

DGC Committee Hearing Meeting Minutes # 4

April 7, 2022

2 p.m. – 5 p.m.

City and County of Denver ([via Zoom](#))

1. Roll Call and Introductions: 16/20 @ 2pm, 15/20 @ 3pm, 12/20 @ 4:20pm. Quorum Achieved. (Quorum is 10) (Majority Vote = ½ + 1)

Name of Committee Member		In Attendance?
Cheryl Hoffman		X
Christy Collins		X
Courtney Anderson		X
Don Larsen	Non-Voting	
Eric Browning		X
Daniel Krausz		X
Josh Radoff		X
Paul Hutton	Non-Voting	
Adam Meltzer		
Chris Gorham		X
Travis Hendrix		X
Tom Hootman		X
Eric Entlich		X (left at 3)
Jonathan Fertig		X
Jeff Tejral	Non-Voting	X
Austin Krcmarik		X
Renee Azerbegi		X, left at 4
Darcie O’Conner Chinnis		X, left at 4
Keith Fox		X, left at 4:20
Scott Rank		Will be absent
Stephen Sanderson	Non-Voting	X
Antonio Navarra		X

2. Discussion and voting on **DGC**

- a. [#P34.6](#) 501.3.9 Soil Amendment

Public Questions/Comments

None

- Committee Questions/Comments:
 - Daniel – are you proposing to be a mandatory part of the elective code? Not mandatory in Denver? Correct – part of Green Code.
 - Christy – the City has not been vetted these as mandatory vs elective, and won't until end of process to align with LEED Platinum level of achievement. Open to voting that this will be mandatory. Eric agrees to continue with mandatory nature of proposal.
- Motion to Approve Passes: Cheryl (14 yes, 1 no, 1 abstaining), Second by Austin.**

b. [#P34.3](#) 601.3.1 Site Water Use Reduction

- Public Questions/Comments
 - None
- Committee Questions/Comments:
 - Jonathan. What is Denver's current graywater thinking?
 - Keith – can only be used for toilet flushing now.
 - Josh what is the source? Rain barrels? Purple pipe systems? If latter, it's still a limited resources so would remove potable side.
 - Lindsay – blackwater is not allowed to be reused in any way. Graywater is washing machines, bathroom sinks, showers. Can happen with no treatment, not storage. Can also happen for indoor purpose like toilet flushing. Rainwater can happen passively where you direct it onto your landscape or active storage. Want to encourage conservation, so don't want to give a free pass if purple pass. But will require less treatment.
 - Josh: are these all legal? Lindsay says yes.
 - Josh: is there a need to incentivize plugging into a purple pipe system? Is it easy to tap into? Lindsay isn't sure of Denver specific policy.
 - Keith – it is available but not required. On website we give requirements and ways it can be used. Austin says rate structure is if you're doing any large-scale irrigation, the

purple pipe makes sense. Otherwise, it's a business decision and incentives are not needed.

- Renee – when is this applicable? Lot of people have existing lawns they redo in summer. Is it only for new construction or major renovations? Christy says current DGC applies only to new construction. Keith reiterates that the code is voluntary and would only apply to those projects.
- Daniel – in base code 601.3 there is an irrigation section that addresses it in next section. Has proponent looked at how 5 gal/SF reduction makes exception more equivalent to rest of section.
- Lindsay – good question. there is an incentive in base Green Code. Have not seen whether the 5 gallon will be equivalent to rest of section. Think it's a calculation we could get at easily.
- Jeff – comment on water budgets. Ran a program with a new development. The budget was a much more intuitive way to get to the concepts we are weighing today. And brings in additional component to reduce potable demand. Gave designers flexibility to use multiple strategies. Designer often does great job but doesn't pass the info to the occupants. This proposal offers a solution to that and really likes this approach.
- Josh – does group see a need to eliminate purple pipe water on large sites? Is it worth limiting to only use on small sites? Christy responds that yes, we should address that. We want to limit it because of the realness of the resource problem. Purple pipe still places stress on the system; however, we don't have the recommendation on hand now to solve this. Does WRA have a recommendation?
- Austin – we aren't picking up a lot of new purple pipe customers each year. Main customers are Xcel Energy for cooling, parks and schools are top 3. Multi acre sites. Some smaller industrial customers. Under half and acre doesn't make sense to pursue. Don't see people using this to get around the gallons/square foot requirement. Christy does see a relevant large site in immediate future. Taking over purple pipe

line from existing customer but are not currently a customer.

- Daniel suggests to specify graywater up to a certain percentage and make a definition for non-potable water. Very important to understand proposal – only changes one number and existing exception. Any project applying the DGC has to follow certain requirements. This exception is extremely beneficial to have as equivalent. To change from 10 to 5, if it's no longer equivalent then would rather have it as a credit so that mandatory is 10 but 5 is another option.
 - Jeff – you could require onsite reuse that would be more clear language for the designer.
 - Austin – outside of code incentive on current 10 gal/SF, would advocate for 5 gal/SF but is outside of my control at Denver Water.
 - Daniel – this is not a requirement. Neither mandatory nor an optional credit. It is only a modification to the exception. No one would use it if it's not beneficial. Suggest to move it out of exception into regular language.
 - Courtney – request Austin to elaborate on what that shift would be. Austin clarifies that currently the requirement is relative to DGC. Incentive can be large – had one last year around \$200k. If the exception moved to 5 gal/SF, don't think superiors would want to reduce it that drastically in one step.

□ **Motion Passes: Motion to Modify to make it elective: Daniel (13 votes yes, 0 vote no, 2 abstained) Second by Courtney.**

- Daniel - Motion to make it 5 gal/SF as an elective to gain credit for this. Definition to say 50% of landscape irrigation from offsite non potable.
- Austin – could make non potable up to 5 gal/SF and then would have no incentive to do onsite vs offsite. In exception portion, could it be 7.5 gal/SF, could likely get incentive to match that. Get down to 5 in

elective portion, could be above and beyond for additional money to incentivize.

- Tom – exception would remain in the code and then 5 gallons would be elective? Daniel clarifies elective would be added. Would rather say all offsite non potable, could have ripple effect.
- Kristen clarifies that these definitions are already in DGC. 601.3 already states no more than 1/3 of site can be offsite anyway.
- Christy – do we want to offer greater incentive to use purple pipe? Daniel says there is still language to include other sources. So, it's in there now.

- Upon revisiting, Additional Motion Passes: Motion to modify 10 gals in exception to 7.5. (11 votes Yes)**

c. [#P34.7](#) 601.3.4 Water Consumption Measurement

- Summary: Recommended move from elective to mandatory. Decrease threshold for irrigation submetering with controllers from 25,000 SF to 10,000 SF to increase water use reduction in irrigation.
- Public Questions/Comments
 - None
- Committee Questions/Comments:
 - Daniel – which occupancies that would apply? Not understanding the table. Lindsay clarifies that this would not apply to residential given the scale.
 - Austin says the 40k gal/person/year is efficient.
 - Daniel is concerned about who may not use this code because of this requirement, does not want to discourage use or exclude projects because of narrow applicability.
- Motion Passes: Motion to Approve as-is: Jonathan (12 votes yes, 1 vote no, 2 abstained), Daniel seconds.**

d. [#P34.8](#) 601.3.1.1 Landscape Design

- Public Questions/Comments
 - None

□ Committee Questions/Comments:

- Cheryl – what is improved landscape definition?
- Renee – this one seems prescriptive, how is it different than the previous proposal? Lindsay says water budget allowance exception would apply also here. This is the primary standard about what goes into landscapes in code currently. What water budget would be land at with 80% xeric? Not sure.
 - Kristen – improved landscape is defined. Does not included hard scape, decking or others. Also, previous proposal was passed as elective so is no longer an exception. Correction: Original exception remains unchanged (until we revisited it).
 - Austin – is there capacity to develop plant list or would use greenco? Jeff adds that this would be a very narrow plant list of 100-150 plants total, this would eliminate a lot of existing common landscape industry shrubs. Would more leeway help developers? Would this just push to budget? Think about how this will limit plant use and how would it be useful.
 - Austin clarifies that using low water plants in CO, would be in 5-6 gal/ft² range. If 80% is low water but other 20% in Kentucky bluegrass, it would average out to around 7.2 gal/ft².
- Travis – in section 1, it lists public rec facilities but think it should just say rec facilities. Confused how the plant list works and how it overlaps with Res landscape section that was voted in? This seems to conflict with it.
- Christy – moving to make DGC limited mandatory use in base code. Every commercial project will choose from the code of what to apply. Then there is a pilot to apply expanded use. Only for commercial projects currently. Aside from that, is 80% achievable? Will limiting the plant list have consequences to Denver’s ecology?

- Cheryl – can Austin run a back of napkin calc of 60% to 80%
 - Austin – as written it comes out to 9.2 with same assumptions.
 - Cheryl – so it may be fairly limiting. If there is an option to do water budget at 10%, everyone would just go to the budget option.
 - Austin – gives designer flexibility. This one is harder to get answer to. Have to do a water budget and ensure 80% are on the plant list. This is even more difficult to do than budget.
 - Kristen – Res proposal already approved had requirement for a minimum of 20 species for commercial and MF and 10 species for Residential to increase diversity. Will need to combine these on the back end.
 - Christy – we moved the 5 gals to elective. Is there a desire to revisit replacing 10 in the exception to 7.5 gal?
 - Austin – can we revisit it? If so, feel that we should move to change it to 7.5 gal/ft².

- Kevin suggests move to reopen last proposal: 11 Yes
 - Christy motions to change to 7.5 in exception. Austin seconds. (show above)
 - Daniel repeats point that “mandatory” could deter users of the code. 60% is already above and beyond.
 - Austin – lot of moving parts on this one.

- Motion Passes: Motion to Modify as written on screen: Courtney (10 votes yes, 0 vote no, 1 abstained) Christy seconds.**
 - Jeff motion to modify Xeric grasses list. Austin requests to refer instead to include other front range Colorado cities.
 - Daniel asks if we can use as a way to borrow another City’s plant list without giving the too much leeway to apply arbitrarily? Eric suggests language to refer to those approved by AHJ.

- Tony – are we speculating what may be available in the future? Jeff says there are many lists out there for other municipalities and this will move designers to use better plant lists. E.g., Colorado Springs, Aurora, Castle Rock, Durango, Fort Collins.
- Daniel cannot support because changing 60% to 80% as mandatory will deter project from following the code. It's too stringent.
- Josh has problems with this proposal. Is there agreement with what problem we're trying to resolve? What is the purpose?
- Josh: how do biodiversity and native/xeric interact? Can we just adapt the water proposal to just use native/drought tolerant? If we keep this, can we call it native and adaptive plant species. Want to avoid unintended consequences.
- Christy: these proposals lead to similar results.
- Josh: All proposals lead to xeric plants. Where are wetland plants located? Want to know what plants are in these lists.
- Jeff: They are called xeric lists not just plant lists.
- Christy: Water quality plant list from the DOTI proposal on the agenda for later today. This may help our non-arid planting xeric list.
- Travis circles back to ask if "public" can be deleted. Also add wetland and Riparian to exceptions.
 - Jeff agrees to both
 - Josh additionally can we change proposal to Native and Adapted Landscape Design.
- Kristen – wetlands is defined in DGC.
- Daniel suggests keeping the section title more concise for easier cross referencing.
- Josh – took me awhile to discern what the focused intent is. Daniel feels these subsequent sections all under section 601 will be this way.
- Minor Modifications within the Motion:**
 - Vote for and section b.3 – 11 Yes, 1 no, 1 abstaining – Passes.
 - Vote for title change 5 Yes, 4 no, 2 abstaining. - Did not achieve

majority, motion fails.

- Jonathan suggests defining an ecoregion. Jeff concurs that more specificity is better, but ecoregion is not preferred.

Vote to remove “public” – 8 yes, 1 no, 3 abstaining, Passes.

e. [#P34.9](#) 601.3.2.1 Plumbing Fixtures & Appliances

Summary: 0.8 gal/toilets are effective, used on water incentive/rebate programs on front range. Most rebate programs in CO are still 1.1 GPF. Nonflushing urinals (EPA water sense labeled), 20,000-45,000 gallons per savings. Touchfree for health benefit. CA rebate for these, Pima AZ base code to waterless. Res lavs from 1.2 to 1 GPM. Aerators that further reduce (0.5/1 GPM) flow rates used all over front range. Evidence that 0.5 GPM is sufficient flow. Res shower heads from 1.8 to 1.5 GPM. 1.25 GPM is becoming more common. Clothes washer to 3.2 gal/ft² from 5.4 gal/ft².

Public Questions/Comments

None.

Committee Questions/Comments:

Eric: Toilets to 0.8 GPF, only seeing Niagara product. Concern about availability of product, force sole source advantage. Price?

Lindsay: Several manufacturers available, don't know if they are major or not.

Jeff: Proflow toilets are available at Ferguson and other supply stores. Used on city project.

Antonio: Concern with the flush and operation. NY is at 1.28 GPF. CA is at 1.2 GPF. Is this a proprietary solution? Why are we coming in so low and going so much further?

Lindsay: Toilets sold in CO need to meet EPA water sense standards at 1.28 GPF. Local jurisdictions can have more restrictive standards. Denver can lead the charge in ultra-low flow fixtures. Technology is now available to move in this direction at a similar cost. Market is there for this.

Chris: Is this intended for new construction or renovations?

Lindsay: intended for new construction only.

Daniel: Effectiveness of flushing? Studies overall/absolute outcome of water reduction available? Duration could be longer, thus not realizing water savings.

Lindsay: Alliance for Water Efficiency and EPA Water Sense could have studies. Thinks there are studies available to support the efficacy.

Jeff: Limited studies done on residential 1.8 GPM for faucets. Commercial projects antidotally had better results for 1.5 GPM. Desire for marketplace to shift in this direction.

Eric B: Known issues in waterless urinals from an odor perspective. Tradeoffs between chemical use and water use in these types of fixtures. Could argue chemicals are worse than water savings.

Cheryl: Low flow toilets from Toto and Kohler are dual flush, 0.8 (low), 1.0/1.28 (high) GPF. These do not comply with standard.

Christy: DGC is trying to move the market, so may help move manufacturers in that direction. Choose to put it in as a choice and encouraging industry to innovate. Low flow showerheads: there is a difference in quality/technology in low flow options.

Antonio: below 1.2 GPM, difficult for clogging toilets. How do we deal with solids to flow through pipes? Moving the waste to the sewer main? Are we addressing pressure?

Jeff: Real world case study for MF in the Watersense Challenge: installed 0.5 GPM sink, 0.8 GPF toilets, did not see drainline carry issues or clogging. Some longer drain lines or flat slopes could be an issue. Manufacturing has performance testing to curb this issue.

Austin: Pressure is addressed with 1.0 GPF in flushometer type WCs.

Eric: NC or renovation? Existing construction? Can they be applicable to an existing construction? Not majorly different. Please consider that as we go forward.

Motion to Table until next Code Hearing: 12 votes yes