# Webinar

**Water Wise Strategies for Drought Resilient Development**

Date: July 22, 2022

**00:00:01 --> 00:00:04:** Hello and welcome everyone. I'm going to go ahead and
**00:00:04 --> 00:00:04:** get started.
**00:00:05 --> 00:00:08:** I'm Marianne eppig. I'm a director of resilience with you
**00:00:08 --> 00:00:12:** Elize Urban resilience program, and I'm also the lead author
**00:00:12 --> 00:00:17:** of Waterwise strategies for drought resilient development. Our latest report.
**00:00:18 --> 00:00:22:** I'm going to start with a few housekeeping announcements. Participants
**00:00:22 --> 00:00:26:** will remain muted through the duration of the webinar. We
**00:00:26 --> 00:00:29:** encourage you to submit your questions through the zoom Q&A
**00:00:29 --> 00:00:32:** function. We'll have Q&A at the end of the webinar.
**00:00:32 --> 00:00:35:** And this webinar is being recorded and will be sent
**00:00:35 --> 00:00:39:** to registrants and uploaded to utilize knowledge Finder platform.
**00:00:41 --> 00:00:44:** I'm also going to give you a few takeaways from
**00:00:44 --> 00:00:46:** the the newest report, waterwise.
**00:00:47 --> 00:00:51:** It introduces the challenges and opportunities associated with drought and
**00:00:51 --> 00:00:55:** limited freshwater availability and provides best practices for real estate
**00:00:55 --> 00:00:59:** and land use professionals to address them. The report includes
**00:00:59 --> 00:01:02:** the science behind the increasing prevalence of drought and its
**00:01:02 --> 00:01:06:** impacts, the business case for water smart development, and landscaping
**00:01:06 --> 00:01:11:** strategies for addressing them through water, smart development, and landscaping.
**00:01:12 --> 00:01:16:** Public sector policies and and practices that can support responsible
**00:01:16 --> 00:01:20:** water use and profiles of water. Smart developments and

their
**00:01:20 --> 00:01:23:** outcomes. We encourage you to download the report from our
**00:01:23 --> 00:01:26:** Knowledge Finder website and we'll put the link to the
**00:01:26 --> 00:01:27:** report in the chat.
**00:01:29 --> 00:01:32:** So why does being water wise matter the frequency, intensity
**00:01:32 --> 00:01:36:** and duration of droughts are increasing, leading to a myriad
**00:01:36 --> 00:01:40:** of issues, including regional wildfires, and this pattern is expected
**00:01:40 --> 00:01:43:** to continue with climate change. As you can see from
**00:01:43 --> 00:01:45:** the maps on the side, over half of the world's
**00:01:45 --> 00:01:48:** population faces water scarcity at least part of the year,
**00:01:49 --> 00:01:52:** including the United States. With the combination of water scarcity,
**00:01:52 --> 00:01:56:** population growth and water quality issues, many communities are beginning
**00:01:57 --> 00:01:59:** to forecast an inability to accommodate.
**00:01:59 --> 00:02:02:** Future water needs some of these communities are halting real
**00:02:02 --> 00:02:06:** estate development and others are requiring that developers acquire their
**00:02:06 --> 00:02:09:** own water supplies, which is getting increasingly expensive.
**00:02:11 --> 00:02:14:** The good news is that investing in water efficiency and
**00:02:14 --> 00:02:18:** conservation measures at the site scale mitigates the risk of
**00:02:18 --> 00:02:22:** water shortages, policy changes, and rising water prices, and garners
**00:02:22 --> 00:02:26:** water and energy cost savings providing long term value to
**00:02:26 --> 00:02:30:** owners and investors upfront. Investment in water and energy efficiency
**00:02:30 --> 00:02:34:** measures increases asset value, and it's important to note the
**00:02:34 --> 00:02:36:** water use uses a lot of energy, so the two
**00:02:36 --> 00:02:37:** are linked.
**00:02:38 --> 00:02:42:** Consumers are increasingly showing a preference for water efficient fixtures,
**00:02:43 --> 00:02:47:** appliances, buildings and landscapes, especially in drought prone regions. So
**00:02:47 --> 00:02:50:** it's just a smart decision for business.
**00:02:52 --> 00:02:55:** The overall lessons learned from the best practices in this
**00:02:55 --> 00:02:58:** report are that saving water saves money and generates long
**00:02:58 --> 00:03:01:** term value for real estate assets, communities and the environment.
**00:03:01 --> 00:03:05:** By working together on water conservation efficiency and reuse, we
**00:03:05 --> 00:03:09:** can protect our water future. Despite protected water

shortages, population
**00:03:09 --> 00:03:10:** increases and climate change.
**00:03:11 --> 00:03:14:** So with that, I'll introduce our speakers today. The first
**00:03:14 --> 00:03:18:** is Lee Ferguson, the senior vice president with Trammell Crow
**00:03:18 --> 00:03:21:** Company, followed by Greg Dorliak, principal with Bank Associates and
**00:03:21 --> 00:03:25:** finally Waiverly Claw director of resilient Communities and watersheds with
**00:03:25 --> 00:03:28:** the Sonoran Institute. With that, I'll turn it over to
**00:03:28 --> 00:03:29:** Lee.
**00:03:31 --> 00:03:34:** All right, thanks for that Mary Ann. And yeah, great
**00:03:34 --> 00:03:37:** to be with everyone today. It's an important topic. You
**00:03:37 --> 00:03:40:** know Greg and Waverly. They're going to be tough to
**00:03:40 --> 00:03:43:** follow. So kind of grateful to be going first to
**00:03:43 --> 00:03:46:** be honest, but looking forward to their, you know, follow-up
**00:03:46 --> 00:03:49:** in the conversation as well, Mary, we can go to
**00:03:49 --> 00:03:52:** the next slide, you know, as as Marion mentioned, I'm
**00:03:52 --> 00:03:55:** a developer with Trammell Crow Company. I'm based in Denver,
**00:03:55 --> 00:03:58:** Co and and our business unit really focuses on the
**00:03:58 --> 00:04:00:** state of Colorado and the state of Utah.
**00:04:01 --> 00:04:04:** You know Trammell Crow Company as a whole? We really
**00:04:04 --> 00:04:06:** cover the entire lower 48 as well as Europe.
**00:04:08 --> 00:04:10:** And you know, I wanted to kind of introduce some
**00:04:10 --> 00:04:13:** of the things we build just for perspective on, you
**00:04:13 --> 00:04:16:** know, kind of where I'm coming from when I talk
**00:04:16 --> 00:04:19:** about water wise development. I'm also going to talk about
**00:04:19 --> 00:04:22:** some best practices from the development side. We've got a
**00:04:22 --> 00:04:26:** case study of the Denver Water Operations Campus, which is
**00:04:26 --> 00:04:29:** a project we recently completed as an owners representative. And
**00:04:29 --> 00:04:33:** then you know, if there's time, definitely some lessons learned,
**00:04:33 --> 00:04:36:** you know. So we're a multi product type developer and
**00:04:36 --> 00:04:38:** you know, within that we really focus on.
**00:04:38 --> 00:04:43:** Office Industrial Life sciences and multifamily. As our core markets,
**00:04:43 --> 00:04:47:** we've got about $30 billion either underway or in the
**00:04:47 --> 00:04:50:** pipeline. In terms of, you know, sort of, Class A
**00:04:50 --> 00:04:56:** development and, and we're really approaching sustainability. You know, across
**00:04:56 --> 00:04:58:** all product types where we can.

**00:04:59 --> 00:05:02:** So Marianne, if you advance, we'll we'll just talk about,
**00:05:02 --> 00:05:05:** you know, some of the best practices here and. And
**00:05:05 --> 00:05:07:** you know, when I when I think about water wise
**00:05:07 --> 00:05:10:** development, there were really 4 categories that I thought we
**00:05:10 --> 00:05:11:** should highlight.
**00:05:12 --> 00:05:15:** And with the key idea around all of those being
**00:05:15 --> 00:05:20:** integrating strategies as early in the design as possible, we
**00:05:20 --> 00:05:23:** we really find that to be a value add to
**00:05:23 --> 00:05:28:** all parties. You know where we get our sustainability strategy
**00:05:28 --> 00:05:30:** outlined early, so you know.
**00:05:31 --> 00:05:34:** Really, the the first character I want to talk about
**00:05:34 --> 00:05:37:** would be water efficiency and and I think the positive
**00:05:37 --> 00:05:40:** thing here about this category is is that's something that
**00:05:40 --> 00:05:43:** we probably already all know what this means and we
**00:05:43 --> 00:05:46:** see it in practice. You know, in our homes and
**00:05:46 --> 00:05:49:** our buildings it's fairly commonplace and and that's you know
**00:05:49 --> 00:05:53:** that's a good thing. So install fixtures that lower water
**00:05:53 --> 00:05:56:** consumption, specify lead free, you know, really everything, and then
**00:05:57 --> 00:06:00:** you know we're possible. We'll also specify hands-free fixtures as
**00:06:00 --> 00:06:01:** well.
**00:06:01 --> 00:06:04:** I think this first category is essentially the norm for
**00:06:04 --> 00:06:07:** any Class A project built in our market. The next
**00:06:07 --> 00:06:10:** is greywater. So the idea of reusing captured or recycled
**00:06:10 --> 00:06:13:** water for non potable requirements. So the water recycling system
**00:06:13 --> 00:06:16:** at number water, which we're going to look at a
**00:06:16 --> 00:06:19:** little bit later and you know my presentation, that functions
**00:06:19 --> 00:06:23:** by collecting the buildings, wastewater and cleaning it through a
**00:06:23 --> 00:06:26:** series of natural and mechanical processes and then that treated
**00:06:27 --> 00:06:30:** water is used for toilet flushing and irrigation. So just
**00:06:30 --> 00:06:32:** one example of how you know we've.
**00:06:32 --> 00:06:35:** Interacted with Gray water on our projects, next ecology and
**00:06:35 --> 00:06:38:** and you know Greg is going to cover this. This
**00:06:38 --> 00:06:41:** idea of what you know, much better detail than I
**00:06:41 --> 00:06:45:** would, but just the idea of water efficient landscaping. And,
**00:06:45 --> 00:06:48:** you know, we're really talking about the full system here.
**00:06:48 --> 00:06:53:** Plants, soils, irrigation and then getting facilities and operators of
**00:06:53 --> 00:06:56:** these assets involved in the process as early as possible

**00:06:56 --> 00:06:59:** so they understand you know how to you know. Take
**00:06:59 --> 00:07:02:** care and carry these these systems forward.
**00:07:02 --> 00:07:06:** And then lastly stormwater. So implementing measures that can reduce
**00:07:06 --> 00:07:09:** runoff. So we have a project 1700 plat which had
**00:07:09 --> 00:07:12:** an image of on the previous slide, just in. As
**00:07:12 --> 00:07:15:** an example, this is an office building we developed. We
**00:07:15 --> 00:07:19:** diverted rainwater and we treated it through a courtyard garden
**00:07:19 --> 00:07:22:** before it was released into the Platte River here in
**00:07:22 --> 00:07:26:** Denver. And that solution created an open space amenity and
**00:07:26 --> 00:07:29:** it eliminated the need for additional capacity in the city
**00:07:29 --> 00:07:32:** storm system. So you know, really kind of the wrap
**00:07:32 --> 00:07:33:** this.
**00:07:33 --> 00:07:36:** Slide there's creative ways to you know. Deal with all
**00:07:36 --> 00:07:40:** four of these categories and we look for those in
**00:07:40 --> 00:07:43:** in our projects. So maybe we go to the next
**00:07:43 --> 00:07:43:** one.
**00:07:44 --> 00:07:47:** So just wanted to use Denver Water. As you know
**00:07:47 --> 00:07:49:** a case study and a walk through some of these
**00:07:49 --> 00:07:52:** best practices. So this was a multi phase.
**00:07:53 --> 00:07:57:** Campus redevelopment that we began master planning in 2012 and
**00:07:57 --> 00:08:02:** that was followed by several years of construction that kicked
**00:08:02 --> 00:08:05:** off in 2015 and and and ended in late 2020.
**00:08:05 --> 00:08:09:** The project team redeveloped a 36 acre site that had
**00:08:09 --> 00:08:13:** been continuously operated by Denver Water for more than 130
**00:08:13 --> 00:08:16:** years. So just as a as a whole the the
**00:08:16 --> 00:08:20:** the program really had some of the most aggressive sustainability
**00:08:20 --> 00:08:22:** goals in the region.
**00:08:23 --> 00:08:26:** LEED Platinum designation for the building you're seeing here, the
**00:08:26 --> 00:08:30:** administration building, along with net, zero energy performance, and that
**00:08:30 --> 00:08:33:** was accomplished through on site solar along with a highly
**00:08:33 --> 00:08:34:** efficient central plant, but.
**00:08:35 --> 00:08:39:** Beyond the energy management, it really operates on the leading
**00:08:39 --> 00:08:42:** edge of water management as well. There's on site water
**00:08:43 --> 00:08:46:** recycling and and water capture, and that's utilized for both
**00:08:46 --> 00:08:50:** on site irrigation as well as toilet flushing. And what

**00:08:50 --> 00:08:54:** was really neat about this project is these were incorporated
**00:08:54 --> 00:08:57:** for the first time in Colorado and you know, I
**00:08:57 --> 00:09:00:** know, Denver Water really looks at this as a as
**00:09:00 --> 00:09:03:** a pilot case and and case study for future developments
**00:09:03 --> 00:09:05:** to implement this idea of 1.
**00:09:05 --> 00:09:08:** Water solutions next slide.
**00:09:10 --> 00:09:13:** So this idea of 1 water, right? So to to
**00:09:13 --> 00:09:17:** us one water means using the most appropriate source of
**00:09:17 --> 00:09:21:** water for each water use. So really non potable water
**00:09:21 --> 00:09:24:** sources for non potable uses. And so the campus had
**00:09:24 --> 00:09:28:** a series of objectives to really meet that overarching goal.
**00:09:28 --> 00:09:33:** You know, number one, separate potable and non potable demand
**00:09:33 --> 00:09:37:** and really treat potable water is a precious resource. Develop
**00:09:37 --> 00:09:40:** non potable water sources. So this idea.
**00:09:40 --> 00:09:44:** Rainwater and graywater and Blackwater and and how do these
**00:09:44 --> 00:09:49:** interact with the project site? Really integrate stormwater best practices.
**00:09:51 --> 00:09:55:** Practice this idea of water conservation through fixture selection and
**00:09:55 --> 00:09:59:** and design choices, and then this kind of overarching idea
**00:09:59 --> 00:10:02:** of potable water through utility. Next slide.
**00:10:04 --> 00:10:07:** And so this this graphic is really a site plan
**00:10:07 --> 00:10:11:** of the campus redevelopment along with some of the strategies
**00:10:11 --> 00:10:12:** that we're used to.
**00:10:13 --> 00:10:18:** You know, implement the the overall water objective so rainwater
**00:10:18 --> 00:10:24:** harvesting low flow plumbing fixtures incorporated throughout a campus landscaping
**00:10:24 --> 00:10:29:** plan, including natural plants, short grass, Prairie, porous paving, and
**00:10:29 --> 00:10:33:** then it's labeled as eco machine. But the the water
**00:10:33 --> 00:10:36:** recycling system you know plays a big role in this
**00:10:36 --> 00:10:40:** and and again, you know I'm going to say this
**00:10:40 --> 00:10:44:** several times. I think there's presentation, but just this idea
**00:10:44 --> 00:10:44:** of.
**00:10:44 --> 00:10:48:** Non potable water for non potable uses do not use
**00:10:48 --> 00:10:52:** potable water where there's a non potable alternative and reduce
**00:10:52 --> 00:10:56:** as much as possible the water demand and and discharges
**00:10:56 --> 00:11:00:** to the environment through recovery and and reuse go the
**00:11:00 --> 00:11:01:** next slide.

**00:11:02 --> 00:11:06:** This is a diagram of the administration building and and
**00:11:06 --> 00:11:10:** some of the approaches used in that building, so again,
**00:11:10 --> 00:11:12:** you know low flow fixtures.
**00:11:14 --> 00:11:18:** You know, really commonplace and and Class A developments, but
**00:11:18 --> 00:11:21:** a critical, you know planning tool to use. And that's
**00:11:21 --> 00:11:25:** not just in the the restrooms but also cafeterias. And
**00:11:25 --> 00:11:29:** you know, fitness areas and anywhere where you're you're using
**00:11:29 --> 00:11:30:** water.
**00:11:31 --> 00:11:35:** The the water recycling system or the eco machine. The
**00:11:35 --> 00:11:39:** treatment system that you know that serves irrigation purposes or
**00:11:39 --> 00:11:44:** can be back flowed for toilet flushing. Rainwater capture also
**00:11:44 --> 00:11:49:** used for landscape, irrigation, irrigation and then there's a potable
**00:11:49 --> 00:11:53:** water backup system. If these systems were to go offline,
**00:11:53 --> 00:11:56:** but the idea is that that those aren't used for
**00:11:56 --> 00:12:00:** any non potable uses, go to the next slide.
**00:12:02 --> 00:12:05:** So just a quick focus on the WRS.
**00:12:06 --> 00:12:10:** So it's at Umm I want to highlight this image.
**00:12:10 --> 00:12:14:** This is the interior of the administration building and one
**00:12:14 --> 00:12:18:** design choice that Denver water made and which I think
**00:12:18 --> 00:12:23:** is really successful, is they're showcasing the final treatment station
**00:12:23 --> 00:12:26:** in the interior of the lobby. This could all have
**00:12:26 --> 00:12:30:** been, you know, back a house out of sight, but
**00:12:30 --> 00:12:34:** they're they're showcasing the final polishing wetland and and using
**00:12:34 --> 00:12:37:** that to really educate the public who.
**00:12:37 --> 00:12:42:** Accesses this building is a series of of treatment tanks,
**00:12:42 --> 00:12:48:** both mechanical and natural, that treat the influent wastewater and
**00:12:48 --> 00:12:48:** and.
**00:12:49 --> 00:12:51:** Gets it to a stage where it can be reused
**00:12:51 --> 00:12:55:** for for toilet flushing and and for irrigation and then
**00:12:55 --> 00:12:58:** next slide. Then I'll just wrap up with some lessons
**00:12:58 --> 00:13:00:** learned from, you know, some of our development.
**00:13:01 --> 00:13:05:** Developments at large. You know these projects are becoming more
**00:13:05 --> 00:13:09:** and more complicated and we we really find that the
**00:13:09 --> 00:13:13:** right design team along with early pre construction design assist
**00:13:13 --> 00:13:17:** has been critical to successful outcomes. So I'm just

showcasing
**00:13:17 --> 00:13:21:** you know the project team on Denver Water. Of course
**00:13:21 --> 00:13:24:** you know, Denver Water was a huge driver of the
**00:13:24 --> 00:13:28:** strategies implemented here and but Stantec the project architect did
**00:13:28 --> 00:13:31:** a great job managing a really complicated team.
**00:13:32 --> 00:13:36:** Mortensen, the general contractor, and more than you know 195
**00:13:36 --> 00:13:40:** Subs who in many cases were we're dealing with technologies
**00:13:40 --> 00:13:44:** that they weren't familiar with, but who you know did
**00:13:44 --> 00:13:48:** an outstanding job implementing these solutions. And we found as
**00:13:48 --> 00:13:51:** an owner and as an owner's Rep that there's really
**00:13:51 --> 00:13:55:** no one-size-fits-all solution. We try to be open to ideas,
**00:13:55 --> 00:13:58:** but you know, of course, conduct due diligence to to
**00:13:58 --> 00:14:02:** settle on the right path forward for that specific opportunity.
**00:14:03 --> 00:14:06:** I think the third bullet point here is one of
**00:14:06 --> 00:14:11:** the most critical, and that's to involve facilities and property
**00:14:11 --> 00:14:16:** management. In these sustainable initiatives during design before they're implemented.
**00:14:16 --> 00:14:20:** Because once you turn over a building, if it's not
**00:14:20 --> 00:14:21:** maintained.
**00:14:22 --> 00:14:24:** And in the way that sort of the design set
**00:14:24 --> 00:14:27:** out to maintain it. Then you're not capturing all the
**00:14:27 --> 00:14:30:** efficiencies that you set out to capture. And then that
**00:14:30 --> 00:14:32:** all kind of leads into the.
**00:14:33 --> 00:14:37:** Concluding point here that you know these, these high performance
**00:14:37 --> 00:14:40:** properties, can you know are sound investments and we found
**00:14:40 --> 00:14:44:** them to lower utility bills to improve, improve tenant retention.
**00:14:44 --> 00:14:47:** And you know to to frankly juice the NOI when
**00:14:47 --> 00:14:51:** executed correctly and you know, we we're we're constantly looking
**00:14:51 --> 00:14:55:** for opportunities to incorporate those in our project, so I'll
**00:14:55 --> 00:14:58:** turn it. I'll turn it back over and look forward
**00:14:58 --> 00:14:59:** to the discussion.
**00:15:07 --> 00:15:07:** Thanks, Lee.
**00:15:10 --> 00:15:13:** Let's see here. I'm trying to start the video and.
**00:15:21 --> 00:15:22:** Hello everyone.
**00:15:23 --> 00:15:27:** I'm Greg borlax. Thank you for having us this afternoon
**00:15:27 --> 00:15:31:** and joining us. We are a I'm a principal with
**00:15:31 --> 00:15:37:** Wink Associates. We are a landscape architecture firm in

Denver,
**00:15:37 --> 00:15:41:** Co. Celebrating our 40th year this year and I have
**00:15:42 --> 00:15:44:** been with the firm 20 years we.
**00:15:45 --> 00:15:49:** Practice all over the country doing work of similar to
**00:15:49 --> 00:15:52:** what you're going to see today, but most of the
**00:15:52 --> 00:15:54:** base of our work is in Denver, Co and the
**00:15:54 --> 00:15:57:** Front Range, and those will be the the projects will
**00:15:57 --> 00:15:58:** be showcasing today.
**00:15:59 --> 00:16:00:** Next slide.
**00:16:02 --> 00:16:06:** I'll start with some crude sketches of the hydrologic cycle
**00:16:06 --> 00:16:10:** that I think a lot of you understand. On the
**00:16:10 --> 00:16:14:** left is the the under Sterb landscape. You'll see rainfall
**00:16:14 --> 00:16:20:** and snow melt with undisturbed vegetation really feeds our stream
**00:16:20 --> 00:16:23:** and river corridors and recharges our groundwater.
**00:16:24 --> 00:16:28:** On the upper right is unfortunately what we've seen over
**00:16:28 --> 00:16:33:** decades of urbanization and development. What we call collective, convey,
**00:16:33 --> 00:16:34:** and dispose.
**00:16:35 --> 00:16:39:** Usually our urban environments are are trying to get water
**00:16:39 --> 00:16:43:** away from you know buildings, paving and and urban areas
**00:16:43 --> 00:16:47:** as fast as we possibly can, and we dispose of
**00:16:47 --> 00:16:51:** that water and our our stream and river corridors and
**00:16:51 --> 00:16:55:** really called cause great stress to those corridors and the
**00:16:55 --> 00:16:59:** repairing areas and the the health of our ecosystem. On
**00:16:59 --> 00:17:02:** the bottom is where we find a lot of really
**00:17:03 --> 00:17:05:** where we found our practice.
**00:17:05 --> 00:17:09:** And that's what we call, collect, convey, and disperse. And
**00:17:09 --> 00:17:14:** this is really thinking about landscape as infrastructure and its
**00:17:14 --> 00:17:19:** ability to utilize that precious resource, especially here in Colorado.
**00:17:20 --> 00:17:24:** Rain and snow melt to really enhance the the ecosystem
**00:17:24 --> 00:17:28:** of our corridors, but also urbanized watersheds. And how we
**00:17:28 --> 00:17:34:** can look at creating beautiful landscapes within the urban environment
**00:17:34 --> 00:17:34:** as well.
**00:17:35 --> 00:17:36:** So next slide.
**00:17:37 --> 00:17:40:** So I'm going to show you 3 projects here in
**00:17:40 --> 00:17:44:** the the Colorado in the Denver area. The first is
**00:17:44 --> 00:17:48:** the taxi development that we begin almost 20 years ago.
**00:17:48 --> 00:17:52:** Planning this and this is in the River North District
**00:17:52 --> 00:17:56:** of Denver. When we started planning this, this was the

**00:17:56 --> 00:18:00:** outskirts of Denver and today it's a really happening. Really
**00:18:00 --> 00:18:04:** cool mixed-use area for the city's next slide.
**00:18:06 --> 00:18:10:** On the left, where the first phases of development, it
**00:18:10 --> 00:18:13:** was a new the bar building, a new mixed-use development
**00:18:13 --> 00:18:17:** along with the rehab of the creative reuse for office
**00:18:17 --> 00:18:20:** of the old Taxi Dispatch Center and what you're starting
**00:18:20 --> 00:18:23:** to see adjacent to the river are what we were
**00:18:23 --> 00:18:27:** calling green fingers at the time, and they were these
**00:18:27 --> 00:18:31:** linear filter strips that would treat and manage storm water
**00:18:31 --> 00:18:33:** as it fell in the site. Clean it and and
**00:18:33 --> 00:18:36:** really create that as a a landscape.
**00:18:36 --> 00:18:38:** An approach, it was one of the first of, you
**00:18:38 --> 00:18:41:** know at that time we were calling these porous landscape
**00:18:41 --> 00:18:44:** detention areas. I think you know them as bioswales now,
**00:18:44 --> 00:18:47:** or that's what they're referred to as now.
**00:18:48 --> 00:18:51:** On the right is what you're saying over the the
**00:18:51 --> 00:18:54:** last 15 years or so the expansion of the taxi
**00:18:54 --> 00:18:55:** campus.
**00:18:56 --> 00:19:00:** Which is now 30 acres and nine buildings. But how
**00:19:00 --> 00:19:04:** that strategy from almost 20 years ago has sort of
**00:19:04 --> 00:19:08:** permeated and and driven the landscape and and approach to
**00:19:08 --> 00:19:11:** to stormwater reuse on that site.
**00:19:12 --> 00:19:12:** So next slide.
**00:19:14 --> 00:19:19:** Important to this strategy is to really spread water out.
**00:19:20 --> 00:19:23:** And Umm, at taxi we were able, even though it's
**00:19:23 --> 00:19:26:** a very flat site on the left. What you're seeing
**00:19:26 --> 00:19:30:** is a a chaser, a runnel on that development site
**00:19:30 --> 00:19:34:** we have no storm pipe. We're we're. We're spreading water
**00:19:34 --> 00:19:38:** out through sheep flow into these natural landscapes, or like
**00:19:38 --> 00:19:43:** this. They're carrying a very shallow chase. And what that
**00:19:43 --> 00:19:46:** does is it keeps our ponding depths very minimal and
**00:19:46 --> 00:19:50:** that allows us to sustain broader ranges of landscape.
**00:19:50 --> 00:19:54:** Types and landscape types that will do that. The treatment
**00:19:54 --> 00:19:56:** that we're looking for when you look at ponds, you
**00:19:56 --> 00:20:00:** know traditional detention ponds. Usually they're 6-7 feet deep and
**00:20:00 --> 00:20:03:** and the ponding starts stacking and there's just not a
**00:20:03 --> 00:20:06:** lot of plants that can sustain that sort of environment.
**00:20:07 --> 00:20:09:** So on the left you're seeing a chase on the
**00:20:09 --> 00:20:12:** right. What you're seeing is, you know, immediately off the
**00:20:12 --> 00:20:16:** building you could see the downspouts running down into what

**00:20:16 --> 00:20:17:** is a a treatment.
**00:20:18 --> 00:20:21:** Garden here, immediately adjacent to the building.
**00:20:22 --> 00:20:23:** Next slide.
**00:20:25 --> 00:20:28:** On the lower right, you're seeing the the first phase
**00:20:28 --> 00:20:32:** and the old taxi dispatch the the garage doors that
**00:20:32 --> 00:20:36:** opened right onto these landscapes and what we started finding
**00:20:36 --> 00:20:39:** out from the developer was that the leasing rates for
**00:20:39 --> 00:20:44:** the ground floor were actually going higher. We're we're higher
**00:20:44 --> 00:20:47:** than what we're upper stores of the office that have
**00:20:47 --> 00:20:51:** mountain and and downtown views and so on. The left
**00:20:51 --> 00:20:55:** through more recent developments, you know, we started doing green
**00:20:55 --> 00:20:57:** roofs and garage doors.
**00:20:57 --> 00:21:00:** Been up on the 3rd, 4th and 5th and 6th
**00:21:00 --> 00:21:01:** stories of of.
**00:21:02 --> 00:21:05:** The of of new buildings. So really, the idea of
**00:21:05 --> 00:21:10:** really opening up right onto landscape or having landscape coming
**00:21:10 --> 00:21:14:** into the office environment or residential environments. It is a
**00:21:14 --> 00:21:18:** huge sort of driver of of the development and the
**00:21:18 --> 00:21:21:** aesthetic and and naturalization of this area.
**00:21:24 --> 00:21:25:** With taxi.
**00:21:26 --> 00:21:27:** Next slide.
**00:21:28 --> 00:21:30:** Taxi having been over.
**00:21:31 --> 00:21:35:** Almost being able to to to watch it and be
**00:21:35 --> 00:21:38:** a lab of the last 15 years really has been
**00:21:38 --> 00:21:42:** hugely beneficial to the firm and the city to to
**00:21:42 --> 00:21:43:** see how that monitors.
**00:21:44 --> 00:21:47:** And how it's working, it's it's really shown as a
**00:21:47 --> 00:21:50:** proof of concept that I think our firm in the
**00:21:50 --> 00:21:52:** last decade or so is really starting to to see
**00:21:53 --> 00:21:55:** the benefits. This is not on a site by site
**00:21:55 --> 00:21:59:** scale, but a more district scale approach to infrastructure, landscape,
**00:21:59 --> 00:22:00:** infrastructure.
**00:22:01 --> 00:22:04:** And so this is a recently developed Rhino Art Park
**00:22:04 --> 00:22:08:** and promenade. St same district, but this is a public
**00:22:08 --> 00:22:10:** project through Denver Parks. Next slide.
**00:22:12 --> 00:22:15:** And So what you're seeing on the upper right, there
**00:22:15 --> 00:22:17:** is the first phase of the plan, with a four
**00:22:17 --> 00:22:19:** acre park along the river.

**00:22:20 --> 00:22:23:** And then a conversion of a public St into a
**00:22:23 --> 00:22:26:** linear park. And while we were planning this about five
**00:22:26 --> 00:22:30:** years ago, I highlight the the image on the upper
**00:22:30 --> 00:22:34:** left because we were also doing sort of green infrastructure
**00:22:34 --> 00:22:38:** strategies in the right away for Brighton Blvd and these
**00:22:38 --> 00:22:41:** were filter strips and and planters.
**00:22:42 --> 00:22:45:** Brighton Blvd is just off off the map here this
**00:22:45 --> 00:22:49:** page, but unfortunately with you know, bike lanes, parking traffic
**00:22:50 --> 00:22:53:** all the needs within a right of way. It couldn't
**00:22:53 --> 00:22:56:** manage all the storm water and that's where the park
**00:22:56 --> 00:23:00:** and the promenade really came in. It's all downstream of
**00:23:00 --> 00:23:03:** this district and so the parking promenade became a huge
**00:23:03 --> 00:23:06:** filter strip for lack of a better team. Back of
**00:23:07 --> 00:23:10:** lack of a better word for the entire district so
**00:23:10 --> 00:23:11:** that we could capture.
**00:23:12 --> 00:23:16:** Overland flow runoff storm runoff that's coming through the district
**00:23:16 --> 00:23:19:** within the the park and the promenade. So what you're
**00:23:19 --> 00:23:22:** seeing on the bottom is that strategy. Almost every planting
**00:23:22 --> 00:23:25:** area other than the small area of the the the
**00:23:25 --> 00:23:28:** turf is functioning to to manage stormwater and treat that
**00:23:28 --> 00:23:31:** stormwater before it gets to the South Platte River.
**00:23:32 --> 00:23:33:** Next slide.
**00:23:36 --> 00:23:39:** So on the left we had old buildings on on
**00:23:39 --> 00:23:43:** the site. This is a a garden courtyard that's going
**00:23:43 --> 00:23:46:** to be next to a library and a new coffee
**00:23:46 --> 00:23:50:** shop and and food and beverage. This is really the
**00:23:50 --> 00:23:54:** the development of the courtyard and they're surrounded by the
**00:23:54 --> 00:23:59:** native landscape. On the right is a slightly larger bioswale
**00:23:59 --> 00:24:03:** that again treats in in and manages runoff from from
**00:24:03 --> 00:24:04:** the entire district.
**00:24:05 --> 00:24:06:** Next slide.
**00:24:09 --> 00:24:11:** This is an area of the promenade. This is called
**00:24:11 --> 00:24:14:** the the what you're looking at is the gangway and
**00:24:14 --> 00:24:17:** and this is a a linear walkway and boardwalk that
**00:24:17 --> 00:24:20:** gets you up to see the city gets you over
**00:24:20 --> 00:24:23:** the river. But all the landscape beneath there is functioning
**00:24:24 --> 00:24:26:** to to treat manage stormwater quality next slide.
**00:24:28 --> 00:24:31:** This is still a little bit raw. It actually opens
**00:24:31 --> 00:24:34:** tomorrow, officially so on the left you see sort of
**00:24:34 --> 00:24:37:** the under the gangway, some of the planting, and just

**00:24:37 --> 00:24:41:** the development that's happening through the the rhino district. And

**00:24:41 --> 00:24:44:** how this strategy is is just a wonderful amenity for

**00:24:44 --> 00:24:45:** the the neighborhood.

**00:24:47 --> 00:24:48:** Next slide.

**00:24:50 --> 00:24:53:** And then lastly, I'll talk about the River Mile redevelopment.

**00:24:53 --> 00:24:54:** Umm?

**00:24:55 --> 00:24:58:** This is in downtown Denver. It's it's a 60 acre

**00:24:58 --> 00:25:02:** redevelopment of the old Elitch Garden site. This is very

**00:25:02 --> 00:25:06:** high density right along the the river and you'll see

**00:25:06 --> 00:25:11:** some of these district strategies. Landscape strategies come together next

**00:25:11 --> 00:25:12:** slide.

**00:25:13 --> 00:25:17:** What you're seeing here is an illustrative plan on the

**00:25:17 --> 00:25:20:** left and at the time we were planning this. We

**00:25:20 --> 00:25:23:** were also lucky enough to be the river corridor planner

**00:25:23 --> 00:25:28:** for what's called the urban Waterways Restoration study, and that

**00:25:28 --> 00:25:30:** was looking at the seven miles of the of the

**00:25:31 --> 00:25:34:** Plat corridor and looking at restoration of that. So while

**00:25:34 --> 00:25:37:** we were doing both of these at the same time,

**00:25:37 --> 00:25:40:** it it really was was unique to to see how

**00:25:40 --> 00:25:43:** an Urban Development could assist in the restoration of.

**00:25:44 --> 00:25:47:** Of the South plant, so the right is the strategy

**00:25:47 --> 00:25:52:** around that, and it's looking at podium level green roofs.

**00:25:52 --> 00:25:57:** And then how infiltrating streets could in effect really feed

**00:25:57 --> 00:26:01:** the restoration feed water to the South Platte clean water

**00:26:01 --> 00:26:06:** in the treated water that would then restore the the

**00:26:06 --> 00:26:09:** S Platte ecosystem. And and so next slide.

**00:26:10 --> 00:26:14:** This comes together in this sort of crude cross section,

**00:26:14 --> 00:26:18:** right? How rainfall might come down through infiltrated streets and

**00:26:18 --> 00:26:21:** green roofs, and then how it could really enhance the

**00:26:22 --> 00:26:26:** riparian corridor. Water being so precious here, that this would

**00:26:26 --> 00:26:29:** be sort of sub irrigated for our repairing and wetland

**00:26:29 --> 00:26:32:** species along the corridor. Next slide.

**00:26:33 --> 00:26:36:** And then I think I'm ending just with some pretty

**00:26:36 --> 00:26:39:** pictures of of what the typical multimodal St would look

**00:26:39 --> 00:26:43:** like. What you're seeing are permeable pavers within the street,

**00:26:43 --> 00:26:46:** with also bioswales, and so how the the image of

**00:26:46 --> 00:26:50:** the street plays into the the restoration of the river.

**00:26:50 --> 00:26:50:** Next slide.
**00:26:53 --> 00:26:55:** We have a key Plaza, you know our our big
**00:26:55 --> 00:26:59:** open space right along the river for festivals and what
**00:26:59 --> 00:27:02:** you're seeing are these green filter strips that really go
**00:27:02 --> 00:27:06:** perpendicular back from the river. So these would be treatment
**00:27:06 --> 00:27:07:** strips that then we could.
**00:27:09 --> 00:27:11:** You know, send run off to and and they would
**00:27:11 --> 00:27:13:** be treated on their way to the river.
**00:27:14 --> 00:27:17:** And then lastly, the last image is a lot of
**00:27:17 --> 00:27:20:** the the river mile. It's a corridor will be more
**00:27:20 --> 00:27:25:** naturalized like this. And and you're seeing the benefits of
**00:27:25 --> 00:27:28:** an urban redevelopment and how it can work in in
**00:27:28 --> 00:27:32:** concert with the large goals of the River restoration as
**00:27:32 --> 00:27:32:** well.
**00:27:39 --> 00:27:43:** Right, that was wonderful Greg. And those were certainly beautiful
**00:27:44 --> 00:27:44:** illustrations.
**00:27:46 --> 00:27:49:** Hi everyone, it's I'm not sure if you can see
**00:27:49 --> 00:27:53:** me quite yet. Spotlight will probably show up in a
**00:27:53 --> 00:27:56:** moment, but it's great to be with you today.
**00:27:57 --> 00:28:00:** My name is Waverly Claw and maybe I'll just pause
**00:28:00 --> 00:28:03:** for a moment. Mo if you could. Oh perfect, you're
**00:28:03 --> 00:28:06:** I am my name is Waverly claw. I'm the director
**00:28:07 --> 00:28:11:** of resilient communities and watersheds for the Sonoran Institute, and
**00:28:11 --> 00:28:16:** Sonoran Institute is a binational nonprofit organization that works in
**00:28:16 --> 00:28:20:** the western United States and in northern Mexico to connect
**00:28:20 --> 00:28:24:** people and communities to the natural resources that nourish and
**00:28:24 --> 00:28:27:** sustain them and Marianne. If you can go to the
**00:28:27 --> 00:28:28:** next slide.
**00:28:28 --> 00:28:28:** Please.
**00:28:29 --> 00:28:31:** So Umm.
**00:28:31 --> 00:28:36:** As Marianne mentioned in her introduction, the West is facing
**00:28:36 --> 00:28:41:** unprecedented challenges around water scarcity, water degradation, and the impacts
**00:28:42 --> 00:28:46:** of climate change and natural hazards on our communities. And
**00:28:46 --> 00:28:50:** to address these trends and be part of the solution,
**00:28:50 --> 00:28:54:** Sonoran Institute empowers staff and leaders in towns, cities and

**00:28:54 --> 00:28:58:** counties in the West to identify those water challenges and
**00:28:58 --> 00:29:02:** select and implement solutions to address them.
**00:29:02 --> 00:29:05:** And one of the ways that we do that is
**00:29:05 --> 00:29:08:** through a three day growing water smart workshop.
**00:29:10 --> 00:29:14:** That addresses water and land use, and we also follow
**00:29:14 --> 00:29:19:** that up with technical assistance and support in partnership with
**00:29:19 --> 00:29:23:** the Babbitt Center for Land and Water Policy, and so
**00:29:23 --> 00:29:27:** that's the lens with which I'm coming from today.
**00:29:28 --> 00:29:29:** Next, slide Marianne.
**00:29:30 --> 00:29:33:** So I would say a major tenet of this work
**00:29:33 --> 00:29:38:** is really shifting the focus from supply side to demand
**00:29:38 --> 00:29:43:** side of water. We hear that community water providers are
**00:29:43 --> 00:29:48:** often focused on acquiring, treating and delivering the water necessary
**00:29:48 --> 00:29:54:** for their community residents and businesses to operate and grow
**00:29:54 --> 00:29:59:** and water infrastructure. We know and, you know, Greg mentioned
**00:29:59 --> 00:30:00:** some of this as well.
**00:30:01 --> 00:30:06:** Has traditionally focused on piping stormwater away from the built
**00:30:06 --> 00:30:11:** environment quickly and efficiently, but in order for communities to
**00:30:11 --> 00:30:16:** become more resilient to future trends around water, they have
**00:30:16 --> 00:30:20:** to focus their attention on the demand side. Or you
**00:30:20 --> 00:30:26:** know, reducing water demand through conservation using water more efficiently,
**00:30:26 --> 00:30:30:** reusing it and implementing nature based solutions.
**00:30:31 --> 00:30:32:** Next slide, please.
**00:30:33 --> 00:30:38:** So 1 barrier in implementing water wise approaches in the
**00:30:38 --> 00:30:42:** public sector are the silos that exist between the entities
**00:30:43 --> 00:30:47:** that are responsible for land use and water respectively. So
**00:30:47 --> 00:30:51:** you know, we hear this a lot. You know from
**00:30:51 --> 00:30:55:** one side you know we're land use planners in the
**00:30:55 --> 00:31:00:** Community Development Department. You know we don't have authority over
**00:31:00 --> 00:31:04:** water, we just manage the built environment.
**00:31:04 --> 00:31:05:** And development and growth.
**00:31:06 --> 00:31:09:** Or on the other side, you know we're a water
**00:31:09 --> 00:31:13:** provider. Our responsibility is to make sure we have the
**00:31:13 --> 00:31:17:** water and infrastructure to serve our area, and you know,
**00:31:17 --> 00:31:21:** we don't have a role in land use decisions that

**00:31:21 --> 00:31:26:** the local government makes. However, once stakeholders from both arenas

**00:31:26 --> 00:31:30:** as well as elected and appointed officials and those involved

**00:31:30 --> 00:31:35:** in economic development, parks and conservation districts, once everyone comes

**00:31:36 --> 00:31:36:** together.

**00:31:36 --> 00:31:42:** And they have concerted conversations about how collaboration can result

**00:31:42 --> 00:31:47:** in water conservation and watershed protection. They begin down the

**00:31:47 --> 00:31:52:** road of building a more resilient community. Next, slide Marion.

**00:31:54 --> 00:31:59:** So water resilient communities don't only reduce their water demand.

**00:31:59 --> 00:32:03:** You know. While that's a major focus of communities in

**00:32:03 --> 00:32:08:** the water scarce West, especially leaders and staff, can also

**00:32:08 --> 00:32:13:** support their communities values and grow their economic base by

**00:32:13 --> 00:32:18:** making policy decisions that protect water for things like agriculture

**00:32:18 --> 00:32:23:** and environmental tourism. Being water smart can also afford.

**00:32:23 --> 00:32:29:** Support affordability helping keep the cost of water manageable for

**00:32:29 --> 00:32:35:** existing and future residents and businesses by fostering green infrastructure

**00:32:35 --> 00:32:37:** projects that work with nature.

**00:32:39 --> 00:32:43:** Implement policies that lessen how much land is being altered

**00:32:43 --> 00:32:48:** from its natural state. Communities can better prepare for the

**00:32:48 --> 00:32:53:** impacts of natural hazards such as flooding, wildfire, and drought.

**00:32:54 --> 00:32:58:** And then they can. Also, you know, support and enhance

**00:32:58 --> 00:33:03:** the ecosystems to ensure that the natural environment can continue

**00:33:03 --> 00:33:07:** to support human life, which is pretty critical next, slide

**00:33:07 --> 00:33:07:** Marianne.

**00:33:09 --> 00:33:12:** So you know to begin or keep moving down the

**00:33:12 --> 00:33:17:** path of water resilient communities. Sonoran Institute recommends kind of

**00:33:17 --> 00:33:21:** a seven step process that we employ during our growing

**00:33:21 --> 00:33:26:** water smart workshops and I'll go through these pretty briefly.

**00:33:26 --> 00:33:29:** You know the first is to really develop and and

**00:33:30 --> 00:33:35:** assemble an interdisciplinary team. Like I mentioned before, you need

**00:33:35 --> 00:33:39:** everyone at the table to have a conversation that better.

**00:33:39 --> 00:33:40:** Intergrades

**00:33:41 --> 00:33:46:** and use planning and development with water resource management.

**00:33:47 --> 00:33:50:** You know then you need to have all of those

**00:33:50 --> 00:33:55:** assembled individuals share their knowledge of current conditions around water

**00:33:55 --> 00:33:59:** and land use in the community. What's the projected growth

**00:33:59 --> 00:34:04:** of the community? What types of development applications are being

**00:34:04 --> 00:34:08:** seen and anticipated? Where's the water coming from? You know

**00:34:08 --> 00:34:13:** our additional supply projects projected and needed, and Sonoran Institute

**00:34:13 --> 00:34:17:** has a community self-assessment that helps aid in this process.

**00:34:17 --> 00:34:19:** And uncover some of those issues.

**00:34:20 --> 00:34:23:** And then you know the team really sets out to

**00:34:23 --> 00:34:28:** create goals that address those water challenges and then identifies

**00:34:28 --> 00:34:33:** opportunities for intervention points to help achieve those goals. And

**00:34:33 --> 00:34:37:** I would say the Urban Land Institute's new report identifies

**00:34:37 --> 00:34:42:** many of those opportunities for achieving water wise development.

**00:34:43 --> 00:34:48:** We then work with communities to develop a water smart

**00:34:48 --> 00:34:51:** message which may sound like it's the role of a

**00:34:51 --> 00:34:56:** communications expert, but it is really valuable for those sitting

**00:34:56 --> 00:35:01:** around the table developing the solutions to have a concise

**00:35:01 --> 00:35:06:** way to share that with other leadership decision makers and

**00:35:06 --> 00:35:10:** the public and and then finally the steps of establishing

**00:35:10 --> 00:35:13:** an action plan and implementing those.

**00:35:13 --> 00:35:17:** Actions that's critical to the success of the community, and

**00:35:17 --> 00:35:18:** so.

**00:35:19 --> 00:35:24:** During our growing water smart workshops, for example, teams spend

**00:35:24 --> 00:35:28:** several hours crafting a 12 month action plan that will

**00:35:28 --> 00:35:32:** guide them once they leave the workshop and then to

**00:35:32 --> 00:35:36:** help them implement those strategies we offer small grants to

**00:35:36 --> 00:35:39:** really get them going along that.

**00:35:39 --> 00:35:39:** Path.

**00:35:41 --> 00:35:45:** And to date, it's great to say that we've held,

**00:35:45 --> 00:35:50:** you know, over 10 workshops in Colorado and Arizona.
**00:35:51 --> 00:35:55:** With over 400 participants and you know over 20 post
**00:35:55 --> 00:36:01:** workshop projects, so communities really are moving forward whether they
**00:36:01 --> 00:36:06:** participated in growing water smart or not, to better integrate
**00:36:07 --> 00:36:12:** efficiency, conservation and reuse into their plans and programs. Next,
**00:36:12 --> 00:36:13:** slide Marian.
**00:36:14 --> 00:36:18:** So just want to talk a little bit about some
**00:36:18 --> 00:36:25:** of the opportunities for intervention points that local government land
**00:36:25 --> 00:36:30:** use planners have to integrate water into their plans and
**00:36:30 --> 00:36:33:** policies that the first toolbox is.
**00:36:35 --> 00:36:40:** About planning and visioning, you know for a sustainable future
**00:36:40 --> 00:36:45:** communities have to create those guiding plans that integrate land
**00:36:45 --> 00:36:49:** use planning with water resiliency goals. And you know those
**00:36:49 --> 00:36:55:** long range land use plans, often called comprehensive plans master
**00:36:55 --> 00:36:59:** plans. They have to establish the community values and goals
**00:36:59 --> 00:37:04:** around water that then sets the direction for implementation through
**00:37:05 --> 00:37:05:** land use.
**00:37:05 --> 00:37:07:** Codes and programs.
**00:37:08 --> 00:37:13:** The next toolbox is ensuring that the development has demonstrated
**00:37:13 --> 00:37:17:** that it has enough water to sustain it. Obviously the
**00:37:17 --> 00:37:19:** core tenet here is that.
**00:37:20 --> 00:37:23:** Communities cannot afford to build in a way that the
**00:37:24 --> 00:37:28:** next generation cannot sustain. We're seeing that pretty acutely in
**00:37:28 --> 00:37:29:** the Colorado River basin.
**00:37:31 --> 00:37:35:** And so you know it's it's important to determine adequate
**00:37:36 --> 00:37:41:** water supply. Think creatively about how communities can offer incentives
**00:37:42 --> 00:37:47:** like discounted tap fees in return for water conservation measures
**00:37:47 --> 00:37:51:** that were integrated into the design of the development.
**00:37:53 --> 00:37:57:** Or to potentially offset water demand from new development by
**00:37:58 --> 00:38:02:** using funds to retrofit existing development. The point is that
**00:38:02 --> 00:38:06:** there are a lot of creative opportunities that can be
**00:38:06 --> 00:38:10:** implemented once people come together and start talking

about what
**00:38:10 --> 00:38:13:** makes the most sense for their community.
**00:38:15 --> 00:38:20:** The third toolbox includes approaches for addressing sort of the
**00:38:20 --> 00:38:24:** urban form as well as outdoor water use and indoor
**00:38:24 --> 00:38:28:** water use in new development or redevelopment.
**00:38:30 --> 00:38:34:** Studies have shown that water demand goes down if you
**00:38:35 --> 00:38:40:** have smaller lots. Single family, residential and water use goes
**00:38:40 --> 00:38:47:** down with certain types of multi family residential development, largely
**00:38:47 --> 00:38:52:** due to the reduction in irrigated landscape area. So you
**00:38:52 --> 00:38:56:** know we can use our land use policies to identify
**00:38:56 --> 00:39:00:** opportunities for water wise landscaping.
**00:39:00 --> 00:39:00:** Umm?
**00:39:02 --> 00:39:07:** Increased density and zoning etcetera. So you know what can
**00:39:07 --> 00:39:11:** a community do in their land. Use codes and policies
**00:39:11 --> 00:39:15:** to incentivize and ensure that water wise growth occurs.
**00:39:17 --> 00:39:21:** The next opportunity is really using plans and policies to
**00:39:21 --> 00:39:23:** protect watershed health.
**00:39:25 --> 00:39:31:** The way that a community grows impacts water quality, stream
**00:39:31 --> 00:39:37:** habitat, and ecological health, so ensuring that there are policies
**00:39:37 --> 00:39:44:** in place that minimize pollution and erosion during development. Protect
**00:39:44 --> 00:39:51:** sensitive areas from development and also promote low impact development
**00:39:51 --> 00:39:55:** and green infrastructure to to better approach.
**00:39:55 --> 00:40:00:** Stormwater issues and increased infiltration can be really valuable.
**00:40:01 --> 00:40:04:** And then you know the public sector also has a
**00:40:04 --> 00:40:08:** role to play in supporting water conservation and efficiency in
**00:40:08 --> 00:40:14:** existing development by establishing programs that influence the attitudes and
**00:40:14 --> 00:40:19:** priorities of residents. Things like conservation oriented water rate structures.
**00:40:21 --> 00:40:27:** Offering programs and rebates that help people replace water thirsty
**00:40:27 --> 00:40:32:** fixtures and landscapes and also educating the community on their
**00:40:32 --> 00:40:35:** role and opportunities to.
**00:40:36 --> 00:40:39:** Participate in the water conservation efforts of the community.

**00:40:40 --> 00:40:44:** And so I just want to close by briefly sharing
**00:40:44 --> 00:40:50:** 2 examples of communities that have recently taken the initiative
**00:40:50 --> 00:40:54:** to reduce water. The first is the city of Evans,
**00:40:54 --> 00:40:58:** Co, which has a population of about 22,000 and is
**00:40:58 --> 00:41:04:** located in a heavily agricultural community in Northern Colorado. They're
**00:41:05 --> 00:41:10:** growing, but they're also constrained by their water supply and
**00:41:10 --> 00:41:10:** so.
**00:41:11 --> 00:41:16:** They took action and they established a water efficiency plan
**00:41:16 --> 00:41:21:** with goals around community water conservation and and then they
**00:41:21 --> 00:41:26:** took that extra step and translated those water efficiency plan
**00:41:26 --> 00:41:31:** goals into principles that were developed and included in the
**00:41:31 --> 00:41:36:** recent update of their comprehensive plan. So you know, notably,
**00:41:36 --> 00:41:40:** the goals of aligning city codes, zoning.
**00:41:41 --> 00:41:46:** Policies and development. With the water efficiency plan and and
**00:41:46 --> 00:41:51:** looking to use easements and acquisitions and other tools to
**00:41:51 --> 00:41:58:** protect watersheds. Really bridges that divide between water resource management
**00:41:58 --> 00:42:02:** and land use planning and then final slide. Marianne is
**00:42:02 --> 00:42:06:** Casa Grande, AZ. You know they are a community of
**00:42:06 --> 00:42:10:** about 55,000 who partnered with their water provider.
**00:42:11 --> 00:42:15:** The Arizona Water Company, following a growing water smart workshop
**00:42:15 --> 00:42:19:** to launch a new demand management program to reduce their
**00:42:19 --> 00:42:22:** water usage by 15%, and so they really worked to
**00:42:23 --> 00:42:28:** develop a public messaging campaign modeled after their community branding
**00:42:28 --> 00:42:32:** to reach the public about their goals and objectives and
**00:42:32 --> 00:42:36:** engage citizens in getting better involved. So I'm going to
**00:42:36 --> 00:42:39:** leave it there, Marianne, if you want to turn to
**00:42:39 --> 00:42:42:** the last slide, so we have some time.
**00:42:42 --> 00:42:45:** Q&A, But thanks so much for joining this discussion today
**00:42:45 --> 00:42:47:** and I'm happy to talk a little bit more about
**00:42:47 --> 00:42:49:** any of these examples.
**00:42:51 --> 00:42:54:** Thank you so much to all of our speakers. We're
**00:42:54 --> 00:42:56:** going to start the Q&A now and we encourage all
**00:42:56 --> 00:42:59:** the audience members to use the Q&A function to submit
**00:42:59 --> 00:43:00:** your questions.

**00:43:02 --> 00:43:04:** Pull some of these up.
**00:43:08 --> 00:43:11:** So we have a question from Nino. Wetland systems can
**00:43:11 --> 00:43:15:** often struggle in very arid climates. Precisely those areas where
**00:43:15 --> 00:43:20:** water efficiency is most critical. How can desert dwellers utilize
**00:43:20 --> 00:43:23:** a similar technology without risk of system failure?
**00:43:29 --> 00:43:32:** Sorry, I was on mute there I can. I can
**00:43:32 --> 00:43:35:** try to answer that and then you know Greg or
**00:43:35 --> 00:43:37:** Waverly. Please please add on but.
**00:43:38 --> 00:43:41:** First off, I think that's exactly right and and we
**00:43:41 --> 00:43:44:** you know, we we're. We try to be careful to
**00:43:44 --> 00:43:47:** have you know site specific solutions to these.
**00:43:48 --> 00:43:50:** Issues and so. Maybe that's not the right.
**00:43:51 --> 00:43:52:** Implementation for.
**00:43:53 --> 00:43:57:** You know a really arid climate we we actually had
**00:43:57 --> 00:44:02:** to introduce some supplemental humidity to the OR you know,
**00:44:02 --> 00:44:04:** dehumidification to the.
**00:44:05 --> 00:44:08:** Admin buildings lobby just to help with that and here
**00:44:08 --> 00:44:11:** in Colorado because we're, you know we're not Arizona but
**00:44:11 --> 00:44:14:** we we we have a, you know a dry climate
**00:44:14 --> 00:44:15:** as well. Umm, you know I think.
**00:44:16 --> 00:44:21:** That's a that that water recycling system is.
**00:44:22 --> 00:44:26:** A very specific implementation, right? We could not have been
**00:44:26 --> 00:44:29:** accomplished without Denver waters advocacy. We had to get state
**00:44:29 --> 00:44:33:** water law changed. We had to update several regulations. We
**00:44:33 --> 00:44:36:** had to change the plumbing code locally and it only
**00:44:36 --> 00:44:39:** applies to civic projects at this time in the city
**00:44:39 --> 00:44:40:** and County of Denver, so.
**00:44:41 --> 00:44:45:** You know we being a private developer could not implement
**00:44:45 --> 00:44:49:** that in a spec projects. Currently I think we focus
**00:44:49 --> 00:44:53:** more on those other buckets, water, efficiencies. You know the
**00:44:54 --> 00:44:58:** ecology solutions, how we approach landscape architecture and how we
**00:44:58 --> 00:45:02:** interact with stormwater. And you know, we try to have
**00:45:02 --> 00:45:05:** you know more than one kind of tool in the
**00:45:06 --> 00:45:09:** toolkit. You know when we approach water.
**00:45:11 --> 00:45:14:** A similar question to that is from Harrison. Rainwater capture
**00:45:14 --> 00:45:17:** seems to be a common theme. How do we see

**00:45:17 --> 00:45:21:** water resilient strategies adapt to water scarce environments like Arizona?
**00:45:21 --> 00:45:25:** Is it still worth investing in rainwater capture? For example,
**00:45:25 --> 00:45:26:** if rain is so sporadic?
**00:45:31 --> 00:45:34:** You know, I'd probably answer that the same way I
**00:45:34 --> 00:45:34:** I am.
**00:45:35 --> 00:45:38:** Not sure it would be, you know, cost effective there.
**00:45:38 --> 00:45:41:** I think you know in areas where there is not
**00:45:41 --> 00:45:45:** rainwater and there's not ways to, you know, come up
**00:45:45 --> 00:45:49:** with a non potable water source to address landscape for
**00:45:49 --> 00:45:50:** instance then.
**00:45:50 --> 00:45:54:** You know, I think plant selection becomes much more, you
**00:45:54 --> 00:45:57:** know, important and and you've got to just weigh those
**00:45:57 --> 00:46:00:** cost benefit analysis. And you know, Greg, I'm sure you
**00:46:01 --> 00:46:01:** could.
**00:46:01 --> 00:46:04:** You know, fill that, fill that in as well.
**00:46:04 --> 00:46:07:** Yeah, I think I'll piggyback on that in the previous.
**00:46:08 --> 00:46:09:** Umm?
**00:46:09 --> 00:46:12:** The the previous question as well.
**00:46:12 --> 00:46:15:** I think that's the strategy for some of the work
**00:46:15 --> 00:46:15:** that we're.
**00:46:17 --> 00:46:20:** Doing is utilize the the rainwater that does fall.
**00:46:21 --> 00:46:24:** And and and you know, to our advantage if if
**00:46:24 --> 00:46:29:** you've got to, you know, think about stormwater management. You
**00:46:29 --> 00:46:33:** know, have that landscape working, not only for beautification.
**00:46:34 --> 00:46:39:** But also, that's providing that that function as well in
**00:46:39 --> 00:46:44:** in reference to the wetland question. Before you know, even
**00:46:44 --> 00:46:45:** here in Colorado.
**00:46:47 --> 00:46:50:** Those aren't wet. Those are actually very dry air and
**00:46:50 --> 00:46:54:** landscapes that were creating the the the soil conditions for
**00:46:54 --> 00:46:57:** infiltrating landscapes is largely sand based.
**00:46:58 --> 00:47:01:** And so it's not wetland species that we're putting into
**00:47:01 --> 00:47:05:** rain garden. It's actually the the dry and the Prairie
**00:47:05 --> 00:47:06:** St species that are.
**00:47:07 --> 00:47:11:** Are in that environment and that are adaptable to both
**00:47:11 --> 00:47:12:** very dry and wet.
**00:47:12 --> 00:47:12:** Conditions.
**00:47:17 --> 00:47:22:** So this is a question for everyone, which is you
**00:47:22 --> 00:47:24:** know what are the three?
**00:47:25 --> 00:47:30:** And most impactful water efficiency strategies that development should be

**00:47:30 --> 00:47:34:** implementing. So I'm wondering, I'm curious what everyone's responses in

**00:47:34 --> 00:47:37:** terms of the three that they would prioritize.

**00:47:43 --> 00:47:45:** Well, I can jump in and get us started, I

**00:47:45 --> 00:47:46:** would say.

**00:47:49 --> 00:47:53:** All of the strategies can be, you know, location and

**00:47:54 --> 00:47:59:** community specific, but at least for the West, reducing outdoor

**00:47:59 --> 00:48:04:** water use is a major opportunity, and so I would

**00:48:04 --> 00:48:05:** place kind of.

**00:48:08 --> 00:48:12:** Water efficient landscaping to be really high on the list

**00:48:12 --> 00:48:17:** and there are, you know, several components to that. You

**00:48:17 --> 00:48:21:** know it's not only plant selection, but it's also irrigation.

**00:48:21 --> 00:48:26:** You know soil composition, etcetera, but I think you know,

**00:48:26 --> 00:48:29:** given we are a society that is kind of conditioned

**00:48:30 --> 00:48:33:** to have turf grass in as many places as possible.

**00:48:33 --> 00:48:38:** That's something that we're working on, unconditioned ourselves.

**00:48:38 --> 00:48:43:** Two because we see that there are higher priorities for

**00:48:43 --> 00:48:48:** that water than an ornamental grass that perhaps no one

**00:48:48 --> 00:48:53:** ever steps on or utilizes. So out outdoor water use

**00:48:53 --> 00:48:54:** is a major strategy.

**00:48:54 --> 00:48:55:** For water.

**00:48:55 --> 00:48:56:** Reduction.

**00:48:57 --> 00:48:59:** You know, pass it to Lee and Greg for other.

**00:49:01 --> 00:49:03:** High level strategies that you.

**00:49:03 --> 00:49:06:** I'll just build on that way you know. Just build

**00:49:06 --> 00:49:09:** on one of the things you said that's that wasn't

**00:49:09 --> 00:49:12:** part of this presentation. We work a lot with campuses

**00:49:12 --> 00:49:15:** here in the region to weighing themselves off of bluegrass

**00:49:15 --> 00:49:17:** and other turf species.

**00:49:18 --> 00:49:22:** And and that's that's for a reason, right? It's it's.

**00:49:22 --> 00:49:25:** It's very easy to grow and maintain turf, and so

**00:49:26 --> 00:49:30:** I think the industry is getting the maintenance industry is

**00:49:30 --> 00:49:35:** getting better at understanding native landscapes. But in response to

**00:49:35 --> 00:49:38:** that question, it's a little hard to answer because I

**00:49:38 --> 00:49:42:** think we approach when when we think about developments I

**00:49:43 --> 00:49:47:** scale does matter, you know, a half acre development versus

**00:49:47 --> 00:49:48:** 60 acre development.

**00:49:48 --> 00:49:50:** Are you going to a 20 acre?

**00:49:51 --> 00:49:52:** You know, we we.

**00:49:53 --> 00:49:55:** The the body of our work and what I tried
**00:49:56 --> 00:49:59:** to present there at the end is is looking at
**00:49:59 --> 00:50:03:** a district Strals stats district scale strategy because I think
**00:50:03 --> 00:50:06:** there is there is power in numbers and be able
**00:50:06 --> 00:50:10:** to to do some of the landscape infrastructure that that
**00:50:10 --> 00:50:11:** we just showed.
**00:50:14 --> 00:50:15:** Yeah, I would say that.
**00:50:17 --> 00:50:21:** Just educating the end user and involving them in the
**00:50:21 --> 00:50:25:** process throughout is we. We've just had a lot of
**00:50:25 --> 00:50:28:** success with that. I think you know I worked on
**00:50:28 --> 00:50:32:** a project early in my career in Houston. It was
**00:50:32 --> 00:50:36:** FMC Technologies campus redevelopment and it had a full scale
**00:50:36 --> 00:50:41:** landscape implementation of native grasses and and you know, it
**00:50:41 --> 00:50:44:** just has a different look to it and its final
**00:50:44 --> 00:50:47:** form than what you know. A lot of us grew
**00:50:47 --> 00:50:48:** up seeing.
**00:50:48 --> 00:50:52:** And have seen an office. Campuses are full career and
**00:50:52 --> 00:50:54:** if you don't have buy in from the end user
**00:50:54 --> 00:50:57:** on what that looks like and and kind of what
**00:50:57 --> 00:51:01:** what the opportunities are with with that implementation. It just
**00:51:01 --> 00:51:04:** it's not going to be a long term success. You'll
**00:51:05 --> 00:51:08:** have a maintenance crew that there no fault of their
**00:51:08 --> 00:51:12:** own just through, you know, private prior practice will come
**00:51:12 --> 00:51:15:** and they'll mow, you know it down to like a
**00:51:15 --> 00:51:18:** you know one inch and that's just not how you,
**00:51:18 --> 00:51:18:** you know.
**00:51:18 --> 00:51:21:** Treat that implementation. I would also say in in the
**00:51:21 --> 00:51:22:** assets that we.
**00:51:24 --> 00:51:27:** You know owner that our partners own long term smart
**00:51:27 --> 00:51:28:** controllers and metering.
**00:51:30 --> 00:51:34:** Has is really important so that you're able to identify
**00:51:34 --> 00:51:37:** issues if you have a multifamily development and it has
**00:51:37 --> 00:51:40:** a toilet that runs, you know 24 hours a day
**00:51:40 --> 00:51:43:** and and the tenant doesn't notify you, that can be
**00:51:43 --> 00:51:47:** tremendously wasteful over a period of time. And if you
**00:51:47 --> 00:51:50:** compound that across, you know 15 units in a 200
**00:51:50 --> 00:51:54:** unit development. Those those have real impacts, and so we
**00:51:54 --> 00:51:59:** have smart metering. You know throughout our our commercial developments
**00:51:59 --> 00:51:59:** and and.

**00:51:59 --> 00:52:02:** And find it to be very, you know, helpful to
**00:52:02 --> 00:52:04:** to to stay on top of those things.
**00:52:06 --> 00:52:09:** Excellent, we have a number of questions about water reuse
**00:52:09 --> 00:52:12:** and I think you know high level. Some people are
**00:52:12 --> 00:52:15:** wondering about OK. How does it work? Are we really
**00:52:15 --> 00:52:18:** cleaning it of like drugs and fecal matter and then
**00:52:18 --> 00:52:20:** I Lee? I'm really curious if you could talk a
**00:52:21 --> 00:52:24:** little bit more about the financials of water reuse and
**00:52:24 --> 00:52:24:** the return.
**00:52:26 --> 00:52:30:** Yeah, so the financials are something that you know what
**00:52:30 --> 00:52:33:** I get that question a lot. And and I think
**00:52:33 --> 00:52:37:** we're trying to get more sophisticated and how we benchmark
**00:52:37 --> 00:52:40:** those returns as we get more and more data points
**00:52:40 --> 00:52:42:** right? So our you know our kind of.
**00:52:43 --> 00:52:46:** All an investment on as a speculative developer. I mean,
**00:52:46 --> 00:52:49:** we're we're looking at a five year cycle from when
**00:52:49 --> 00:52:53:** we source an opportunity to when it's ultimately stabilized and
**00:52:53 --> 00:52:56:** either sold or transferred to a longer term holder. And
**00:52:56 --> 00:52:59:** so you know we're getting those data points over time
**00:52:59 --> 00:53:02:** as we implement more and more of these strategies. I
**00:53:02 --> 00:53:06:** will say that by having early pre construction support.
**00:53:07 --> 00:53:11:** In a development, we're getting real time feedback between fixture
**00:53:11 --> 00:53:14:** choices, so going with a low flow fixture versus a
**00:53:14 --> 00:53:18:** more conventional fixture, we're able to show to our partners
**00:53:18 --> 00:53:22:** and to ourselves. There's not a premium for this solution,
**00:53:22 --> 00:53:24:** and we know there's a long term payoff and that
**00:53:24 --> 00:53:28:** we're using less water overtime, so that's more of just
**00:53:28 --> 00:53:30:** a I mean that that's just a.
**00:53:31 --> 00:53:34:** A, A benchmark that we're able to see in the
**00:53:34 --> 00:53:38:** planning right now in terms of our longer term operations.
**00:53:38 --> 00:53:43:** You know, Denver water, for instance, they're assembling a whole
**00:53:43 --> 00:53:47:** range of data points as they've been operational for several
**00:53:47 --> 00:53:51:** years now. Of you know, having zero outside water use
**00:53:51 --> 00:53:55:** for non potable irrigation, right? And and so there's a.
**00:53:55 --> 00:53:59:** There's an actual dollar amount that they're able to show,
**00:53:59 --> 00:54:01:** you know, in educational.
**00:54:01 --> 00:54:04:** Seminars of like hey, we we we own this campus
**00:54:04 --> 00:54:06:** for 130 years. Here's what we spent up to that
**00:54:06 --> 00:54:10:** date, and here's what we're spending now and they're able

**00:54:10 --> 00:54:12:** to do that. And we're talking about water today, but
**00:54:13 --> 00:54:16:** you know, water is connected to energy use, right? It's
**00:54:16 --> 00:54:18:** it's. It's a circle. And so you know, you can't
**00:54:18 --> 00:54:21:** really talk about one without the other in terms of
**00:54:21 --> 00:54:25:** operating a campus, they're showing, you know, real energy savings
**00:54:25 --> 00:54:28:** as well. But you know some of these decisions they
**00:54:28 --> 00:54:28:** made.
**00:54:32 --> 00:54:35:** And I would back up what Greg said earlier. This
**00:54:35 --> 00:54:39:** is the last point. Scale really matters. Like you know,
**00:54:39 --> 00:54:43:** we're able to show you know fixtures and landscape, and
**00:54:43 --> 00:54:46:** really any project we do. But when we get these
**00:54:46 --> 00:54:51:** campus opportunities you can, you can really show that you
**00:54:51 --> 00:54:54:** know making a meaningful impact, and I guess just last
**00:54:55 --> 00:54:58:** point I would make is you know the sources of
**00:54:58 --> 00:55:00:** energy and water use are really key.
**00:55:00 --> 00:55:04:** As a developer, we're doing single sort of use.
**00:55:05 --> 00:55:08:** Implementations, but if you're you know if where we're getting
**00:55:08 --> 00:55:11:** our energy from is not, you know, clean.
**00:55:11 --> 00:55:13:** It's sort of a drop in the bucket, so I
**00:55:13 --> 00:55:16:** would encourage all of us to think about. You know
**00:55:16 --> 00:55:19:** these sort of. You know, beginning sources of how we're
**00:55:19 --> 00:55:21:** getting our our energy and and and our water and
**00:55:21 --> 00:55:24:** making sure we're we're, you know, doing what we can
**00:55:24 --> 00:55:24:** there.
**00:55:26 --> 00:55:29:** OK, final question. I know there's quite a few questions
**00:55:29 --> 00:55:31:** that we haven't been able to get to today, so
**00:55:31 --> 00:55:34:** speakers are are welcome to to respond to these and
**00:55:34 --> 00:55:37:** answer type answers. If you have time to do that.
**00:55:37 --> 00:55:40:** But I'm curious in terms of last question. How can
**00:55:40 --> 00:55:43:** we improve collaboration between the public and private sectors to
**00:55:43 --> 00:55:48:** advance water, smart development and landscaping? I'll start with Waverly.
**00:55:49 --> 00:55:53:** Yeah, that's a great question. Marianne and you know, I
**00:55:53 --> 00:55:55:** think in some cases.
**00:55:57 --> 00:56:02:** Water wise development can be viewed as something that's maybe
**00:56:02 --> 00:56:05:** being forced on developers or that it's a very regulatory
**00:56:06 --> 00:56:08:** thing, but in fact I think there are a lot
**00:56:08 --> 00:56:13:** of creative opportunities to, you know, begin with incentives to

**00:56:13 --> 00:56:16:** you know for community to talk with their. You know
**00:56:16 --> 00:56:20:** primary developers around you know what is the low hanging
**00:56:20 --> 00:56:24:** fruit? What are the opportunities or what would reduce barriers
**00:56:24 --> 00:56:27:** to participation. Mean one quick.
**00:56:27 --> 00:56:31:** For example, is that the city of Fountain Co. They
**00:56:31 --> 00:56:36:** offered an incentive to developers that would reduce the tap
**00:56:36 --> 00:56:40:** fee that they would pay and their system development charge
**00:56:40 --> 00:56:44:** if the developer reduced the amount of turf grass in
**00:56:45 --> 00:56:49:** their landscaping to 30 or 50% of the total landscape
**00:56:49 --> 00:56:54:** area, and that program became so successful that actually 100%
**00:56:54 --> 00:56:57:** of developers took advantage of that.
**00:56:57 --> 00:57:02:** Discounted tap fee. And so there are creative approaches I
**00:57:02 --> 00:57:08:** think. Also ensuring that the development review process is clear
**00:57:08 --> 00:57:13:** and that regulations are not conflicting one another within a
**00:57:13 --> 00:57:18:** local land use code and so cities like Longmont, Co
**00:57:18 --> 00:57:25:** actually have like a water efficiency sustainability specialist on board
**00:57:25 --> 00:57:27:** that goes through the entire.
**00:57:27 --> 00:57:32:** Development review process with developers. In order to demystify the
**00:57:32 --> 00:57:36:** process, make it simpler and and and better achieve the
**00:57:36 --> 00:57:38:** Community's objectives.
**00:57:43 --> 00:57:45:** Lee and Greg, do you have responses to that?
**00:57:45 --> 00:57:48:** Yeah I did that. I think I'll you know, in
**00:57:48 --> 00:57:52:** in every city and community is is different but.
**00:57:53 --> 00:57:56:** Here you know the the project that we showed in
**00:57:56 --> 00:57:59:** in in the River, North District and also the one
**00:57:59 --> 00:58:04:** downtown. This is really being driven by the private sector
**00:58:04 --> 00:58:06:** and the Community more than the city.
**00:58:08 --> 00:58:12:** And I think developers and communities are wanting a different
**00:58:12 --> 00:58:17:** type of infrastructure, and they're asking for that and so.
**00:58:18 --> 00:58:18:** Umm?
**00:58:21 --> 00:58:24:** That that's probably a lot different in a lot of
**00:58:24 --> 00:58:26:** other communities but but here I think it's.
**00:58:31 --> 00:58:33:** Thank you Greg. We lost your sound at the end
**00:58:33 --> 00:58:35:** of your sentence, but I think we we got what
**00:58:35 --> 00:58:35:** you were saying.
**00:58:37 --> 00:58:38:** Ellie how about you?
**00:58:39 --> 00:58:42:** Well not, I mean hard to follow away really. And

**00:58:42 --> 00:58:46:** Greg, there's they're really thorough on on all that. I
**00:58:46 --> 00:58:49:** would just say that you know education is key and
**00:58:49 --> 00:58:53:** open dialogue and just you know, being upfront about the
**00:58:53 --> 00:58:56:** challenges that you know are are being experienced on a
**00:58:56 --> 00:59:01:** predevelopment effort and and you know having good relationships with
**00:59:01 --> 00:59:05:** you, know whatever authorities have in your addiction you're interacting
**00:59:05 --> 00:59:08:** with, you know, and and and like we have to
**00:59:08 --> 00:59:09:** do on on a lot of.
**00:59:10 --> 00:59:13:** Areas outside of water. You've got to get a community
**00:59:13 --> 00:59:16:** buy in. You've got to, you know, spend the time
**00:59:16 --> 00:59:19:** to educate folks and and and also learn right like
**00:59:19 --> 00:59:19:** I mean.
**00:59:20 --> 00:59:23:** This is not. We're not subject matter expert or I'm
**00:59:23 --> 00:59:26:** not subject matter expert, and this is part of our
**00:59:26 --> 00:59:28:** our, our, our job as as developers to try to
**00:59:28 --> 00:59:31:** learn from the community about what's going to help you
**00:59:31 --> 00:59:33:** know. Make a project successful so.
**00:59:35 --> 00:59:36:** That's all they would add there.
**00:59:37 --> 00:59:40:** Huge thank you to all of you for joining us
**00:59:40 --> 00:59:42:** today and also to our speakers. I'm just going to
**00:59:42 --> 00:59:45:** conclude by letting you know about some of our upcoming
**00:59:46 --> 00:59:49:** programming. If you're interested in staying engaged in our water,
**00:59:49 --> 00:59:52:** wise work. We're building a coalition that we're going to
**00:59:53 --> 00:59:56:** be running over over the coming years. We'll put links
**00:59:56 --> 00:59:58:** in the chat for all of these, by the way,
**00:59:58 --> 01:00:01:** but if you don't see those links, you can just
**01:00:01 --> 01:00:04:** contact resilience that you will like.org For more information. We
**01:00:04 --> 01:00:07:** also have a UI learning online course on the introduction
**01:00:08 --> 01:00:08:** to climate.
**01:00:08 --> 01:00:12:** Risk and resilience on there's four sessions. The first one
**01:00:12 --> 01:00:15:** is July 26th and you can go to learning.uli.org to
**01:00:15 --> 01:00:18:** find that course & up. And then finally we have
**01:00:18 --> 01:00:21:** a coastal forum at ULI fall meeting. It's our global
**01:00:21 --> 01:00:24:** meeting in the fall on October 25th. In the morning
**01:00:24 --> 01:00:27:** you can sign up for the coastal form. It's all
**01:00:27 --> 01:00:33:** about coastal resilience strategies through our fall meeting website whichisfall.uli.org
**01:00:33 --> 01:00:35:** and with that thank you so much for joining us
**01:00:35 --> 01:00:38:** today. We hope to stay engaged with you all.

**01:00:39 --> 01:00:41:** And we really look forward to hearing from you if
**01:00:41 --> 01:00:44:** you're interested in staying involved in in our water wise
**01:00:44 --> 01:00:47:** work, excellent. Thank you again to our speakers. Such wonderful
**01:00:47 --> 01:00:49:** presentations. We really appreciate your time.
**01:00:52 --> 01:00:53:** Thank you Marian.
**01:00:58 --> 01:01:01:** Hi everyone, if we didn't get to your question, Umm,
**01:01:01 --> 01:01:03:** we hopefully you can reach out to us and we
**01:01:03 --> 01:01:06:** can respond to you. Or you can download the report
**01:01:06 --> 01:01:08:** and I think a lot of the answers are in
**01:01:08 --> 01:01:09:** there as well.
**01:01:13 --> 01:01:14:** Hi everyone, thank you so much.

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