IgCC/Stretch Code Committee Meeting Agenda
June 10, 2019, 2pm-5pm
City and County of Denver

1. Roll Call and Introductions

2. The first 30 minutes of the meeting will be dedicated to finishing up Chapters 5 & 9.

3. Everyone reviews Chapter 6 and the non-IECC elements of Chapter 8 and notes from previous meeting and be prepared to discuss

4. Discussion on Master IgCC Development Table and homework assignments from the May 20th meeting.

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Katrina – Master IgCC Development Table. Elevations above a flood plain.

Jim Turner – To qualify for stretch code incentive, do you have to comply with full stretch code, certain number of points. Jeremy’s idea is that 5 feet is significant and carries unintended consequences. Up to 3 ft is good above that you don’t gain as much for going above. Jeremy is flood plain manager. He thinks 3 is good.

Scott – Base code now is 2.

Jim – 1 ½ right now. 1 foot above 100 year flood data.

Scott – Struggling with this because we already have criteria for this. It creates difficulty for ADA accessibility and adds cost. I feel we already have stringent requirements from Denver Water. Would like to see a higher benefit from the change.

Jim – I would agree with that. They should be protected with our current requirements. We what require currently protects most buildings as is. This only applies to FEMA regulated flood plains, lots of areas that flood that are not included in those deemed so by FEMA. Potentially more losses in those areas.

Paul K – Any idea how many miles of creeks have been paved over.

Jim – 10s or dozens. Larger streams that we would have water in the street and wasn’t left with a stream channel.

Paul H – Have we have significant losses in the city.

Jim – It is measurable.

Chris – Not for new buildings.

Dane – How often is 100 year flood plain evaluated.

Dane – Depends on the flood plain, looking at rain fall data. Storm water models are also being updated.

Sonrisa entered committee at this point.

Jeff – If we go to 5 feet I feel like we could lose a story on buildings taking in to consideration new requirements.

Jim – They could push the building down into the hole, not best design for sustainability.

If stretch code stays as pass fail, this doesn’t have the best effect. Points system it might be worth it.

Jim NBI – 30% fall within flood plain, Less restrictive here would be more beneficial to implementation of green code.

Paul K – Agree strongly.

Out for now if we are looking at pass fail. If we go to a points system, this could be considered.

Storm Water Management Requirements Line 9 and below in the Table.

Jim – Hard to compare the greenfield ones. Not comparable. We already do a lot on this if project is over a certain size, does this go above and beyond is hard to determine.

Scott – Is there a way you think would be better? To have a metric to gain higher level compliance?

If stretch code stays as pass fail, this doesn’t have the best effect. Points system it might be worth it.

Jim NBI – Cost of creating less pervious area is significant so an incentive would need to be significant.
Jim NBI – Only 40% of LEED projects claim this credit.
Scott – Something maybe we can consider. Table and then think a little deeper if we are going to add.
Sonrisa – How do we increase the perviousness of the site, we just need a metric and what is the appropriate metric.
Next Item Grey Fields Jim Turner - Grey Fields Igcc promotes retention. Not sure anything we can do would be beyond what the State already requires. Retention pond is double, it's big and takes up a big chunk of the site. Could discourage people unless there are some pretty big incentives.
Jeff - Could run in to issues with retention not being released and water rights.
Scott – Any recommendations?
Jim Turner – Hesitate to say Yes or No, but I think the state may already have it covered. On some projects the cost is so high that it may not be worth it.
Paul K – Is this criteria been adopted in other parts of the country?
Jim NBI – Dallas did not leave it in. Rhode Island and Boulder modified it.
Paul H – Which portion did Boulder keep.
Jim NBI – We can look it up and send over for next meeting what Boulder put in to place.
Scott – Then Jim can review and see if it makes sense and could work for Denver.
Shaunna – Would it be beneficial for someone from Boulder be able to call in or come in to share their feedback.
Scott – Yes it would be helpful to the committee.
Move Greyfield to the next meeting. Out temporarily- will revisit.
Discharge Rate of Storm Water.
Jim Turner – IgCC uses a different method so hard to compare. We would need an interpretation of that code.
Scott – If we change that code, would we be crossing a line with the state.
Jim Turner – Potentially because if we reduce the rate it discharges we are holding on to it longer.
Scott – More realistic to Denver due to limited area?
Jim Turner – State is set on mimicking. Might be opp to store more water, but makes the storage facility larger.
Scott – Big cost factor.
Jim Turner – Would just need to look at the cost impact. Industry is going.. rate pretty well figured out now trying to minimize run off from the site. More to be gained by incentives for infiltration. Would reduce the discharge rate.
Table – Need to see how we are going to incentivize. Scott.
Jim Turner – Sarah Anderson has been working on this for smaller sites especially.
344 – Jim Turner – Nothing in there that goes above and beyond what we currently do. I think we have this one covered.
Jim NBI- very possible that you already are good on this one, this written for entire country.
14 Jim Turner – Already enforcing next one. How do we infiltrate more storm water but not dirty or contaminated to then pollute the river. 501.3.4.5 in IgCC right now our permit says remove 80% of total reduced solids. Some new permit from the state to start addressing this may already be addressing the metric in IgCC. Hoping for it in June.
Scott – maybe we can table and come back to this.
Seems like big picture that Colorado is already addressing more than at the national level in IgCC.
Scott – I tend to agree, Colorado is ahead of the curve with water.
Jim Turner – Not the front but above the middle.
Sonrisa – Are you satisfied with above average or do you want to push for more?
Jim Turner – Several big pushes in criteria we write. Capturing a lot more projects that will have to look at water management.
Paul H – I think it would be a great challenge to take on with our projects working toward the greater good.
Katrina – Light Pollution Dave doing research on what Boulder is doing.
Dave – Boulder adopted their own lighting and has been revised several times over the years. They put in that all lighting be in accordance with this ordinance by 2018. I don’t think they are following IgCC based on the difference in lighting requirements. Opinion to write our own ordinance that would be more concise and easier to comply as well as enforce. Tasked with writing an ordinance to be submitted to the zoning
department.
Dane Sanders – IgCC based on model lighting ordinance.
Dave – Rather elaborate model code.
Dane – Ignores lumens per square foot.
Dave – If electrical contractors don’t understand they won’t comply.
Dane – All published on cut sheets. Contractors should be able to easily follow it. Boulder uses outdated
language.
Paul – Does that ordinance deal specifically with building up lighting.
Dane – Yes, but more comprehensive then that. IgCC version says there are exception that lighting zone 3
& 4 up lighting are excluded. Not a good thing, shouldn’t be done in Denver. Zones 1 & 2 are allowed as long
as they don’t include 50% or more of your up lighting.
Dave – Watts per sq ft on the façade or watts per linear foot.
Scott – Dane and Dave work together on this to come up with something ordinance wise to bring back to
the committee, Paul Hutton volunteered as well as Sonrisa.
Sonrisa – IgCC lighting table by same.
Dane – Concerns with glare rating.
Dave – Somethings in glare rating are confusing.
Dane – Glare only higher angles.
Katrina – I think your consensus would be great to bring to the committee.
Scott – Dave would like you to start a collaboration so we can bring something back in this format to the
committee.
Bicycle Parking
Paul Hutton – Bicycle Colorado issue they are interested in, doing some research. No recommendation as of
right now. Agree there are areas where we need more bicycle parking. Question they couldn’t answer was it
is just legacy buildings or new buildings.
Paul K – Will you be asking bike ridership is to people across the city?
Paul H – Yes I believe they can provide a un biased opnion.
Sonrisa – Wondering if we should add other modes of vehicles.. scooters.
Christy – Seen that come up on other projects. Do we want to tackle that?
Paul H – would we expand to say alternate transport, bicycles, scooters.
Christy – Are scooters changing the amount of people who bicycle to work.
Paul H – Some may be switching.
Building Site Waste Management
Cheryl - Requires 3 things. What you’re going to do with waste, where you’ll put them (back to cannot put
them in undeveloped land with restrictions) Do we think there’s an issue now with where materials are
being brought. My experience is that most are looking for most cost effective removal method. But if we
think things are going where they shouldn’t. Not sure what the aim of this portion of. Threshold 90%
stumps and vegetation. Looking in to contacting A1 organics.
Sonrisa – Biggest goal would be to get out of landfills only 30% right now .Don’t have true waste to energy
plant.
Paul K – Do you know people at A1 Organics?
Sonrisa – I can give you a better number. Can connect you with Courtney Cotton she will have all of the info
she also has better contacts with A1 Organics.
NBI – Still want us to reach out to A1
Cheryl – I can take care of that.
Chapter 9
Diversion Rates – Cheryl – Behind.. have at next meeting.
Refrigerants - Sonrisa – Add HTFC to refrigerants and add the phase out plan from LEED, use this language
here. A little more aggressive. Enhanced credit
Penny – Don’t bring in old language, make sure it’s current language.
Katrina – How would it work in major renovations.
Sonrisa & Penny – That’s where the phase out plan comes in.
Regional Material Sourcing
Line 19 –
Paul H – Looked at small project. Some of the key locations where we wish we could source materials Norfolk Nebraska. Source of a lot of major building materials to Denver. Salt Lake City few manufactured there, Dallas Fort Worth, would still argue that is regional 750 miles. Would enable projects here to connect with enough building materials.

Cheryl – Salt Lake and Nebraska within 600 driving. LEED consultant overall industry is going to make regional even smaller. Keep it to be what would be safe and Nebraska and Salt Lake, go down the percentage.

Paul H – Would like to pull materials from Southwest.

Sonrisa – A lot in Salt Lake, Nebraska Kansas. Was getting in right within unless we did a lot of recycle materials from the site. 10% and take it up to 600 miles, give a little on each end.

Penny – Good compromise.

Sonrisa – Not all the way to Dallas.

Paul H – You take it to 1000 you incorporate California.

Penny – At that point you are making it in to Made in the US not so much regional.

Paul H – 10% and 600 would let you get concrete masonry and steel.

Cheryl – Straight line 600.

Sonrisa – I like 700 range better. Paul H – 10% and 600 would be interesting to try.

Paul K – Why 600 over 700?

Paul H – I think the trend is tighter.

Paul K – How much comes rail vs truck?

Paul H – Never tried to analyze that.

Cheryl – Somewhere weighted average for alternative method.

Paul H – So would rail be that alternative?

Cheryl – Not sure. For bldg. materials rail or water, uses weighted average to determine the distance it can be

Katrina – 10% 600 miles (include the rail factor) Exception in the draft.

Life Cycle Assessment – Performance Option

Sonrisa – Stick with 10% reduction because it aligns with LEED, not ready for it. No one has even done these assessments yet. Asking a lot, just to do it. The benefit is making people think about it, don’t think we need to force them to demonstrate a savings here.

NBI – That’s right, the alignment with LEED is a good reason to stick with 10%.

Cheryl – What qualifies as an LCA do you have to hire a 3rd party. How does project show compliance with this.

Sonrisa – Would need to go ANSI standard to determine.

Cheryl - Need to look more at compliance and reporting, better define them.

Katrina – Do NBI want to look at the LCA and determine the best reporting and compliance.

NBI – Alternative to the prescriptive path.

Katrina – Was that enough or do we need more review.

Sonrisa – It is time consuming and you usually have sustainability consultant do it. It is labor intensive and you need someone to do it.

NBI – Denver’s call how they want to report it.

Cheryl – On smaller projects that don’t have budget available to hire a third party, it kicks them out.

Sonrisa – Do you think we keep it in or wait.

Cheryl – If tiered system then this is what we use.

Katrina – Ok keeping as is since it’s optional. Ok with reporting as is.

Chapter 6

Katrina - Jeff can you walk us through since you’ve reviewed.

Site Water Use Reduction

NBI – Summarize Landscape Design Requirement

Jeff – Not consistent across all levels in landscape industry. ET compatible plants.. what they are. Some asking for a plant list.

Katrina – Have Plant List in Green Building Code.

Jeff – Lets have one we use.
Paul H – How would you handle projects where you would need fields.
Scott – Thinking about that too.
Paul H – Excludes athletic fields.
Scott – what about college campuses. Other reasons why college campus would want more grass. Do we exclude college campuses. Has to be a way to accommodate that realistic need.
Christy – We could add to the exception.
Scott – Yes schools and campuses added to exceptions.
Cheryl – On a college it would be renovation, they have 40% to play with.
Scott – Think it’s important to include campuses and universities.
Sonrisa – Don’t you think that could be covered by Recreational Fields. Feel like last part covers it.
Paul K – In the interest of moving towards a tiered system points incentives it would be good to steer schools away from having so many grass fields in order to save water. In this climate it’s not the right thing to have all these fields.
Jeff – Would it make sense to exempt out.
Paul H – Want to incentivize owners to do more.
Jeff – Both Denver Parks and Schools would meet this profile. Low water use.
Paul H – What is our average rain fall. 14½
Jeff – 14½
Cheryl – Item 3 would go away if we use Denver Plant List.
Jeff – Plant list is a good idea
Paul K – Irrigation not currently rain water sensors. Is that in IgCC
Shaunna – Yes next section.
Katrina – In as is.
Irrigation
NBI – Summarize – Limitation on using fresh water as opposed to reclaimed or alternate on site sources of water. There are limits on how much water should be potable and requirements for controls, requirements for design of irrigation systems.
Jeff – We reviewed these requirements and looked at 601.3.1.2 irrigation of golf course, really trying to get alternatives to these types of projects. May need to discuss distance from site. We have our own purple pipe system.
Jeff Kelley – How would you install that purple line
Jeff T – Mainly towards city park towards green valley ranch.
Jeff Keeley – If we wanted to extend it Denver Water would install and you would cover the cost as a developer.
Jeff T – Yes, it is costly. Change to a ¼ mile. Larger buffer.
Katrina – Strike “Other landscaped areas”
Jeff T – Don’t think that’s needed.
Katrina – Only put in if we are going with a points based system because of expense?
Jeff T – Yes make it optional.
Irrigation System Design
Jeff T – Yes we need more professionally installed and maintained systems. Like it.
Sonrisa – Make sure Denver list includes Purple Pipe Water approved plants.
Jeff T – Would advise work with city Aborrist list and the sliding requirements
Christy – Was purple pipe water considered when making the approved plant lists for Denver.
Sonrisa – Recycled water has the salts.
Need to determine if this list allows for Purple Pipe Water.
Sonrisa – What we have on here is not a performance based system. This doesn’t really address grey water. Would like to see the green code push for this and reward it. Without performance metric here we can’t really push for use of grey water.
NBI – You could just add a requirement.
Katrina – Looking to add a section for grey water
Sonrisa – Could be really restricting if
Jeff – We need some sort of scaling involved, site specific based on water usage.
Sonrisa – How can we help people along the path of using grey water with moving the 2nd sentence.
You could use up to 10 gallons per sq ft of potable water, if you want to exceed it has to be grey water or redirected rain water. Incentivize grey water usage.

Jeff and Sonrisa work on language and bring back.

Controls –

Jeff – Do you do it through better clocks or cycle and soak. This one is in, it’s pretty well written. Thoughts to add freeze sensors.

Katrina – Can you draft final language for the group Jeff.

Jeff – Yes

Exception of Temporary

Jeff – Temp can become permanent. Temp should be placed above ground. Eye sore won’t stay that way.

Sonrisa – LEED definition for temporary might be helpful too.

Irrigation of Rainfall compatible plants

NBI – Allowing irrigation of established 60%

Katrina – This doesn’t work in our climate, all plants in Colorado need water.

Jeff – We have example at DIA. They are trying without irrigation didn’t take and now some areas are pretty bad. Do a plant list not ET compatible plants. Read this more of areas not being irrigated. Native landscape areas. Am I wrong?

NBI – After establishment then they shall not be irrigated.

Paul K – Jim who is going back to verify that plants are established and disabled the water?

Jim NBI – No, I don’t think it’s enforceable.

Paul K – Great idea, have rain water sensor in place so you don’t water, but you will have irrigation in place.

Jeff – I would expect some areas would be non irrigated after established. Turf would be the higher or moderate, Hydrozones could be introduced here. Get to an overall water budget approach instead of just turning it off.

Katrina – Lists are not split to determine watering requirements for each set of plants.

Jeff – We cut tap and remove the irrigation system. Might be something IgCC doesn’t know, some commercial sites have substantial native seeding.

Katrina – Can you rewrite to match the lists with those specific determinations?

Jeff – Yes

Building Water Use Reduction

Plumbing Fixtures and Fittings

NBI – Set of requirements are to limit in building water consumption. Based on 1.28 per flush water closets. Not sure where Denver or Colorado is at regulations for water closets. Each of these are low water use fixture numbers. Appliances generally Energy Star, additional requirements for cooling fluids for HVAC equipment.

Jeff – We are ahead of the curve on this one. Keep this in, but lets go beyond where we are for state standard. Looking for next level. Toilets 1.1 recommending.

Paul H – Manufacturers already there.

Jeff – Yes, getting better.

Paul H – All inclusive bathrooms, seeing water usage in building lower by eliminating urinals. Would be consider going to mandatory gender neutral, dual flush.

Sonrisa – Dual flush still get you to 1.1.

Jeff – Still debating the dual. People don’t know what button to use.

Paul H – Not doing any public buildings without gender neutral bathrooms. In public toilet rooms it’s just stalls.

Penny – No reason we couldn’t drop these numbers based on our current requirements and performance.

Jeff – Need to look at these more in depth.

Katrina – Jeff do you want to fill these in with your recommendations?

NBI – Where are these referenced, Plumbing Code?

Jeff – State of Colorado regulations are what we follow. Working very well, and not seeing illegal plumbing fixtures. Like to do some more research, multi use bathrooms and the dual flush option. Also, discussion about faucets.

Sonrisa – Questions on gender neutral restrooms

Scott – About configuration not necessarily water use.
Paul K – Multi family and single family energy saving device, cold water out back in to the system. Lots of water savings to go with potentially. Familiar with those.
Jeff – On demand hot water systems. All for those as long as on demand, not passively route water.
Sonrisa – Recirc ones are not good that way.
Jeff – Passively, always flowing and can grow bacteria. Legionella Don’t work with on demand hot water heaters.
HVAC Systems –
NBI – Problem with this one. It save energy reduces discharge of cooling towers. Hesitant to put this pass or fail for Denver.
Sonrisa – What’s the adoption rate among buildings with cooling towers.
Penny – Driven by quality of water.
Sonrisa – 5 is actually medium because usually you can get up to 7.
Penny – You can get better with your treatment of water.
Jeff – One of the areas we’ve done working in, but not expert in cooling towers. If gradation could see heat pumps, not moving to AC but not using cooling towers. Most costly and design things that need to be done. Penny – Typically in Denver you would be running a cooling tower to include Heat Pump due to freezing. No getting rid of them. But could introduce where they are not currently being used.
Paul H – Evaporative cool more water efficient. Wouldn’t want to lose that here.
Sonrisa – This kicks out swamp cooler.
Paul H – But we use evaporative not swamp cooler. Could be classified as once through.
Questions about what would be taken out as a “once through”
Penny – For Denver take out evaporative coolers.
Shaunna – Pull up definition of “once through cooling”
Committee says they need clarification.
Sonrisa – We need to modify this section since it doesn’t even make sense to us.
Penny – Need to look at LEED definitions.
Paul H – Take out direct and indirect evaporative cooling.
Needs to determine what would be excluded by the statement of “once through cooling”
Katrina suggested Paul H, Jeff, Penny and Sonrisa collaborate and make suggestions as to what we should move forward. Christy would like to be included. Maybe let the committee know in advance if you won’t have your information by Thursday or Friday before meeting so we don’t have to bring up things we aren’t ready to discuss.
Scott – On HVAC we need to include an engineer in the industry included.
Penny and Sonrisa – Both are technically engineers.
Scott – Thinking more people who do HVAC engineering all the time.
Next Meeting Chapters 6 & 8 July 1st next meeting.