent: Saturday, April 8, 2023 4:28 PM
To: Stacie Greco <sgreco@AlachuaCounty.US>
Subject: Proposed Irrigation code changes

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Stacie, not sure you remember me, I worked with Dr. James Heaney on Conserve Florida a few years ago!

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Sorry for the long winded email!

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Randy Switt

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Eliana Bardi

From: Phillip Hisey <phisey@gmail.com>
Sent: Wednesday, April 12, 2023 8:46 AM
To: Taylor,Nicholas W
Cc: Deirdre Irwin; Dukes,Michael D; Eliana Bardi; Stacie Greco; Tal Coley; ejb.btp
Subject: Re: FW: The WaterSense Current | Issue LV, Spring 2023

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dr. Taylor,

Thank you for the response. There is no doubt that the gallons per day usage is high but without a target number to try and hit or design irrigations systems to meet we are really struggling with the end result. Have you had a chance to put together the results from your dive into the water star program.

We need a meeting with GRU to discuss how industry can work with H2O save to create a better way.

Thanks again for your help and look forward to seeing the results of your study.

Phillip Hisey

On Tue, Apr 11, 2023 at 11:31 PM Taylor,Nicholas W <nwtaylor@ufl.edu> wrote:

Hi Phillip,

It is important to take into consideration that the EPA data represents the entire US, much of which is arid (Rocky Mountains west). Evaporation from pools is much less of a factor in Florida with our high humidity and rainfall. They are also considering evaporation from heated pools in the winter. Again, the impact is much less in Florida.

Here are some numbers to consider from Gainesville (GRU).

Single-family, detached homes, dual-metered with potable water use for irrigation. This is water use for 2022 and property features summarized for homes with and without pools.

ORG	POOL	number_of_homes	home_size	beds	baths	lot_size	landscape_size	primary_gpd	irrigation_gpd
GRU	N	722	2369	3.5	2.5	18385	13941	134	234
GRU	Y	558	3129	4	3.1	28536	19529	159	318

Note that, on average, homes with pools are slightly larger (home_size, beds, baths) and water use on the primary water meter (everything but irrigation) is slightly higher, by 25 gallons per day. Next, note that the water used for irrigation (irrigation_gpd) in both the pool and no-pool group is much higher than all of the other water uses combined (primary_gpd).

Irrigation vastly outweighs water used for pools, even with refilling to account for evaporation.

Just to help validate, here are numbers from the same analysis for Orlando (OUC).

ORG	POOL	number_of_homes	home_size	beds	baths	lot_size	landscape_size	primary_gpd	irrigation_gpd
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OUCN	5807	1885	3.3	2.2	9305	7002	149	234
OUCY	3756	2540	3.7	2.7	12721	9709	182	381

Here are the numbers from Jacksonville (JEA).

ORG	POOL	number_of_homes	home_size	beds	baths	lot_size	landscape_size	primary_gpd	irrigation_gpd
JEA	N	18985	2917	3.5	2.5	13915	10947	149	298
JEA	Y	8603	3606	3.8	3	18318	14020	178	422

These patterns hold across all of the utilities that we work with. Let's focus on the elephant in the room, reducing water use for landscape irrigation. Let me know if you would like more information on these calculations and/or if you would like to discuss.

I hope this helps.

Nick

From: Phillip Hisey <phisey@gmail.com>

Sent: Tuesday, April 11, 2023 8:38 PM

To: Eliana Bardi <ebardi@alachuacounty.us>; Dukes, Michael D <mddukes@ufl.edu>; Stacie Greco <sgreco@AlachuaCounty.US>; Taylor, Nicholas W <nwtaylor@ufl.edu>

Cc: ejb.btp <ejb.btp@gmail.com>; Tal Coley <tcoley@fngla.org>

Subject: Fwd: FW: The WaterSense Current | Issue LV, Spring 2023

[External Email]

Thought I'd share this information.

The EPA says "Did you know that evaporation is one of the leading causes of water loss in residential pools?" See below in the E-letter I received.

The WaterSense Current | Issue LV, Spring 2023