Webinar

ULI Colorado: Advancing Water Smart Development & Landscaping with Cross-Sector Collaboration

Date: July 20, 2021

00:00:00 --> 00:00:05: Ferguson and then finally, we'll have Lee Ferguson with Trammell

00:00:05 --> 00:00:08: Crow talk about best practices in water,

00:00:08 --> 00:00:12: smart development in case studies that he's worked on.

00:00:12 --> 00:00:16: Well, at the end will have Q&A facilitated by John

00:00:16 --> 00:00:20: Bergren with water resource advocates and then will close at

00:00:20 --> 00:00:22: 10:15 AM Mountain time.

00:00:22 --> 00:00:24: We're all based out of Colorado,

00:00:24 --> 00:00:27: so this will be best practices and case studies from

00:00:27 --> 00:00:28: Colorado,

00:00:28 --> 00:00:31: but a lot of these water smart development and landscaping

00:00:31 --> 00:00:33: best practices are broadly applicable.

00:00:36 --> 00:00:40: I'm Marianne epic. I work with the Urban Land Institute,

00:00:40 --> 00:00:42: which we call you lie.

00:00:42 --> 00:00:46: You lie is a global nonprofit supported by members representing

00:00:46 --> 00:00:50: the entire spectrum of real estate development and land use

00:00:50 --> 00:00:51: disciplines.

00:00:51 --> 00:00:54: We facilitated an open exchange of ideas,

00:00:54 --> 00:00:57: information and experience among industry leaders and policymakers,

00:00:57 --> 00:01:01: dedicated primarily to responsible land use.

00:01:01 --> 00:01:05: My Co moderator is John Bergren with Western resource advocates.

00:01:05 --> 00:01:06: John, are you there?

00:01:07 --> 00:01:10: Yeah, thanks man. So just quick question question.

00:01:10 --> 00:01:14: We should have. Kids were in a conservation organization headquartered

00:01:14 --> 00:01:15: in Colorado.

00:01:15 --> 00:01:19: We work around the West and we worked on a
00:01:19 --> 00:01:21: variety of UM land,
00:01:21 --> 00:01:25: energy and water issues. And we use law,
00:01:25 --> 00:01:28: science and economics to craft innovative solutions to some of
00:01:29 --> 00:01:32: these pressing challenges that we see here in the West.
00:01:32 --> 00:01:34: And thank you very much.
00:01:35 --> 00:01:38: Excellent, the reason why we've started focusing on water,
00:01:38 --> 00:01:42: smart development and landscaping is that we have a goal
00:01:42 --> 00:01:45: to make water smart development the norm in a community
00:01:45 --> 00:01:47: is experiencing extreme drought,
00:01:47 --> 00:01:50: which is particularly the American West.
00:01:50 --> 00:01:54: We started over the winter planning focus groups amount around
00:01:54 --> 00:01:57: the American West to hear from you line members and
00:01:57 --> 00:02:00: others in terms of how are they addressing water,
00:02:00 --> 00:02:04: smart development in landscaping we learned a great deal that
00:02:04 --> 00:02:08: will be putting in two different national reports published by
00:02:08 --> 00:02:09: U L I on water,
00:02:09 --> 00:02:13: Smart development and landscaping. They'll be coming out in the
00:02:13 --> 00:02:14: fall in the spring.
00:02:14 --> 00:02:18: We're also building across Sector coalition here in Colorado that
00:02:18 --> 00:02:20: we plan to put together.
00:02:20 --> 00:02:23: And meet over at least over the next five years.
00:02:23 --> 00:02:25: So if you're interested in getting more involved,
00:02:25 --> 00:02:26: please send me an email.
00:02:26 --> 00:02:30: My emails just marry an epic at uli.org.
00:02:30 --> 00:02:33: I would love to turn it over to our panelists.
00:02:33 --> 00:02:36: Now. Our first panel panelist is Jessica Thrasher,
00:02:36 --> 00:02:39: who is the education and outreach manager of the Colorado
00:02:39 --> 00:02:42: Stormwater Center with the Colorado State University.
00:02:42 --> 00:02:43: My Jessica hey, Mary
00:02:43 --> 00:02:46: Ann. Thank you so much for the introduction.
00:02:46 --> 00:02:49: I'm excited to be a part of this conference and
00:02:49 --> 00:02:53: kicking off the panel discussion today on water smart policy
00:02:53 --> 00:02:56: and systems overview as we start the discussion today,
00:02:56 --> 00:03:00: it is important to know why water smart land use.
00:03:00 --> 00:03:04: And development is a critical issue for our future in
00:03:04 --> 00:03:06: the West and Colorado specifically.
00:03:06 --> 00:03:11: Next slide. This conversation is critical due to the changes

00:03:11 --> 00:03:15: that we have made to our landscape with urbanization and
00:03:15 --> 00:03:17: as our cities have expanded,
00:03:17 --> 00:03:21: we have more and more impervious area as sidewalks and
00:03:21 --> 00:03:24: asphalt in parking lots have been installed.
00:03:24 --> 00:03:27: This has decreased the amount of infiltration that we have
00:03:27 --> 00:03:30: as we remove vegetation and has increased the amount of
00:03:30 --> 00:03:32: stormwater runoff.
00:03:32 --> 00:03:35: Additionally, urbanization has caused the heat island effect where it
00:03:36 --> 00:03:39: is significantly warmer in cities than in the surrounding areas.
00:03:39 --> 00:03:42: This has caused increases in energy consumption as people are
00:03:42 --> 00:03:45: running their air conditions more and also increased air pollution.
00:03:45 --> 00:03:49: As more and more people use their cars instead of
00:03:49 --> 00:03:51: biking or walking.
00:03:51 --> 00:03:53: Additionally with urbanization and stormwater runoff,
00:03:53 --> 00:03:55: we have increases in flooding.
00:03:55 --> 00:03:58: This could be nuisance flooding where we have minor property
00:03:58 --> 00:03:59: damage,
00:03:59 --> 00:04:02: or it could also be catastrophic flooding or we have
00:04:02 --> 00:04:05: loss of property and loss of life.
00:04:05 --> 00:04:08: Additionally, with nuisance flooding, if you're looking to have a
00:04:08 --> 00:04:11: walkable city and you have frequent flooding events,
00:04:11 --> 00:04:14: then you might not be able to use those sidewalks
00:04:14 --> 00:04:19: because they're frequently flooded and also makes for more perilous
00:04:19 --> 00:04:21: driving conditions as water.
00:04:21 --> 00:04:23: Goes along our impervious surface areas.
00:04:23 --> 00:04:26: It picks up debris. It picks up trash and oil
00:04:26 --> 00:04:30: and fertilizers and it deposits them into our water bodies.
00:04:30 --> 00:04:33: This has the effect of potentially reducing what we were
00:04:34 --> 00:04:36: able to use our reservoirs for.
00:04:36 --> 00:04:39: We might not be able to use them for fishing
00:04:39 --> 00:04:42: or swimming in worst cases for drinking.
00:04:42 --> 00:04:45: It also has the effect of potentially causing algal blooms,
00:04:45 --> 00:04:50: which can pose hazards to human pet and aquatic health.
00:04:50 --> 00:04:53: We are now also seeing increases in extreme weather events
00:04:54 --> 00:04:56: due to climate change in Colorado.
00:04:56 --> 00:05:00: This presented last year with the abnormally severe fire season

00:05:00 --> 00:05:03: with the results this year and the impacts being mud
00:05:03 --> 00:05:05: slides and increased risks of flooding.
00:05:07 --> 00:05:11: And finally, equity issues. Our community members in the lowest
00:05:11 --> 00:05:14: income areas are hit the hardest and are the most
00:05:14 --> 00:05:18: vulnerable to the negative impacts of extreme weather events.
00:05:18 --> 00:05:22: Next slide, please. We are also working with drought as
00:05:22 --> 00:05:25: you can see from this map released July 13th of
00:05:25 --> 00:05:29: this year that the vast majority of the western side
00:05:29 --> 00:05:31: of our state is in extreme to exceptional drought,
00:05:31 --> 00:05:33: and while the rest of our state,
00:05:33 --> 00:05:35: the eastern side of our state,
00:05:35 --> 00:05:38: might not be experiencing this drop the majority of our
00:05:39 --> 00:05:41: water comes from the western side and that is why
00:05:41 --> 00:05:43: it is a very critical issue.
00:05:43 --> 00:05:48: Next slide, please. It is not just Colorado that is
00:05:48 --> 00:05:51: struggling with drought conditions.
00:05:51 --> 00:05:55: As you can see, the entire West is experiencing drought
00:05:55 --> 00:05:56: as well,
00:05:56 --> 00:05:59: with the majority of states experiencing extreme to exceptional draft.
00:05:59 --> 00:06:03: Next slide, please. Now we have better understanding of the
00:06:03 --> 00:06:06: water challenges that we are facing.
00:06:06 --> 00:06:09: We can look at some of the current water policies
00:06:09 --> 00:06:10: in Colorado.
00:06:10 --> 00:06:13: This is a brief list of water policies related to
00:06:13 --> 00:06:14: water smart development.
00:06:14 --> 00:06:18: Some of you may be frustrated by what seems to
00:06:18 --> 00:06:21: be a lack of progress in our water smart policy,
00:06:21 --> 00:06:24: but it is important to note that progress has been
00:06:25 --> 00:06:28: made and our water policy today looks much different than
00:06:28 --> 00:06:30: it did 20 years ago.
00:06:30 --> 00:06:32: For example, the use of reclaimed water.
00:06:32 --> 00:06:36: Greywater and rainwater are all new changes to our policy
00:06:36 --> 00:06:37: in the last 20 years.
00:06:37 --> 00:06:40: These policies are enabling us to use water more than
00:06:40 --> 00:06:44: once and have these policies to have water smart development
00:06:44 --> 00:06:47: moving forward and these you will see examples of how
00:06:47 --> 00:06:50: these policies are being used on the ground from our
00:06:50 --> 00:06:53: presenters that are coming up in the next.
00:06:53 --> 00:06:56: In our presentation time here.

00:06:56 --> 00:07:01: As we move forward, we need policies that promote innovation

00:07:01 --> 00:07:05: and incentivized integrated approaches to water and land use.

00:07:05 --> 00:07:09: Next slide, please. One of these ways that we can

00:07:10 --> 00:07:14: have this integration is through the one water approach.

00:07:14 --> 00:07:18: The one water approach seeks to manage water holistically,

00:07:18 --> 00:07:21: and it's a look at water management that has each

00:07:21 --> 00:07:25: of these different approaches to water equal,

00:07:25 --> 00:07:28: so we can have thriving cities and social and economic

00:07:28 --> 00:07:29: inclusion.

00:07:29 --> 00:07:32: Healthy waterways and sustainable agricultural systems.

00:07:32 --> 00:07:36: This system also approaches on multiple benefits and looks at

00:07:36 --> 00:07:37: the economic,

00:07:37 --> 00:07:42: environmental, and. Social benefits. Of our water management system.

00:07:42 --> 00:07:46: Next slide please. Some examples of this integrated approach are

00:07:46 --> 00:07:51: utilizing a green infrastructure practices like rain gardens,

00:07:51 --> 00:07:54: rain gardens, infiltrate stormwater into the landscape.

00:07:54 --> 00:07:59: They slow the water down and infiltrate it while also

00:07:59 --> 00:08:04: having landscape vibrant lush landscape so you can have multiple

00:08:04 --> 00:08:06: uses of your water.

00:08:06 --> 00:08:10: It's also cleaning or water or storm water before it

00:08:10 --> 00:08:13: goes into our groundwater systems.

00:08:13 --> 00:08:17: Another example is. Permeable pavement you can have infiltration and

00:08:17 --> 00:08:20: cleaning of our water in addition to a walkable and

00:08:21 --> 00:08:24: drivable surface with green roofs in our cities you don't

00:08:24 --> 00:08:28: have to have extra space for your vegetated areas.

00:08:28 --> 00:08:30: You can have them on roofs.

00:08:30 --> 00:08:34: This can help reduce the heat island effect and also

00:08:34 --> 00:08:39: provide lead credits where you can have decreased energy consumption

00:08:39 --> 00:08:42: in our buildings by having that.

00:08:42 --> 00:08:45: Those those are more insulated roof like areas with our

00:08:45 --> 00:08:46: greywater systems.

00:08:46 --> 00:08:49: From the greater water system example here,

00:08:49 --> 00:08:53: this is using water more than once so we can

00:08:53 --> 00:08:57: keep more water in our rivers and use it for

00:08:57 --> 00:08:58: other resources.

00:08:58 --> 00:09:03: This particular system utilizes sink and shower runoff or sink

00:09:03 --> 00:09:06: and shower water to then be put in your toilets.
00:09:06 --> 00:09:10: Another example of Gray water use is the laundry to
00:09:10 --> 00:09:12: landscape system where utilizing.
00:09:12 --> 00:09:15: Your shower your washer water onto your landscape.
00:09:15 --> 00:09:21: Next slide please. Now that we have looked at the
00:09:21 --> 00:09:23: state level policies,
00:09:23 --> 00:09:26: what can be done at the local level will be
00:09:26 --> 00:09:31: taking a moment to look at ordinances and examples from
00:09:31 --> 00:09:35: what cities are doing in Colorado to really have the
00:09:35 --> 00:09:38: rubber meet the road and institute these water saving measures
00:09:38 --> 00:09:39: locally.
00:09:39 --> 00:09:41: One very effective tool is water budgets.
00:09:41 --> 00:09:45: There are a number of cities who are utilizing water
00:09:45 --> 00:09:49: budgets to help their residents to make better choices around
00:09:49 --> 00:09:49: there.
00:09:49 --> 00:09:54: Landscaping practices this is also helping residents by encouraging the
00:09:54 --> 00:09:57: use of water efficient measures inside their home.
00:09:57 --> 00:10:01: Water efficient appliances, as well as having less grass and
00:10:01 --> 00:10:04: more native vegetation in their lawns.
00:10:04 --> 00:10:07: But this is also a tool that can be used
00:10:07 --> 00:10:12: on the front end of developments as well by allocating
00:10:12 --> 00:10:16: water budgets to an entire project and and that way
00:10:16 --> 00:10:18: when the development goes in,
00:10:18 --> 00:10:20: there is a total water.
00:10:20 --> 00:10:24: Allocation and that can be used to inform what landscape
00:10:24 --> 00:10:27: practices are being used and also what appliances are being
00:10:27 --> 00:10:29: installed in these developments.
00:10:29 --> 00:10:34: The additionally additional regulations are adopting or strengthening water related
00:10:34 --> 00:10:36: ordinances and regulations.
00:10:36 --> 00:10:42: The City of Aurora has ordinances prohibiting water waste.
00:10:42 --> 00:10:45: The City of Westminster has an amendment that you may
00:10:45 --> 00:10:50: not negatively impact water infrastructure or supply with any water
00:10:50 --> 00:10:53: conservation in new development or redevelopment.
00:10:53 --> 00:10:58: The City of Westminster is also refining some of their
00:10:58 --> 00:10:59: zoning categories.
00:10:59 --> 00:11:03: So they can better reflect anticipated water use.
00:11:03 --> 00:11:07: And then the town of Buena Vista is limiting the
00:11:07 --> 00:11:11: amount of high water use vegetation and turfgrass for any
00:11:11 --> 00:11:12: new development.

00:11:12 --> 00:11:15: An additional tool that you can use at the local

00:11:15 --> 00:11:19: level is requiring certifications or registration of landscape professionals.

00:11:19 --> 00:11:22: For example, the town of Castle Rock requires this in

00:11:22 --> 00:11:25: order for contractors to work within the city or on

00:11:25 --> 00:11:26: commercial properties,

00:11:26 --> 00:11:30: and this will be discussed by another panelist as well.

00:11:30 --> 00:11:36: Next slide, please. Another tool is by utilizing incentives and

00:11:36 --> 00:11:39: resources to promote the water.

00:11:39 --> 00:11:43: The land and water use development so one is conservation

00:11:43 --> 00:11:46: oriented tap fees by the city of Fountain by giving

00:11:46 --> 00:11:51: discounts to developments that are utilizing more conservation approaches,

00:11:51 --> 00:11:55: you can provide incentives for reduced irrigation.

00:11:55 --> 00:11:59: With popular programs like turf replacement or outdoor fixture rebates,

00:11:59 --> 00:12:03: and then you can also provide resources like low water

00:12:03 --> 00:12:04: vegetation lists.

00:12:04 --> 00:12:08: Our model landscape plans and templates and also providing water

00:12:08 --> 00:12:12: efficient land development patterns like the town of Castle Rock

00:12:12 --> 00:12:12: does.

00:12:12 --> 00:12:14: These are just brief examples,

00:12:14 --> 00:12:17: but the full list can be viewed in the link

00:12:17 --> 00:12:22: below with best practices for implementing water conservation and demand

00:12:22 --> 00:12:26: management through land use planning efforts and we will be

00:12:26 --> 00:12:30: providing a resource page afterwards with that link next page

00:12:30 --> 00:12:31: please.

00:12:33 --> 00:12:37: Finally, I'd like to leave you all with the question

00:12:37 --> 00:12:40: today of what do we want our cities and land

00:12:40 --> 00:12:43: to look like now and in the future?

00:12:43 --> 00:12:46: How can we develop water smart policies that will help

00:12:46 --> 00:12:50: us to integrate one water approaches into future planning?

00:12:50 --> 00:12:55: Next slide. Here are some more resources available for you.

00:12:55 --> 00:12:58: All of these will be all of these.

00:12:58 --> 00:12:59: Letterings and blue are links,

00:12:59 --> 00:13:02: and again you will receive that resource slide after the

00:13:02 --> 00:13:03: presentation.

00:13:03 --> 00:13:07: Next slide. And finally, if you have any questions,

00:13:07 --> 00:13:10: here's my contact information and you can contact me at

00:13:10 --> 00:13:10: any point.

00:13:10 --> 00:13:11: Thank you very much.

00:13:15 --> 00:13:17: Thank you so much Jessica,

00:13:17 --> 00:13:20: and I'd like to introduce our next panelist,

00:13:20 --> 00:13:23: Bill Vitech, who's a senior principal with Dig studio and

00:13:23 --> 00:13:26: he'll be talking about water wise landscaping.

00:13:26 --> 00:13:27: Hey girl

00:13:27 --> 00:13:30: hi, good morning everyone. Thank you Mary Ann and Jessica.

00:13:30 --> 00:13:32: Thank you for that. Great overview.

00:13:32 --> 00:13:36: I think it's wonderful to see all those resources and

00:13:36 --> 00:13:38: I think we all are aware of the high level

00:13:38 --> 00:13:40: issues we're dealing with.

00:13:40 --> 00:13:43: I wanted to focus on really a series of projects

00:13:43 --> 00:13:47: that where we're at really trying to bring home how

00:13:47 --> 00:13:50: we address low water usage in the landscape and not

00:13:50 --> 00:13:53: just the landscape but in the overall approach to project

00:13:53 --> 00:13:54: planning.

00:13:54 --> 00:13:57: So next slide please. I think the first issue we

00:13:57 --> 00:14:01: have to grapple with his landscape architects and and their

00:14:01 --> 00:14:06: general community and development community as a whole is what

00:14:06 --> 00:14:10: is an appropriate aesthetic for a low water use landscape.

00:14:10 --> 00:14:13: These are a couple shots of Denver Denver's on the

00:14:13 --> 00:14:17: left 6th Ave Parkway was developed in a city beautiful

00:14:17 --> 00:14:21: movement back in the early 1900s is really a very

00:14:21 --> 00:14:25: imported landscape that was established in the East Coast and

00:14:25 --> 00:14:26: areas like you know.

00:14:26 --> 00:14:30: Boston and Cleveland and DC and brought out to the

00:14:31 --> 00:14:33: West when water was not an issue.

00:14:33 --> 00:14:37: Your big proponents of what we're now calling this this

00:14:37 --> 00:14:42: evolution from a city beautiful movement to a city ecological

00:14:42 --> 00:14:45: approach and some of the new parkways we're doing.

00:14:45 --> 00:14:49: This is actually at the Central Park neighborhood out at

00:14:49 --> 00:14:50: former airport site.

00:14:50 --> 00:14:54: We're reusing materials that are much more low water,

00:14:54 --> 00:14:56: use intensive, much different irrigation techniques,

00:14:56 --> 00:15:00: and much more different approaches to the actual lot landscape

00:15:00 --> 00:15:01: itself.

00:15:01 --> 00:15:04: So this whole is static of developing.

00:15:04 --> 00:15:07: Or this whole approach to develop a new aesthetic for

00:15:07 --> 00:15:10: the West we think is of paramount importance.

00:15:10 --> 00:15:14: Next slide please. So I want to highlight this through
00:15:14 --> 00:15:17: a series of projects that we've been working on.
00:15:17 --> 00:15:20: Actually for the last 20 plus years.
00:15:20 --> 00:15:22: So I've kind of dimness is past,
00:15:22 --> 00:15:25: present, and future, so the I think again the approach
00:15:25 --> 00:15:28: here is to how do we define a more sustainable
00:15:28 --> 00:15:30: water approach in a.
00:15:30 --> 00:15:33: I think there's some interesting lessons learned from each one
00:15:33 --> 00:15:34: of these projects.
00:15:34 --> 00:15:38: Next please. The first project I want to focus on
00:15:38 --> 00:15:43: was something we actually started planning on over 25 years
00:15:43 --> 00:15:47: ago and actually in New Mexico at lost components.
00:15:47 --> 00:15:50: And this was a a 4700 acre project where we
00:15:50 --> 00:15:54: actually needed to develop a water budget as a tool
00:15:54 --> 00:15:58: not only to address some legal challenges and in court
00:15:58 --> 00:16:02: cases that were facing the developer as a result of
00:16:02 --> 00:16:03: this project,
00:16:03 --> 00:16:07: but also determine how much water from the city's new.
00:16:07 --> 00:16:12: Greywater effluent system that they were developing would be needed
00:16:12 --> 00:16:16: to help subsidized the potable water and then also use
00:16:16 --> 00:16:20: our design in our in a basically an irrigation monitoring
00:16:20 --> 00:16:25: system to actually mount record how much water is actually
00:16:25 --> 00:16:27: being used on a daily basis.
00:16:27 --> 00:16:31: So a very very native approach to the overall landscape.
00:16:31 --> 00:16:36: Really a low water use focus except for the golf
00:16:36 --> 00:16:37: course area.
00:16:37 --> 00:16:39: Which is much more of a target golf course anyway.
00:16:39 --> 00:16:43: Next slide, please. So how we begin to go about
00:16:44 --> 00:16:45: doing this?
00:16:45 --> 00:16:48: Rose again with 4700 acres on about 1000 units,
00:16:48 --> 00:16:51: 218 hole golf courses designed by Jack Nicklaus.
00:16:51 --> 00:16:54: And so we what we began to do is categorized
00:16:54 --> 00:16:58: the landscape classifications in terms of the highest intensity.
00:16:58 --> 00:17:00: Obviously being the golf course,
00:17:00 --> 00:17:04: but then down through a series of higher to lower
00:17:04 --> 00:17:05: water usage usage,
00:17:05 --> 00:17:09: so we refer to them as high image all the
00:17:09 --> 00:17:11: way down to restored native.
00:17:11 --> 00:17:14: And so we mapped all of those areas on the
00:17:14 --> 00:17:17: project site is to from an exterior point of view

00:17:17 --> 00:17:19: as to where that water would be applied in.
00:17:19 --> 00:17:23: At what rate would be applied next slide please.
00:17:23 --> 00:17:27: So this showed us that basically the overall build out
00:17:27 --> 00:17:30: plan over a 20 year cycle from 2010 to 2030,
00:17:30 --> 00:17:33: and they're they're pretty much on track in terms of
00:17:33 --> 00:17:34: the ultimate development.
00:17:34 --> 00:17:36: We we knew what the water,
00:17:36 --> 00:17:39: the amount of water was that was currently existed.
00:17:39 --> 00:17:42: We knew what the potable water demand would be based
00:17:43 --> 00:17:46: on the unit types as they developed overtime in the
00:17:46 --> 00:17:47: third column here.
00:17:47 --> 00:17:50: So that obviously increases as the ultimate build out occurs.
00:17:50 --> 00:17:53: The 650 acres is what we knew that.
00:17:53 --> 00:17:57: Water demand for the golf courses would be and then
00:17:57 --> 00:17:58: we looked at the total,
00:17:58 --> 00:18:01: so we calculated what the total demand was and what
00:18:01 --> 00:18:04: our shortfall would be in terms of acre,
00:18:04 --> 00:18:07: feet that shortfall then allowed us to work with the
00:18:07 --> 00:18:11: city in the development of their greywater effluent system as
00:18:11 --> 00:18:14: to how much water we would commit to purchasing for
00:18:14 --> 00:18:18: the project and the ultimate goal of all this in
00:18:18 --> 00:18:21: the end was to say through the.
00:18:21 --> 00:18:24: Expansion of that Gray water system and the purchase of
00:18:24 --> 00:18:28: those effluent rights we would be able to reduce the
00:18:28 --> 00:18:31: portable water usage that was going to the golf course
00:18:31 --> 00:18:35: within a very inappropriate way and really just limit that
00:18:35 --> 00:18:36: to the units itself.
00:18:36 --> 00:18:40: So that was one example where it really many next
00:18:40 --> 00:18:44: slide plays the the challenges of the Community and what
00:18:44 --> 00:18:46: not forced to that solution.
00:18:46 --> 00:18:49: But it really became the basis for a model moving
00:18:49 --> 00:18:51: forward currently at Central Park,
00:18:51 --> 00:18:53: which is the former Stapleton.
00:18:53 --> 00:18:58: Airport again. Interestingly enough, about 4700 acres in terms of
00:18:58 --> 00:18:59: the size of the project,
00:18:59 --> 00:19:04: but a much higher density approach to the to the
00:19:04 --> 00:19:06: lot types and the products.
00:19:06 --> 00:19:08: About 7500 units in total.
00:19:08 --> 00:19:13: Here we didn't actually develop a detailed water modeling tool,
00:19:13 --> 00:19:16: but what we did instead was we really utilized a

00:19:16 --> 00:19:21: low water use approach to their overall marketing message and

00:19:21 --> 00:19:23: entitlement message.

00:19:23 --> 00:19:25: For much more sustainable landscapes.

00:19:25 --> 00:19:28: So again, this is where we've really begun to look

00:19:28 --> 00:19:29: at the parkways,

00:19:29 --> 00:19:33: their traditional green Denver parkways in in a much different

00:19:33 --> 00:19:34: landscape aesthetic,

00:19:34 --> 00:19:36: still making them very usable.

00:19:36 --> 00:19:38: It very iconic within the community,

00:19:38 --> 00:19:40: but making them much different.

00:19:40 --> 00:19:44: Next slide, please. And we developed a series of design

00:19:44 --> 00:19:49: guidelines that all of the builders that develop individual product

00:19:49 --> 00:19:53: at Stapleton have to follow and this promoted ideas such

00:19:53 --> 00:19:57: as urban agriculture but insisted upon low water use materials

00:19:57 --> 00:19:59: and low water use irrigation systems.

00:19:59 --> 00:20:03: When we first started the project we did allow a

00:20:03 --> 00:20:07: little bit of turf in the front lawn so these

00:20:07 --> 00:20:08: houses.

00:20:08 --> 00:20:11: But today you're not even allowed front front lawn a

00:20:12 --> 00:20:12: landscape.

00:20:12 --> 00:20:15: Everything has to be on drip and in the rear

00:20:15 --> 00:20:19: yards of the of the newer areas of development.

00:20:19 --> 00:20:20: Much more limited grass area,

00:20:20 --> 00:20:23: and that's controlled by a maximum square footage,

00:20:23 --> 00:20:26: so the guidelines were a key tool and really guiding

00:20:26 --> 00:20:30: the developers as well as being an education tool for

00:20:30 --> 00:20:31: the home builders.

00:20:31 --> 00:20:34: So what's involved next slide please is a much more

00:20:34 --> 00:20:36: sort of the slides.

00:20:36 --> 00:20:39: Two slides on the left where some of the very

00:20:39 --> 00:20:42: first phase is we did in terms of some of

00:20:42 --> 00:20:43: the pocket.

00:20:43 --> 00:20:46: Parks and you can see ten years later,

00:20:46 --> 00:20:48: how were already evolving into a much more,

00:20:48 --> 00:20:51: say, native and restored native landscape approach.

00:20:51 --> 00:20:54: So even within the context of this project over last

00:20:54 --> 00:20:54: 20 years,

00:20:54 --> 00:20:56: we've really developed a landscape aesthetic.

00:20:56 --> 00:21:00: Some of the very first faces we did out there.

00:21:00 --> 00:21:02: We did native seed in these parkways,

00:21:02 --> 00:21:05: and we would get calls from the first owner saying,
00:21:05 --> 00:21:08: you know, when you gonna come out and mow these
00:21:08 --> 00:21:09: weeds.
00:21:09 --> 00:21:12: So gradually overtime, people have accepted this landscape aesthetic and
00:21:12 --> 00:21:13: really embrace the beauty.
00:21:13 --> 00:21:16: Of it, and we've estimated about the end of the
00:21:16 --> 00:21:18: ultimate build out,
00:21:18 --> 00:21:21: we've save about 80 million gallons of water per year
00:21:21 --> 00:21:22: in terms of water usage.
00:21:22 --> 00:21:26: One of the advantages that Central Park does have it.
00:21:26 --> 00:21:29: It is part of the overall cities reclaimed water.
00:21:29 --> 00:21:33: But even judicious use of reclaimed water is very important.
00:21:33 --> 00:21:36: The last project I want to focus on is Canyon
00:21:36 --> 00:21:38: S next slide please.
00:21:38 --> 00:21:41: This is a master plan community where currently involved in
00:21:41 --> 00:21:43: down in Castle Rock and I think this Jessica and
00:21:44 --> 00:21:47: others have mentioned they have some really progressive standards.
00:21:47 --> 00:21:50: So actually part of getting the entitlements for this project
00:21:50 --> 00:21:53: is the development of what we're referring to as a
00:21:53 --> 00:21:56: water efficiency plan or what the town is referring to
00:21:56 --> 00:21:58: as a water efficiency plan.
00:21:58 --> 00:22:01: So we would not go anywhere with this project without
00:22:01 --> 00:22:02: the development of this plan.
00:22:02 --> 00:22:06: Next slide, please. Again, we took a very similar approach
00:22:06 --> 00:22:09: in some of our other projects in terms of categorizing
00:22:09 --> 00:22:12: the landscape typology that would be allowed,
00:22:12 --> 00:22:16: so everything from limited high intensity usage to what refer
00:22:16 --> 00:22:19: to is enhanced native and then two restored native,
00:22:19 --> 00:22:21: so it's kind of a transect and I think part
00:22:21 --> 00:22:25: of the overall message is that enhanced native landscape and
00:22:25 --> 00:22:28: a restored native landscape can be a very beautiful,
00:22:28 --> 00:22:30: picturesque landscape to look at.
00:22:30 --> 00:22:34: And again, what is really appropriate for Colorado and the
00:22:34 --> 00:22:34: West so?
00:22:34 --> 00:22:37: Uhm next slide please. So again,
00:22:37 --> 00:22:39: we looked at our landscape typology.
00:22:39 --> 00:22:42: We actually got into great detail on each of the
00:22:42 --> 00:22:43: product types.
00:22:43 --> 00:22:46: That would be a part of this Community modeling.
00:22:46 --> 00:22:50: Both the exterior use as well as interior use based

00:22:50 --> 00:22:54: on square footage and requirements and numbers of fixtures etc.

00:22:54 --> 00:22:57: So we modeled all different seven or eight product types

00:22:58 --> 00:22:58: that we have.

00:22:58 --> 00:23:02: Next slide please. And then what we did was we

00:23:02 --> 00:23:07: built the water model based on those landscape types,

00:23:07 --> 00:23:10: both from the exterior use as well as the interior

00:23:10 --> 00:23:11: use.

00:23:11 --> 00:23:15: This is we allowed room for grading and disturbed areas

00:23:15 --> 00:23:18: that would be restored next slide please.

00:23:18 --> 00:23:21: All of this rolled up into a very massive spreadsheet.

00:23:21 --> 00:23:24: I'm sorry for the eye test here,

00:23:24 --> 00:23:27: but I guess the most important thing is really that

00:23:28 --> 00:23:32: it is a comprehensive water budgeting and demand forecasting tool.

00:23:32 --> 00:23:34: Next slide, please. And then lastly,

00:23:34 --> 00:23:38: I guess the key takeaway from that is that through

00:23:38 --> 00:23:42: the use of enhanced native and particularly restored native with

00:23:42 --> 00:23:45: the ultimate build out of the project,

00:23:45 --> 00:23:48: we're going to save over 5.4 million gallons.

00:23:48 --> 00:23:51: Water per year in terms of much more aesthetic or

00:23:51 --> 00:23:54: much more native inappropriate landscape aesthetic.

00:23:54 --> 00:23:58: So that was this was a very kind of convincing

00:23:58 --> 00:24:01: table to share with the town to show them how

00:24:01 --> 00:24:05: we were going to utilize water in a very judicious

00:24:05 --> 00:24:09: way. So lastly, I think the key takeaways from these

00:24:09 --> 00:24:13: projects and what we've learned and what we continue to

00:24:13 --> 00:24:14: employ in our tools is,

00:24:14 --> 00:24:17: as we design, our landscapes is number one.

00:24:17 --> 00:24:21: Have a water budget. Now upfront think about projects.

00:24:21 --> 00:24:24: This can be used from a small lot development of

00:24:24 --> 00:24:27: 10 lots all the way up to you know 10,000

00:24:28 --> 00:24:29: acres in in 5000 units,

00:24:29 --> 00:24:31: so this can be very scalable.

00:24:31 --> 00:24:34: It's a tool not only to help our clients in

00:24:35 --> 00:24:38: the city see how much water needs to be purchased,

00:24:38 --> 00:24:41: but also moving forward. If it's it can be set

00:24:41 --> 00:24:45: up now with the sensors and technology to see how

00:24:45 --> 00:24:48: much water is actually being used so it's actually a

00:24:48 --> 00:24:51: very important in terms of a monitoring tool.

00:24:51 --> 00:24:55: Are moving forward and then lastly as you know,

00:24:55 --> 00:24:59: start thinking about and start promoting from both an

awareness
00:24:59 --> 00:25:00: and catch education standpoint.
00:25:00 --> 00:25:05: What are the appropriate plant materials to be using in
00:25:05 --> 00:25:08: our arid dry West that that still provide the beauty
00:25:09 --> 00:25:10: we all love and expect,
00:25:10 --> 00:25:14: but is really much more low water intensive so that's
00:25:15 --> 00:25:16: it from my end.
00:25:16 --> 00:25:18: I think there's some some,
00:25:18 --> 00:25:22: if anybody wants any more information please feel free to.
00:25:22 --> 00:25:25: Reach out to me. My contact information is on this
00:25:25 --> 00:25:26: last slide here,
00:25:26 --> 00:25:29: so I'm going to turn it over to Bob or
00:25:29 --> 00:25:30: you next.
00:25:30 --> 00:25:31: OK, thank you so much.
00:25:31 --> 00:25:31: Bill
00:25:31 --> 00:25:35: we, we really appreciate seeing and learning from all of
00:25:35 --> 00:25:36: your case studies on water,
00:25:36 --> 00:25:39: smart landscaping. And before I turn it over to Bob,
00:25:39 --> 00:25:42: I just want to say that this you could build
00:25:42 --> 00:25:45: the most water efficient landscape in the world,
00:25:45 --> 00:25:48: but if you don't maintain it over time,
00:25:48 --> 00:25:49: it won't stay water efficient.
00:25:49 --> 00:25:52: So that's why I'm so excited to introduce.
00:25:52 --> 00:25:56: YouTube Howie who will be talking about how we maintain
00:25:56 --> 00:26:00: it overtime and how we do that through certification by
00:26:00 --> 00:26:00: Bob.
00:26:01 --> 00:26:04: Hi there, good morning, thank you very much.
00:26:04 --> 00:26:07: Great to be here and thanks Bill and appreciate that
00:26:07 --> 00:26:08: information.
00:26:08 --> 00:26:12: Very kind of hands-on showing showing the beauty and reality
00:26:13 --> 00:26:16: of all that that it can really happen.
00:26:16 --> 00:26:19: So I'm speaking really on water efficient landscaping and irrigation
00:26:19 --> 00:26:20: certification.
00:26:20 --> 00:26:24: You irrigation very much ties in to the landscaping,
00:26:24 --> 00:26:28: of course, so we'll dive right in my little bit.
00:26:28 --> 00:26:32: About me. I'm just so you kind of know where
00:26:32 --> 00:26:33: I'm coming from.
00:26:33 --> 00:26:37: I'm a principal of a company called Irrigation Analysis where
00:26:37 --> 00:26:38: water efficiency,
00:26:38 --> 00:26:42: water conservation consultants mainly focused on we work a lot

00:26:42 --> 00:26:44: with existing landscapes,
00:26:44 --> 00:26:46: who definitely can help on.
00:26:46 --> 00:26:49: On the front end on new landscapes as well.
00:26:49 --> 00:26:53: But really helping people to basically get their irrigation systems
00:26:53 --> 00:26:55: working more efficiently and to save water.
00:26:55 --> 00:26:59: It's very common to reduce water use by 20 to
00:26:59 --> 00:26:59: 40%,
00:26:59 --> 00:27:03: so it's great to be a part of the solution
00:27:03 --> 00:27:04: and all that.
00:27:04 --> 00:27:08: But anyway some certifications I have a few so I
00:27:08 --> 00:27:11: hopefully can talk from experience on this.
00:27:11 --> 00:27:12: I'm with the irrigation association.
00:27:12 --> 00:27:15: I'm a certified landscape irrigation auditor.
00:27:15 --> 00:27:16: I'm like well certified landscaper.
00:27:16 --> 00:27:19: I also. Teach that class watershed,
00:27:19 --> 00:27:22: wise landscape, professional and ISA certified arborist.
00:27:22 --> 00:27:26: I'm also an ask a consulting arborist so worked in
00:27:26 --> 00:27:28: the industry for 30 /
00:27:28 --> 00:27:32: 30 years so have a pretty diverse background and pretty
00:27:32 --> 00:27:33: broad background.
00:27:33 --> 00:27:38: Pretty familiar with all aspects and the projects I work
00:27:38 --> 00:27:42: on really on are all from all facets and phases,
00:27:42 --> 00:27:46: so the and I worked as a landscaper and irrigator.
00:27:46 --> 00:27:48: I've also as the owner.
00:27:48 --> 00:27:51: Uhm, and from the owner side of things,
00:27:51 --> 00:27:55: work with water providers and municipalities as well as the
00:27:55 --> 00:27:56: state on water efficiency,
00:27:56 --> 00:28:00: irrigation efficiency, and then as the end user.
00:28:00 --> 00:28:03: I manage my own HO and our irrigation system and
00:28:03 --> 00:28:04: landscape.
00:28:04 --> 00:28:08: So next one. So kind of diving in here certification
00:28:08 --> 00:28:13: for water efficient landscaping should involve and imply a practical
00:28:13 --> 00:28:18: working knowledge and understanding and expertise on the subject.
00:28:18 --> 00:28:22: And in this case water efficient landscaping.
00:28:22 --> 00:28:25: Certifications can be can or may be required,
00:28:25 --> 00:28:27: and I kind of say this.
00:28:27 --> 00:28:29: It's really comes down to.
00:28:29 --> 00:28:31: If if the project requires it,
00:28:31 --> 00:28:35: or if the the municipality or or water provider,
00:28:35 --> 00:28:37: or perhaps even the state,

00:28:37 --> 00:28:40: or requiring these certifications, but you know if this is
00:28:40 --> 00:28:42: important to your project.
00:28:42 --> 00:28:46: I mean, just make it a requirement of your project,
00:28:46 --> 00:28:49: but so the landscape architect you know could be certified
00:28:49 --> 00:28:52: as a water efficient within water efficiency.
00:28:52 --> 00:28:56: There's various designations there. I'm not as familiar with those,
00:28:56 --> 00:28:59: the irrigation designer more familiar in that area.
00:28:59 --> 00:29:03: But they can be certified in in in water efficiency
00:29:03 --> 00:29:06: and certified knowledge of the subject installers,
00:29:06 --> 00:29:08: the landscapers, both the installers,
00:29:08 --> 00:29:11: but also the maintenance folks,
00:29:11 --> 00:29:15: can certainly have certification, will talk more about that in
00:29:15 --> 00:29:16: a minute.
00:29:16 --> 00:29:20: And also water managers, whoever's in charge of or managing
00:29:20 --> 00:29:22: the water or inspecting the systems.
00:29:22 --> 00:29:27: So those certifications, but can be held by the company,
00:29:27 --> 00:29:29: which is a good good thing.
00:29:29 --> 00:29:33: Uhm, but but if just the company has that knowledge
00:29:33 --> 00:29:36: and it's not down to the project level with the
00:29:37 --> 00:29:37: supervisor,
00:29:37 --> 00:29:41: the technician, it's pretty hard to make that happen.
00:29:41 --> 00:29:44: So I would say certainly the company should be certified
00:29:44 --> 00:29:46: or have certification and expertise,
00:29:46 --> 00:29:50: but in some one of the major principles of that
00:29:50 --> 00:29:51: company,
00:29:51 --> 00:29:54: but also the hands on hands on boots on the
00:29:54 --> 00:29:55: ground,
00:29:55 --> 00:29:58: folks need to need to be certified and understand these
00:29:58 --> 00:29:59: concepts.
00:29:59 --> 00:30:02: Otherwise it's it's. Really hard to make it happen,
00:30:02 --> 00:30:07: they just can't follow through on it next next slide
00:30:07 --> 00:30:08: please.
00:30:08 --> 00:30:11: Uhm, so again certification implies a knowledge,
00:30:11 --> 00:30:16: understanding and presumed level of expertise relating to water efficiency,
00:30:16 --> 00:30:21: water efficient landscape principles and practices.
00:30:21 --> 00:30:22: Again, it should be required,
00:30:22 --> 00:30:26: or at the very least recommended by the local water
00:30:26 --> 00:30:27: provider,
00:30:27 --> 00:30:30: municipality or state requirement is is a lot stronger,
00:30:30 --> 00:30:33: of course, and we really need to have that if

00:30:33 --> 00:30:38: you're going to have a water efficient landscapes being being
00:30:38 --> 00:30:38: a reality,
00:30:38 --> 00:30:41: not just something to talk about,
00:30:41 --> 00:30:43: but if there's not a requirement,
00:30:43 --> 00:30:47: chances are it'll kind of languished and not really get
00:30:47 --> 00:30:47: done.
00:30:47 --> 00:30:51: So certification also can and should be incorporated into the.
00:30:51 --> 00:30:55: State or local water, efficient landscape irrigation ordinances or regulations.
00:30:55 --> 00:30:59: And again, you know there's there's various examples we were
00:30:59 --> 00:31:01: talking about earlier about that.
00:31:01 --> 00:31:06: And like in particular, city of Castle Rock here in
00:31:06 --> 00:31:09: Colorado as well as city of Aspen.
00:31:09 --> 00:31:12: And yeah, so next slide.
00:31:12 --> 00:31:16: So there's two essential and interrelated components of a water
00:31:16 --> 00:31:17: efficient landscape.
00:31:17 --> 00:31:20: Obviously the landscape, but very definitely the irrigation.
00:31:20 --> 00:31:23: Also the irrigation system so they really go hand in
00:31:23 --> 00:31:24: hand,
00:31:24 --> 00:31:27: and if it's not a water efficient landscape,
00:31:27 --> 00:31:30: it's very hard to make it a water efficient landscape.
00:31:30 --> 00:31:34: And if it's not a a water efficient irrigation system,
00:31:34 --> 00:31:38: it's pretty hard to make it make it that way.
00:31:38 --> 00:31:41: So both both are really critical and important,
00:31:41 --> 00:31:44: especially in new developments. But even going back on old
00:31:45 --> 00:31:49: developments and kind of reworking them either from the landscape
00:31:49 --> 00:31:50: irrigation side.
00:31:50 --> 00:31:52: Certification needs to address both aspects,
00:31:52 --> 00:31:54: not just irrigation, not just landscape,
00:31:54 --> 00:31:57: or really both. If it's really going to be,
00:31:57 --> 00:32:00: you know, the most water smart and water efficient.
00:32:02 --> 00:32:07: Next so water efficient landscapes require proper design,
00:32:07 --> 00:32:11: proper installation, maintenance and then management of the landscaping irrigation
00:32:11 --> 00:32:13: and really all four are required.
00:32:13 --> 00:32:17: If you don't have all four of these working together
00:32:17 --> 00:32:21: or really being done in a water efficient manner,
00:32:21 --> 00:32:23: it's it's just falls apart,
00:32:23 --> 00:32:26: so it's a lot and it's a lot of people
00:32:26 --> 00:32:29: and processes and steps involved,

00:32:29 --> 00:32:33: but it's very doable if each person along the along
00:32:33 --> 00:32:35: the way and along the chain.
00:32:35 --> 00:32:38: They're doing what they're supposed to be doing,
00:32:38 --> 00:32:41: but also again, if there's there's things like certification,
00:32:41 --> 00:32:44: but also ordinances regulations to some degree that are kind
00:32:44 --> 00:32:46: of enforcing that,
00:32:46 --> 00:32:49: and actually even enforcement of those regulations and ordinances as
00:32:49 --> 00:32:49: well,
00:32:49 --> 00:32:51: so that really critical. I mean,
00:32:51 --> 00:32:54: it's easy to kind of.
00:32:54 --> 00:32:56: You know, if we see a lot of times,
00:32:56 --> 00:32:58: they really a great design.
00:32:58 --> 00:33:02: Uhm, can be installed improperly or maintained improperly or managed
00:33:02 --> 00:33:02: improperly.
00:33:02 --> 00:33:07: And then then then the thing just falls apart and
00:33:07 --> 00:33:10: then the water efficiency that is.
00:33:10 --> 00:33:12: In a lot of cases now needed is not even
00:33:12 --> 00:33:16: does not is not achieved because there's been breakdowns in
00:33:16 --> 00:33:18: this situation or or in the process there.
00:33:18 --> 00:33:22: And the other thing I want to say about the
00:33:22 --> 00:33:23: like.
00:33:23 --> 00:33:25: If in the installation if corners are cut,
00:33:25 --> 00:33:29: say and instead of using the high efficiency equipment and
00:33:29 --> 00:33:30: and technology that's out there,
00:33:30 --> 00:33:32: it's kind of like, well,
00:33:32 --> 00:33:35: you know we can, you know the developer can save,
00:33:35 --> 00:33:38: you know 10% on that piece of the piece of
00:33:38 --> 00:33:39: their project.
00:33:39 --> 00:33:42: You know the corner gets cut and at that point
00:33:42 --> 00:33:45: all of a sudden now we're going down the road
00:33:45 --> 00:33:49: of this water efficient landscape is is not nearly as
00:33:49 --> 00:33:51: water efficient as it could be.
00:33:51 --> 00:33:56: So next slide please. So it requires a understanding.
00:33:56 --> 00:34:00: Water efficient landscape requires both an understanding of conservation and
00:34:00 --> 00:34:01: efficiency.
00:34:01 --> 00:34:04: I mean, just knowing a lot about the subject,
00:34:04 --> 00:34:08: either landscaping or irrigation does not guarantee that you're going
00:34:08 --> 00:34:12: to or not really translate necessarily that it's going to

00:34:12 --> 00:34:13: be water efficient.
00:34:13 --> 00:34:17: But going ahead. And if you do have that knowledge
00:34:17 --> 00:34:20: and then applying the best practices to that,
00:34:20 --> 00:34:23: as in conservation and efficiency with those.
00:34:23 --> 00:34:26: Aspects in mind using water efficient plant materials,
00:34:26 --> 00:34:30: say and using irrigation technology and methodology that promotes and
00:34:30 --> 00:34:31: makes efficiency happen,
00:34:31 --> 00:34:34: and then you can deliver it.
00:34:34 --> 00:34:36: It can happen, but you need.
00:34:36 --> 00:34:38: You need both of those,
00:34:38 --> 00:34:40: not just the technical knowledge,
00:34:40 --> 00:34:44: but also an understanding of conservation and efficiency.
00:34:44 --> 00:34:48: So uhm, water efficiency for landscaping irrigation has to be
00:34:48 --> 00:34:50: considered through the whole process.
00:34:50 --> 00:34:53: And at the end, the goal is to have a
00:34:53 --> 00:34:54: beautiful,
00:34:54 --> 00:34:57: very aesthetically pleasing and enjoyable landscape,
00:34:57 --> 00:34:59: but also have water efficiency.
00:34:59 --> 00:35:02: And if those two if all that's done,
00:35:02 --> 00:35:04: then it really can be achieved.
00:35:04 --> 00:35:08: You know it can be a very nice landscape and
00:35:08 --> 00:35:11: then it can be very water efficient.
00:35:11 --> 00:35:14: And again it's easily can go arrive.
00:35:14 --> 00:35:18: Any of the aspects talked about before those four aspects
00:35:18 --> 00:35:19: are lacking or neglected.
00:35:21 --> 00:35:25: So requiring certification does not guarantee water efficiency or savings
00:35:25 --> 00:35:26: or water efficient landscape,
00:35:26 --> 00:35:30: so it's kind of easy to get lost on.
00:35:30 --> 00:35:33: Oh yeah, we have certification and it's like.
00:35:33 --> 00:35:36: But if it's not really happening out in the field
00:35:36 --> 00:35:39: and not really happening in the landscape,
00:35:39 --> 00:35:41: then it's like well you have the certification,
00:35:41 --> 00:35:44: but it's not really translating into water efficiency and savings,
00:35:44 --> 00:35:47: so that's again having certification and really pretty solid strong
00:35:47 --> 00:35:50: program for that and re certification continuing education,
00:35:50 --> 00:35:53: that kind of thing. But then also that there's some,
00:35:53 --> 00:35:56: you know, ordinances, regulations to support it,
00:35:56 --> 00:35:59: as well as enforcement. If it's not being followed or
00:35:59 --> 00:35:59: being done,
00:35:59 --> 00:36:02: and a really good way to do that.

00:36:02 --> 00:36:05: It's been talked about, I think by.
00:36:05 --> 00:36:08: By Bradley Beal. Past two speakers in the panel so
00:36:08 --> 00:36:12: far but having a water budget for the project and
00:36:12 --> 00:36:14: then following through on it,
00:36:14 --> 00:36:16: making sure it's it's it happens.
00:36:16 --> 00:36:18: You gotta track and monitor the water.
00:36:18 --> 00:36:22: Use looking at budget or expected water usage and and
00:36:22 --> 00:36:25: then comparing that to actual usage and also making an
00:36:25 --> 00:36:27: adjustment for weather factors.
00:36:27 --> 00:36:30: So don't expect that a water efficient landscape will be
00:36:30 --> 00:36:31: properly installed,
00:36:31 --> 00:36:33: maintained or managed or vice versa.
00:36:33 --> 00:36:36: There could and should be ongoing.
00:36:36 --> 00:36:41: Follow on irrigation. Checks and inspections and also landscape checks
00:36:41 --> 00:36:45: and inspections to make sure that the landscape stays water
00:36:45 --> 00:36:46: efficient.
00:36:46 --> 00:36:49: Next, so I've got a slide out of order here,
00:36:49 --> 00:36:52: but will go with this one right now.
00:36:52 --> 00:36:54: Just wanted to throw this out.
00:36:54 --> 00:36:58: Here's some states that require irrigation licensing.
00:36:58 --> 00:37:02: Second box there bullet is states that have irrigation as
00:37:02 --> 00:37:04: part of their landscape licensing.
00:37:04 --> 00:37:08: Voluntary licensing in irrigation in Florida and states that are
00:37:08 --> 00:37:13: considering or having licensing or regulatory rules pertaining to irrigation.
00:37:13 --> 00:37:17: And this is again not necessarily efficient irrigation in some
00:37:17 --> 00:37:17: cases.
00:37:17 --> 00:37:20: Very definitely these have efficient irrigation,
00:37:20 --> 00:37:24: but these are some and these are some states that
00:37:25 --> 00:37:27: are doing those things so.
00:37:27 --> 00:37:32: And next. Uh, so which kind of certification is right
00:37:32 --> 00:37:37: or right for your project or for your municipality or
00:37:37 --> 00:37:39: your water district?
00:37:39 --> 00:37:43: Consider the depth and practical detail of the various certifications.
00:37:43 --> 00:37:45: What is being taught in,
00:37:45 --> 00:37:48: to what level is the course material testing instruction?
00:37:48 --> 00:37:53: Rigorous or pretty simplistic? Who's the instructing in the course?
00:37:53 --> 00:37:55: What is their level of knowledge,
00:37:55 --> 00:37:59: experience and expertise? And how is the level of knowledge
00:37:59 --> 00:38:00: gained being evaluated?

00:38:00 --> 00:38:04: Is there a test? And definitely usually a kind of

00:38:04 --> 00:38:08: a follow on continuing Ed requirement to continue and maintain

00:38:08 --> 00:38:09: certification.

00:38:09 --> 00:38:15: Next so here are some certifications for water efficient landscapes

00:38:15 --> 00:38:18: and and primarily to Orient towards irrigation,

00:38:18 --> 00:38:23: but not exclusively here. I'm not going to go through

00:38:23 --> 00:38:24: all those,

00:38:24 --> 00:38:27: I mean in detail, but you can see the irrigation

00:38:27 --> 00:38:31: association and quell the G3 group LCC has here in

00:38:31 --> 00:38:36: Colorado as a sustainable landscape management certificate in the state

00:38:36 --> 00:38:38: of Texas is quite interesting.

00:38:38 --> 00:38:42: They have a very strict irrigation license.

00:38:42 --> 00:38:46: Licensing requirement and then as we've been talking about today,

00:38:46 --> 00:38:49: regional and local certification requirements or requirements.

00:38:49 --> 00:38:52: Town of Castle Rock, City of Aspen in particular.

00:38:52 --> 00:38:58: With their call certification. I'm not going to go into

00:38:58 --> 00:38:59: all this,

00:38:59 --> 00:39:02: but if you want to know more like well what's

00:39:02 --> 00:39:02: involved,

00:39:02 --> 00:39:05: was it cost what, how much time and how rigorous

00:39:05 --> 00:39:06: is the program,

00:39:06 --> 00:39:09: and is it more landscaper irrigation focused this?

00:39:09 --> 00:39:12: This gives you some pretty good background on that,

00:39:12 --> 00:39:16: so you can dig into that if you would like.

00:39:16 --> 00:39:18: I do, I do think,

00:39:18 --> 00:39:20: uh, uh, it's important to,

00:39:20 --> 00:39:22: you know, have background and knowledge.

00:39:22 --> 00:39:25: I think the focus on water and irrigation,

00:39:25 --> 00:39:29: the kind of the. The end of the line,

00:39:29 --> 00:39:31: shall we say, in a lot of ways,

00:39:31 --> 00:39:34: like for all the things like that,

00:39:34 --> 00:39:36: Bill's been talking about with the project.

00:39:36 --> 00:39:38: It's really comes down to,

00:39:38 --> 00:39:41: you know, the the irrigation system that's out there in

00:39:41 --> 00:39:42: the landscape,

00:39:42 --> 00:39:45: certainly. But having an irrigation system that's that's water efficient

00:39:46 --> 00:39:48: and and kind of kept as being water efficient in

00:39:48 --> 00:39:49: his water efficient,

00:39:49 --> 00:39:52: ongoing basis is really where the rubber meets the road,
00:39:52 --> 00:39:54: really. The the end game.
00:39:54 --> 00:39:58: And if that's the people at the end that are.
00:39:58 --> 00:40:01: You know controlling the pipe or turning the water on
00:40:01 --> 00:40:03: and off on an actual landscape,
00:40:03 --> 00:40:05: or not doing that in an efficient manner were really
00:40:05 --> 00:40:06: they were.
00:40:06 --> 00:40:09: It's going to be pretty much the mythical something they
00:40:09 --> 00:40:12: were never going to be able to achieve or accomplish,
00:40:12 --> 00:40:14: so that's why I think that it's important to be
00:40:14 --> 00:40:16: certifications important and important,
00:40:16 --> 00:40:17: especially for the people that are,
00:40:17 --> 00:40:19: you know, downstream in this case.
00:40:19 --> 00:40:22: So at the end of this whole thing to make
00:40:22 --> 00:40:24: sure they know what they're doing.
00:40:24 --> 00:40:26: They're doing a good job with it,
00:40:26 --> 00:40:29: and certification is a great way to do that.
00:40:29 --> 00:40:30: So thanks very much.
00:40:32 --> 00:40:34: Thank you so much Bob.
00:40:34 --> 00:40:36: And again, if any of you have questions for any
00:40:36 --> 00:40:37: of the panelists,
00:40:37 --> 00:40:40: please put them in the chat box and will address
00:40:40 --> 00:40:42: them at the end during the Q&A.
00:40:42 --> 00:40:44: But for now, I'd love to turn it over to
00:40:44 --> 00:40:45: our final panelist,
00:40:45 --> 00:40:47: you Ferguson, with Trammell Crow.
00:40:47 --> 00:40:48: Highly. Hey, thanks for that,
00:40:48 --> 00:40:51: Mary Ann. Great to be with you all this morning,
00:40:51 --> 00:40:54: you know. Thanks for the opportunity to speak on this
00:40:54 --> 00:40:54: topic.
00:40:54 --> 00:40:55: You know, Jessica, Bill, Bob,
00:40:55 --> 00:40:57: they're they're tough acts to follow.
00:40:57 --> 00:40:59: They're all such experts in their field.
00:40:59 --> 00:41:02: But I'll do my best to add something to what?
00:41:02 --> 00:41:08: They've covered next slide. Oh,
00:41:08 --> 00:41:10: got transitions there. Sorry about that.
00:41:10 --> 00:41:11: So as Mary Ann mentioned,
00:41:11 --> 00:41:14: you know I'm a commercial real estate developer with Trammell
00:41:14 --> 00:41:15: Crow Company.
00:41:15 --> 00:41:17: So I just wanted to quickly run through.
00:41:17 --> 00:41:20: You know what what we generally work on 'cause I

00:41:20 --> 00:41:23: think it'll add some context to you know,
00:41:23 --> 00:41:24: the perspective that I'm, you know,
00:41:24 --> 00:41:27: come into this conversation with so you know we we
00:41:27 --> 00:41:30: were a multi product type developer so we're involved in
00:41:30 --> 00:41:31: office,
00:41:31 --> 00:41:32: industrial, multifamily, mixed use projects.
00:41:32 --> 00:41:35: We do you know some health care and.
00:41:35 --> 00:41:38: Online retail and half of our business is speculative development,
00:41:38 --> 00:41:42: where we act as the owner and the other half
00:41:42 --> 00:41:42: is,
00:41:42 --> 00:41:46: you know, either fear, build to suit projects where you
00:41:46 --> 00:41:49: know acting on as a third party on behalf of
00:41:49 --> 00:41:50: of another owner next slide.
00:41:53 --> 00:41:55: So I'll pivot, you know,
00:41:55 --> 00:41:57: to what are best practices.
00:41:57 --> 00:42:00: But first you know when we you know at my
00:42:00 --> 00:42:02: company talk about sustainability.
00:42:02 --> 00:42:05: You know we're trying to be proactive and you're not
00:42:05 --> 00:42:09: really intentional to integrate a strategy at the front end
00:42:09 --> 00:42:10: of our developments.
00:42:10 --> 00:42:14: We found that there's a real benefit to stakeholders with
00:42:14 --> 00:42:15: that approach.
00:42:15 --> 00:42:18: You're less reactive. You can really focus the team early
00:42:18 --> 00:42:20: on the project objectives,
00:42:20 --> 00:42:23: and you know we're typically pursuing some level of LEED
00:42:24 --> 00:42:25: certification on.
00:42:25 --> 00:42:28: On every project that that that we tackle next slide.
00:42:30 --> 00:42:32: So so when I think about water,
00:42:32 --> 00:42:35: smart development and and when I was preparing for this
00:42:35 --> 00:42:36: discussion,
00:42:36 --> 00:42:39: there were really four categories that you know I wanted
00:42:39 --> 00:42:39: to highlight.
00:42:39 --> 00:42:42: The first would be water efficiency and I think you
00:42:42 --> 00:42:46: know the positive thing about this category is we probably
00:42:46 --> 00:42:47: already know what this means.
00:42:47 --> 00:42:49: We see it in practice.
00:42:49 --> 00:42:52: It's our, you know, our new buildings in our homes.
00:42:52 --> 00:42:54: It's it's fairly ubiquitous and and,
00:42:54 --> 00:42:56: and that's a really good thing,
00:42:56 --> 00:42:59: so installing fixtures you know and and design overall design,
00:42:59 --> 00:43:01: design solutions that lower. Our water consumption,

00:43:01 --> 00:43:04: you know, lead free everything.
00:43:04 --> 00:43:09: And then of course hands free fixtures where possible.
00:43:09 --> 00:43:13: You know, this category is essentially the norm for Class
00:43:13 --> 00:43:14: A.
00:43:14 --> 00:43:17: Projects built in our market next is greywater or being
00:43:17 --> 00:43:21: able to reuse captured or recycled water for non potable
00:43:21 --> 00:43:26: water requirements that that whole idea around non potable water
00:43:26 --> 00:43:28: being applied to non potable uses.
00:43:28 --> 00:43:32: You know black water systems are.
00:43:32 --> 00:43:34: You know less common actually?
00:43:34 --> 00:43:37: You know, Denver water, which I've got a case study
00:43:37 --> 00:43:38: for,
00:43:38 --> 00:43:41: is is the first kind of commercial building application of
00:43:41 --> 00:43:42: that system,
00:43:42 --> 00:43:44: but something that we're watching and,
00:43:44 --> 00:43:47: you know, will I think become more commonplace as the
00:43:47 --> 00:43:50: complexity and and regulations are.
00:43:50 --> 00:43:52: Are further developed, you know ecology?
00:43:52 --> 00:43:56: We've heard this presented already excellently by Bill,
00:43:56 --> 00:43:59: so I'll just echo his his his comments there.
00:43:59 --> 00:44:03: You know when we talk about water efficient landscaping work,
00:44:03 --> 00:44:06: we're really talking about the entire system,
00:44:06 --> 00:44:11: plants, soils, irrigation, but also the facilities and operations operations
00:44:11 --> 00:44:14: side of that to make sure that all that great
00:44:14 --> 00:44:18: design and construction execution is is continued after the the
00:44:18 --> 00:44:21: building is turned over and.
00:44:21 --> 00:44:25: Lastly, stormwater, you know, being able to implement measures to
00:44:25 --> 00:44:30: reduce runoff site specific solutions there that you know benefit
00:44:30 --> 00:44:34: the city storm infrastructure and you know really,
00:44:34 --> 00:44:38: really, all of our neighbors as well next slide.
00:44:40 --> 00:44:44: So I wanted to include a quick case study.
00:44:44 --> 00:44:48: UM, our most recent local experience with water smart development
00:44:48 --> 00:44:51: is the Denver Water Operations campus.
00:44:51 --> 00:44:53: This was a multi phase effort.
00:44:53 --> 00:44:57: We got involved in 2012 in the master planning kicked
00:44:57 --> 00:45:01: off construction in 2015 and oversaw five year effort to
00:45:02 --> 00:45:02: redevelop.

00:45:02 --> 00:45:04: Denver Water's 36 acre campus.

00:45:04 --> 00:45:09: They they operated that site continuously for more than 130

00:45:09 --> 00:45:10: years.

00:45:10 --> 00:45:12: You know, kind of globally.

00:45:12 --> 00:45:16: The campus does have some really aggressive sustainability goals.

00:45:16 --> 00:45:19: It's LEED Platinum here at the administration building.

00:45:19 --> 00:45:23: It's also net zero that's accomplished through on site solar,

00:45:23 --> 00:45:27: but it also operates on the leading edge of water

00:45:27 --> 00:45:31: management and and it incorporated several systems for the first

00:45:32 --> 00:45:33: time in in Colorado.

00:45:33 --> 00:45:41: Next slide. So Denver water had some really clear objectives

00:45:41 --> 00:45:43: for this campus.

00:45:43 --> 00:45:47: UM, these five objectives were to separate potable and non

00:45:47 --> 00:45:52: potable demand and to complement that develop non potable water

00:45:52 --> 00:45:56: sources that could be implemented on site to truly integrate.

00:45:56 --> 00:46:00: You know, kind of stormwater best practices across the campus,

00:46:00 --> 00:46:04: all in service of water conservation in this idea of

00:46:04 --> 00:46:06: potable water through utility.

00:46:06 --> 00:46:12: So next slide. And to accomplish that,

00:46:12 --> 00:46:14: uhm? That our design team,

00:46:14 --> 00:46:17: you know, came up with a series of strategies that

00:46:17 --> 00:46:18: were put into place.

00:46:18 --> 00:46:20: This idea of you know,

00:46:20 --> 00:46:23: truly integrated approach to water management that affects you.

00:46:23 --> 00:46:26: Know everything from wastewater to groundwater at a store,

00:46:26 --> 00:46:29: and you know the entire system and also using the

00:46:29 --> 00:46:32: most appropriate sources of water for each use.

00:46:32 --> 00:46:35: And I'm kind of a broken record on that one,

00:46:35 --> 00:46:39: but that was a key.

00:46:39 --> 00:46:42: Strategy for this campus and and something that we want

00:46:42 --> 00:46:45: to see on all of our developments using non potable

00:46:45 --> 00:46:48: water for non potable uses and then to reduce the

00:46:48 --> 00:46:52: overall footprint. Water demand and discharge as much as possible,

00:46:52 --> 00:46:54: and so that was accomplished.

00:46:54 --> 00:46:58: In this application, several ways there's on site rainwater harvesting

00:46:59 --> 00:47:00: that can be used for irrigation,

00:47:00 --> 00:47:04: low flow plumbing fixtures adopted throughout.

00:47:04 --> 00:47:07: Appropriate landscaping and also hardscaping initiatives.
00:47:07 --> 00:47:10: Similar to what Jessica mentioned.
00:47:10 --> 00:47:15: Porous paving throughout. There is an on site water recycling
00:47:15 --> 00:47:19: system and then native detention areas to address.
00:47:19 --> 00:47:23: You know, both on site and off site runoff.
00:47:23 --> 00:47:28: Next slide. So this graphic I'm just breaks down some
00:47:28 --> 00:47:34: of the systems at work in the administration building itself.
00:47:34 --> 00:47:38: So low flow fixtures throughout the kitchen cafeteria,
00:47:38 --> 00:47:42: common areas and restrooms, and these really apply to the
00:47:42 --> 00:47:43: campus at large.
00:47:43 --> 00:47:47: Kind of in concert with that rainwater capture that can
00:47:47 --> 00:47:51: be used for on site irrigation as well as treated
00:47:51 --> 00:47:55: wastewater that can be applied to toilet flushing and irrigation
00:47:55 --> 00:48:00: as well. With appropriate backup systems to make sure that
00:48:00 --> 00:48:03: demand can be met at at all times.
00:48:03 --> 00:48:07: So next slide. And I just want just want to
00:48:07 --> 00:48:12: highlight the water recycling system since it is so,
00:48:12 --> 00:48:15: uhm, you know such a key part of this project
00:48:15 --> 00:48:18: up against something that had not been.
00:48:18 --> 00:48:20: Implemented in the state of Colorado before.
00:48:20 --> 00:48:24: Although we did have some good examples to work from
00:48:24 --> 00:48:26: in other parts of the country.
00:48:26 --> 00:48:29: What we're seeing in this image here is is the
00:48:29 --> 00:48:31: final polishing wetland that,
00:48:31 --> 00:48:36: UM. Is the final stage that influence would be taken
00:48:36 --> 00:48:38: through before it's,
00:48:38 --> 00:48:42: you know, deemed appropriate to be used for on site
00:48:42 --> 00:48:46: toilet flushing and you know a lot of detail around
00:48:46 --> 00:48:47: the system.
00:48:47 --> 00:48:51: Happy to answer, you know questions about it or or
00:48:52 --> 00:48:54: discuss offline next next slide.
00:49:00 --> 00:49:04: Oh, you know, Maryann? I think just in the interest
00:49:04 --> 00:49:04: of time,
00:49:04 --> 00:49:07: I'll skip this slide as well and just go to
00:49:07 --> 00:49:10: kind of the lessons learned perfect so you know just
00:49:11 --> 00:49:14: to close with a few best practices as these projects
00:49:14 --> 00:49:16: become more and more complex.
00:49:16 --> 00:49:18: One thing that we're trying to do on all of
00:49:18 --> 00:49:22: our development says get the design team together early and
00:49:22 --> 00:49:26: combine that with early pre construction assist just so that.
00:49:26 --> 00:49:30: We've got the minds that are going to be executing
00:49:30 --> 00:49:32: this together throughout.

00:49:32 --> 00:49:36: I'm just highlighting the team that was in place for
00:49:36 --> 00:49:37: Denver Water.
00:49:37 --> 00:49:41: Great collection of local and national design consultants combined with,
00:49:41 --> 00:49:44: you know, a really large trade partner.
00:49:44 --> 00:49:48: You know network that that helped construct that campus.
00:49:48 --> 00:49:52: You know? Certainly no one size fits all solution.
00:49:52 --> 00:49:55: It was an owner. We try to be open to
00:49:56 --> 00:49:56: ideas.
00:49:56 --> 00:50:00: But you know, really conduct due diligence to make sure
00:50:00 --> 00:50:01: that we're,
00:50:01 --> 00:50:04: you know, settling on the right path forward for that
00:50:05 --> 00:50:09: specific development for our partners and for that site.
00:50:09 --> 00:50:11: Uhm, this has been said already,
00:50:11 --> 00:50:15: but I would just echo it involving facilities and property
00:50:15 --> 00:50:19: management throughout the design and construction process and having a
00:50:19 --> 00:50:23: robust training program is something that that you know,
00:50:23 --> 00:50:27: we've seen a lot of value in.
00:50:27 --> 00:50:32: Because, you know, we can spend hours and hours planning
00:50:32 --> 00:50:32: and.
00:50:32 --> 00:50:35: Executing, but if six months later the you know the
00:50:35 --> 00:50:39: systems themselves are not being maintained and the programming has
00:50:39 --> 00:50:40: changed,
00:50:40 --> 00:50:42: he said, you know then it,
00:50:42 --> 00:50:45: then it was kind of all for nothing and then
00:50:45 --> 00:50:45: just,
00:50:45 --> 00:50:48: you know, our. Our takeaway has been that owning and
00:50:48 --> 00:50:52: operating these high performance properties has been a sound investment
00:50:52 --> 00:50:53: strategy.
00:50:53 --> 00:50:56: It lowers our utility bills on our projects that we
00:50:56 --> 00:50:57: own,
00:50:57 --> 00:50:59: but it's it's also served to,
00:50:59 --> 00:51:02: you know, attract and retain talent in our users and
00:51:02 --> 00:51:04: it's improved ROI.
00:51:04 --> 00:51:07: You know when executed correctly so.
00:51:07 --> 00:51:08: Uhm, and I you know,
00:51:08 --> 00:51:09: look forward to the panel discussion.
00:51:09 --> 00:51:10: Thanks for your time there.
00:51:13 --> 00:51:14: Thank you so much Leah,
00:51:14 --> 00:51:17: and with that will turn over and make this into

00:51:17 --> 00:51:19: a Q&A moderated by John Bergren,
00:51:19 --> 00:51:22: who's a water policy analyst with Western resource advocates and
00:51:22 --> 00:51:24: Mako moderator to engage in the Q&A.
00:51:24 --> 00:51:29: Please submit your questions via the chat box and we'll
00:51:29 --> 00:51:32: try and get to as many as we can.
00:51:32 --> 00:51:33: John, take it away.
00:51:35 --> 00:51:37: And thanks to all the panelists that was that was
00:51:37 --> 00:51:38: really interesting.
00:51:38 --> 00:51:42: And and yeah, so feel free to put any questions
00:51:42 --> 00:51:42: in the chat.
00:51:42 --> 00:51:46: I think given that we have a relatively small audience,
00:51:46 --> 00:51:49: we can also just you folks wanna unmute themselves and
00:51:49 --> 00:51:51: ask her questions rather than typing them out.
00:51:51 --> 00:51:55: That would be welcomed as well so.
00:51:55 --> 00:51:57: I have many questions for the panelists.
00:51:57 --> 00:52:00: I'll see if anyone else in the audience has any
00:52:01 --> 00:52:02: questions they like to ask.
00:52:09 --> 00:52:09: John,
00:52:09 --> 00:52:12: do you want to just go ahead and start with
00:52:12 --> 00:52:13: one of yours and then we'll
00:52:13 --> 00:52:14: keep
00:52:14 --> 00:52:15: an eye on the chat box?
00:52:15 --> 00:52:18: Yeah, so our Veronica looks like you raise your hand.
00:52:18 --> 00:52:20: Feel free time yourself or or put your question in
00:52:20 --> 00:52:21: the chat.
00:52:22 --> 00:52:25: Miss Officer stuff you just a question.
00:52:25 --> 00:52:28: I think for Jessica, so there's a lot you had
00:52:29 --> 00:52:32: a lot of good examples of utilities that in the
00:52:32 --> 00:52:36: Colorado area that are doing these sort of more.
00:52:36 --> 00:52:39: Forward thinking practices and I'm just curious as to why
00:52:39 --> 00:52:42: you think that has been successful in Colorado.
00:52:44 --> 00:52:46: Netflix making that happen and how could we replicate it
00:52:46 --> 00:52:47: nationally?
00:52:49 --> 00:52:49: I
00:52:49 --> 00:52:52: think there has been greater awareness that drought is now
00:52:52 --> 00:52:55: becoming not just something that we see every now and
00:52:55 --> 00:52:57: then or occasionally,
00:52:57 --> 00:53:00: but it's now the norm instead of the exception.
00:53:00 --> 00:53:03: And so I think these cities and areas are recognizing
00:53:03 --> 00:53:06: that our water is definitely a finite resource and that
00:53:06 --> 00:53:10: we need to start installing better practices now rather than

00:53:10 --> 00:53:13: waiting until we have to do just water restrictions all
00:53:13 --> 00:53:14: of the time.
00:53:14 --> 00:53:17: And so by planning ahead and looking at how we
00:53:17 --> 00:53:20: can make our communities more sustainable.
00:53:20 --> 00:53:23: And that's how we can plan for the future,
00:53:23 --> 00:53:26: and making sure that the Colorado that we love right
00:53:26 --> 00:53:29: now remains that way for our future generations.
00:53:29 --> 00:53:32: Having great examples, there are other examples from across the
00:53:32 --> 00:53:32: country,
00:53:32 --> 00:53:34: like in our neighbor states of Arizona,
00:53:34 --> 00:53:37: New Mexico who are having really forward thinking policies around
00:53:37 --> 00:53:38: water conservation.
00:53:38 --> 00:53:41: You know these areas that aren't ahead water state and
00:53:41 --> 00:53:45: are reliant on waters are our Interstate water compacts to
00:53:45 --> 00:53:46: receive their water.
00:53:46 --> 00:53:49: We're also seeing record lows and Lake Mead and so
00:53:49 --> 00:53:50: these have really.
00:53:50 --> 00:53:56: Precipitated these discussions and the need to have more policies.
00:53:56 --> 00:54:01: That are conservation focused and to have ways for cities
00:54:01 --> 00:54:05: and counties to move forward with their water planning and
00:54:05 --> 00:54:07: in more sustainable ways.
00:54:07 --> 00:54:08: Answer your question Veronica.
00:54:10 --> 00:54:10: Yes,
00:54:10 --> 00:54:13: thanks that's great. I look forward to being able to
00:54:13 --> 00:54:15: click on the links in your slide.
00:54:15 --> 00:54:16: Oh great.
00:54:16 --> 00:54:19: And the other panelists might have something else to add
00:54:19 --> 00:54:19: as well.
00:54:24 --> 00:54:27: Any other thoughts? And the panelists and kind of like
00:54:27 --> 00:54:30: what motivates Colorado communities to take this.
00:54:30 --> 00:54:31: These types of initiatives?
00:54:36 --> 00:54:37: I thought Jessica summed it up.
00:54:37 --> 00:54:40: Really, I wouldn't. I don't have anything to add.
00:54:46 --> 00:54:49: Well, maybe just following up Jessica with you again is
00:54:49 --> 00:54:50: so you don't.
00:54:50 --> 00:54:53: You mentioned that there's been a kind of a history
00:54:53 --> 00:54:56: of state pop state policies that help incentivize or push
00:54:56 --> 00:54:57: community instruction.
00:54:57 --> 00:55:01: I'm curious to hear your thoughts on what additional state
00:55:01 --> 00:55:04: policies might be necessary to further push us in this

00:55:04 --> 00:55:04: direction.

00:55:07 --> 00:55:10: You know the regulations. I was just thinking about Regulation

00:55:10 --> 00:55:14: 86 with Gray water that that particular regulation is being

00:55:14 --> 00:55:15: revised right now,

00:55:15 --> 00:55:19: which will be really helpful because it's a statewide regulation

00:55:19 --> 00:55:21: that you're allowed to do great water.

00:55:21 --> 00:55:25: But the cities and counties individually have to allow grey

00:55:25 --> 00:55:27: water to be used in those areas,

00:55:27 --> 00:55:31: and so additional clarification I think in opening up that

00:55:31 --> 00:55:33: discussion more so that cities,

00:55:33 --> 00:55:36: so there's more easier ways for people to implement.

00:55:36 --> 00:55:40: Grey water in their areas and and clarification on some

00:55:40 --> 00:55:43: of those regulations I think would be really helpful.

00:55:43 --> 00:55:47: And and then also just having more.

00:55:47 --> 00:55:50: Regulations kind of moving forward on what this looks like.

00:55:50 --> 00:55:53: What does water smart development look like?

00:55:53 --> 00:55:55: How can we have a?

00:55:55 --> 00:55:58: I guess just more just more policies around what has

00:55:58 --> 00:56:01: to happen instead of leaving it up to the developers

00:56:01 --> 00:56:04: leaving up to some of the cities like set to

00:56:04 --> 00:56:07: state policy around this is what new developments need to

00:56:07 --> 00:56:08: look like for our area,

00:56:08 --> 00:56:11: and I'm not sure if that will be coming kind

00:56:11 --> 00:56:12: of in the future,

00:56:12 --> 00:56:15: but I think that is what is needed for the

00:56:15 --> 00:56:17: future of our water and land use development.

00:56:17 --> 00:56:20: More integrated approaches, more focus on one water solutions.

00:56:23 --> 00:56:23: Well,

00:56:23 --> 00:56:25: just send follow up on this.

00:56:25 --> 00:56:27: This line of thought, maybe Bob.

00:56:27 --> 00:56:30: Could you talk about what you see is the role

00:56:30 --> 00:56:33: of the state in terms of certification and then be

00:56:33 --> 00:56:36: curious to hear from Lee and Bill as well if

00:56:36 --> 00:56:38: they think there's a role for the state in additional

00:56:39 --> 00:56:39: state policies.

00:56:41 --> 00:56:43: Yep, thanks John. I know I.

00:56:43 --> 00:56:46: I do think it's it's should be something that is

00:56:46 --> 00:56:47: kind of,

00:56:47 --> 00:56:50: you know, passed through on a statewide level.

00:56:50 --> 00:56:53: I do think. Where there's not not that kind of

00:56:53 --> 00:56:56: some of these areas don't need to be water efficient
00:56:56 --> 00:56:58: or don't want to be water efficient,
00:56:58 --> 00:57:01: but I think you know it's definitely in the more
00:57:01 --> 00:57:04: suburban and urban areas are the ones that that where
00:57:04 --> 00:57:07: it's really most you know most of the water uses
00:57:07 --> 00:57:10: is, you know, taking place and that's really where where
00:57:10 --> 00:57:13: the and and I guess a lot of the expertise
00:57:13 --> 00:57:15: in a lot of cases is based in these areas
00:57:15 --> 00:57:18: also, so I think that's where it really needs to
00:57:18 --> 00:57:20: be in it's the systems are more limited.
00:57:20 --> 00:57:23: I mean if you're a.
00:57:23 --> 00:57:25: You know, in a in rural Colorado somewhere,
00:57:25 --> 00:57:29: you probably have a little more access to water,
00:57:29 --> 00:57:32: but that it may not last long if we,
00:57:32 --> 00:57:35: if the suburban and urban people are using it so
00:57:35 --> 00:57:36: much.
00:57:36 --> 00:57:38: So I do think especially for yeah,
00:57:38 --> 00:57:42: the newer developments in the that's that's where you know,
00:57:42 --> 00:57:45: having a statewide kind of at least some kind of
00:57:45 --> 00:57:48: minimal standards or requirements and and it would be nice
00:57:48 --> 00:57:52: if the landscape community would kind of naturally,
00:57:52 --> 00:57:55: you know, follow that. But it's it's not it.
00:57:55 --> 00:57:56: There's a lot of things,
00:57:56 --> 00:57:59: barriers I guess to having that really come through.
00:57:59 --> 00:58:01: I mean really work out that way.
00:58:01 --> 00:58:04: So I think having a.
00:58:04 --> 00:58:06: A statewide certification would be really great,
00:58:06 --> 00:58:08: but at the very least,
00:58:08 --> 00:58:11: having it down in in the local levels and then
00:58:11 --> 00:58:13: that will kind of radiate out,
00:58:13 --> 00:58:16: I think. And then also even at the project level
00:58:16 --> 00:58:17: you can do that too.
00:58:17 --> 00:58:20: Just say on our project you need to be certified
00:58:20 --> 00:58:23: and these are the certifications we're accepting or requiring for
00:58:24 --> 00:58:25: people involved in our work so.
00:58:28 --> 00:58:31: Yeah, just to add to what that what else the
00:58:31 --> 00:58:32: state could do.
00:58:32 --> 00:58:34: I think some of the,
00:58:34 --> 00:58:38: UM, they're experimenting with some of the demonstration projects on
00:58:38 --> 00:58:40: on water harvesting and on site water storage,

00:58:40 --> 00:58:44: rainwater storage, and I think allowing that on a more
00:58:44 --> 00:58:45: universal level.
00:58:45 --> 00:58:48: I mean, there's all kinds of downstream water issues associated
00:58:48 --> 00:58:49: with that,
00:58:49 --> 00:58:54: but I think that there's a lot more opportunity for.
00:58:54 --> 00:58:57: Smarter water use by allowing that on site and maybe
00:58:57 --> 00:59:00: it's scalable to different only different sizes of sites.
00:59:00 --> 00:59:04: And Bob was saying both from both the.
00:59:04 --> 00:59:07: You know the use is really at the urban and
00:59:07 --> 00:59:11: suburban levels and or maybe only time applies to a
00:59:11 --> 00:59:12: certain type of project,
00:59:12 --> 00:59:16: but I think there could be more done in that
00:59:16 --> 00:59:20: respect and then in addition to not only this question
00:59:20 --> 00:59:21: but the one previous,
00:59:21 --> 00:59:24: I would say I would also say that we've seen
00:59:24 --> 00:59:28: a market change in what the consumer is expecting relative
00:59:28 --> 00:59:32: to all the social movements we see in environmental awareness,
00:59:32 --> 00:59:36: ESG movement, etc. That. People are now deciding you know
00:59:36 --> 00:59:37: where they live,
00:59:37 --> 00:59:41: who they work for, what type of house they buy
00:59:41 --> 00:59:42: based on,
00:59:42 --> 00:59:44: I think I'm much more appropriate.
00:59:44 --> 00:59:47: Environmental and sustainable approach. And so I think that you
00:59:47 --> 00:59:48: know,
00:59:48 --> 00:59:51: sometimes you can regulate this in it from the state
00:59:51 --> 00:59:54: all the way down to the local level.
00:59:54 --> 00:59:57: But I think that over the last couple of years,
00:59:57 --> 01:00:01: we've really seen a market change in terms of the
01:00:01 --> 01:00:04: consumer now beginning to demand a more appropriate use of
01:00:04 --> 01:00:05: water.
01:00:05 --> 01:00:08: And influencing their their buying decisions.
01:00:11 --> 01:00:13: Yeah, and I would just add uhm,
01:00:13 --> 01:00:16: you know when when we when we look at our
01:00:16 --> 01:00:19: at our new developments and I said this in my
01:00:19 --> 01:00:20: my presentation,
01:00:20 --> 01:00:23: I think you know by and large those are fairly
01:00:23 --> 01:00:23: efficient.
01:00:23 --> 01:00:26: Can always do a little bit more there and but

01:00:26 --> 01:00:29: where there seems to be a gap both in terms

01:00:29 --> 01:00:33: of just overall performance and also monitoring our our existing

01:00:33 --> 01:00:38: commercial buildings and. Making progress there can have a real

01:00:38 --> 01:00:41: impact on our overall community water use,

01:00:41 --> 01:00:45: and so that's something we talked a lot about.

01:00:45 --> 01:00:47: In in House here are you know when when we

01:00:47 --> 01:00:51: when we pursue adaptive reuse opportunities is how do we

01:00:51 --> 01:00:54: bring those systems up to speed and you know by

01:00:54 --> 01:00:55: and large for the Community Colorado,

01:00:55 --> 01:00:58: I think that's something you know where we can improve,

01:00:58 --> 01:01:01: you know. In a new development we've got,

01:01:01 --> 01:01:05: especially these larger ones we have on site operations there

01:01:05 --> 01:01:06: all the time,

01:01:06 --> 01:01:08: right? So you, you learn about an issue.

01:01:08 --> 01:01:11: If there's, you know, a leaky toilet,

01:01:11 --> 01:01:14: or you know something is not performing the way it

01:01:14 --> 01:01:15: should be.

01:01:15 --> 01:01:17: You learn about it immediately,

01:01:17 --> 01:01:18: but that's not the case.

01:01:18 --> 01:01:22: You know, with with. With some older older stock projects,

01:01:22 --> 01:01:25: and so you know that's somewhere we should look as

01:01:25 --> 01:01:25: well.

01:01:27 --> 01:01:30: I wonder if you could just expand on that a

01:01:30 --> 01:01:31: little bit like what how?

01:01:31 --> 01:01:35: What are the major opportunities with looking at existing stock

01:01:35 --> 01:01:37: and in making those more efficient?

01:01:39 --> 01:01:41: You know we've had a lot of success with with

01:01:41 --> 01:01:44: our monitoring programs across our you know office and multifamily

01:01:45 --> 01:01:45: communities,

01:01:45 --> 01:01:48: and I know that, UM.

01:01:48 --> 01:01:50: You know there there are plans in place to offer

01:01:51 --> 01:01:54: incentives to kind of go back to stabilized properties and

01:01:54 --> 01:01:58: and and add some of those metering and monitoring capabilities.

01:01:58 --> 01:02:01: You know that's certainly one.

01:02:01 --> 01:02:04: One area where where that could happen?

01:02:04 --> 01:02:09: You know, honestly, just education at the property level can

01:02:09 --> 01:02:10: be very effective.

01:02:10 --> 01:02:14: You know, telling you just reinforcing with your residents.

01:02:14 --> 01:02:18: Hey, if you've got a if your toilet is running
01:02:19 --> 01:02:20: continuously.
01:02:20 --> 01:02:23: Even if you're not necessarily noticing that in your in
01:02:23 --> 01:02:23: your bill,
01:02:23 --> 01:02:27: that's a big deal and you need to tell maintenance
01:02:27 --> 01:02:29: and put in a work order for it.
01:02:29 --> 01:02:31: Don't let it run for a month and it's just
01:02:31 --> 01:02:34: these kind of incremental steps can be really effective,
01:02:34 --> 01:02:37: and we certainly try to have those conversations with our
01:02:37 --> 01:02:40: property management teams to make sure that that's getting out,
01:02:40 --> 01:02:43: you know to to our residents into our office users.
01:02:46 --> 01:02:50: I'm curious here. If Jessica or Bob have class on
01:02:50 --> 01:02:50: this,
01:02:50 --> 01:02:55: uh, you know, new development versus existing development and and
01:02:55 --> 01:02:58: best practices for encouraging water development.
01:02:58 --> 01:03:01: Whether it's already in place or whether it's planned.
01:03:03 --> 01:03:04: I
01:03:04 --> 01:03:07: would yeah I would. That's that's a lot of what
01:03:07 --> 01:03:08: we spend our time on.
01:03:08 --> 01:03:11: Is existing projects and getting them to be more efficient,
01:03:11 --> 01:03:13: more water efficient. So lots of opportunity.
01:03:13 --> 01:03:17: I don't know one of the things we've done with
01:03:17 --> 01:03:20: a lot of the of our clients municipal clients as
01:03:20 --> 01:03:23: we kind of talked to them about who are there.
01:03:23 --> 01:03:25: Hi users, water wasters abusers,
01:03:25 --> 01:03:28: whatever you want. It's a little harsh but they said
01:03:28 --> 01:03:30: it calling him names is a good way to get
01:03:30 --> 01:03:31: him to do something.
01:03:31 --> 01:03:34: So either hit him in the wallet or you know
01:03:34 --> 01:03:37: give him a little beat him up a little bit.
01:03:37 --> 01:03:40: But anyway so yeah, but but kind of those targeting
01:03:40 --> 01:03:43: those people that are really using excessive amounts of water
01:03:43 --> 01:03:43: is kind of.
01:03:43 --> 01:03:47: You know if you can get those people kind of
01:03:47 --> 01:03:50: more down in line and also on just on board
01:03:50 --> 01:03:52: that can help a lot and there's some.
01:03:52 --> 01:03:54: You know some good programs.
01:03:54 --> 01:03:57: Some of our partners, summer water provider partners are using,
01:03:57 --> 01:04:00: you know, incentivizing people to do to take action and

01:04:00 --> 01:04:01: to do things.
01:04:01 --> 01:04:04: And that's we do get a little frustrated.
01:04:04 --> 01:04:06: We we kind of were the water doctors and we
01:04:06 --> 01:04:10: write the efficiency prescription for somebody and then it just
01:04:10 --> 01:04:13: sometimes where it's like did anything happened it is it
01:04:13 --> 01:04:16: just sitting on the shelf for or what?
01:04:16 --> 01:04:19: So the incentives. I think I can be a good
01:04:19 --> 01:04:23: tool to help help people if the water providers are.
01:04:23 --> 01:04:26: Game for that it's a lot cheaper to do save
01:04:26 --> 01:04:28: water than it is to go get new supply or
01:04:28 --> 01:04:30: even find new supply.
01:04:30 --> 01:04:31: It's lot better situation. So yeah,
01:04:31 --> 01:04:33: so that's yeah those are some thoughts.
01:04:37 --> 01:04:37: Absolutely,
01:04:37 --> 01:04:40: you know I would like to echo kind of what
01:04:40 --> 01:04:41: Bob and Lee said.
01:04:41 --> 01:04:43: Well firstly with in regards to education,
01:04:43 --> 01:04:45: you know as an educator myself,
01:04:45 --> 01:04:47: what I see and what we have seen kind of
01:04:47 --> 01:04:50: in Colorado is that we have so many people moving
01:04:50 --> 01:04:52: here that they don't understand.
01:04:52 --> 01:04:55: Though the conservation need that we have the drought situation
01:04:55 --> 01:04:57: here and so they're used,
01:04:57 --> 01:04:58: they're moving from the Midwest potentially,
01:04:58 --> 01:05:01: and they're used to seeing Kentucky bluegrass and not having
01:05:02 --> 01:05:02: to irrigate it.
01:05:02 --> 01:05:06: And so they're surprised when they see their water bills
01:05:06 --> 01:05:06: and.
01:05:06 --> 01:05:10: And having that education paired with something like a water
01:05:10 --> 01:05:13: budget so that they can understand why we need to
01:05:13 --> 01:05:17: have different types of vegetation here is really important.
01:05:17 --> 01:05:21: And then additionally, I think it's so much easier to
01:05:21 --> 01:05:24: make these modifications on the front end then it is
01:05:24 --> 01:05:25: to retrofit.
01:05:25 --> 01:05:27: You know if we go in and we have new
01:05:27 --> 01:05:29: developments that already have a,
01:05:29 --> 01:05:32: you know like like Lee and Bill were talking about
01:05:32 --> 01:05:36: these new developments that have water wise components already in
01:05:36 --> 01:05:36: them.
01:05:36 --> 01:05:39: Water wise fixtures you have grey water potentially in their

01:05:39 --> 01:05:42: utilizing grey water for your outdoor irrigation.
01:05:42 --> 01:05:45: Having these integrated systems and you're having less lawn areas
01:05:45 --> 01:05:48: you know are you have strict requirements on how much.
01:05:48 --> 01:05:51: One you can have, I think that's a really effective
01:05:51 --> 01:05:54: head of moving forward so you don't have to then
01:05:54 --> 01:05:57: convince people to retrofit their existing homes.
01:05:57 --> 01:05:59: And like Bob was saying,
01:05:59 --> 01:06:02: you know, trying to switch out the irrigation system.
01:06:02 --> 01:06:04: There's a a much higher cost,
01:06:04 --> 01:06:07: so if we can start with these developments and have
01:06:07 --> 01:06:09: these conservation practices already in place,
01:06:09 --> 01:06:12: I think that'll really help us moving forward.
01:06:12 --> 01:06:15: You know those new developments like the one with Denver
01:06:15 --> 01:06:18: Water and the greater water systems where they're installing?
01:06:18 --> 01:06:21: Those dumb that picture of the greywater system that I
01:06:21 --> 01:06:25: had in my presentation already in these new developments.
01:06:25 --> 01:06:27: Those are great examples that we can,
01:06:27 --> 01:06:29: I think, expand on moving forward.
01:06:31 --> 01:06:34: I have another curveball to throw into the conversation just
01:06:34 --> 01:06:34: for fun,
01:06:34 --> 01:06:37: but I also think, and I I haven't really dug
01:06:37 --> 01:06:40: into this and I think it's it's a sensitive subject,
01:06:40 --> 01:06:42: but I think you know 90%
01:06:42 --> 01:06:45: of the water used in Colorado is used by agriculture,
01:06:45 --> 01:06:47: and I think there needs to be a,
01:06:47 --> 01:06:49: whereas I think in a lot of ways I'm sure
01:06:50 --> 01:06:53: if you're pumping water and you have this electricity costs
01:06:53 --> 01:06:56: and other things like that that there's a lot you
01:06:56 --> 01:06:58: know you're pretty cognizant of your water use,
01:06:58 --> 01:07:00: but at the same time,
01:07:00 --> 01:07:01: there's probably some great opportunities.
01:07:01 --> 01:07:04: Help the AG users be more efficient if we can
01:07:04 --> 01:07:08: make the AG users more efficient that would hopefully free
01:07:08 --> 01:07:09: up some supply for,
01:07:09 --> 01:07:12: you know, domestic use commercial industrial use,
01:07:12 --> 01:07:16: but also for you know just stream flow so.
01:07:16 --> 01:07:21: Another hole. Topic for another day.
01:07:21 --> 01:07:21: So
01:07:21 --> 01:07:23: yeah, I think we could have a whole entire conference
01:07:23 --> 01:07:24: on the exact topic.

01:07:24 --> 01:07:28: Bob, yes, Sir. Have faith go ahead.
01:07:30 --> 01:07:30: Good
01:07:30 --> 01:07:34: morning, just thank you all for presenting on this
01:07:34 --> 01:07:35: very important
01:07:35 --> 01:07:36: topic. This is
01:07:36 --> 01:07:38: something we've been grappling with
01:07:38 --> 01:07:41: for a long time and and how
01:07:41 --> 01:07:43: to include and you know,
01:07:43 --> 01:07:47: the all the various stakeholders and I think it was
01:07:47 --> 01:07:48: Bob.
01:07:48 --> 01:07:53: Maybe it was also Lee who talked about the need
01:07:53 --> 01:07:54: for.
01:07:54 --> 01:07:58: Some of these implements some of these strategies to be
01:07:58 --> 01:08:00: implemented at the project level,
01:08:00 --> 01:08:04: and so I was curious about.
01:08:04 --> 01:08:08: How any of you anyone who's presented really would suggest
01:08:08 --> 01:08:12: how to bring in the developer and really engage them
01:08:12 --> 01:08:13: and,
01:08:13 --> 01:08:17: you know, get some of these strategies implemented at that
01:08:17 --> 01:08:20: at that level at the project level,
01:08:20 --> 01:08:24: and I'd like to turn that over to Lee who
01:08:24 --> 01:08:25: is a developer.
01:08:27 --> 01:08:30: Sure, no, that's a great great question and dumb,
01:08:30 --> 01:08:33: you know, I, I think I'd come to that in
01:08:33 --> 01:08:34: two ways.
01:08:34 --> 01:08:36: There. On one hand, I,
01:08:36 --> 01:08:41: I think in this in the new development space.
01:08:41 --> 01:08:46: It's an expectation that some level of water efficiency and
01:08:46 --> 01:08:51: overall sustainability be incorporated into these projects.
01:08:51 --> 01:08:54: And there's a variety of reasons for that.
01:08:54 --> 01:08:56: You know there's the operation side.
01:08:56 --> 01:08:59: There's the marketing side. There's the competition side.
01:08:59 --> 01:09:02: I mean the the competitive set in that class.
01:09:02 --> 01:09:04: I space expects, you know,
01:09:04 --> 01:09:08: some level of sustainability and within that umbrella water efficiency.
01:09:08 --> 01:09:12: Our capital expects it. You know the the capital markets
01:09:12 --> 01:09:16: when you go to monetize a development expects it so.
01:09:16 --> 01:09:20: So there's there's sort of that lens that that I'm
01:09:20 --> 01:09:23: generally coming at these projects with.
01:09:23 --> 01:09:25: That's not the case for,
01:09:25 --> 01:09:27: you know, every development group out there.

01:09:27 --> 01:09:31: Certainly right. There's no kind of one size fits all
01:09:31 --> 01:09:31: approach,
01:09:31 --> 01:09:35: and so for those projects there's there's different checkins along
01:09:35 --> 01:09:36: the way,
01:09:36 --> 01:09:39: right? There's the conceptual plan check in,
01:09:39 --> 01:09:42: there's maybe the site development plan check in there are,
01:09:42 --> 01:09:44: you know interactions with various,
01:09:44 --> 01:09:48: you know. External utilities and and all the way along
01:09:48 --> 01:09:50: those those checkins,
01:09:50 --> 01:09:53: or where we need to like implement these approaches or
01:09:53 --> 01:09:57: else it becomes too late because the drawings are completed.
01:09:57 --> 01:10:02: Your you've got a budget that you've taken out to
01:10:02 --> 01:10:03: the market.
01:10:03 --> 01:10:05: You know and and and you can't pivot at a
01:10:05 --> 01:10:07: certain place along the road,
01:10:07 --> 01:10:09: so that's why we try to get.
01:10:09 --> 01:10:13: Both the experts who you know are really crafting these
01:10:13 --> 01:10:17: solutions in place early and also the general contractor as
01:10:17 --> 01:10:20: well as some key Subs so that they're part of
01:10:20 --> 01:10:24: that pre construction process and we can really put in
01:10:24 --> 01:10:26: a plan and then execute it.
01:10:26 --> 01:10:30: So we've had more success with that the longer we
01:10:30 --> 01:10:30: wait,
01:10:30 --> 01:10:34: the more expensive and sort of.
01:10:34 --> 01:10:36: You know, just difficult to resolve it.
01:10:36 --> 01:10:38: It can become. So
01:10:38 --> 01:10:41: I have a follow up if that's OK
01:10:41 --> 01:10:41: with everyone.
01:10:43 --> 01:10:43: And
01:10:43 --> 01:10:47: I think some of what you're saying is true in
01:10:47 --> 01:10:47: some places.
01:10:47 --> 01:10:50: And yeah, I think you alluded to this too,
01:10:50 --> 01:10:53: that you are aware that there are.
01:10:53 --> 01:10:55: You know, developers there is that competition there.
01:10:55 --> 01:10:57: Is that drive. There is the,
01:10:57 --> 01:10:59: you know
01:10:58 --> 01:10:59: need and also
01:10:59 --> 01:11:00: the
01:11:00 --> 01:11:00: the
01:11:00 --> 01:11:00: desire for

01:11:00 --> 01:11:04: these projects to incorporate these strategies.
01:11:04 --> 01:11:10: In some places and not in others and so.
01:11:10 --> 01:11:13: I guess I was curious and I
01:11:13 --> 01:11:16: don't want to call any place in particular
01:11:16 --> 01:11:20: out, but I know that there's for example,
01:11:20 --> 01:11:22: there's some struggle in engaging developers,
01:11:22 --> 01:11:24: for example, and in Arizona
01:11:24 --> 01:11:27: or Utah. To really
01:11:27 --> 01:11:31: take on some of these new and you know sustainable
01:11:31 --> 01:11:34: practices and So what would your
01:11:34 --> 01:11:36: suggestion be to engage them?
01:11:37 --> 01:11:41: Uhm, well and and I'm not.
01:11:41 --> 01:11:44: Overly familiar with that exact issue there,
01:11:44 --> 01:11:47: but I would say you know developers are very engaged
01:11:48 --> 01:11:51: in the market all and the market is a good
01:11:51 --> 01:11:55: driver for most of these solutions are our typical levers
01:11:55 --> 01:11:58: on these developments. Are you know land price,
01:11:58 --> 01:11:59: rent and construction costs right?
01:11:59 --> 01:12:02: Not to oversimplify it, but so.
01:12:02 --> 01:12:07: If we can incorporate. You know some measure early enough
01:12:07 --> 01:12:11: to either you know offset it in a land negotiation
01:12:11 --> 01:12:14: or you know we have a rent that can offset
01:12:14 --> 01:12:18: that. Construction costs then the project can go forward,
01:12:18 --> 01:12:21: right? So I think you know where we've had the
01:12:21 --> 01:12:24: most success is knowing what the requirements are,
01:12:24 --> 01:12:27: even if they're very strict requirements,
01:12:27 --> 01:12:29: right? I mean, that's not the issue,
01:12:29 --> 01:12:34: it's more just being able to react to it and
01:12:34 --> 01:12:34: not.
01:12:34 --> 01:12:39: You know, facing either a change after you've committed a
01:12:39 --> 01:12:42: certain amount of time and capital to a pursuit,
01:12:42 --> 01:12:44: or you know, being complete,
01:12:44 --> 01:12:48: for instance, and then having to respond to something.
01:12:48 --> 01:12:51: So I think you know zoning code,
01:12:51 --> 01:12:55: and like local municipal requirements like can all be addressed,
01:12:55 --> 01:12:59: but they need to be kind of coordinated and then
01:12:59 --> 01:13:04: put in place so that you can address them right
01:13:04 --> 01:13:05: at the start.
01:13:05 --> 01:13:06: Of of your pursuit, right?
01:13:06 --> 01:13:10: Because we're. You know as a developer.
01:13:10 --> 01:13:13: You're never working with like the full kind of context,

01:13:13 --> 01:13:16: but you've got to make a decision to close on
01:13:16 --> 01:13:19: a property or a piece of land and then proceed
01:13:19 --> 01:13:23: with design and so knowing kind of everything that's wrapped
01:13:23 --> 01:13:26: up in that is is the key to having a
01:13:26 --> 01:13:27: successful project,
01:13:27 --> 01:13:29: and I think you know,
01:13:29 --> 01:13:32: push back. You might see in the market for is
01:13:32 --> 01:13:35: is maybe more aligned with like the timing that that
01:13:36 --> 01:13:37: are that a request was made,
01:13:37 --> 01:13:40: or that a policy changed other than.
01:13:40 --> 01:13:44: This unwillingness to do it right so.
01:13:44 --> 01:13:44: Like
01:13:44 --> 01:13:47: I said, really quickly. Also time and money you know
01:13:47 --> 01:13:50: are two really big drivers motivating factors.
01:13:50 --> 01:13:53: I would say. And so if you have a conservation
01:13:53 --> 01:13:56: tap fee or you have a reduced fee if you
01:13:56 --> 01:14:00: start instituting some of these practices in the developer.
01:14:00 --> 01:14:03: I've seen that you successfully in certain areas and also
01:14:03 --> 01:14:05: how they may be accelerated.
01:14:05 --> 01:14:07: Plan review times so people aren't they.
01:14:07 --> 01:14:11: They get benefits from instituting these practices so that would
01:14:11 --> 01:14:14: be another way to encourage people to incorporate them into
01:14:14 --> 01:14:15: their.
01:14:15 --> 01:14:15: Developments
01:14:17 --> 01:14:19: ask Dex lean just, you know,
01:14:19 --> 01:14:20: we're we're past time, but Rachel.
01:14:20 --> 01:14:22: If you want to get your question real quick,
01:14:22 --> 01:14:23: that would be great.
01:14:24 --> 01:14:26: We're going to extend the
01:14:26 --> 01:14:29: time a little bit, John for
01:14:29 --> 01:14:35: discussion. Excellent so Lee, I'm very interested in if this
01:14:35 --> 01:14:39: was market driven in your area or if you were
01:14:39 --> 01:14:41: able to come.
01:14:41 --> 01:14:47: Celebrate at change in public attitude because you thought is
01:14:47 --> 01:14:51: very stuck on our eastern seaboard
01:14:51 --> 01:14:53: landscapes in arid
01:14:53 --> 01:14:53: Utah.
01:14:56 --> 01:15:02: Sure, uhm well. So the case study I presented.
01:15:02 --> 01:15:04: To be honest about that,
01:15:04 --> 01:15:08: so three of the four kind of best practices that
01:15:08 --> 01:15:12: I presented we would do on on every project you

01:15:13 --> 01:15:13: know.
01:15:13 --> 01:15:16: Water efficiency, efficient landscape, stormwater functions,
01:15:16 --> 01:15:19: the greywater or Blackwater solution is.
01:15:19 --> 01:15:23: More of a case by case basis for our team
01:15:23 --> 01:15:25: and just to be honest,
01:15:25 --> 01:15:29: and you know that black water solution at Denver Water
01:15:29 --> 01:15:32: had never been done in the state before right?
01:15:32 --> 01:15:35: And we would not have been successful there in my
01:15:35 --> 01:15:40: opinion without Denver waters advocacy and expertise in navigating the
01:15:40 --> 01:15:44: various regulations on Regulation 84 which was in Jessica's deck,
01:15:44 --> 01:15:46: was updated during the during that project.
01:15:46 --> 01:15:50: So you know we were kind of proceeding.
01:15:50 --> 01:15:52: With the hopes that this would be approved but it
01:15:52 --> 01:15:56: was not approved at start construction on a private project
01:15:56 --> 01:15:58: you could never do that right?
01:15:58 --> 01:16:00: We would never be able to get capital and place
01:16:00 --> 01:16:04: to proceed with the design and actually enter into construction,
01:16:04 --> 01:16:07: not knowing if if you know a a part of
01:16:07 --> 01:16:09: the system was going to be,
01:16:09 --> 01:16:11: you know, approved or not.
01:16:11 --> 01:16:14: And so I think. There's a little bit of a
01:16:14 --> 01:16:16: give and take there,
01:16:16 --> 01:16:20: UM, but here in Colorado.
01:16:20 --> 01:16:23: We cannot compete in that Class A space without,
01:16:23 --> 01:16:26: you know, having these measures in our developments that there's
01:16:26 --> 01:16:28: a differentiating factor there.
01:16:28 --> 01:16:30: There's, you know, kind of a.
01:16:30 --> 01:16:34: We're all in this together.
01:16:34 --> 01:16:37: Approach to these projects and we've been successful there.
01:16:37 --> 01:16:38: Utah, you know. Again, I,
01:16:38 --> 01:16:42: I'm just not as familiar with that local market,
01:16:42 --> 01:16:45: but uhm, I think. You know,
01:16:45 --> 01:16:48: we've seen some momentum here locally in this last cycle
01:16:48 --> 01:16:52: with these projects and and that that could you know
01:16:52 --> 01:16:55: that might very well be the case in Utah with
01:16:55 --> 01:16:56: with this next cycle, right?
01:16:56 --> 01:17:00: But uhm. We also have strong,
01:17:00 --> 01:17:03: you know city government here and building department and and

01:17:03 --> 01:17:06: you know and there's these policies in place that help
01:17:07 --> 01:17:08: motivate these projects forward,
01:17:08 --> 01:17:12: right? And Jessica was exactly right about.
01:17:12 --> 01:17:15: You know some of these incentives around tap fees and
01:17:15 --> 01:17:16: and you know,
01:17:16 --> 01:17:19: review time frames and and you know having kind of
01:17:19 --> 01:17:23: advocates within the building department that can help get these
01:17:23 --> 01:17:24: projects through.
01:17:24 --> 01:17:27: I mean, those are all incentives to actually like attempt
01:17:27 --> 01:17:27: it,
01:17:27 --> 01:17:31: right? Because you don't want to take all that on
01:17:31 --> 01:17:32: and then not have any.
01:17:32 --> 01:17:36: You know, kind of assistance guiding you through these really
01:17:36 --> 01:17:38: complicated issues so.
01:17:38 --> 01:17:40: I'm not sure if I answered your question,
01:17:40 --> 01:17:42: but I did my best
01:17:42 --> 01:17:45: there. I just want to toss it over to Bill
01:17:45 --> 01:17:46: as well.
01:17:46 --> 01:17:48: Who's talked about changing consumer preferences and bill?
01:17:48 --> 01:17:52: Do you know about different market preferences in different States
01:17:52 --> 01:17:53: and could you address that?
01:17:54 --> 01:17:57: Yeah I I would say that I think it's in
01:17:57 --> 01:18:02: the development or clients and mostly in the master plan
01:18:02 --> 01:18:07: community areas that we're working with are now seeing this
01:18:07 --> 01:18:11: as a market expectation just like Lee was saying about
01:18:11 --> 01:18:12: his office space.
01:18:12 --> 01:18:16: You know, I think for particularly the you know,
01:18:16 --> 01:18:20: market rate to higher end types of projects that it's
01:18:20 --> 01:18:24: certainly becoming more of a requirement or an expectation.
01:18:24 --> 01:18:27: On the consumer side to be more sensitive,
01:18:27 --> 01:18:29: I mean there's always the outlier right?
01:18:29 --> 01:18:31: And and somebody says, you know I have all the
01:18:31 --> 01:18:33: water and I'm going to use it.
01:18:33 --> 01:18:36: However, I you know darn well please and but I
01:18:36 --> 01:18:39: think that that is getting very few and far between
01:18:39 --> 01:18:42: and many times it's a it is a carrot and
01:18:42 --> 01:18:45: it's a stick. And combined I would just say that.
01:18:45 --> 01:18:47: Any relative to the Castle Rock.
01:18:47 --> 01:18:49: The Canyon S projects I was showing.
01:18:49 --> 01:18:52: I mean there were there was a stick in that,

01:18:52 --> 01:18:55: you know it was. You will do this water efficiency
01:18:55 --> 01:18:58: plan in this budget and this monitoring follow up or
01:18:58 --> 01:19:00: you won't get approvals,
01:19:00 --> 01:19:02: but on the same time the carrot was OK.
01:19:02 --> 01:19:05: Will allow you a little bit more density.
01:19:05 --> 01:19:08: Will you know? Have worked with you on some permit
01:19:08 --> 01:19:11: fees and will do some expedited approvals so sometimes it's
01:19:11 --> 01:19:14: both of those tools in the toolbox if you will
01:19:14 --> 01:19:18: to to get those. A project through the entitlement process,
01:19:18 --> 01:19:22: but you know, I think at the end of the
01:19:22 --> 01:19:22: day,
01:19:22 --> 01:19:25: you know sometimes it's it's.
01:19:25 --> 01:19:28: A lot of times that the change in the momentum
01:19:28 --> 01:19:31: does come not so much ordinance lead,
01:19:31 --> 01:19:33: although there are some good examples,
01:19:33 --> 01:19:36: but I think many times is public sector lead.
01:19:36 --> 01:19:39: And then once somebody kind of is successful with a
01:19:39 --> 01:19:44: really great project like it Central Park or formally Stapleton
01:19:44 --> 01:19:47: I mean that was not a requirement at all to
01:19:47 --> 01:19:50: do the level of of water efficiency and the new
01:19:50 --> 01:19:51: approach to landscape.
01:19:51 --> 01:19:55: And you know, as it became a very desirable place
01:19:55 --> 01:19:56: to live.
01:19:56 --> 01:19:59: I think the other developers and other builders saw that
01:19:59 --> 01:20:02: and everybody kind of followed in in in behind as
01:20:02 --> 01:20:05: they saw the success of the project itself.
01:20:05 --> 01:20:08: So it's it's changing. It's maybe not changing as fast
01:20:09 --> 01:20:11: as as us in the industries would like,
01:20:11 --> 01:20:14: but I do think the momentum is going in the
01:20:14 --> 01:20:18: right way to understanding the real importance of water conservation
01:20:18 --> 01:20:21: and and water wise development.
01:20:21 --> 01:20:21: So
01:20:21 --> 01:20:24: you guys I I am so jealous of what I'm
01:20:24 --> 01:20:27: hearing because in our last legislature and I have to
01:20:27 --> 01:20:29: say it didn't pass.
01:20:29 --> 01:20:31: So that was a good thing.
01:20:31 --> 01:20:34: But we had legislation introduced that if you had a
01:20:34 --> 01:20:36: larger lot your water should be
01:20:36 --> 01:20:38: cheaper because you needed more.
01:20:39 --> 01:20:39: And
01:20:39 --> 01:20:41: it didn't pass. Thank heavens,

01:20:41 --> 01:20:42: but it was heard in legislature last.
01:20:42 --> 01:20:43: I would throw
01:20:43 --> 01:20:45: out. You know it's it's
01:20:45 --> 01:20:46: not an option for you guys.
01:20:46 --> 01:20:48: It's not an option for it.
01:20:48 --> 01:20:50: It's not an option. This is not an option.
01:20:50 --> 01:20:52: So it's like we might as well.
01:20:52 --> 01:20:55: You know, dive in and do it the right way
01:20:55 --> 01:20:56: so.
01:20:56 --> 01:20:59: And show you know anybody that thinks it's an option.
01:20:59 --> 01:21:02: Just show him what Jessica had up for your drought
01:21:02 --> 01:21:03: situation in Utah,
01:21:03 --> 01:21:05: especially so anyway, so I have
01:21:05 --> 01:21:08: a lot of resources for you to connect you to
01:21:08 --> 01:21:09: great examples.
01:21:09 --> 01:21:12: I agree. Definitely with Bill's comment that you need to
01:21:12 --> 01:21:15: see examples of what these beautiful landscapes can look like.
01:21:15 --> 01:21:18: 'cause otherwise people think it's just Rock You know,
01:21:18 --> 01:21:21: take out your landscape and put in rock and that's
01:21:21 --> 01:21:23: not what we're talking about.
01:21:23 --> 01:21:25: That's not a vibrant landscape.
01:21:25 --> 01:21:27: And so. Definitely connect with me afterwards and I can
01:21:27 --> 01:21:29: connect you to a lot of resources.
01:21:32 --> 01:21:32: And
01:21:32 --> 01:21:35: I just want to add that I added some document
01:21:35 --> 01:21:38: filled with panelist resources to the chat box.
01:21:38 --> 01:21:41: So if you click on that you should be able
01:21:41 --> 01:21:45: to download it and include Jessica's links and some links
01:21:45 --> 01:21:47: from from other panelists as well.
01:21:51 --> 01:21:51: Well,
01:21:51 --> 01:21:55: maybe if, UM, unless folks have any other questions we
01:21:55 --> 01:21:56: might be able to wrap it up,
01:21:56 --> 01:21:59: but it's good to hear that Lee and Bill are
01:21:59 --> 01:22:01: both opening satellite offices in Utah,
01:22:01 --> 01:22:04: so that's going to be really great for it.
01:22:04 --> 01:22:07: So pushing things in in Utah so you're welcome Rachel
01:22:07 --> 01:22:08: for this.
01:22:08 --> 01:22:11: This panel, absolutely. We
01:22:11 --> 01:22:12: do cover Salt Lake, so yeah.
01:22:12 --> 01:22:15: If you see anything out there let me know.
01:22:15 --> 01:22:16: Yeah,

01:22:16 --> 01:22:19: uh, great. Well maybe I'll turn it over to Mary
01:22:19 --> 01:22:20: Ann to conclude the
01:22:20 --> 01:22:22: panel. Wonderful
01:22:22 --> 01:22:25: thank you and I'm just gonna put up our contact
01:22:26 --> 01:22:29: information for UM for me and also for John since
01:22:29 --> 01:22:30: we moderated this session.
01:22:30 --> 01:22:33: If you are interested in learning more about water,
01:22:33 --> 01:22:37: smart development in landscaping and getting that report that we're
01:22:37 --> 01:22:38: working on it,
01:22:38 --> 01:22:40: it'll be a national ULI report on water,
01:22:40 --> 01:22:44: smart development and landscaping. You're welcome to get in touch
01:22:44 --> 01:22:44: with me.
01:22:44 --> 01:22:47: We're also building a long term coalition on these issues
01:22:48 --> 01:22:51: and then John works with Western resource advocates and is
01:22:51 --> 01:22:52: very much in touch with.
01:22:52 --> 01:22:54: The environmental perspective on all of this,
01:22:54 --> 01:22:57: so you're welcome to get in touch with him and
01:22:57 --> 01:23:00: I know our panelists put their contact information on their
01:23:00 --> 01:23:01: slides,
01:23:01 --> 01:23:02: so I don't know if faith.
01:23:02 --> 01:23:06: Maybe you know, if all these slides will be available
01:23:06 --> 01:23:08: or just the recordings afterwards.
01:23:08 --> 01:23:12: I know for sure the recordings will be available and
01:23:12 --> 01:23:15: it would be great to get those slides available as
01:23:15 --> 01:23:15: well,
01:23:15 --> 01:23:19: so we I don't believe we have collected them and
01:23:19 --> 01:23:22: that will be a little bit of an effort so
01:23:22 --> 01:23:24: I can promise the recordings.
01:23:25 --> 01:23:25: I cannot
01:23:25 --> 01:23:26: these slides,
01:23:25 --> 01:23:26: necessarily
01:23:26 --> 01:23:26: but
01:23:26 --> 01:23:26: perhaps
01:23:26 --> 01:23:27: promise
01:23:26 --> 01:23:27: we can.
01:23:27 --> 01:23:30: Whoever gets in touch with you can ask you for
01:23:30 --> 01:23:32: your slides in the meantime.
01:23:32 --> 01:23:35: Great and I know we'll add our slides to the
01:23:35 --> 01:23:38: UI Colorado Resources page so if no or else,
01:23:38 --> 01:23:40: you can find in there.

01:23:40 --> 01:23:42: So we'll make them publicly available.
01:23:42 --> 01:23:45: Thank you all so much for joining us today and
01:23:45 --> 01:23:48: a huge round of applause to our panelists who dedicated
01:23:48 --> 01:23:51: a lot of time and effort to putting this together
01:23:51 --> 01:23:54: for you. Also, thank you so much for being with
01:23:54 --> 01:23:55: us today.
01:23:55 --> 01:23:57: Thank you.
