Webinar

Business Case for Resilience in Southeast Florida

Date: April 17, 2020

00:00:00 --> 00:00:03: Hello everyone and welcome to the business case for Resilience

00:00:03 --> 00:00:05: Focus Group webinar.

00:00:05 --> 00:00:07: My name is Leah Shepherd and I'm a manager for

00:00:07 --> 00:00:09: you allies Urban Resilience program.

00:00:09 --> 00:00:11: I along with the rest of the project team,

00:00:11 --> 00:00:14: I'm excited to share an overview of the business case

00:00:14 --> 00:00:17: for resilience in Southeast Florida project.

00:00:17 --> 00:00:19: But before we get into it I'm happy to hand

00:00:19 --> 00:00:21: it over to Doctor Jennifer Jurado,

00:00:21 --> 00:00:24: Broward County's chief Resilience Officer to share a few opening

00:00:25 --> 00:00:25: remarks.

00:00:25 --> 00:00:28: Thank you, Jennifer. We've understood that we need to really

00:00:28 --> 00:00:30: be able to talk more about the economics.

00:00:30 --> 00:00:32: Not so much in terms of exposure,

00:00:32 --> 00:00:34: but the great opportunities that are gained,

00:00:34 --> 00:00:36: the return on investment that comes.

00:00:36 --> 00:00:40: By investing in resilience the same way that we talk

00:00:40 --> 00:00:43: about the return on investment that comes with other very

00:00:43 --> 00:00:44: key economic sectors.

00:00:44 --> 00:00:48: Whether that's investing in our beaches or tourism or the

00:00:48 --> 00:00:51: role that the ports in our airports or agriculture pay

00:00:51 --> 00:00:54: play for our communities and we know that the business

00:00:54 --> 00:00:59: community sees investments and infrastructure and resilience very much along

00:00:59 --> 00:01:00: the same lines.

00:01:00 --> 00:01:03: And increasingly it's going to be essential that we be

00:01:03 --> 00:01:07: able to communicate clearly about the importance of making this.

00:01:07 --> 00:01:10: Proactive investment and how it serves our communities,
00:01:10 --> 00:01:14: not just long term, but there are immediate benefits that
00:01:14 --> 00:01:16: our community stand to derive as well.
00:01:16 --> 00:01:19: So with that, we were thrilled to be able to
00:01:19 --> 00:01:23: partner with the private sector and undertaking the evaluation that
00:01:23 --> 00:01:26: will be referenced today and this web and R is
00:01:26 --> 00:01:30: a very important part of the stakeholder process to help
00:01:30 --> 00:01:34: think about how we better frame our communications moving forward.
00:01:34 --> 00:01:35: So thanks very much to you.
00:01:35 --> 00:01:37: Well, I and the whole team.
00:01:37 --> 00:01:40: In an your management of this project and again to
00:01:40 --> 00:01:42: everyone who's on the call today.
00:01:42 --> 00:01:43: Thank you.
00:01:45 --> 00:01:47: Thank you so much Jennifer Ann.
00:01:47 --> 00:01:49: Just on behalf of the entire UI team.
00:01:49 --> 00:01:53: Just wanted to share our deepest condolences for the loss
00:01:53 --> 00:01:55: of your in your community.
00:01:55 --> 00:01:58: OK, thank you for answering these introductory questions.
00:01:58 --> 00:02:01: There will be more opportunities to pull in throughout the
00:02:01 --> 00:02:01: webinars,
00:02:01 --> 00:02:04: so please keep your cell phone standing now a little
00:02:04 --> 00:02:06: bit about the team and the project.
00:02:06 --> 00:02:10: The Urban Land Institute is a nonprofit membership organization for
00:02:10 --> 00:02:13: professionals in the real estate and land use sectors.
00:02:13 --> 00:02:16: I, Leah Shepherd and the manager for the Urban Resilience
00:02:16 --> 00:02:19: Program and we are managing this project on behalf of
00:02:19 --> 00:02:22: the Southeast Florida climate Change Compact,
00:02:22 --> 00:02:25: the Urban Resilience Program supports our members,
00:02:25 --> 00:02:29: communities and cities to identify best practices for finite resilience
00:02:29 --> 00:02:30: at the building,
00:02:30 --> 00:02:34: community and regional levels. Our work includes technical assistance,
00:02:34 --> 00:02:38: research and hosting convenience just like this one.
00:02:38 --> 00:02:41: As COVID-19 has caused a sudden and painful disruption to
00:02:41 --> 00:02:43: our cities around the world,
00:02:43 --> 00:02:46: it's clear that the topic of resilience is more important
00:02:46 --> 00:02:46: than ever.
00:02:46 --> 00:02:49: Our work today is focused on resilience to the impacts
00:02:50 --> 00:02:53: of climate change as opposed to a public health emergency.

00:02:53 --> 00:02:56: However, where there are many parallels to consider in terms

00:02:56 --> 00:02:58: of community preparedness,

00:02:58 --> 00:03:00: adaptability, health and economic impacts,

00:03:00 --> 00:03:03: and the need for science based strategy.

00:03:03 --> 00:03:06: Today's study builds from the best available science to help

00:03:06 --> 00:03:11: propose strategies for climate adaptation in Southeast Florida and assess

00:03:11 --> 00:03:13: the business case for implementation.

00:03:19 --> 00:03:22: The Urban Resilience Program is partnering with the ULI Southeast

00:03:22 --> 00:03:24: Florida Caribbean District Council.

00:03:24 --> 00:03:27: The District Council serves 7 Floridian counties,

00:03:27 --> 00:03:30: plus Puerto Rico and the Caribbean islands,

00:03:30 --> 00:03:34: totaling over 1100 members and over 3000 active participants.

00:03:34 --> 00:03:36: Local members are at the forefront of issues like resilience

00:03:36 --> 00:03:38: in real estate and the built environment.

00:03:42 --> 00:03:45: We are very proud to be working with our local

00:03:45 --> 00:03:48: Southeast Florida District Council and a calm on behalf of

00:03:48 --> 00:03:52: the Southeast Florida regional Climate Change Compact compact that I'm

00:03:52 --> 00:03:54: sure many of you on this web and R fire

00:03:54 --> 00:03:55: familiar with,

00:03:55 --> 00:03:57: which was formed by Broward,

00:03:57 --> 00:03:59: Miami, Dade, Monroe and Palm Beach Counties,

00:03:59 --> 00:04:03: was created in 2010 to both support local government efforts

00:04:03 --> 00:04:03: to meet,

00:04:03 --> 00:04:08: share challenges and to develop climate adaptation and mitigation strategies

00:04:08 --> 00:04:09: for the region.

00:04:09 --> 00:04:13: To share exactly how this analysis can inform decision making

00:04:13 --> 00:04:15: and help align communication around resilience.

00:04:15 --> 00:04:18: I'm very happy to pass the mic to our local

00:04:18 --> 00:04:20: project manager Alec Bogdanoff.

00:04:20 --> 00:04:22: Alec Ticular thank you Leah,

00:04:22 --> 00:04:25: and thank you all for attending today so this business

00:04:25 --> 00:04:29: case is really designed to identify the return on resilience

00:04:29 --> 00:04:33: and adaptation measures that considers the risks of sea level

00:04:33 --> 00:04:38: rise coupled with other flooding risks applicable specifically to Southeast

00:04:38 --> 00:04:38: Florida.

00:04:38 --> 00:04:42: And So what we're looking at is the higher frequency

00:04:42 --> 00:04:42: storms.
00:04:42 --> 00:04:45: Not kind of the catastrophic hurricanes,
00:04:45 --> 00:04:48: so we can understand what the long term risks and
00:04:48 --> 00:04:51: also kind of some of the more near term risks
00:04:51 --> 00:04:53: of sea level rise are.
00:04:53 --> 00:04:56: From an economic standpoint, and so this is my opportunity
00:04:56 --> 00:04:59: to thank the project partners we were able to secure
00:04:59 --> 00:05:02: a grant from the Florida Department of Environmental Protection.
00:05:02 --> 00:05:05: There was a cost share between Miami,
00:05:05 --> 00:05:07: Dade, Broward, Palm Beach and Monroe counties.
00:05:07 --> 00:05:10: The business community cost shared about 25%
00:05:10 --> 00:05:11: of the cost of this study.
00:05:11 --> 00:05:15: We also receive private philanthropic grants and a ecom are
00:05:15 --> 00:05:17: project partner as well is helping with some of the
00:05:18 --> 00:05:18: cost.
00:05:18 --> 00:05:20: Share through.
00:05:20 --> 00:05:25: Some of the services they're providing as well.
00:05:25 --> 00:05:28: Next slide, please. So ultimately.
00:05:28 --> 00:05:32: What we want to do is achieve transparency here,
00:05:32 --> 00:05:34: so we want to look at this project and say
00:05:34 --> 00:05:38: how do we create a business case for our community
00:05:38 --> 00:05:41: that is understood by the private sector and that they
00:05:41 --> 00:05:44: feel they can also own so they can use that
00:05:44 --> 00:05:46: in advocating for action.
00:05:49 --> 00:05:52: The and so the first part here is the industry
00:05:52 --> 00:05:56: and community outreach that you all are participating in today,
00:05:56 --> 00:05:59: and so this is one of those events we had
00:05:59 --> 00:06:03: one yesterday with the private sector and we'll look into
00:06:03 --> 00:06:04: that.
00:06:04 --> 00:06:07: Will look into a little bit of the results of
00:06:07 --> 00:06:08: that later on in the web.
00:06:08 --> 00:06:12: And are we will also be hosting a regional launch
00:06:12 --> 00:06:13: event in outreach events.
00:06:13 --> 00:06:15: Once the report is done,
00:06:15 --> 00:06:18: and so we want to look at how the cities
00:06:18 --> 00:06:22: and regions are using this to inform infrastructure decisions.
00:06:22 --> 00:06:25: And then we also want to identify some best case
00:06:25 --> 00:06:28: examples that can be used to define and kind of
00:06:28 --> 00:06:32: guide what we're doing down here and ultimately this is
00:06:32 --> 00:06:37: about communications. So we're going to integrate this report into

00:06:37 --> 00:06:38: a industry audience,
00:06:38 --> 00:06:42: forward report, and so this will be something that will
00:06:42 --> 00:06:46: be easily understood by our private sector and also public
00:06:46 --> 00:06:49: sector friends to make sure that this is an approachable
00:06:49 --> 00:06:53: topic and the information can be used readily.
00:06:53 --> 00:06:56: And ultimately we want to aid in a region wide
00:06:56 --> 00:06:59: communication effort and not just a kind of County by
00:06:59 --> 00:07:00: County,
00:07:00 --> 00:07:03: but kind of looking at this from a region.
00:07:03 --> 00:07:06: The interconnectedness of our. Economy and also of our resilience
00:07:06 --> 00:07:07: efforts.
00:07:11 --> 00:07:15: So some of the post project impacts were looking to
00:07:15 --> 00:07:17: have our first original risk understanding.
00:07:17 --> 00:07:20: So what are the core infrastructure assets?
00:07:20 --> 00:07:23: How will this? How will flooding on the higher frequency
00:07:24 --> 00:07:27: events affect public and private property and then also economic
00:07:28 --> 00:07:31: sectors looking at jobs and the different sectors that are
00:07:31 --> 00:07:34: important to our community. For example,
00:07:34 --> 00:07:36: the marine industry in Fort Lauderdale.
00:07:36 --> 00:07:39: There's also looking at the return on investment if we
00:07:39 --> 00:07:41: implement systemic strategies,
00:07:41 --> 00:07:44: for example. Raising seawalls across the region?
00:07:44 --> 00:07:46: What does that mean economically and then we can also
00:07:46 --> 00:07:48: look at building level strategies,
00:07:48 --> 00:07:50: kind of from a regional standpoint.
00:07:50 --> 00:07:51: Again, it won't look asset specific,
00:07:51 --> 00:07:53: but regionally. If we take this approach,
00:07:53 --> 00:07:56: how will it affect the economy?
00:07:56 --> 00:07:59: And then ultimately we want broad support regionally for resilience
00:07:59 --> 00:08:03: investments from both the public private sector and then be
00:08:03 --> 00:08:06: able to take this information to the state and federal
00:08:06 --> 00:08:09: government to better explain. Why we need to act and
00:08:09 --> 00:08:11: why we need to act now.
00:08:11 --> 00:08:13: This is a lot of information that you know from
00:08:13 --> 00:08:15: a congressional standpoint.
00:08:15 --> 00:08:17: There still trying to use to make decisions,
00:08:17 --> 00:08:21: especially as we have an infrastructure package coming forward in
00:08:21 --> 00:08:22: the next year or two.
00:08:22 --> 00:08:25: Potentially this information can help define some of what the

00:08:25 --> 00:08:26: money is spent on,

00:08:26 --> 00:08:29: so this is a very important study from that perspective.

00:08:34 --> 00:08:36: Great and so where we are in the project.

00:08:36 --> 00:08:39: So we obviously selected the consultant we did the research

00:08:39 --> 00:08:40: data Threshold collection,

00:08:40 --> 00:08:43: which I'll walk you through momentarily and we're in the

00:08:43 --> 00:08:46: process of looking at the exposure analysis and avoided losses.

00:08:46 --> 00:08:49: That's what a commas or economic modeling partner is doing

00:08:49 --> 00:08:49: today.

00:08:49 --> 00:08:50: We're doing the focus group,

00:08:50 --> 00:08:52: so this is where we are in the process.

00:08:52 --> 00:08:55: And then after this will be looking at the economic

00:08:55 --> 00:08:56: benefits of adaptation in case studies.

00:08:56 --> 00:08:58: I'm going to go over a couple of case studies

00:08:58 --> 00:09:00: at the end to give you a flavor of what

00:09:00 --> 00:09:01: we're looking at,

00:09:01 --> 00:09:05: and then ultimately will provide some regional resilient strategy recommendations

00:09:05 --> 00:09:06: as well.

00:09:06 --> 00:09:09: This will all culminate with a report launch and communications

00:09:09 --> 00:09:10: this summer.

00:09:13 --> 00:09:16: So we all have our own definitions of resilience,

00:09:16 --> 00:09:19: so we just wanted to put one up for economic

00:09:19 --> 00:09:22: resilience so we could tell you our approach here and

00:09:22 --> 00:09:23: so for us.

00:09:23 --> 00:09:25: This is the capacity to prevent,

00:09:25 --> 00:09:29: withstand, recover from an otherwise bounce back better from human

00:09:30 --> 00:09:33: or natural cause shocks or disruptions to the economy.

00:09:33 --> 00:09:36: So this is the definition that we'll be using kind

00:09:36 --> 00:09:40: of in laying the groundwork for what we mean by

00:09:40 --> 00:09:41: an economic resilience study.

00:09:46 --> 00:09:48: And what is the return on resilience so you know

00:09:48 --> 00:09:51: our private or public sector friends notice,

00:09:51 --> 00:09:54: but ultimately what we're trying to do is make the

00:09:54 --> 00:09:54: business case.

00:09:54 --> 00:09:57: So here we can look at it from a property

00:09:57 --> 00:09:58: value standpoint.

00:09:58 --> 00:10:02: Property value affects flooding. Property value is a private sector

00:10:02 --> 00:10:02: benefit.
00:10:02 --> 00:10:04: So if you stay the effects of flooding,
00:10:04 --> 00:10:08: you can enhance property value or at least keep property
00:10:08 --> 00:10:08: value.
00:10:08 --> 00:10:10: This will improve tax revenue,
00:10:10 --> 00:10:12: which is a public sector benefit.
00:10:12 --> 00:10:15: And ultimately. This will improve the adaptive capacity,
00:10:15 --> 00:10:18: so inability of communities ability to adapt in the future.
00:10:18 --> 00:10:19: So if we spend money now,
00:10:19 --> 00:10:20: we can protect property value.
00:10:20 --> 00:10:23: Now will be tax revenue now later and now to
00:10:23 --> 00:10:23: adapt.
00:10:23 --> 00:10:26: Ultimately, if you don't, there's a negative feedback loop,
00:10:26 --> 00:10:28: which is if we lose property value,
00:10:28 --> 00:10:31: we lose tax revenue and will lose our adaptive capacity.
00:10:31 --> 00:10:33: This is why it's important to act and act now,
00:10:33 --> 00:10:35: and this is part of the business case that we
00:10:35 --> 00:10:36: are making.
00:10:39 --> 00:10:42: And very quickly the physical scenarios we're looking at are
00:10:43 --> 00:10:44: mean higher high water.
00:10:44 --> 00:10:46: So looking at the average daily high tide,
00:10:46 --> 00:10:48: the one year title event,
00:10:48 --> 00:10:51: which is the King Tide and the 10 year title
00:10:51 --> 00:10:51: event,
00:10:51 --> 00:10:53: which is a frequent coastal storm.
00:10:53 --> 00:10:57: Again, what we're looking at is the higher frequency events,
00:10:57 --> 00:11:00: not the catastrophic low frequency events such as a hurricane,
00:11:00 --> 00:11:03: and so this is done specifically so that we can
00:11:03 --> 00:11:07: look at those long-term trends and better associated with sea
00:11:07 --> 00:11:08: level rise.
00:11:08 --> 00:11:10: This example here. You can look at later,
00:11:10 --> 00:11:14: but it basically just shows how sea level rise can
00:11:14 --> 00:11:16: cause 100 year storm surge.
00:11:16 --> 00:11:20: To inundate this, this here is an airport with sea
00:11:20 --> 00:11:21: level rise.
00:11:21 --> 00:11:23: And so.
00:11:23 --> 00:11:25: With our public sector friends,
00:11:25 --> 00:11:28: we don't have to go into detail on the next
00:11:28 --> 00:11:28: slide,
00:11:28 --> 00:11:31: which looks at the sea level rise curves.
00:11:31 --> 00:11:34: But we are using the new unified sea level rise

00:11:34 --> 00:11:37: projections now 20 years from now and 50 years from
00:11:37 --> 00:11:37: now,
00:11:37 --> 00:11:41: so that were consistent with the compact planning horizons,
00:11:41 --> 00:11:43: and so this is what we're using.
00:11:43 --> 00:11:47: This information is then taken into the economic modeling,
00:11:47 --> 00:11:49: and so I'm going to pass it over to Aaron,
00:11:49 --> 00:11:52: and he's going to walk through how we take this
00:11:52 --> 00:11:53: information an.
00:11:53 --> 00:11:57: Apply it to an economics framework.
00:11:57 --> 00:12:00: Great thanks Alec. I am not able to see the
00:12:00 --> 00:12:02: full participant list,
00:12:02 --> 00:12:05: but I think I've likely interacted with some of you
00:12:05 --> 00:12:06: in the past,
00:12:06 --> 00:12:08: just as some context setting.
00:12:08 --> 00:12:11: I'm about to discuss some of the major elements from
00:12:11 --> 00:12:16: the economic analysis that is being conducted to support findings
00:12:16 --> 00:12:17: in this study.
00:12:17 --> 00:12:20: This analysis in many ways is building off of a
00:12:20 --> 00:12:23: similar study that we did for Broward County about a
00:12:23 --> 00:12:26: year and a half ago that focused on the business
00:12:26 --> 00:12:29: community in Dania Beach and some.
00:12:29 --> 00:12:32: Regional impact. So for those of you who are familiar
00:12:32 --> 00:12:33: with that study,
00:12:33 --> 00:12:37: some may see some content in this presentation that that
00:12:37 --> 00:12:39: mirrors that study as well.
00:12:39 --> 00:12:42: So I'm going to walk you through four or five
00:12:42 --> 00:12:44: main elements of the economic analysis.
00:12:44 --> 00:12:48: I'm going to start by just addressing some of the
00:12:48 --> 00:12:49: primary questions.
00:12:49 --> 00:12:52: That we're trying to answer as part of this study,
00:12:52 --> 00:12:56: I'm going to discuss some key concepts that underpin the
00:12:57 --> 00:12:58: economic modeling.
00:12:58 --> 00:13:02: From there, I'll briefly outline some of the primary data
00:13:02 --> 00:13:05: resources as well as modeling tools that we're using to
00:13:05 --> 00:13:07: carry out the analysis,
00:13:07 --> 00:13:11: and I'll finish up by just providing an overview of
00:13:11 --> 00:13:14: some of the key reporting metrics that we plan to
00:13:14 --> 00:13:16: include in the final report.
00:13:16 --> 00:13:19: So with that, we're kind of taking a linear approach,
00:13:19 --> 00:13:22: as Alec mentioned in that kind of flow chart,
00:13:22 --> 00:13:26: a couple slides back of the project process where right

00:13:26 --> 00:13:29: now we're working on answering the questions of what are
00:13:29 --> 00:13:34: the economic vulnerabilities of communities in Southeast Florida to coastal
00:13:34 --> 00:13:35: hazards. And now in the future,
00:13:35 --> 00:13:37: once we're able to answer,
00:13:37 --> 00:13:40: that question will be moving into the question of what
00:13:40 --> 00:13:44: are the costs and benefits of different adaptation actions that
00:13:44 --> 00:13:46: are intended to mitigate those.
00:13:46 --> 00:13:50: Economic for abilities that we're currently evaluating.
00:13:50 --> 00:13:55: And then Lastly, the other third bucket of questions that
00:13:55 --> 00:13:57: we're trying to answer.
00:13:57 --> 00:14:00: Is trying to account for the fact that planning an
00:14:00 --> 00:14:02: implementing adaptation takes time and resources,
00:14:02 --> 00:14:06: but nevertheless it's important to think about what actions can
00:14:06 --> 00:14:08: be taken today to promote resilience.
00:14:08 --> 00:14:12: So we'll be including some recommendations to that in the
00:14:12 --> 00:14:13: report as well.
00:14:13 --> 00:14:14: Next slide.
00:14:18 --> 00:14:20: So this is a a list of kind of primary
00:14:20 --> 00:14:23: modeling concepts that underpin the economic analysis.
00:14:23 --> 00:14:26: I'm going to briefly go through some of this stuff
00:14:26 --> 00:14:29: and I'm happy to answer questions at the end of
00:14:29 --> 00:14:32: the web and our people want to follow up.
00:14:32 --> 00:14:35: So starting with risk assessment approaches when we do a
00:14:35 --> 00:14:37: natural hazards analysis such as this one,
00:14:37 --> 00:14:40: there is kind of two pathways you can take.
00:14:40 --> 00:14:44: You can do a deterministic analysis or a probabilistic probabilistic
00:14:44 --> 00:14:47: analysis is generally extremely resource intensive.
00:14:47 --> 00:14:50: Ann is looks at events of both low and high
00:14:50 --> 00:14:50: probability.
00:14:50 --> 00:14:53: Over a defined period of time and also spends a
00:14:53 --> 00:14:57: lot of trying trying to tease out the uncertainty of
00:14:57 --> 00:14:59: key variables that go in the analysis.
00:14:59 --> 00:15:03: So for instance, first floor elevation of a building you'd
00:15:03 --> 00:15:05: want to do a field site visit to kind of
00:15:05 --> 00:15:07: develop those parameters.
00:15:07 --> 00:15:09: The other approach is deterministic,
00:15:09 --> 00:15:12: and this is the approach we're taking in this study
00:15:12 --> 00:15:16: where we are modeling discrete events in specific time horizon.
00:15:16 --> 00:15:20: So Alec talked a little about the scenarios we're looking

00:15:20 --> 00:15:21: at.
00:15:21 --> 00:15:24: Daily high tide. A King tide Anna tenure tide in
00:15:24 --> 00:15:26: today 2014 twenty 70.
00:15:26 --> 00:15:30: So we were taking that deterministic approach that we can
00:15:30 --> 00:15:31: show you.
00:15:31 --> 00:15:35: What is the increasing risk overtime as well as the
00:15:35 --> 00:15:38: cascading benefits of taking action.
00:15:38 --> 00:15:43: When it comes to modeling economic impacts or economic effects,
00:15:43 --> 00:15:48: there's various dimensions to the model structure and approaches.
00:15:48 --> 00:15:51: First, I want to just elaborate a little on primary
00:15:51 --> 00:15:53: versus secondary impact.
00:15:53 --> 00:15:57: So in this analysis we're looking at both of those
00:15:57 --> 00:16:01: types of impacts you could consider primary impacts.
00:16:01 --> 00:16:05: Take for example, a business that is exposed to the
00:16:05 --> 00:16:07: tenure Coastal storm.
00:16:07 --> 00:16:11: The primary impacts of flooding in that context would be
00:16:12 --> 00:16:16: structuring content damage as well as direct effects to employees
00:16:16 --> 00:16:18: that work at that business.
00:16:18 --> 00:16:23: Secondary impacts take a broader downstream view of the economic
00:16:23 --> 00:16:25: consequences that could occur.
00:16:25 --> 00:16:28: So in the example of that business that is not
00:16:28 --> 00:16:32: able to operate because it was affected by a flood
00:16:32 --> 00:16:33: event,
00:16:33 --> 00:16:37: that business depends on suppliers and a broader supply chain
00:16:37 --> 00:16:37: too.
00:16:37 --> 00:16:41: Carry out its business operations so the secondary impacts in
00:16:41 --> 00:16:45: this context would kind of account for that broader supply
00:16:45 --> 00:16:49: chain that exists in Southeast Florida and extends beyond those
00:16:49 --> 00:16:53: jurisdictional boundaries. Another important element of this study,
00:16:53 --> 00:16:57: and especially as it relates to thinking about adaptation,
00:16:57 --> 00:17:00: is to distinguish what is a temporary impact versus permanent
00:17:00 --> 00:17:01: impact.
00:17:01 --> 00:17:04: So in this study, we are delineating temporary impacts as
00:17:04 --> 00:17:05: storm event,
00:17:05 --> 00:17:08: so that would be the 10 year storm versus permanent

00:17:08 --> 00:17:11: impacts is something that we consider is is likely going
00:17:11 --> 00:17:12: to be permanent,
00:17:12 --> 00:17:14: which would be the daily high tide.
00:17:14 --> 00:17:18: For example, you would approach modeling the economic damages differently
00:17:18 --> 00:17:21: based on if it's a temporary or permanent impact and
00:17:21 --> 00:17:21: also.
00:17:21 --> 00:17:24: Think differently about what type of adaptation is needed.
00:17:24 --> 00:17:28: Building off of the discussion of permanent impacts,
00:17:28 --> 00:17:31: it's we're also trying to illuminate in this study that
00:17:31 --> 00:17:33: you have one time impacts.
00:17:33 --> 00:17:36: Let's take a business again and use it as an
00:17:36 --> 00:17:40: example business that's in a permanent sea level rise zone
00:17:40 --> 00:17:41: in the future.
00:17:41 --> 00:17:44: In all reality is not going to be able to
00:17:44 --> 00:17:46: function as it did in the past,
00:17:46 --> 00:17:49: and would likely lose its entire market value.
00:17:49 --> 00:17:51: So you have property value loss,
00:17:51 --> 00:17:55: but if that business isn't able to relocate in the
00:17:55 --> 00:17:56: same taxing jurisdiction,
00:17:56 --> 00:18:00: or you know the broader County going to have reoccuring
00:18:00 --> 00:18:05: annual impacts accounting for business sales losses as well as
00:18:05 --> 00:18:09: employee earnings which also has fiscal impacts.
00:18:09 --> 00:18:12: When it comes to the categories of affects where when
00:18:12 --> 00:18:16: I'm trying to describe and in this bucket of concepts
00:18:16 --> 00:18:19: is basically the different approaches to modeling damages.
00:18:19 --> 00:18:22: So we look at economic damages.
00:18:22 --> 00:18:26: Those are pretty industry, standard straightforward approaches.
00:18:26 --> 00:18:29: So what is the content and structure damage?
00:18:29 --> 00:18:34: As I mentioned earlier of a building that's flooded?
00:18:34 --> 00:18:36: 'cause this is a regional study.
00:18:36 --> 00:18:39: An important element of this is looking at the broader
00:18:39 --> 00:18:41: economic and fiscal impact.
00:18:41 --> 00:18:43: So in terms of economic impacts,
00:18:43 --> 00:18:46: are thinking about flow sending through an economy and how
00:18:46 --> 00:18:50: the business close how investment decision making earnings as well
00:18:50 --> 00:18:53: as broader fiscal impacts such as property and sales tax
00:18:53 --> 00:18:57: impacts. Additionally, we're trying to address economic value,

00:18:57 --> 00:19:01: which is a broader concept of generally described as the
00:19:01 --> 00:19:04: total value that society places on a resource.
00:19:04 --> 00:19:07: So you could think of this in the context of
00:19:07 --> 00:19:09: coastal recreation in Florida,
00:19:09 --> 00:19:12: where people may spend money to pay for parking or
00:19:12 --> 00:19:15: buy sundries or get some food and then visit the
00:19:15 --> 00:19:16: beach.
00:19:16 --> 00:19:20: But numerous studies have showed that these individuals generally value
00:19:20 --> 00:19:24: their visit above and beyond what they spend on those
00:19:24 --> 00:19:26: items I just discussed.
00:19:26 --> 00:19:30: So economic value is trying to account for the willingness
00:19:30 --> 00:19:32: that people have to pay to user resource,
00:19:32 --> 00:19:35: above and beyond what they actually do.
00:19:35 --> 00:19:39: Pay Lastly, reporting metrics. We're going to be showing you
00:19:39 --> 00:19:43: both these event Dayton based metrics for individual storms in
00:19:43 --> 00:19:45: these future time horizons.
00:19:45 --> 00:19:48: But we're also going to be showing cumulative impacts,
00:19:48 --> 00:19:50: which is important just to be able to think that
00:19:50 --> 00:19:54: adaptation is not designed just to protect from these discrete
00:19:54 --> 00:19:55: events in 2014,
00:19:55 --> 00:19:58: twenty 70, but it's intended to provide benefits year over
00:19:59 --> 00:20:00: year to varying events.
00:20:00 --> 00:20:01: Next slide, please.
00:20:06 --> 00:20:08: So this slide is just a list of data inputs
00:20:08 --> 00:20:10: and modeling resources.
00:20:10 --> 00:20:12: I'm quickly going to go through this.
00:20:12 --> 00:20:14: I know a number of people on the web and
00:20:14 --> 00:20:18: are actually at the individuals who helped my team acquire
00:20:18 --> 00:20:19: some of this data,
00:20:19 --> 00:20:22: so you probably have a strong familiarity with what I'm
00:20:22 --> 00:20:24: about to talk about in terms of the primary data
00:20:25 --> 00:20:28: inputs were looking at critical infrastructure and Community assets,
00:20:28 --> 00:20:31: so we were able to secure data from compact partners
00:20:31 --> 00:20:33: related to transportation,
00:20:33 --> 00:20:36: infrastructure, utilities, infrastructure that could include.
00:20:36 --> 00:20:41: Wastewater treatment plans power generation.
00:20:41 --> 00:20:44: Pump stations things of that nature as well as core
00:20:44 --> 00:20:48: community assets like hospitals and emergency shelters.
00:20:48 --> 00:20:51: The underlying analysis is primarily built off parcel data,
00:20:51 --> 00:20:55: so we've been able to collect relatively standardized parcel

data
00:20:55 --> 00:20:57: across the counties,
00:20:57 --> 00:21:00: which is critical to identify what type of land use
00:21:00 --> 00:21:00: it is,
00:21:00 --> 00:21:02: what structure exists on the property?
00:21:02 --> 00:21:04: What is the market value,
00:21:04 --> 00:21:08: which are all core inputs that we integrate into our
00:21:08 --> 00:21:09: models.
00:21:09 --> 00:21:12: Because we also have a business focus as part of
00:21:12 --> 00:21:15: the analysis we are looking at firm level data.
00:21:15 --> 00:21:18: So we want to understand at a specific parcel what
00:21:18 --> 00:21:20: type of business is there?
00:21:20 --> 00:21:22: What industry doesn't participate in?
00:21:22 --> 00:21:24: How much does it generate in sales?
00:21:24 --> 00:21:27: How many employees work for that business?
00:21:27 --> 00:21:30: All those inputs, just like the parcel data record to
00:21:30 --> 00:21:32: integrate into our models.
00:21:32 --> 00:21:35: And Lastly to answer questions related to adaptation,
00:21:35 --> 00:21:39: we're processing data related to shoreline types so we can
00:21:39 --> 00:21:40: understand.
00:21:40 --> 00:21:45: The feasibility or the applicability of different adaptation responses.
00:21:45 --> 00:21:49: You know a certain stretch of shoreline may be best
00:21:49 --> 00:21:52: suited to use more natural approaches,
00:21:52 --> 00:21:57: such as dunes or beach nourishment where other pressed stretches.
00:21:57 --> 00:22:00: The inner coastal Area may be more in line to
00:22:01 --> 00:22:04: receive seawall repairs or bulkhead raising,
00:22:04 --> 00:22:07: and things of that nature.
00:22:07 --> 00:22:11: When incorporating some basic unit costs that are being adjusted
00:22:11 --> 00:22:15: to account for the local economic conditions in the four
00:22:15 --> 00:22:15: counties,
00:22:15 --> 00:22:20: we're also incorporating assumptions that were provided by County partners
00:22:20 --> 00:22:23: about who would pay for these actions,
00:22:23 --> 00:22:27: which is important when we do some of our our
00:22:27 --> 00:22:28: modeling.
00:22:28 --> 00:22:32: Lastly, the modeling resources were using planning is planning and
00:22:32 --> 00:22:32: policy.
00:22:32 --> 00:22:36: Memorandums primarily from federal agencies like the Army Core of

00:22:36 --> 00:22:37: engineers as well as FEMA.

00:22:37 --> 00:22:40: And these are standard approaches that are used in there.

00:22:40 --> 00:22:43: Will accept it and very clear in the methodology is

00:22:43 --> 00:22:47: to undertake because we're getting data that is not standardized

00:22:47 --> 00:22:50: across the four counties were developing customized models that can

00:22:50 --> 00:22:53: integrate all those data in a way that's meaningful,

00:22:53 --> 00:22:57: incomparable. So we're developing customized models for these primary impacts.

00:22:57 --> 00:23:01: I talked about structuring content damage.

00:23:01 --> 00:23:05: Business sales output loss among others and Additionally we are

00:23:05 --> 00:23:06: using a proprietary model.

00:23:06 --> 00:23:09: Some of you may be familiar with the roomy Pi

00:23:09 --> 00:23:10: plus model,

00:23:10 --> 00:23:14: but it's a. It's a very sophisticated regional economic model

00:23:15 --> 00:23:18: that can account for various feedback loops.

00:23:18 --> 00:23:19: Throughout the economy.

00:23:23 --> 00:23:25: Alright, next slide.

00:23:27 --> 00:23:30: So what is on this slide is just a really

00:23:30 --> 00:23:34: simple schematic or workflow of how these different data inputs

00:23:34 --> 00:23:36: and modeling resources interact.

00:23:36 --> 00:23:40: I've provided some brief definitions of primary consequences,

00:23:40 --> 00:23:45: secondary consequences modeling. I discussed that a few slides ago,

00:23:45 --> 00:23:48: but you can see those definitions on the left and

00:23:48 --> 00:23:52: the right is this schematic where we start by doing

00:23:52 --> 00:23:54: the primary con cequence analysis?

00:23:54 --> 00:23:59: Incorporating the property and infrastructure and sea level rise and

00:23:59 --> 00:24:01: flood data that was discussed,

00:24:01 --> 00:24:05: we model those impacts for accounting for both those assets

00:24:05 --> 00:24:08: just exposed to sea level rise as well as assets

00:24:09 --> 00:24:11: that are exposed to coastal storms.

00:24:11 --> 00:24:15: We take those findings primarily finding some property damage,

00:24:15 --> 00:24:20: business output loss, an adaptation costs and related assumptions,

00:24:20 --> 00:24:24: and we integrate that into the Remy model and through

00:24:24 --> 00:24:28: that model where able to show changes from a baseline

00:24:28 --> 00:24:32: environment to this future forecasted environment under a no action

00:24:32 --> 00:24:37: scenario or with adaptation, and those change change metrics are

00:24:37 --> 00:24:39: primarily changes in employment.

00:24:39 --> 00:24:42: Gross domestic product as well as population.

00:24:42 --> 00:24:47: And will be producing results for both the Southeast Florida

00:24:47 --> 00:24:49: counties as well as the rest of Florida.

00:24:49 --> 00:24:50: Next slide.

00:24:53 --> 00:24:55: So here's a little table that has a lot of

00:24:55 --> 00:24:56: information on it.

00:24:56 --> 00:24:58: I know this can be overwhelming.

00:24:58 --> 00:25:01: Thankfully this is being recorded and you can review this

00:25:02 --> 00:25:03: in more detail after if desired,

00:25:03 --> 00:25:06: but what I have here is just on the far

00:25:06 --> 00:25:06: left,

00:25:06 --> 00:25:10: just a list of the key reporting metrics that we

00:25:10 --> 00:25:11: will include.

00:25:11 --> 00:25:15: And in the report we've delineated these reporting metrics if

00:25:15 --> 00:25:17: their primary or secondary impacts,

00:25:17 --> 00:25:20: and if they are.

00:25:20 --> 00:25:24: Appropriate to be introduced into the focus on physical scenarios,

00:25:24 --> 00:25:27: whether it be coastal storms or sea level rise.

00:25:27 --> 00:25:31: Additionally, on the right, the right three columns are describing

00:25:31 --> 00:25:33: what geography reports will be.

00:25:33 --> 00:25:34: Findings will be reported at.

00:25:34 --> 00:25:37: So we're including findings at the city level,

00:25:37 --> 00:25:41: County level, as well As for the broader secondary consequences.

00:25:41 --> 00:25:43: Modeling the rest of Florida,

00:25:43 --> 00:25:47: there's a few single and double asterisks that are included,

00:25:47 --> 00:25:49: and these are just to indicate,

00:25:49 --> 00:25:51: based on the note at the bottom left.

00:25:51 --> 00:25:54: Corner of the slide that our goal is not just

00:25:55 --> 00:25:58: provide kind of bulk results like there's.

00:25:58 --> 00:26:02: This much benefit to property or there's this much benefit

00:26:02 --> 00:26:03: to business.

00:26:03 --> 00:26:06: We want to be able to show what land uses

00:26:06 --> 00:26:09: are most at risk and what land uses have the

00:26:09 --> 00:26:12: most most to gain based on taking action on adaptation

00:26:12 --> 00:26:16: and resilience. We also want a similar dis aggregation when

00:26:16 --> 00:26:19: we look at the business impacts.

00:26:19 --> 00:26:22: What sectors and industries are most at risk?

00:26:22 --> 00:26:25: What sectors and industries have the most to gain from
00:26:25 --> 00:26:28: adaptation so the primary impacts?
00:26:28 --> 00:26:30: I won't. Don't go through the entire list.
00:26:30 --> 00:26:33: I've touched on a lot of these structuring content,
00:26:33 --> 00:26:36: damage, business output loss. We've got the fiscal impacts,
00:26:36 --> 00:26:40: property tax, sale tax, and these broader secondary impacts related
00:26:40 --> 00:26:41: to employment,
00:26:41 --> 00:26:43: population, and GDP.
00:26:43 --> 00:26:46: So with that I will pass the mic back to
00:26:46 --> 00:26:46: Alex.
00:26:46 --> 00:26:49: He's going to give a quick overview of some of
00:26:49 --> 00:26:53: the adaptations scenarios that we are modeling at a systemic
00:26:54 --> 00:26:54: basis,
00:26:54 --> 00:26:58: as well as highlight some case studies that illuminate the
00:26:58 --> 00:27:02: good work that's already been done and undertaken in Southeast
00:27:02 --> 00:27:03: Florida.
00:27:05 --> 00:27:08: Great thanks Aaron and so we want to make up
00:27:08 --> 00:27:10: a little bit of time so that we can leave
00:27:10 --> 00:27:11: time for questions.
00:27:11 --> 00:27:15: So I'm going to go through both the adaptation scenarios
00:27:15 --> 00:27:17: and case studies a little fast.
00:27:17 --> 00:27:19: So if folks have specific questions,
00:27:19 --> 00:27:20: there is a zoom chat,
00:27:20 --> 00:27:21: you are welcome to chat.
00:27:21 --> 00:27:26: The project team will compile those questions and answer them
00:27:26 --> 00:27:27: at the end.
00:27:27 --> 00:27:30: So the adaptation series we're looking at in this study
00:27:30 --> 00:27:31: are in three buckets to protect,
00:27:31 --> 00:27:35: accommodate, and hybrid, so the protect looks at beach nourishment
00:27:35 --> 00:27:38: June enhancement Seawall in bulkhead raising.
00:27:38 --> 00:27:41: The accommodate looks at dry and wet flood proofing,
00:27:41 --> 00:27:44: elevating structures, and elevating interior roadways.
00:27:44 --> 00:27:46: And a hybrid is the mixture of two looking at
00:27:46 --> 00:27:48: critical facilities,
00:27:48 --> 00:27:51: fortifying specific infrastructure and elevating that,
00:27:51 --> 00:27:53: as well as options. And so it's important to note
00:27:53 --> 00:27:55: that this is a regional effort.
00:27:55 --> 00:27:57: We're not going to be looking at.
00:27:57 --> 00:28:00: Asset specific, but generally kind of regionally.

00:28:00 --> 00:28:02: If we take these strategies,
00:28:02 --> 00:28:05: what is that mean? And so looking at the next
00:28:05 --> 00:28:05: slides,
00:28:05 --> 00:28:08: we're going to just briefly go over the case studies,
00:28:08 --> 00:28:11: and so the first case study looks at the post
00:28:11 --> 00:28:11: Sandy,
00:28:11 --> 00:28:15: a win a Rd, raising improve Rd improvements and Rd
00:28:15 --> 00:28:15: Racing.
00:28:15 --> 00:28:17: And so there was severe erosion,
00:28:17 --> 00:28:20: 8 one in Fort Lauderdale after Superstorm Sandy,
00:28:20 --> 00:28:23: Fort Lauderdale and Broward County worked with F Dot an
00:28:23 --> 00:28:24: ultimately,
00:28:24 --> 00:28:27: to improve the resilience of the project.
00:28:27 --> 00:28:28: They included 40 foot deep.
00:28:28 --> 00:28:31: Sheet piles between the roadway in the beach to help
00:28:32 --> 00:28:32: with scouring.
00:28:32 --> 00:28:34: They raised the road by two feet.
00:28:34 --> 00:28:37: In some parts, the the wall between the beach and
00:28:37 --> 00:28:40: the road was raised by foot and they were back.
00:28:40 --> 00:28:43: Walls put in the entrances so that the sand just
00:28:43 --> 00:28:45: can't easily wash onto the roadway,
00:28:45 --> 00:28:48: and so it's important to note was that this was
00:28:48 --> 00:28:49: not new money,
00:28:49 --> 00:28:51: so this is part of the story one we want
00:28:51 --> 00:28:52: to tell is that.
00:28:52 --> 00:28:56: This is about taking infrastructure dollars that are already on
00:28:56 --> 00:28:59: the docket and including resilience as part of them to
00:28:59 --> 00:29:02: make sure that the investments we make are secure for
00:29:02 --> 00:29:05: the long term, and so the next study looks more
00:29:05 --> 00:29:08: at a nature based which is the Lake Worth lagoon.
00:29:08 --> 00:29:11: So this is the largest estuary in Palm Beach County
00:29:11 --> 00:29:15: between two man made inlets and ultimately here they took
00:29:15 --> 00:29:16: implementation of seagrass,
00:29:16 --> 00:29:20: mangrove planters, oyster reefs, clean sand and built paths around
00:29:20 --> 00:29:21: it as well as well,
00:29:21 --> 00:29:25: so they took an infrastructure project that has a great
00:29:25 --> 00:29:26: recreational component.
00:29:26 --> 00:29:30: Improve the water quality, which helped with.
00:29:30 --> 00:29:34: You know enhancing fisheries and wildlife and then on top
00:29:34 --> 00:29:37: of it added more storm protection for the area.
00:29:37 --> 00:29:40: So here is a place where the natural protection was

00:29:40 --> 00:29:43: built in with kind of hard other hardening measures and
00:29:43 --> 00:29:46: used to really improve the resilience of that project.
00:29:46 --> 00:29:49: And the third one we're going to look at is
00:29:49 --> 00:29:52: on Virginia Key and so this was in Miami Dade
00:29:52 --> 00:29:56: County in conjunction with the Frost Science Museum and other
00:29:56 --> 00:30:00: local nonprofits. And they rehabilitated 20 acres of coastal habitats
00:30:00 --> 00:30:00: in dunes.
00:30:00 --> 00:30:03: And so this was in an effort to partially protect
00:30:03 --> 00:30:05: the water treatment plant.
00:30:05 --> 00:30:07: So on top of protecting the water treatment plant,
00:30:07 --> 00:30:10: there were a lot of ecological benefits by using this
00:30:10 --> 00:30:12: natural infrastructure,
00:30:12 --> 00:30:13: and so these were in this place,
00:30:13 --> 00:30:16: it was a quite effective approach and I also want
00:30:16 --> 00:30:19: to point out that we will be looking at the
00:30:19 --> 00:30:22: road raising pilot project in Monroe County as well and
00:30:22 --> 00:30:24: are going through the information on that right now.
00:30:27 --> 00:30:31: And while folks are getting their questions in.
00:30:31 --> 00:30:34: This webinar was recorded and will be distributed.
00:30:34 --> 00:30:38: The final report will be available this summer and please
00:30:38 --> 00:30:40: reach out to me or Lea if you want to
00:30:40 --> 00:30:41: talk through anything.
00:30:41 --> 00:30:46: Have questions, comments, anything. We really appreciate your support and
00:30:46 --> 00:30:49: input and then Lastly this is Lee's email here and
00:30:49 --> 00:30:51: I know many of you have mine as well.
00:30:59 --> 00:31:03: Alright, our first question was remind us the timeline for
00:31:03 --> 00:31:05: completion of this study.
00:31:05 --> 00:31:09: Certainly so ultimately we are aiming to have this study
00:31:09 --> 00:31:12: done at the end of June and launch it then
00:31:12 --> 00:31:16: our launch for the results is in mid June.
00:31:16 --> 00:31:22: We are currently evaluating how the COVID-19 situation is affecting
00:31:22 --> 00:31:23: our deadlines.
00:31:23 --> 00:31:27: Mainly because we were planning on a large public event
00:31:27 --> 00:31:28: for releasing the report,
00:31:28 --> 00:31:32: and so we're evaluating whether the options there are and
00:31:32 --> 00:31:34: how we can do this most effectively.
00:31:34 --> 00:31:37: But ultimately we are looking at June,
00:31:37 --> 00:31:40: but it will be this summer if it is not.
00:31:40 --> 00:31:41: If it is slightly delayed.

00:31:48 --> 00:31:53: Well, last call for questions if there are no further
00:31:53 --> 00:31:57: questions we are happy to end this a little early.
00:31:57 --> 00:32:02: Give you all a few minutes breathing time until what
00:32:02 --> 00:32:05: may be a 11:30 call for many of you.
00:32:05 --> 00:32:08: So thank you again for your time again,
00:32:08 --> 00:32:12: please feel free to reach out if you have any
00:32:13 --> 00:32:18: questions and we look forward to sharing the report when
00:32:18 --> 00:32:19: it's done.
00:32:19 --> 00:32:23: And with that, again, thank you to Erin and Leah
00:32:23 --> 00:32:24: and the whole team.
00:32:24 --> 00:32:30: And our compact partners who have just been tremendous on
00:32:30 --> 00:32:32: getting this forward.
00:32:32 --> 00:32:33: So thank you guys and have a great day.
