

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

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

00:09:54 --> 00:09:57: encouraging the

00:09:57 --> 00:10:01: use of water efficient measures inside their home.

00:10:01 --> 00:10:04: Water efficient appliances, as well as having less grass and

00:10:04 --> 00:10:07: more native vegetation in their lawns.

00:10:07 --> 00:10:12: But this is also a tool that can be used

00:10:12 --> 00:10:16: on the front end of developments as well by allocating

00:10:16 --> 00:10:18: water budgets to an entire project and and that way

00:10:18 --> 00:10:20: when the development goes in,

00:10:20 --> 00:10:24: there is a total water.

00:10:24 --> 00:10:27: Allocation and that can be used to inform what landscape

00:10:27 --> 00:10:29: practices are being used and also what appliances are being

00:10:29 --> 00:10:34: installed in these developments.

00:10:34 --> 00:10:36: The additionally additional regulations are adopting or

00:10:36 --> 00:10:42: strengthening water related

00:10:42 --> 00:10:45: ordinances and regulations.

00:10:45 --> 00:10:50: The City of Aurora has ordinances prohibiting water waste.

00:10:50 --> 00:10:53: The City of Westminster has an amendment that you may

00:10:53 --> 00:10:58: not negatively impact water infrastructure or supply with any

00:10:58 --> 00:10:59: water

00:10:59 --> 00:11:03: conservation in new development or redevelopment.

00:11:03 --> 00:11:07: The City of Westminster is also refining some of their

00:11:07 --> 00:11:11: zoning categories.

00:11:11 --> 00:11:12: So they can better reflect anticipated water use.

00:11:12 --> 00:11:12: And then the town of Buena Vista is limiting the

00:11:12 --> 00:11:12: amount of high water use vegetation and turfgrass for any

00:11:12 --> 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
00:11:59 --> 00:12:03: fixture rebates,
00:12:03 --> 00:12:04: and then you can also provide resources like low water
00:12:04 --> 00:12:08: vegetation lists.

00:12:08 --> 00:12:12: Our model landscape plans and templates and also providing
00:12:12 --> 00:12:12: water
00:12:12 --> 00:12:14: efficient land development patterns like the town of Castle
00:12:14 --> 00:12:17: Rock
00:12:17 --> 00:12:22: does.

00:12:22 --> 00:12:26: These are just brief examples,
00:12:26 --> 00:12:30: but the full list can be viewed in the link
00:12:30 --> 00:12:31: below with best practices for implementing water
00:12:31 --> 00:12:33: conservation and demand
00:12:33 --> 00:12:37: management through land use planning efforts and we will
00:12:37 --> 00:12:40: be
00:12:40 --> 00:12:43: providing a resource page afterwards with that link next page
00:12:43 --> 00:12:46: please.

00:12:46 --> 00:12:50: Finally, I'd like to leave you all with the question
00:12:50 --> 00:12:55: today of what do we want our cities and land
00:12:55 --> 00:12:58: to look like now and in the future?
00:12:58 --> 00:12:59: How can we develop water smart policies that will help
00:12:59 --> 00:13:02: us to integrate one water approaches into future planning?
00:13:02 --> 00:13:03: Next slide. Here are some more resources available for you.

00:13:03 --> 00:13:07: All of these will be all of these.
00:13:07 --> 00:13:10: Letterings and blue are links,
00:13:10 --> 00:13:10: and again you will receive that resource slide after the
00:13:10 --> 00:13:10: presentation.

00:13:10 --> 00:13:10: Next slide. And finally, if you have any questions,
00:13:10 --> 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

00:18:58 --> 00:18:59: terms of

00:18:59 --> 00:19:04: the size of the project,

00:19:04 --> 00:19:06: but a much higher density approach to the to the

00:19:06 --> 00:19:08: lot types and the products.

00:19:08 --> 00:19:13: About 7500 units in total.

00:19:13 --> 00:19:16: Here we didn't actually develop a detailed water modeling

00:19:16 --> 00:19:16: tool,

00:19:16 --> 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
00:19:49 --> 00:19:53: 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
00:19:57 --> 00:19:59: 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

00:26:13 --> 00:26:16: 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

00:26:19 --> 00:26:20: 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
00:28:13 --> 00:28:18: practical
00:28:13 --> 00:28:18: working knowledge and understanding and expertise on the
00:28:18 --> 00:28:22: 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

00:36:41 --> 00:36:45: landscape checks

00:36:45 --> 00:36:46: and inspections to make sure that the landscape stays water

00:36:46 --> 00:36:49: efficient.

00:36:49 --> 00:36:52: Next, so I've got a slide out of order here,

00:36:52 --> 00:36:54: but will go with this one right now.

00:36:54 --> 00:36:58: Just wanted to throw this out.

00:36:58 --> 00:37:02: Here's some states that require irrigation licensing.

00:37:02 --> 00:37:04: Second box there bullet is states that have irrigation as

00:37:04 --> 00:37:08: part of their landscape licensing.

00:37:08 --> 00:37:13: Voluntary licensing in irrigation in Florida and states that are

00:37:13 --> 00:37:17: considering or having licensing or regulatory rules pertaining

00:37:17 --> 00:37:17: to irrigation.

00:37:17 --> 00:37:20: And this is again not necessarily efficient irrigation in some

00:37:20 --> 00:37:24: cases.

00:37:24 --> 00:37:27: Very definitely these have efficient irrigation,

00:37:27 --> 00:37:32: but these are some and these are some states that

00:37:32 --> 00:37:37: are doing those things so.

00:37:37 --> 00:37:39: And next. Uh, so which kind of certification is right

00:37:39 --> 00:37:43: or right for your project or for your municipality or

00:37:43 --> 00:37:45: your water district?

00:37:45 --> 00:37:48: Consider the depth and practical detail of the various

00:37:48 --> 00:37:53: certifications.

00:37:53 --> 00:37:55: What is being taught in,

00:37:55 --> 00:37:59: to what level is the course material testing instruction?

00:37:59 --> 00:38:00: Rigorous or pretty simplistic? Who's the instructing in the

00:38:00 --> 00:38:00: course?

00:38:00 --> 00:38:00: What is their level of knowledge,

00:38:00 --> 00:38:00: experience and expertise? And how is the level of knowledge

00:38:00 --> 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 system and then native detention areas to address.

00:47:15 --> 00:47:19: You know, both on site and off site runoff.

00:47:19 --> 00:47:23: Next slide. So this graphic I'm just breaks down some of the systems at work in the administration building itself.

00:47:23 --> 00:47:28: So low flow fixtures throughout the kitchen cafeteria, common areas and restrooms, and these really apply to the campus at large.

00:47:28 --> 00:47:34: Kind of in concert with that rainwater capture that can be used for on site irrigation as well as treated wastewater that can be applied to toilet flushing and irrigation as well. With appropriate backup systems to make sure that demand can be met at all times.

00:47:34 --> 00:47:38: So next slide. And I just want just want to highlight the water recycling system since it is so, uhm, you know such a key part of this project up against something that had not been.

00:47:38 --> 00:47:42: Implemented in the state of Colorado before.

00:47:42 --> 00:47:43: Although we did have some good examples to work from in other parts of the country.

00:47:43 --> 00:47:47: What we're seeing in this image here is is the final polishing wetland that, UM. Is the final stage that influence would be taken through before it's, you know, deemed appropriate to be used for on site toilet flushing and you know a lot of detail around the system.

00:47:47 --> 00:47:51: Happy to answer, you know questions about it or or discuss offline next next slide.

00:47:51 --> 00:47:55: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:47:55 --> 00:48:00: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:00 --> 00:48:03: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:03 --> 00:48:07: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:07 --> 00:48:12: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:12 --> 00:48:15: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:15 --> 00:48:18: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:18 --> 00:48:20: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:20 --> 00:48:24: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:24 --> 00:48:26: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:26 --> 00:48:29: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:29 --> 00:48:31: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:31 --> 00:48:36: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:36 --> 00:48:38: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:38 --> 00:48:42: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:42 --> 00:48:46: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:46 --> 00:48:47: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:47 --> 00:48:51: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:48:51 --> 00:48:54: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:48:54 --> 00:49:00: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:00 --> 00:49:04: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:04 --> 00:49:04: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:04 --> 00:49:07: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:07 --> 00:49:10: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:10 --> 00:49:11: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:11 --> 00:49:14: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:14 --> 00:49:16: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:16 --> 00:49:18: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:18 --> 00:49:22: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:22 --> 00:49:26: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing this together throughout.

00:49:26 --> 00:49:30: Oh, you know, Maryann? I think just in the interest of time, I'll skip this slide as well and just go to kind of the lessons learned perfect so you know just to close with a few best practices as these projects become more and more complex.

00:49:30 --> 00:49:32: One thing that we're trying to do on all of our development says get the design team together early and combine that with early pre construction assist just so that. We've got the minds that are going to be executing 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

00:56:23 --> 00:56:23: 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

01:04:55 --> 01:04:57: situation

01:04:57 --> 01:04:58: here and so they're used,

01:04:58 --> 01:05:01: they're moving from the Midwest potentially,

01:05:02 --> 01:05:02: and they're used to seeing Kentucky bluegrass and not

01:05:02 --> 01:05:06: having

01:05:06 --> 01:05:06: to irrigate it.

01:05:06 --> 01:05:10: And so they're surprised when they see their water bills

01:05:10 --> 01:05:13: and.

01:05:13 --> 01:05:17: And having that education paired with something like a water

01:05:17 --> 01:05:21: budget so that they can understand why we need to

01:05:21 --> 01:05:24: have different types of vegetation here is really important.

01:05:24 --> 01:05:25: And then additionally, I think it's so much easier to

01:05:25 --> 01:05:27: make these modifications on the front end then it is

01:05:27 --> 01:05:29: to retrofit.

01:05:29 --> 01:05:32: You know if we go in and we have new

01:05:32 --> 01:05:36: developments that already have a,

01:05:36 --> 01:05:36: you know like like Lee and Bill were talking about

01:05:36 --> 01:05:39: these new developments that have water wise components

01:05:39 --> 01:05:39: already in

01:05:39 --> 01:05:39: them.

01:05:39 --> 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
01:12:55 --> 01:12:59: addressed,
01:12:59 --> 01:13:04: 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.

This video transcript has been machine-generated, so it may not be accurate. It is for personal use only. Reproduction or use without written permission is prohibited. If you have a correction or for permission inquiries, please contact [\[email protected\]](#).