Webinar

Protecting Coastlines to Transform Communities Norfolks Ohio Creek Watershed

Date: January 20, 2023

00:00:04 --> 00:00:06: Thank you all for joining us this afternoon. My name

00:00:07 --> 00:00:09: is Jane Hutton and I work with the UI to

00:00:09 --> 00:00:12: Williger Center for housing. Before we get into what I

00:00:12 --> 00:00:15: know will be an interesting and engaging presentation from VHB

00:00:15 --> 00:00:17: in the city of Norfolk, let's let's get into a

00:00:17 --> 00:00:21: few housekeeping notes. If you're not familiar with us, the

00:00:21 --> 00:00:25: Trollinger Center for Housing integrates you utilize wide-ranging housing activities

00:00:25 --> 00:00:28: into a program of work with three objectives to catalyze

00:00:28 --> 00:00:30: the production of housing provide thought.

00:00:31 --> 00:00:34: Leadership on the housing industry and inspire a broader commitment

00:00:34 --> 00:00:35: to housing.

00:00:36 --> 00:00:39: Also of interest to this audience, maybe utilize urban resilience

00:00:39 --> 00:00:42: program. The Urban Resilience program works with UI members to

00:00:42 --> 00:00:46: provide technical assistance, advanced knowledge through research and catalyze the

00:00:47 --> 00:00:50: adoption of transformative practices for real estate and land use

00:00:50 --> 00:00:50: policy.

00:00:53 --> 00:00:57: The Trollinger Center has the upcoming Housing Opportunity Conference, which

00:00:57 --> 00:01:00: is one of the nation's premier meetings of the residential

00:01:00 --> 00:01:05: development, lending, investing and policy. Community brings together a diverse

00:01:05 --> 00:01:09: mix of private and nonprofit real estate developers, public officials,

00:01:09 --> 00:01:13: urban and regional planners, housing advocates, architects,

investors and lenders

00:01:13 --> 00:01:17: with one common goal to expand housing opportunities in their

00:01:17 --> 00:01:21: communities. This year, the conference will take place March 27th

00:01:21 --> 00:01:22: through 29th, 2023.

00:01:22 --> 00:01:25: In Phoenix, AZ and early Bird, pricing is available through

00:01:26 --> 00:01:29: January 31st. More information can be found on our website

00:01:29 --> 00:01:34: at housingconference.uli.org and you can e-mail housing at uli.org with

00:01:34 --> 00:01:35: any questions.

00:01:37 --> 00:01:40: The 4th annual Resilience Summit will be held on May

00:01:40 --> 00:01:43: 15th, 2023 in conjunction with ULI Spring meeting in Toronto.

00:01:43 --> 00:01:47: This exclusive event will bring together leaders in the fields

00:01:47 --> 00:01:51: of real estate and resilience to share practical solutions to

00:01:51 --> 00:01:55: protect communities and investment from climate risk. Registration is now

00:01:55 --> 00:01:59: open. Sponsorship opportunities, which include discounts for the resilient summit

00:01:59 --> 00:02:03: and spring meeting, are available. Please reach out to resilience

00:02:03 --> 00:02:06: at uli.org with any questions and to learn more please.

00:02:06 --> 00:02:08: Is it the main event page?

00:02:09 --> 00:02:12: Without further ado, I'd like to kick it off to

00:02:12 --> 00:02:15: Kim Blossom from VHB, who will be introducing our panel

00:02:15 --> 00:02:15: today.

00:02:16 --> 00:02:16: Thank you, Jane.

00:02:17 --> 00:02:20: Hi there and thank you for joining us this afternoon

00:02:20 --> 00:02:23: as we share the story of the Ohio Creek Watershed

00:02:23 --> 00:02:24: project.

00:02:24 --> 00:02:28: This project is located in southeastern Virginia, near the mouth

00:02:28 --> 00:02:31: of the Chesapeake Bay, in an area known as Hampton

00:02:31 --> 00:02:31: Roads.

00:02:33 --> 00:02:35: We're happy to be here and we're grateful to ULI

00:02:35 --> 00:02:38: for creating a space for us all to come together

00:02:38 --> 00:02:39: and and to connect.

00:02:40 --> 00:02:43: My name is Kim Blossom. I'm an environmental scientist with

00:02:43 --> 00:02:44: VHB.

00:02:45 --> 00:02:49: And because this project was funded by HUD, compliance with

00:02:49 --> 00:02:53: the national Environmental Policy Act, otherwise known as NEPA, was

00:02:53 --> 00:02:56: required prior to release of the grant funding.

00:02:58 --> 00:03:02: The Hampton Roads region is experiencing the highest rate of

00:03:02 --> 00:03:04: relative sea level rise on the East Coast.

00:03:06 --> 00:03:09: Relative sea level rise refers to the height of the

00:03:09 --> 00:03:12: ocean relative to the land, which in this area is

00:03:12 --> 00:03:16: subsiding, making it one of the largest population centers at

00:03:16 --> 00:03:18: risk, second only to New Orleans.

00:03:20 --> 00:03:24: The communities living in the project area were constantly faced

00:03:24 --> 00:03:28: with both coastal and rainfall related flooding that inundated sidewalks

00:03:28 --> 00:03:32: and submerged roadways creating disruption to daily life.

00:03:33 --> 00:03:36: I'm pleased to introduce our speakers so that they can

00:03:36 --> 00:03:39: tell you more about this transformative project and how it

00:03:39 --> 00:03:42: can be used as a model for community resilience throughout

00:03:42 --> 00:03:42: the nation.

00:03:45 --> 00:03:48: Kyle Spencer is the chief resilience officer for the city

00:03:48 --> 00:03:52: of Norfolk, VA, and spent the previous four years as

00:03:52 --> 00:03:54: the Deputy Resilience Officer.

00:03:55 --> 00:03:58: For the last 15 years he has been working to

00:03:58 --> 00:04:01: make Norfolk a more resilient city as both a consultant

00:04:01 --> 00:04:04: and a technology leader before he began working in the

00:04:04 --> 00:04:05: Resilience Office.

00:04:07 --> 00:04:12: Kyle's primary focus is implementing the city's resilience strategy by

00:04:12 --> 00:04:16: managing complex water management, environmental and urban planning, and and

00:04:16 --> 00:04:18: smart cities projects.

00:04:19 --> 00:04:23: While with the city, Kyle has been collaborating with regional

00:04:23 --> 00:04:28: partners on resilience innovations to support research projects with university.

00:04:28 --> 00:04:32: And developing business solutions and the resilient sector by turning

00:04:32 --> 00:04:35: Norfolk into a coastal community laboratory.

00:04:36 --> 00:04:40: Kyle is a certified GIS professional and a certified floodplain

00:04:40 --> 00:04:41: manager.

00:04:42 --> 00:04:46: Also presenting today is Neville Reynolds. Neville is the leader

00:04:46 --> 00:04:50: of VHB's environmental services practice. For the past 33 years,

00:04:50 --> 00:04:55: he has partnered with municipalities, housing authorities and developers to

00:04:55 --> 00:05:01: deliver complex real estate developments, including residential communities across the

00:05:01 --> 00:05:02: Mid-Atlantic coastal areas.

00:05:04 --> 00:05:09: Neville is focused on climate adaptation and mitigation strategies, and

00:05:09 --> 00:05:13: he leads the planning, design and permitting of shoreline restoration

00:05:13 --> 00:05:18: and waterfront improvements aimed at creating more sustainable and resilient

00:05:18 --> 00:05:18: communities.

00:05:20 --> 00:05:22: And with that, I will hand it off to Kyle.

00:05:23 --> 00:05:27: Thanks, Kim. Good afternoon, everyone. So I'm going to start

00:05:27 --> 00:05:31: out just here orienting everyone I know this is a

00:05:31 --> 00:05:34: national webinar. So I wanted to Orient the group here

00:05:35 --> 00:05:38: on on the project location and some of the challenges

00:05:38 --> 00:05:42: that we're we're trying to tackle here with this project.

00:05:43 --> 00:05:47: So as Kim mentioned, we're in Southeast Virginia at the

00:05:47 --> 00:05:50: mouth of Chesapeake Bay and in Norfolk is a.

00:05:50 --> 00:05:54: The City of Water, we're surrounded really on three sides

00:05:54 --> 00:05:56: by by water. The the Elizabeth River.

00:05:58 --> 00:06:01: Kind of works its way from the West side of

00:06:01 --> 00:06:03: the city down around to the South. And then the

00:06:04 --> 00:06:07: Chesapeake Bay borders us from from the north. And so

00:06:07 --> 00:06:10: we're right there where the pin is is located and

00:06:10 --> 00:06:13: the and the pin point at the bottom is, is

00:06:13 --> 00:06:16: where the project location is. But we'll kind of zoom

00:06:16 --> 00:06:19: into that a little bit here on the next slide.

00:06:20 --> 00:06:24: And talk about the challenges that we're facing in Norfolk

00:06:24 --> 00:06:28: and Kim covered some of these in the in the

00:06:28 --> 00:06:32: opening remarks. So with relative sealable rise coming up.

00:06:34 --> 00:06:36: At a sort of a a steady rate over the

00:06:36 --> 00:06:40: last 100 years or so, we've been measuring in our

00:06:40 --> 00:06:44: in our tide gauges with that comes rising groundwater and

00:06:44 --> 00:06:48: so, so that creates some challenges with foundation designs and

00:06:48 --> 00:06:52: and other types of stormwater projects. We're seeing an increase

00:06:52 --> 00:06:56: in precipitation from rainfall events. We collect a lot of

00:06:56 --> 00:07:00: data in our city with gauges and sensors and and

00:07:00 --> 00:07:03: we're just seeing about a 2025% increase over the last

00:07:03 --> 00:07:04: 20 years.

00:07:04 --> 00:07:08: And the rainfall amounts and we're a very built out

00:07:08 --> 00:07:11: city, we're about 95% built out. So. So there there's

00:07:11 --> 00:07:14: a lot of runoff that comes with that. And so

00:07:14 --> 00:07:18: we would we're tackling that with as well with some

00:07:18 --> 00:07:21: of our zoning code changes. And then we're seeing more
00:07:21 --> 00:07:25: frequent and and higher storm surge events impacting our city.
00:07:25 --> 00:07:29: The majority of the highest water levels in the last
00:07:29 --> 00:07:33: 100 years have actually happened since the year 2000. So
00:07:33 --> 00:07:34: we're seeing this this.
00:07:34 --> 00:07:38: The trend kind of tick tick upwards for us here
00:07:38 --> 00:07:41: in Hampton Roads and in Norfolk. And so a lot
00:07:41 --> 00:07:45: of the issues that we're facing are are kind of
00:07:45 --> 00:07:49: due to the unattended consequences of our ancestors where the
00:07:49 --> 00:07:53: development patterns over time, you know a couple 100 years
00:07:53 --> 00:07:57: ago you know weren't as well regulated and So what
00:07:57 --> 00:08:00: happened is we filled in a lot of the old
00:08:00 --> 00:08:03: creeks and and marshes that were.
00:08:03 --> 00:08:07: Within the city and here I'm showing a historic map
00:08:07 --> 00:08:10: on the left and where that shoreline would would be
00:08:10 --> 00:08:14: today over the current map and it's outlined in black,
00:08:14 --> 00:08:17: the historic shoreline. The red dots are are some storm
00:08:17 --> 00:08:22: events, recorded flood events and then I've thrown some inundation
00:08:22 --> 00:08:25: on on top of the existing map today in blue.
00:08:25 --> 00:08:28: And so you can see the floodplain and where we
00:08:28 --> 00:08:31: tend to have flooding really aligns well with the historic
00:08:31 --> 00:08:33: shoreline. So the water's.
00:08:33 --> 00:08:36: To trying to go back to where it used to
00:08:36 --> 00:08:39: be. And so with this type of information we we
00:08:39 --> 00:08:42: now can sort of better manage our our systems of
00:08:42 --> 00:08:47: protection sometimes we aren't always fighting the water back we're
00:08:47 --> 00:08:51: actually allowing it to come into the city by daylighting
00:08:51 --> 00:08:54: the historic creeks and we'll we'll show that in the
00:08:54 --> 00:08:58: in the project here here today during the presentation of
00:08:58 --> 00:09:00: what what we mean by that.
00:09:01 --> 00:09:03: On the on some future slides and and so with
00:09:03 --> 00:09:06: the sea level rise and everything else you get this
00:09:06 --> 00:09:09: phenomenon of what we call blue sky flooding or sunny
00:09:09 --> 00:09:12: day flooding where this the wind tends to if it
00:09:12 --> 00:09:14: blows from the Northeast the water will be pushed up
00:09:14 --> 00:09:17: into these creeks and rivers it kind of has this
00:09:17 --> 00:09:20: Cove effect and and stacks up into those and and
00:09:20 --> 00:09:22: it can't flush out with the with when it goes

00:09:22 --> 00:09:23: to low tide and so.
00:09:25 --> 00:09:28: And if that's coupled with with the full moon type
00:09:28 --> 00:09:31: of event, you get this flooding all over the streets.
00:09:31 --> 00:09:34: The waters backs up into the stormwater system and comes
00:09:35 --> 00:09:37: out into the roads and floods them and creates a
00:09:38 --> 00:09:42: lot of challenges for transportation. For example, the lower right
00:09:42 --> 00:09:45: hand corner picture is is a ferry landing between Norfolk
00:09:45 --> 00:09:49: and Portsmouth and and you know on occasions folks have
00:09:49 --> 00:09:51: to get off the boat, well if they're pants and
00:09:51 --> 00:09:54: take their shoes off and walk off, walk off the
00:09:54 --> 00:09:55: boat.
00:09:55 --> 00:09:56: In the water and so.
00:09:59 --> 00:10:02: You know this is something that we're that we're keeping
00:10:02 --> 00:10:05: track of and and monitoring and implementing you know the
00:10:05 --> 00:10:08: types of projects like the one we're going to talk
00:10:08 --> 00:10:10: about today to to help with some of these do
00:10:10 --> 00:10:11: the next one.
00:10:13 --> 00:10:16: Here's another map view. Today we're going to focus in
00:10:16 --> 00:10:19: on the Red circle on the right hand side. But
00:10:19 --> 00:10:22: again this is just another way of looking at the
00:10:22 --> 00:10:26: historic shoreline and how that interacts with today's current floodplain.
00:10:26 --> 00:10:29: So we're showing 100 year storm with seal Rise added
00:10:29 --> 00:10:31: on top of that and and so you can just
00:10:32 --> 00:10:34: kind of see how much of our state we're so
00:10:34 --> 00:10:37: flat that once the water kind of reaches a certain
00:10:37 --> 00:10:40: point it really spreads out across the city and so
00:10:40 --> 00:10:42: this project, the Ohio Creek project.
00:10:42 --> 00:10:45: Is focusing on and on on this one part of
00:10:45 --> 00:10:48: the city which happens to be a a lower income
00:10:49 --> 00:10:53: area. It's primarily African American and was actually planted about
00:10:53 --> 00:10:57: 1900. And so we're seeing since even the 1900s a
00:10:57 --> 00:11:00: lot of these creeks have been filled in as as
00:11:00 --> 00:11:04: neighborhoods like this were developed over time. And so you've
00:11:04 --> 00:11:09: got the Eastern branch, Elizabeth River following along the edge
00:11:09 --> 00:11:13: of where the edge of the shoreline and that's what's.
00:11:13 --> 00:11:15: Inundating the neighborhood that that we're talking about today.
00:11:16 --> 00:11:19: Do the next one. And so now we're zoomed in
00:11:19 --> 00:11:22: on the neighborhood. It is actually a historic district in

00:11:22 --> 00:11:25: the National Register and so you can see a lot
00:11:25 --> 00:11:28: of those beautiful homes there along the along the river
00:11:28 --> 00:11:30: and and Kim circling those on the map and then
00:11:31 --> 00:11:33: in the the top of this picture is Interstate 264.
00:11:33 --> 00:11:37: And so what's happened is this community is actually only
00:11:37 --> 00:11:39: has two ways in and out. There's there's one way
00:11:39 --> 00:11:42: kind of on the right hand side of the picture
00:11:42 --> 00:11:45: and there's one that kind of goes off the picture
00:11:45 --> 00:11:46: to the left and so when a.
00:11:46 --> 00:11:49: Big Storm event comes or floods them, they kind of
00:11:49 --> 00:11:51: get trapped in here and so some of the goals
00:11:51 --> 00:11:54: that we're going to talk about here in a minute
00:11:54 --> 00:11:55: for this project were to.
00:11:56 --> 00:12:00: Uh, create, you know better connections throughout the city for
00:12:00 --> 00:12:04: these types of events and help with emergency services as
00:12:04 --> 00:12:07: well. So here's the goals that we we went into
00:12:07 --> 00:12:11: the project with. Again this was the National Disaster Resilience
00:12:11 --> 00:12:14: competition that HUD put out back in 2015 and and
00:12:14 --> 00:12:16: we we applied and won in 2016 and then it
00:12:16 --> 00:12:19: took about a year for HUD to release the funds
00:12:19 --> 00:12:22: for us to be get designing. But all along we
00:12:22 --> 00:12:26: were interacting with the Community and working out the goals
00:12:26 --> 00:12:27: that you see.
00:12:27 --> 00:12:30: Here's we want to you know stop the flooding with
00:12:30 --> 00:12:33: the with the edge protection. But we want to create
00:12:33 --> 00:12:38: these economic opportunities connect them better, strengthen their connections to
00:12:38 --> 00:12:41: the rest of the community so they can get to
00:12:41 --> 00:12:44: work and and during a storm event and not be
00:12:44 --> 00:12:47: stuck in their neighborhood. But we also want to connect
00:12:47 --> 00:12:51: the community with next to the historic Chesterfield Heights neighborhood
00:12:51 --> 00:12:54: is a is a public housing community run by Norfolk
00:12:54 --> 00:12:57: Redevelopment Housing Authority called.
00:12:57 --> 00:13:00: Many village and we wanted to bring those two communities
00:13:00 --> 00:13:04: together around the open space that's between them and we've
00:13:04 --> 00:13:07: got some nice pictures and and details about how we
00:13:07 --> 00:13:11: did that. And then again it's it's about creating these
00:13:11 --> 00:13:15: community and connections which will strengthen the

neighborhood and and

00:13:15 --> 00:13:18: with this project we were allowed to put in a

00:13:18 --> 00:13:19: lot of amenities.

00:13:21 --> 00:13:24: With the funding from the grant. And so you'll see

00:13:24 --> 00:13:27: how all this kind of comes together really nicely here

00:13:27 --> 00:13:29: here today in this presentation.

00:13:31 --> 00:13:33: So this is how how we did that and it

00:13:34 --> 00:13:36: and you can go to the next one Kim it

00:13:36 --> 00:13:40: it really is really about the partnership. So we're we're

00:13:40 --> 00:13:41: a city and have.

00:13:42 --> 00:13:46: Have you know limited resources a lot of times right

00:13:46 --> 00:13:49: for for big project like this is $120 million grant

00:13:49 --> 00:13:53: program and so Norfolk had to partner with the the

00:13:53 --> 00:13:58: states housing community development they actually received the grant. We

00:13:58 --> 00:14:01: were a sub recipient to them but we had a

00:14:01 --> 00:14:04: strong design team led by Arcadis on on all the

00:14:04 --> 00:14:07: civil and kind of stormwater work and then we had

00:14:07 --> 00:14:12: landscape architects and and our design architects with SCAPE and

00:14:12 --> 00:14:12: Wagner.

00:14:13 --> 00:14:17: All the nonprofit Elizabeth River Project is a big environmental

00:14:17 --> 00:14:20: activists out here where they're doing a lot of river

00:14:20 --> 00:14:24: cleanup and things like that. So we brought them around

00:14:24 --> 00:14:27: to help us you know work through the living shoreline

00:14:27 --> 00:14:31: designs and and they also have their learning barge parked

00:14:31 --> 00:14:35: out here at the at the neighborhoods there's a Learning

00:14:35 --> 00:14:38: Center that in RHA runs and so it was just

00:14:38 --> 00:14:41: a really important for us to bring them in into

00:14:41 --> 00:14:43: the mix and then and then VHB.

00:14:43 --> 00:14:46: Again helped us with with the NEPA process and and

00:14:46 --> 00:14:50: did a lot of the design on the shoreline projects

00:14:50 --> 00:14:53: and we'll go through all the details of the design

00:14:53 --> 00:14:57: here a little bit. And then we executed this project

00:14:57 --> 00:15:00: with a company called MEB. So they were the construction

00:15:00 --> 00:15:04: managers of the project and and we we were actually

00:15:04 --> 00:15:07: in the last month, month or two of construction and

00:15:07 --> 00:15:11: we'll we'll be finished up here really soon and we

00:15:11 --> 00:15:14: we look forward to showing it off. So folks.

00:15:14 --> 00:15:16: On the call today, would like to come see it

00:15:17 --> 00:15:20: sometime. You can always reach out and we're happy to

00:15:20 --> 00:15:22: happy to show folks around.

00:15:24 --> 00:15:26: If you'd like to so you can, you can go

00:15:26 --> 00:15:26: to the next one.

00:15:27 --> 00:15:29: And so this, this is how the funding kind of

00:15:29 --> 00:15:32: broke down, this, this project was the release of funds

00:15:32 --> 00:15:33: actually.

00:15:34 --> 00:15:37: Came in and kind of late 2019 and we broke

00:15:37 --> 00:15:43: ground actually in February of 2020 right before the pandemic

00:15:43 --> 00:15:47: and but during this time there was a lot of

00:15:47 --> 00:15:52: market forces that that created inflation and escalation and the

00:15:52 --> 00:15:56: pricing and so. So we had about $120 million of

00:15:56 --> 00:16:01: of funding to work with for the design and construction

00:16:01 --> 00:16:04: of the project and that's.

00:16:04 --> 00:16:07: And and the the total grant was 120 million. So.

00:16:07 --> 00:16:11: So the difference there is the state took some for

00:16:11 --> 00:16:15: the administration but we also took $5 million of the

00:16:15 --> 00:16:20: 120 and created a nonprofit to work on resilience innovations

00:16:20 --> 00:16:24: on on tools and technologies that we can test again

00:16:24 --> 00:16:27: as a as a living laboratory to.

00:16:29 --> 00:16:32: To test out new ways to fight, fight the challenge

00:16:32 --> 00:16:35: that we have and build resilience in that way. And

00:16:35 --> 00:16:38: and so we've been working with that group for a

00:16:38 --> 00:16:42: while along along with the with the project construction we

00:16:42 --> 00:16:46: brought in CDBG entitlement money as well to help bridge

00:16:46 --> 00:16:49: the gap between the the remaining funding that we had

00:16:49 --> 00:16:53: and the cost of construction. We also have in Norfolk

00:16:53 --> 00:16:56: a what we call the resilient penny. So we take

00:16:56 --> 00:16:58: one penny of our real estate tax.

00:16:58 --> 00:17:02: Revenues which generates about $2,000,000 and we set that aside

00:17:02 --> 00:17:06: for for for different projects and so we took one

00:17:06 --> 00:17:09: years worth of that to help us get get the

00:17:09 --> 00:17:12: funding and then the local or the regional.

00:17:13 --> 00:17:18: Sanitation district, sanitary sewer district operators, they had a pump

00:17:18 --> 00:17:21: station that we were able to take offline and so

00:17:21 --> 00:17:24: they brought in some funding because we were sort of

00:17:24 --> 00:17:27: helping them out as well. So this is sort of

00:17:27 --> 00:17:30: the financial stack of how we accomplish the project.

00:17:31 --> 00:17:35: So as Kyle just mentioned, you know the project was

00:17:35 --> 00:17:39: primarily funded through a HUD grant, U.S. Department of Housing

00:17:39 --> 00:17:43: and Urban Development, and one of the requirements of that
00:17:43 --> 00:17:47: grant was to allocate all spending within two specific census
00:17:47 --> 00:17:47: tracts.
00:17:49 --> 00:17:52: And this area, you know Kyle touched on, this includes
00:17:52 --> 00:17:57: 2 residential communities, predominantly African American communities with civic leagues
00:17:57 --> 00:18:01: and strong community identities. One of them was the Chesterfield
00:18:01 --> 00:18:05: Heights community, which is on the historic National Register. And
00:18:05 --> 00:18:08: then the other, like Kyle mentioned, is the public housing
00:18:08 --> 00:18:11: community with more than 300 housing units.
00:18:12 --> 00:18:15: And to better understand the makeup of the community, the
00:18:16 --> 00:18:18: team utilized data from the US Census Bureau.
00:18:19 --> 00:18:23: You know, understanding the demographics and the socioeconomics of the
00:18:23 --> 00:18:27: community that's going to be most affected by the project
00:18:27 --> 00:18:29: is critical to meaningful engagement.
00:18:31 --> 00:18:36: So this the total population of the two census tracts
00:18:36 --> 00:18:41: was around 5000 people in 2016, 2017 I believe, with
00:18:41 --> 00:18:46: the majority of the work actually occurring in census tract
00:18:46 --> 00:18:46: 46.
00:18:48 --> 00:18:53: And within that census tract 46, the majority of folks
00:18:53 --> 00:18:59: identified as black and African-American, what it was over 83%
00:18:59 --> 00:19:02: of the population in that community.
00:19:03 --> 00:19:09: And then the median household income for the study area,
00:19:09 --> 00:19:15: which is both census tracts combined, was $26,277.00 and so
00:19:15 --> 00:19:21: and census tract 46, it was lower, much lower, it's
00:19:21 --> 00:19:25: 27,708 and in census tract 47 it's 51,677.
00:19:27 --> 00:19:30: 34% of the population in census tract 46, which is
00:19:31 --> 00:19:35: where the majority of the work happened, was below the
00:19:35 --> 00:19:38: poverty level and 13% of the census tract in 47
00:19:38 --> 00:19:41: was below the poverty level.
00:19:41 --> 00:19:46: This is a breakdown of the study area employment data,
00:19:46 --> 00:19:50: which provides the number of businesses and employees in each
00:19:50 --> 00:19:54: business sector within both census tracts.
00:19:54 --> 00:19:58: With only two means of ingress and egress, you could
00:19:58 --> 00:20:03: see where these businesses and employees are dramatically affected by
00:20:03 --> 00:20:08: recurrent flooding events as the project area becomes isolated and

00:20:08 --> 00:20:11: separated from the greater City of Norfolk.
00:20:12 --> 00:20:15: As you can tell, it's really important for us to
00:20:15 --> 00:20:19: have the community involved in the process as as a
00:20:19 --> 00:20:24: partner. And so throughout the design and throughout the construction
00:20:24 --> 00:20:28: we we've held over 40 meetings with them and with
00:20:28 --> 00:20:29: other partners to.
00:20:30 --> 00:20:33: To, you know, take that that feedback from them on
00:20:33 --> 00:20:36: the design, make changes, go back to them with those
00:20:36 --> 00:20:39: changes. And so we really want to create a feedback
00:20:39 --> 00:20:39: loop.
00:20:40 --> 00:20:44: With the community and all the different partners so that
00:20:44 --> 00:20:47: we had full buy in across the board for the
00:20:47 --> 00:20:47: project.
00:20:48 --> 00:20:52: And so we had design charettes with with residents and
00:20:52 --> 00:20:56: and and other other partners. We had meet and greets
00:20:56 --> 00:20:59: for Section 3. So when you when you have a
00:21:00 --> 00:21:04: HUD funded project like this you know you were required
00:21:04 --> 00:21:04: to.
00:21:05 --> 00:21:10: Target the local community the low income community and surrounding
00:21:10 --> 00:21:15: communities for for new hires and some of the contracts.
00:21:15 --> 00:21:17: And so we we did a lot of work to
00:21:17 --> 00:21:20: try to bring in as many new hires from the
00:21:20 --> 00:21:24: communities we could as well as set aside a smaller
00:21:24 --> 00:21:28: parts of the construction to to make available for some
00:21:28 --> 00:21:32: of the small businesses that qualify to Section 3 and
00:21:32 --> 00:21:34: just some more pictures here of.
00:21:35 --> 00:21:36: What that kind of looks like.
00:21:37 --> 00:21:40: You know lots of poster boards and sticky notes and
00:21:40 --> 00:21:44: and things like that. Lots of conversations one-on-one with residents
00:21:44 --> 00:21:47: and and and the and the different partners that the
00:21:47 --> 00:21:50: lower right hand corner is one of our Section 3
00:21:50 --> 00:21:52: mixers that we had. We went to this there's a
00:21:52 --> 00:21:55: school in the neighborhood and we went to the principal
00:21:55 --> 00:21:58: and the and the teachers and asked for students that
00:21:58 --> 00:22:01: we could pull out of class for a little bit.
00:22:01 --> 00:22:04: Brought them into the library and they helped us design
00:22:04 --> 00:22:07: the playground equipment and some of the park features as
00:22:07 --> 00:22:07: well.
00:22:08 --> 00:22:11: A lot of it also is is different ways of
00:22:11 --> 00:22:16: of getting a communication and and and engagement from

the
00:22:16 --> 00:22:19: different residents. A lot of the folks here are are
00:22:20 --> 00:22:23: elderly and so they they're more on the snail mail
00:22:23 --> 00:22:27: side of things. So we we send out door hangers
00:22:27 --> 00:22:31: newsletters quarterly and we meet them you know where they
00:22:31 --> 00:22:35: are so we'll have meetings in the community on the
00:22:35 --> 00:22:39: street or at the at the rec Center that's nearby.
00:22:40 --> 00:22:42: And you know, so instead of trying to bring them
00:22:42 --> 00:22:45: to City Hall or something like that, we really want
00:22:45 --> 00:22:47: to kind of meet them where they were. And this
00:22:47 --> 00:22:50: is the kind of feedback here on the screen that
00:22:50 --> 00:22:53: we were getting. We were, you know, folks remember as
00:22:53 --> 00:22:56: a kid fishing on the shoreline, there was a fishing
00:22:56 --> 00:22:58: pier. They wanted to, you know, play chess in the
00:22:58 --> 00:23:01: park. They wanted trails to walk on and things like
00:23:01 --> 00:23:03: that. And so we we took all these kind of
00:23:03 --> 00:23:06: notes in and brought them to the design team and
00:23:06 --> 00:23:08: and again we we would make changes, come back to
00:23:09 --> 00:23:09: the community.
00:23:09 --> 00:23:11: And say, hey, is this, what is this what you
00:23:11 --> 00:23:14: were talking about is this is what we were hearing,
00:23:14 --> 00:23:16: how does this look? And so we we did that
00:23:16 --> 00:23:18: several times throughout the design at each milestone.
00:23:21 --> 00:23:23: And so we're just going to play about a minute
00:23:23 --> 00:23:26: of this video. This is an example of us going
00:23:26 --> 00:23:30: to the Marlborough Ave. residence in the community where it's
00:23:30 --> 00:23:31: a historic.
00:23:32 --> 00:23:35: Brick Road that that's about three blocks of the community.
00:23:35 --> 00:23:38: Unfortunately, we had to tear that up to put in
00:23:38 --> 00:23:41: new stormwater pipes, but we put back pervious pavers that
00:23:41 --> 00:23:43: look like bricks. And so we had an event on
00:23:43 --> 00:23:46: a Saturday inviting them to come in and pick out
00:23:46 --> 00:23:49: the colors and pick out the patterns and stuff. So
00:23:49 --> 00:23:51: we'll we'll just watch this for about a minute.
00:24:01 --> 00:24:04: The bricks make Marlboro, Marlboro.
00:24:04 --> 00:24:07: Those bricks also make flooding a problem on Marlboro Ave.
00:24:07 --> 00:24:09: in the Chesterfield Heights.
00:24:09 --> 00:24:12: Neighborhood bricks that are here today are about 100 years
00:24:12 --> 00:24:15: old, and they're made of clay and the water doesn't
00:24:15 --> 00:24:17: really filter through them very.
00:24:17 --> 00:24:19: Well, they'll get a facelift as part of the Ohio

00:24:19 --> 00:24:21: Creek watershed flood mitigation projects.
00:24:21 --> 00:24:23: As part of this project, this road will will need
00:24:24 --> 00:24:24: to.
00:24:24 --> 00:24:26: Come up to we can make room for some infrastructure
00:24:26 --> 00:24:28: and and when we put that back, we would like
00:24:28 --> 00:24:31: to put back these brick pavers. They're made of a
00:24:31 --> 00:24:34: different material but there's little space in between them that
00:24:34 --> 00:24:36: allows the water to go to pass through around the
00:24:36 --> 00:24:39: bricks. Today we're here showing a display of what the
00:24:39 --> 00:24:41: new pavers on Marlborough Ave. we're going to look.
00:24:41 --> 00:24:44: Like and they wanted help from residents like Greg Johnson,
00:24:45 --> 00:24:46: who has lived here for decades.
00:24:46 --> 00:24:47: Yeah.
00:24:47 --> 00:24:50: We want them to sort of be a part of
00:24:50 --> 00:24:54: that conversation and weigh in on on the color.
00:24:54 --> 00:24:56: And the look and feel of everything because they're the
00:24:56 --> 00:24:58: ones having to experience it every day.
00:24:58 --> 00:25:01: It's very important. I mean everyone. We live here. Why
00:25:01 --> 00:25:03: would you have a guy?
00:25:04 --> 00:25:06: You've never been here to come in and tell me
00:25:06 --> 00:25:07: about?
00:25:08 --> 00:25:09: My home.
00:25:10 --> 00:25:11: Telling somebody.
00:25:11 --> 00:25:14: Else throughout this project, we've been taking their input and
00:25:14 --> 00:25:17: modifying the design and incorporating their feedback into the different
00:25:17 --> 00:25:20: elements of the project as we've been going along in
00:25:20 --> 00:25:21: the last year or.
00:25:21 --> 00:25:24: So, but it's not just limited to this project. From
00:25:24 --> 00:25:27: building 5 new schools to building a new neighborhood with
00:25:27 --> 00:25:31: the Huntersville Plan book, to building the city itself every
00:25:31 --> 00:25:34: year with budget planning, Norfolk is constantly reaching out to
00:25:34 --> 00:25:37: its residents for their input and ideas.
00:25:40 --> 00:25:40: It's imperative that.
00:25:43 --> 00:25:45: To do you should always.
00:25:47 --> 00:25:50: So, yeah. So yeah, as you can see we, we
00:25:50 --> 00:25:51: do a lot with.
00:25:52 --> 00:25:56: With with videos and things like that trying to reach
00:25:56 --> 00:25:59: everybody every possible way we can and and so I
00:25:59 --> 00:26:02: just wanted to point out you know we've got this

00:26:02 --> 00:26:06: approach now that we've learned through this project and and

00:26:06 --> 00:26:09: other things like the Dutch dialogues we did a few

00:26:09 --> 00:26:12: years ago. And these are the, these are the the

00:26:12 --> 00:26:16: values that we want to base our solutions on and

00:26:16 --> 00:26:19: you know just kind of you know point out that

00:26:19 --> 00:26:22: that it's really important for us to you know to

00:26:22 --> 00:26:23: be equitable.

00:26:23 --> 00:26:26: And and innovative where we can and and really integrate

00:26:26 --> 00:26:29: and and work with what's there the best we can

00:26:29 --> 00:26:33: because folks you know change is sometimes hard. So we

00:26:33 --> 00:26:36: we want to you know respect the the character of

00:26:36 --> 00:26:39: the neighborhood and the heritage that that they have and

00:26:39 --> 00:26:42: so these are these are the types of things that

00:26:42 --> 00:26:45: that we're bringing to the projects like this.

00:26:47 --> 00:26:50: Hi, Kyle, Jane here. We have a question from the

00:26:50 --> 00:26:51: audience.

00:26:51 --> 00:26:51: That.

00:26:51 --> 00:26:55: Relates to this conversation of community engagement. Can you speak

00:26:55 --> 00:26:59: more to how you avoided gentrification in the neighborhood in

00:26:59 --> 00:27:02: the process of realizing this project?

00:27:03 --> 00:27:07: Yeah, I mean, you know, gentrification is is a.

00:27:08 --> 00:27:10: Is a tough thing to.

00:27:11 --> 00:27:14: To deal with sometimes for for cities there's there you

00:27:14 --> 00:27:18: know some things we have control over zoning codes and

00:27:18 --> 00:27:21: other things like that but other things we just don't.

00:27:22 --> 00:27:25: One thing I think really that helped this community out

00:27:25 --> 00:27:28: with that type of issue is there there's a lot

00:27:28 --> 00:27:31: of folks that have grown up here and come back

00:27:31 --> 00:27:35: to this neighborhood to take care of their elderly parents

00:27:35 --> 00:27:39: and things like that. And so there's there's so much

00:27:39 --> 00:27:42: attachment to this neighborhood that I think.

00:27:42 --> 00:27:46: Most folks want to stay here and always be here

00:27:46 --> 00:27:49: and so we haven't seen you know folks really trying

00:27:49 --> 00:27:53: to move out or really even move in because they're

00:27:53 --> 00:27:56: just not not a lot available for sale or or

00:27:56 --> 00:28:00: up for option. And again it's we're pretty built out

00:28:00 --> 00:28:03: so we're there's not even a lot of space to

00:28:03 --> 00:28:07: build new homes Even so. So it feels like everything

00:28:07 --> 00:28:08: is kind of.

00:28:09 --> 00:28:12: Kind of doing it for itself but but it is

00:28:12 --> 00:28:14: something that we we try to keep an eye on
00:28:14 --> 00:28:17: as we redevelop. You know when we go in and
00:28:17 --> 00:28:21: redevelop you know tear something down and build back up,
00:28:21 --> 00:28:24: we're definitely cognizant of of how that goes and and
00:28:24 --> 00:28:25: allowing for.
00:28:26 --> 00:28:30: Choice that give people a choice to stay versus you
00:28:30 --> 00:28:33: know, having to feel like they have to move out.
00:28:33 --> 00:28:37: And we also do require in our new developments that
00:28:37 --> 00:28:41: certain numbers of units are are available for lower income
00:28:41 --> 00:28:45: residents in the city so that so that they're not
00:28:45 --> 00:28:49: priced out of the new, you know, the new development.
00:28:49 --> 00:28:52: So I think Umm, well, I'm going to hand it
00:28:52 --> 00:28:56: over to anneville here. He's going to take you through.
00:28:56 --> 00:28:59: A lot of the design aspects of the project and
00:28:59 --> 00:29:02: and kind of give you more detail of of what's
00:29:02 --> 00:29:04: of what all went into the.
00:29:04 --> 00:29:09: Neighborhood. So we're going to talk about the resilience components
00:29:09 --> 00:29:12: of the project and really kind of 2/2 areas. I'm
00:29:12 --> 00:29:16: going to talk about the coastal resiliency aspects, really dealing
00:29:16 --> 00:29:19: with the water. And then Kyle will follow back up
00:29:19 --> 00:29:22: and give an overview of some of the key project
00:29:22 --> 00:29:26: elements that establish the and strengthen the fabric of the
00:29:26 --> 00:29:27: community.
00:29:27 --> 00:29:29: Just following on on.
00:29:30 --> 00:29:34: Kyle's commentary for guidelines, the city and the design team.
00:29:35 --> 00:29:40: Provided or developed a series of guiding principles to really
00:29:40 --> 00:29:44: kind of direct to the the design process and those
00:29:44 --> 00:29:48: included working with the system and not against it. And
00:29:48 --> 00:29:51: that's with the natural systems in the area as well
00:29:51 --> 00:29:55: as some of the built elements of the the Community
00:29:55 --> 00:29:59: solution should be effective obviously and add value to the
00:29:59 --> 00:30:04: Community in making decisions using the best data available.
00:30:05 --> 00:30:09: Accommodating the water, of course, was important both from the
00:30:09 --> 00:30:13: exterior and resisting outside flooding from storm surge and sea
00:30:13 --> 00:30:17: level rise, retaining water within the community, allowing it to
00:30:17 --> 00:30:20: to be stored and then drained slowly back into the
00:30:20 --> 00:30:21: groundwater.

00:30:21 --> 00:30:25: And then reinforce the assets of the Community, layer public
00:30:25 --> 00:30:30: benefits, strengthen partnerships in the community and share the knowledge
00:30:30 --> 00:30:33: and resources. And as Kyle mentioned, the idea is that
00:30:34 --> 00:30:37: this project really is a showcase for the nation on
00:30:37 --> 00:30:39: how resiliency can be developed.
00:30:41 --> 00:30:44: So we can talk about this with respect to four
00:30:44 --> 00:30:47: key areas, coastal defense which is resisting the surge that
00:30:47 --> 00:30:50: may be in the form of dikes and burns, floodwalls
00:30:50 --> 00:30:54: or revetments, kind of a harder element of those. And
00:30:54 --> 00:30:57: then try to incorporate a nature based element to that
00:30:57 --> 00:31:00: coastal defense system through living shorelines.
00:31:01 --> 00:31:06: Then stormwater management is important, using tide gates, pump stations,
00:31:06 --> 00:31:12: infrastructure improvements and then low impact development techniques to infiltrate
00:31:12 --> 00:31:15: the water back into the into the ground.
00:31:15 --> 00:31:21: Another important point is the transportation infrastructure. Transportation roadways are
00:31:21 --> 00:31:25: linear features. They can, they can serve as berm features
00:31:25 --> 00:31:29: in a resiliency project, raising the roadways to improve the
00:31:29 --> 00:31:33: access. That was very important in this project. It's called
00:31:33 --> 00:31:39: touched on and with all these infrastructure improvements allows opportunities
00:31:39 --> 00:31:39: to improve.
00:31:40 --> 00:31:46: The sidewalks, crosswalks, sidewalk connectivity and the entrances to the
00:31:46 --> 00:31:47: community.
00:31:47 --> 00:31:51: And then last one, last but not least are the
00:31:51 --> 00:31:56: community amenities allowing water to flood certain areas, creating parks
00:31:56 --> 00:32:00: that that are resilient to that flooding community pier and
00:32:00 --> 00:32:04: access to the SE eastern branch of the Elizabeth River
00:32:04 --> 00:32:09: was very important. And then incorporating trails, fitness centers and
00:32:09 --> 00:32:13: other amenities within the community. So I'm going to walk
00:32:13 --> 00:32:17: through and show you how these elements are key elements
00:32:17 --> 00:32:19: were woven into the community.
00:32:19 --> 00:32:23: For a bit of context, I'll touch on just a
00:32:23 --> 00:32:29: couple of reference points. As Kyle mentioned, I64I264 runs along
00:32:29 --> 00:32:31: the northern.
00:32:33 --> 00:32:34: Portion of the.
00:32:35 --> 00:32:40: Of the neighborhood you have Campostella Rd. which allows

the
00:32:41 --> 00:32:44: entrance from the West on Kimball Terrace.
00:32:46 --> 00:32:50: And then you have Ballentine Blvd. which allows access into
00:32:50 --> 00:32:54: the community coming down from the north and into the
00:32:54 --> 00:32:58: community. So moving from from West to East, we have
00:32:58 --> 00:33:03: the entrance improvements to the neighborhood through raising Kimball Terrace
00:33:03 --> 00:33:07: that served as a burn feature which then tied into
00:33:07 --> 00:33:11: a sea wall, flood wall type feature around an industrial
00:33:11 --> 00:33:16: property. At this location there just wasn't enough room for.
00:33:16 --> 00:33:20: The northern berm here. This section of the community was
00:33:20 --> 00:33:25: also protected from exterior flooding by an earthen berm.
00:33:26 --> 00:33:31: And then the the floodwall transitions into an earthen berm
00:33:31 --> 00:33:35: around the perimeter of the main body of the community,
00:33:36 --> 00:33:40: which makes its way through this area and back up,
00:33:40 --> 00:33:44: tying into the more elevated areas next to I264.
00:33:45 --> 00:33:50: Within that firm, we have a title allowing title exchange
00:33:50 --> 00:33:51: with Ohio Creek.
00:33:52 --> 00:33:56: This water feature to the West you see these areas
00:33:56 --> 00:34:01: are created wetlands that were incorporated into the design to
00:34:01 --> 00:34:06: expand green areas, open areas and to allow more flood
00:34:06 --> 00:34:11: flood capacity. There was a tide gate installed into Haines
00:34:11 --> 00:34:15: Creek at this location and that prevents flooding from coming
00:34:16 --> 00:34:20: back into Haines Creek and flooding these portions over the
00:34:20 --> 00:34:21: neighborhood.
00:34:22 --> 00:34:25: The Bron feature you see here is a lower burn
00:34:25 --> 00:34:30: feature that allows Haines Creek to maintain stormwater without flooding
00:34:30 --> 00:34:34: the neighborhood. And then we have interior components of the
00:34:34 --> 00:34:36: project as well, stormwater.
00:34:37 --> 00:34:42: Improvements within the community. You have purview permeable pavers that
00:34:42 --> 00:34:46: were put in sidewalk improvements of bioretention areas and just,
00:34:46 --> 00:34:50: you know, to run through the statistics of the project
00:34:50 --> 00:34:52: over a mile of earthen berm.
00:34:54 --> 00:34:58: Flood wall 800 feet of flood wall raised roads that
00:34:58 --> 00:35:02: create that berm one tide gate. Really this is 2500
00:35:02 --> 00:35:07: living feet of living shorelines. You see these blue areas
00:35:07 --> 00:35:11: down here are oyster reefs in front of the stone
00:35:11 --> 00:35:16: structures that retain the the living shoreline and then

approximately

00:35:16 --> 00:35:22: 3 acres of created wetlands storm various stormwater management elements.

00:35:22 --> 00:35:24: You have St. level bioswales.

00:35:25 --> 00:35:30: Stormwater park over 2000 new trees were put in the

00:35:30 --> 00:35:36: neighborhood. 2 miles of drainage upgrades within the community and

00:35:36 --> 00:35:39: for various pavers to pump stations.

00:35:40 --> 00:35:43: So can go right into the first area. We're going

00:35:43 --> 00:35:47: to walk through the project using aerial photography to really

00:35:47 --> 00:35:50: give you a feel for what the project looks like.

00:35:50 --> 00:35:55: For orientation, this locate, this is campostella, this is Kimball

00:35:55 --> 00:35:59: Terrace, the relocated Kimball Terrace and elevated. You can see

00:35:59 --> 00:36:03: how the old Kimball Terrace came right through the center

00:36:03 --> 00:36:07: as you coming into the neighborhood right through the center

00:36:07 --> 00:36:10: of a concrete plant. So not an ideal situation.

00:36:10 --> 00:36:15: The road was relocated raised with bike PED Path. Here

00:36:15 --> 00:36:20: you can see the berm feature surrounding Ohio Creek, the

00:36:20 --> 00:36:26: created wetlands at various locations here and the new entrance

00:36:26 --> 00:36:30: to the industrial facility to this the at the bottom

00:36:30 --> 00:36:33: part of the screen as well.

00:36:33 --> 00:36:37: This is looking into Paynes Creek. This is the Haines

00:36:37 --> 00:36:42: Creek tide gate during construction Means Creek is in the

00:36:42 --> 00:36:46: background. You see the seawall is in partial construction here

00:36:46 --> 00:36:51: along Kimball Terrace you see where the berm earthen berm

00:36:51 --> 00:36:54: then ties in comes out towards the eastern branch of

00:36:54 --> 00:36:59: the Elizabeth River. And then looking back into Haynes Creek

00:36:59 --> 00:37:02: you see the lower berm in the back of these

00:37:02 --> 00:37:04: neighborhoods and.

00:37:04 --> 00:37:08: There really was an effort to tie these these features

00:37:08 --> 00:37:12: into the landscape. Try to make them blend as naturally

00:37:12 --> 00:37:17: as possible with smooth gradients. You see the plantings and

00:37:17 --> 00:37:21: the on the right hand side of the screen there

00:37:21 --> 00:37:25: fresh plantings and a nice nice transition to the borough

00:37:25 --> 00:37:29: area. This is the Haines Creek pump station back at

00:37:29 --> 00:37:33: the the base of or the top of the watershed

00:37:33 --> 00:37:34: at Haines Creek.

00:37:34 --> 00:37:38: You see created wetlands here to the to the right

00:37:38 --> 00:37:41: of the upper right of the screen, the berm feature

00:37:41 --> 00:37:46: in the foreground and then the living shoreline component really

00:37:46 --> 00:37:49: kind of a layered approach. You see the berm at

00:37:49 --> 00:37:54: elevation 12 living Shoreline component which creates a dissipative edge,

00:37:54 --> 00:37:59: dissipates wave energy plus providing habitat and then offshore of

00:37:59 --> 00:38:03: the stone structures are oyster reef structures, this area in

00:38:03 --> 00:38:04: the foreground.

00:38:05 --> 00:38:08: Here is a a stone revetment that was necessary because

00:38:08 --> 00:38:10: of the deep water offshore did not allow for a

00:38:11 --> 00:38:15: living shoreline approach, which which would have been preferred but

00:38:15 --> 00:38:18: not not really feasible at this location. Just another view

00:38:18 --> 00:38:21: of that living shoreline. A lot of these areas look

00:38:21 --> 00:38:25: maybe a little rough there. This is right after construction,

00:38:25 --> 00:38:29: during construction. Maintenance really hasn't kicked in at this point.

00:38:30 --> 00:38:34: In a view of the you saw the the clip

00:38:34 --> 00:38:38: on Marlboro Blvd. These are the end result of the

00:38:38 --> 00:38:42: pervious pavers you see the bioswales are.

00:38:43 --> 00:38:47: The basins for the bioswales are in place adjacent to

00:38:47 --> 00:38:51: the roadways and then at the intersections will be more

00:38:51 --> 00:38:55: bioretention areas and really kind of create a traffic calming

00:38:56 --> 00:38:57: function in the community.

00:38:59 --> 00:39:02: This towards the eastern end of the project you see

00:39:02 --> 00:39:05: the berm that wraps around on the outside of the

00:39:05 --> 00:39:09: shoreline and coming up towards the neighborhood. This is the

00:39:10 --> 00:39:13: Community peer in construction and then in the kind of

00:39:13 --> 00:39:17: the center of the photo is the Valentine pump station,

00:39:17 --> 00:39:21: the larger the two pump stations that was incorporated into

00:39:21 --> 00:39:21: the plan.

00:39:23 --> 00:39:27: And just another view a little bit later, the pier

00:39:27 --> 00:39:31: is complete and this location you see the connectivity along

00:39:31 --> 00:39:34: the top of the berm to the community. Again, it's

00:39:34 --> 00:39:37: kind of a side view of the pump station. This

00:39:37 --> 00:39:42: has an educational component. Under this overhang, there is a

00:39:42 --> 00:39:45: a window wall that allows people to observe the inner

00:39:45 --> 00:39:50: workings of the pump station. There will be educational kiosks

00:39:50 --> 00:39:53: added in there at some point in time and then

00:39:53 --> 00:39:53: last.

00:39:53 --> 00:39:58: Not least is the connectivity to outside of the community
00:39:58 --> 00:40:02: along the Ballantyne corridor there is a light rail system
00:40:03 --> 00:40:06: just to the north to the right of this bridge
00:40:06 --> 00:40:11: crossing that that connectivity was through a four foot wide
00:40:11 --> 00:40:16: sidewalk under here which was very dangerous, not really protected
00:40:16 --> 00:40:21: from the roadway. Next slide Kim. So that's been replaced
00:40:21 --> 00:40:23: with a 14 foot wide walkway.
00:40:24 --> 00:40:29: Allowing a safer pedestrian ingress and egress to the community.
00:40:29 --> 00:40:32: Now Kyle will take it back over and talk about
00:40:33 --> 00:40:36: some of the social resiliency aspects of the project.
00:40:37 --> 00:40:40: Yeah. Yeah, things that will. So just got a couple
00:40:40 --> 00:40:43: more slides here. We'll we'll close out and take some
00:40:43 --> 00:40:46: more questions. And so we'll, you know again in this
00:40:46 --> 00:40:49: resilience park, it's sort of the bridge between the public
00:40:49 --> 00:40:53: housing community and the historic neighborhood. These are some of
00:40:53 --> 00:40:57: the, the things that we were trying to accomplish there.
00:40:57 --> 00:41:00: We wanted you know, protect the neighborhood from flooding, connect
00:41:00 --> 00:41:05: the two neighborhoods and and create these engagement opportunities that
00:41:05 --> 00:41:07: the housing community was already actually.
00:41:07 --> 00:41:10: Built 3 feet above the the flood zone elevation and
00:41:10 --> 00:41:14: so we didn't have to actually build the berm around
00:41:14 --> 00:41:17: around it. And so the berm actually goes through the
00:41:17 --> 00:41:20: park and can and sort of creates amenities there for
00:41:20 --> 00:41:22: them. You can can go to the next one. So
00:41:23 --> 00:41:25: this is a rendering of the park. You can see
00:41:25 --> 00:41:29: lots of new playground equipment there by the school. That
00:41:29 --> 00:41:32: pool already existed. We didn't, we didn't do that as
00:41:32 --> 00:41:35: part of the project, but we created this Plaza that
00:41:35 --> 00:41:38: connects the the road there next to the school.
00:41:38 --> 00:41:41: To the to the other Rd. that goes around it
00:41:41 --> 00:41:44: that that didn't exist before and on there there's there's
00:41:44 --> 00:41:47: chest tables and and things like that BBQ pits and
00:41:47 --> 00:41:50: and picnic tables along that field in the background and
00:41:50 --> 00:41:52: that field used to be a little kind of a
00:41:52 --> 00:41:55: muddy surface all the time. You couldn't really do much
00:41:56 --> 00:41:58: with it after rain for several days and now they're
00:41:58 --> 00:42:02: we've put under drains we've really smoothed it out and
00:42:02 --> 00:42:04: flattened it and all that drains to the Creek on

00:42:04 --> 00:42:07: the on the left kind of wooded Creek area and
00:42:07 --> 00:42:08: that's a sort of that.
00:42:08 --> 00:42:12: Example of daylight and Historic Creek that didn't didn't really
00:42:12 --> 00:42:14: exist before. So we were sort of allowing it to
00:42:14 --> 00:42:17: freely flow and can help us convey the stormwater out
00:42:17 --> 00:42:20: of the out of the park area. Here's some just
00:42:20 --> 00:42:23: picture renderings that we we had during the design and
00:42:23 --> 00:42:26: planning process of of what that those plazas and some
00:42:26 --> 00:42:29: of that playground equipment looks like. And again the the
00:42:29 --> 00:42:32: kids in the school helped us work through that and
00:42:32 --> 00:42:35: pick out those they picked out the colors of the
00:42:35 --> 00:42:38: services. It's a nice rubber soft surface to play on
00:42:38 --> 00:42:38: as well.
00:42:38 --> 00:42:42: Here's a picture of that park under construction. You can
00:42:42 --> 00:42:45: see that that field coming along, they're working in those,
00:42:45 --> 00:42:49: those drains underneath and we're building little outdoor spaces too
00:42:49 --> 00:42:53: up around the school for sort of outdoor education opportunities,
00:42:53 --> 00:42:56: little little coves and things for them to hang out,
00:42:56 --> 00:42:58: hang out in the shade.
00:42:59 --> 00:43:02: Here's a picture of those that new playground equipment after
00:43:02 --> 00:43:05: it's been installed and kind of finishing up some some
00:43:05 --> 00:43:08: last last things here in this picture. But you can
00:43:08 --> 00:43:11: see it's really come together nicely and and it looks
00:43:11 --> 00:43:14: looks great in it and it feels great when you're
00:43:14 --> 00:43:15: out there.
00:43:17 --> 00:43:21: Here's a more later picture of that park nearly completed.
00:43:21 --> 00:43:24: There's there's still some work up there along the Plaza.
00:43:24 --> 00:43:27: The trees haven't gone in there, but you can you
00:43:27 --> 00:43:30: can kind of see how that berm is snaking its
00:43:30 --> 00:43:33: way from the on the left side up through there.
00:43:33 --> 00:43:36: There's a little nature trail winding through the trees on
00:43:36 --> 00:43:39: the right side of the field. And along that edge
00:43:39 --> 00:43:41: of the field will be the the BBQ pits and
00:43:41 --> 00:43:45: and picnic tables and the basketball court on the lower
00:43:45 --> 00:43:47: left hand side will also get a rubbery nice.
00:43:47 --> 00:43:51: Purpose instead of that hot asphalt black surface.
00:43:54 --> 00:43:56: And there's a there's another view of that as well.
00:43:58 --> 00:43:59: And during the fall time.
00:44:01 --> 00:44:03: So I think just to kind of finish up here
00:44:03 --> 00:44:06: just want to give a couple of lessons learned for

00:44:06 --> 00:44:10: folks looking. You know we I really believe this is
00:44:10 --> 00:44:13: a replicable type project that you know can some of
00:44:13 --> 00:44:16: these techniques and tools that we were using could be
00:44:16 --> 00:44:20: used throughout the the really the entire East Coast most
00:44:20 --> 00:44:23: cities along the coast are facing the same challenges and
00:44:23 --> 00:44:27: and have similar edge conditions and typologies and I think
00:44:27 --> 00:44:30: you could do some of these and so if you're
00:44:30 --> 00:44:31: looking to do this.
00:44:31 --> 00:44:34: You know, one of the things is, is we we
00:44:34 --> 00:44:38: were under this grant deadline of of five years and
00:44:38 --> 00:44:41: you know with COVID and everything that was a real
00:44:41 --> 00:44:46: challenge. And so building the $100 million with the construction
00:44:46 --> 00:44:50: in a three-year. In the historic neighborhood, you know is
00:44:50 --> 00:44:54: very disruptive, impactful to the residents and so you know.
00:44:55 --> 00:44:57: You know if you are able to spread that out
00:44:58 --> 00:45:00: a little bit, break it up a little bit in
00:45:00 --> 00:45:03: different ways, you it might be a little bit easier
00:45:03 --> 00:45:07: on the residents you know. So typically this would be
00:45:07 --> 00:45:10: a 5 or 10 year probably project and then there's
00:45:10 --> 00:45:12: a lot of residential properties that.
00:45:14 --> 00:45:17: In an historic community or owner occupied but but there
00:45:17 --> 00:45:20: are several that quite a few that have rental renters
00:45:20 --> 00:45:22: in them. And so when you're trying to you know
00:45:22 --> 00:45:25: acquire real real estate easement and things like that it
00:45:25 --> 00:45:28: was challenging to track down the right folks to to
00:45:28 --> 00:45:31: be able to do that. And being the historic neighborhood
00:45:31 --> 00:45:34: the roads are narrower and they're not built to the
00:45:34 --> 00:45:37: same standards as today. And so bringing in large infrastructure
00:45:37 --> 00:45:40: pipes and piles and things can be a challenge. But
00:45:40 --> 00:45:43: that's where you need those good partners that know how
00:45:43 --> 00:45:44: to do that well.
00:45:44 --> 00:45:45: And MB brought that to the table.
00:45:46 --> 00:45:49: And just to finish up here with some, some really
00:45:50 --> 00:45:53: you know kind of positive note. This is a transformational
00:45:53 --> 00:45:57: project for, for the neighborhood and really for the city.
00:45:57 --> 00:46:01: It's our, it's our you know our our shining example
00:46:01 --> 00:46:04: of sort of how you build resilience in a historic
00:46:04 --> 00:46:07: neighborhood in a in an urban city like we have
00:46:07 --> 00:46:11: and and work with again the the environment the assets
00:46:11 --> 00:46:13: you have the best you can and like I said

00:46:13 --> 00:46:16: before we're wrapping up construction.

00:46:16 --> 00:46:21: Probably reaching substantial completion on the entire project next month.

00:46:21 --> 00:46:25: We'll tie a few bows around things in the following

00:46:25 --> 00:46:28: weeks and months and then we'll be out of the

00:46:28 --> 00:46:31: out of the neighborhood this spring and and and ready

00:46:31 --> 00:46:34: for them to enjoy enjoy it without us being in

00:46:34 --> 00:46:37: the way. So I think, I think we'll we'll stop

00:46:37 --> 00:46:40: there and see see if we have questions that we

00:46:40 --> 00:46:42: can answer the rest of the time.

00:46:44 --> 00:46:46: Thanks so much, Kyle. I'm going to invite all the

00:46:46 --> 00:46:49: panelists to go ahead and turn on their camera right

00:46:49 --> 00:46:51: now and we can get to some of the questions.

00:46:51 --> 00:46:54: We've got quite a few in the chat, so we

00:46:54 --> 00:46:56: may not be able to get them all. But don't

00:46:56 --> 00:46:58: worry, we will reach out with two all the ones

00:46:58 --> 00:47:01: that we don't get to. So please keep them coming.

00:47:02 --> 00:47:05: If somebody wants to jump in, we have a question

00:47:05 --> 00:47:09: from Carolyn about inquiring whether you modeled impacts of this

00:47:10 --> 00:47:13: coastal modification on adjacent or regional coastlines.

00:47:14 --> 00:47:17: Yeah we we're kind of getting this question a lot

00:47:17 --> 00:47:21: on projects like this and and you know the thing

00:47:21 --> 00:47:24: about building in these types of features in a coastal

00:47:24 --> 00:47:28: environment is, is you're really in this infinite basin of

00:47:28 --> 00:47:32: the Atlantic Ocean, Chesapeake Bay and so holding back water

00:47:32 --> 00:47:36: in our neighborhood doesn't you know the the water bodies

00:47:36 --> 00:47:40: have rivers and creeks in the names but they're they're

00:47:40 --> 00:47:41: they're title.

00:47:41 --> 00:47:43: And estuaries, and so they don't.

00:47:45 --> 00:47:48: Like a a mountainous kind of river.

00:47:49 --> 00:47:53: Pluvial fluvial type environment. If you put down something in

00:47:53 --> 00:47:56: the floodplain, it will push it over to the other

00:47:56 --> 00:48:00: folks because it doesn't have anywhere else to go. But

00:48:00 --> 00:48:03: here it's really spread out and across the entire.

00:48:04 --> 00:48:08: River system based systems, Atlantic Ocean and so it's not

00:48:08 --> 00:48:11: we did look at it and it's not even something

00:48:12 --> 00:48:15: you can measure such a small amount if there's anything

00:48:15 --> 00:48:19: there the sensors and modeling can actually pick pick up

00:48:19 --> 00:48:23: even that little level precision and accuracy to to see

00:48:23 --> 00:48:26: any change. So we we did check it and we

00:48:26 --> 00:48:28: didn't find any issues there.

00:48:29 --> 00:48:34: This question were there any resilience measures like retrofitting implemented

00:48:34 --> 00:48:38: directly on the existing housing in the Community, whether it

00:48:38 --> 00:48:40: be public housing or private homes?

00:48:41 --> 00:48:44: We we actually created as part of this project a

00:48:44 --> 00:48:48: sort of pattern book or guidebook on on home projects

00:48:48 --> 00:48:51: for retaining rain is what we call a retaining rain

00:48:51 --> 00:48:54: program. So if you look that up online on our

00:48:54 --> 00:48:57: website, there's 10 home projects that that we created for

00:48:58 --> 00:49:01: folks to do on their property and then there's an

00:49:01 --> 00:49:04: an entire appendicies dedicated to what's how to do that

00:49:04 --> 00:49:08: with historic properties. So our project didn't touch those but

00:49:08 --> 00:49:09: we we are offering.

00:49:10 --> 00:49:14: Little Mini grants to and and and rain barrels trees

00:49:14 --> 00:49:17: for free to residents in the community to implement on

00:49:18 --> 00:49:21: their parcel and we educate them on how to do

00:49:21 --> 00:49:25: that and and sometimes help them implement them ourselves. So

00:49:25 --> 00:49:28: so this is a big part of the entire plan

00:49:28 --> 00:49:31: here but we didn't we didn't go in and raise

00:49:31 --> 00:49:34: any houses as part of this project or anything like

00:49:34 --> 00:49:38: that but we we are working with residents to do

00:49:38 --> 00:49:39: those types of things.

00:49:40 --> 00:49:43: On, on on their own but this overall project really

00:49:43 --> 00:49:47: wouldn't would would prevent the need of raising houses in

00:49:47 --> 00:49:50: this community now because they're protected but but if they

00:49:50 --> 00:49:53: want to capture some rainfall soak it up a little

00:49:53 --> 00:49:56: bit better. We were giving out trees and rain barrels

00:49:57 --> 00:49:57: currently.

00:49:58 --> 00:50:01: Right. Another question anyone from the panel feel free to

00:50:01 --> 00:50:05: jump in. Based on climate change scenarios that are available,

00:50:05 --> 00:50:08: how many years or decades will the physical resilience interventions

00:50:08 --> 00:50:11: being implemented protect this community?

00:50:11 --> 00:50:14: Yes, so I can take this again. We, we built

00:50:14 --> 00:50:16: to the the FEMA 100 year flood level plus we

00:50:16 --> 00:50:19: accounted for 2 1/2 feet of sea level rise. So.

00:50:19 --> 00:50:22: So you know depending on which seal rise curve you

00:50:22 --> 00:50:25: look at, there's a lot of them out there. We

00:50:25 --> 00:50:28: see this definitely exceeding the life of a project.

00:50:28 --> 00:50:32: Typically a infrastructure project like this is a 50 year,

00:50:33 --> 00:50:35: maybe 75 year design life and so. So 2 1/2

00:50:36 --> 00:50:39: feet of steel rise basically takes us to 2100 for
00:50:39 --> 00:50:42: for looking out, you know kind of out. So we've
00:50:43 --> 00:50:46: got some free board on that berm and things like
00:50:46 --> 00:50:49: that. And we also upsized the pumps and the pipes
00:50:50 --> 00:50:54: to account for the extra rainfall that we are measuring.
00:50:54 --> 00:50:58: So they're you know 2025% bigger than our standard would
00:50:58 --> 00:50:58: be because.
00:50:59 --> 00:51:02: Sort of looking ahead at at at how, how it's
00:51:02 --> 00:51:02: changed.
00:51:02 --> 00:51:05: Right. And I think we may have time for just
00:51:05 --> 00:51:08: one or two more questions. We have a question from
00:51:08 --> 00:51:10: the audience asking if you can speak a little bit
00:51:10 --> 00:51:13: more on how the living shoreline at the oyster reefs
00:51:13 --> 00:51:16: was designed to not simply transfer the problem to the
00:51:16 --> 00:51:17: adjacent area.
00:51:18 --> 00:51:19: Will take that one.
00:51:19 --> 00:51:24: Yeah, I'm not sure what the reference to transferring the
00:51:24 --> 00:51:28: problem the the the shoreline prior to the prior to
00:51:28 --> 00:51:32: the project was about a 3 to 4 foot escarpment.
00:51:32 --> 00:51:37: There were fragments of vegetation along the shoreline, but a
00:51:38 --> 00:51:43: fairly abrupt transition from the waters edge to the upland.
00:51:43 --> 00:51:47: So this project did a little bit of bank grading
00:51:47 --> 00:51:49: and installed a sand planting.
00:51:49 --> 00:51:52: Paris on a 12:50 slope to create a a more
00:51:52 --> 00:51:57: gradual transition at that land water interface. And then that
00:51:57 --> 00:52:02: 12:50 slope behind the structures was was of course planted
00:52:02 --> 00:52:07: with two types of vegetation sporting alterniflora which is inundated
00:52:07 --> 00:52:11: twice a day and Cortana patents in the back shore
00:52:11 --> 00:52:14: and the transition from that feature to the front of
00:52:15 --> 00:52:16: the berm allows those.
00:52:18 --> 00:52:21: Vegetation communities to migrate upgradient.
00:52:22 --> 00:52:26: During, you know, during sea level in response to sea
00:52:26 --> 00:52:26: level rise.
00:52:27 --> 00:52:34: The oyster reefs were supplemented, existing again fragmented oyster clumps
00:52:34 --> 00:52:39: along the shoreline and so that those were installed directly
00:52:39 --> 00:52:44: out in front of the the structures. Not sure if
00:52:44 --> 00:52:46: that answers the question, but.
00:52:48 --> 00:52:49: That was the design process.
00:52:50 --> 00:52:54: Great. Thanks, Neville. All right. And then one last question
00:52:54 --> 00:52:58: very quickly. To finance such a large infrastructure project

that

00:52:58 --> 00:53:01: uses CDBG grant money and other sources like this, how

00:53:01 --> 00:53:05: does the planning team work across silos and build administrative

00:53:05 --> 00:53:06: capacity?

00:53:06 --> 00:53:10: So the the way that we do deal with this

00:53:10 --> 00:53:11: in Norfolk is.

00:53:12 --> 00:53:16: I work in the city manager's Office of resilience. So

00:53:16 --> 00:53:19: I actually don't sit in a silo sort of department

00:53:19 --> 00:53:22: where I'm really just only, you know, looking at one

00:53:22 --> 00:53:25: thing. Our our role in the city is actually to

00:53:25 --> 00:53:29: bring the different partment departments around the table to tackle

00:53:29 --> 00:53:33: these problems that not one department would ever sort of

00:53:33 --> 00:53:37: take on themselves. And so that's how we work administratively.

00:53:37 --> 00:53:41: We're relatively small department, but being that we're, you know,

00:53:41 --> 00:53:44: within the city manager's office.

00:53:44 --> 00:53:47: That that sort of helps us break down those silos

00:53:47 --> 00:53:50: and barriers that may, you know, kind of exist otherwise.

00:53:50 --> 00:53:53: So we think that's kind of a good thing. We've

00:53:53 --> 00:53:57: seen other cities kind of do things differently, but for

00:53:57 --> 00:54:00: us, we think that's the best, best way to manage

00:54:00 --> 00:54:04: these, these like large, complex, multifaceted projects that really touch

00:54:04 --> 00:54:07: every department in the city in some way or another

00:54:07 --> 00:54:10: is to kind of work them to an office like

00:54:10 --> 00:54:14: ours, in this case the city manager's Office of resilience.

00:54:14 --> 00:54:17: Well, thank you again to our panel and to our

00:54:17 --> 00:54:21: attendees for your engagement. I want to be conscious of

00:54:21 --> 00:54:24: time, so going to go ahead and end this here

00:54:24 --> 00:54:27: as as a reminder, this was recorded and will be

00:54:27 --> 00:54:31: available to watch on utilized knowledge Finder. Have a good

00:54:31 --> 00:54:33: afternoon everyone. Bye.
