

# Economic Architecture Podcast

## Episode 27 Transcript:

*The following transcript has been edited for clarity:*

**Stuart Yasgur:** I'm Stuart Yasgur, and this is Economic Architecture, the podcast.

**Kyle Spencer:** So, we're the first locality in the country doing this pre-disaster. We haven't had that major storm, that Katrina or the Sandy, where Congress just sends in billions of dollars to rebuild. We're doing this prior to that, makes it a little bit challenging sometimes because we haven't had a Cat 3 storm hit us, and pretty much every year there's a percent chance it can happen. So, we just are trying to get ahead of that and show a new model of doing these things.

**Stuart Yasgur:** Norfolk is a city in Virginia that we call a living laboratory.

**Stuart Yasgur:** It's a place where the development and implementation of new innovations have real potential to improve resiliency in the face of climate-related disasters.

**Stuart Yasgur:** Norfolk is at the frontier of designing and thinking through infrastructure innovations that protect against future major weather-related events.

**Stuart Yasgur:** These innovations create the necessary protections that can help mitigate the potential damage to vulnerable communities near the coastlines.

**Stuart Yasgur:** This week, I had the privilege to speak with Kyle Spencer, an innovator from the city of Norfolk.

**Kyle Spencer:** I'm the Chief Resilience Officer for the city.

**Kyle Spencer:** What we thought about was densifying development and moving towards the interior of the city, where it's a little bit higher ground or much higher ground in some cases and concentrating folks there. But it takes a long time to like move a city, if you will.

**Stuart Yasgur:** Norfolk is a region that's come up many times on the podcast, but why I think this conversation is particularly notable is that Kyle's innovations are sensible, clear, practical approaches to solving a problem.

**Stuart Yasgur:** In some ways, his work is so profoundly sensible, it's provocative.

**Stuart Yasgur:** One of the things that's really interesting is that they recognize that when the large-scale solutions that they're putting in place today come online, that will create protections for the city for 50 to 70 years.

**Stuart Yasgur:** Kyle and his team are clear-eyed about the challenges that climate change is presenting to the region, they're taking action to address the problems of tomorrow, but they also recognize that if Norfolk is gonna be a viable and thriving city a hundred years from now, that they're gonna have to use that time to start addressing some of the fundamental issues that they face.

**Kyle Spencer:** It really started with us, back about almost 10 years ago now, with the Rockefeller Foundation's 100 Resilient Cities initiative. They identified a hundred cities around the world as resilient. We were one of the first 33.

**Kyle Spencer:** We were the third city in the world to appoint the position, which they helped support for the first couple of years to get it going, but

then it's now part of our general fund, like budget. And it's grown quite a bit from one or two people now to about 10 people.

**Kyle Spencer:** So, Norfolk, we're an old city, and over time we've developed and redeveloped ourselves, and with that has come with some unintended consequences. And primarily that's due to the way we filled in these old creeks.

**Kyle Spencer:** And reclaimed land historically has created a lot of flooding challenges. Also has created some concentrated pockets of poverty and disconnected some neighborhoods.

**Kyle Spencer:** We're working towards trying to solve those kinds of problems using projects that have these multiple layers of benefits. And solutions to them, and, at the same time, look for innovation. So, we're very much trying to be at the front of, whether it's a technology innovation or a best practice in planning, we see ourselves as like a living laboratory to help figure these things out, and hopefully folks can learn from our experience.

**Stuart Yasgur:** It's really distinctive geography, right? Like you have coast, you have rivers, you're in a very specific kind of land area. Can you help just paint a picture for people?

**Kyle Spencer:** So, we sit at the mouth of the Chesapeake Bay near the Atlantic Ocean, and we have these natural deep-water ports that are really what brought Norfolk to be... historically we're a big port city, so we have the third largest port on the East Coast. We have the largest Navy station in the world.

**Kyle Spencer:** We also have the only NATO headquarters in America here, and we're surrounded, really on three sides, by water. We actually have seven and a half miles of beach that face the Chesapeake Bay. It's

not the beach that you see at the ocean, like you would in Virginia Beach or somewhere in Miami.

**Kyle Spencer:** But it's a nice, calm beach that still faces a lot of challenges, of course.

**Kyle Spencer:** So that's on the north end of the city, and then lots of creeks and rivers, like you said, coastal plain kind of environment that reach way up into the city. And like I said, historically, some of those have been filled in, and stormwater pipes and things like that have been put in place instead of those natural systems.

**Kyle Spencer:** And those tend to be problem areas for us for flooding. It seems like the water has a memory to it, and it wants to go back to those old places.

**Kyle Spencer:** And a lot of those places historically weren't filled in with an engineered type of fill you would do today, 16, 1700s. And so those lands are settling much quicker than the natural ground around them. And so that's where the flooding is, where we filled, is what we say.

**Kyle Spencer:** A lot of cities and localities up and down the East Coast were developed in a similar way.

**Kyle Spencer:** We've been here about 400 years, so a lot of that's happened in our history.

**Kyle Spencer:** I would say about 15%, I think the last time I've looked at it, of our city is that reclaimed land, which also happens to be about the percentage of our floodplain. The water is a huge asset for us, but also can be a threat that we're trying to adapt to and manage as things change around us.

**Stuart Yasgur:** In the United States, a city going back to the 1600s, this is a very old city from the U.S. perspective.

**Kyle Spencer:** Oh yeah, for sure. And a lot of our infrastructure's old, you can see these sorts of things stacking on top of themselves that we're trying to fix, and we're seeing as we do projects, we're finding pipes made out of terracotta, sometimes carved out wood.

**Kyle Spencer:** I think one of the things that we're really proud of is just trying to think about how to live with water. And we started that exercise with the Dutch dialogues. We just celebrated our 10-year anniversary of that a couple of weeks ago. And so, we brought in these Dutch experts and people from New Orleans and places that are a little bit farther along to learn from them about how do we adapt to rising seas and these sorts of things.

**Kyle Spencer:** More rainfall. And that really gave us a sort of Kickstarter, a jumpstart into this resilience space on what to do.

**Kyle Spencer:** And our first real project example was the National Disaster Resilience Competition that Housing Urban Development put on in 2000. We were awarded in 2016. We got the largest single grant that we've ever received for the city back then, and that was \$112 million. That was to implement a comprehensive flood management project—it's not just a flood protection system; it has amenities built in to help strengthen the community.

**Kyle Spencer:** Provide social cohesion and really environmental justice.

**Kyle Spencer:** With that grant, we helped create a nonprofit to work on resilience, innovation, and bring solutions to problems that we just can't solve with our day-to-day kind of work.

**Stuart Yasgur:** Interesting. So, this is the first time I've ever heard about pipes made out of carved out wood. That's unbelievable.

**Kyle Spencer:** Yeah. Like a hollow tree, basically.

**Stuart Yasgur:** That's remarkable. And I should say, we have had a chance to talk to Paul Robinson.

**Kyle Spencer:** Yeah. So, RISE is that nonprofit, and I have worked together ever since the beginning. So, the idea is that cities buy a lot of stuff, and we've shown that this model does work.

**Kyle Spencer:** And it's very unique because we're using HUD money, a federal agency that typically doesn't do this type of innovation. And luckily, the state came in and added some money on top of that. And so, Paul and his team have put out many challenges now and come up with lots of great solutions for places like us to tap into, if we choose.

**Kyle Spencer:** And it's great because we don't have to really do much on the front end. They broker all the relationships; they help fund these companies to get them started on these ideas. It just takes a little bit of my meeting time, like time to sit down and talk to them. We'll share our data with these companies so they can have all the resources they need to develop a solution that does work for a city like ours.

**Stuart Yasgur:** I do think that this is an incredible example, and just to play it back to you, and correct me if I'm wrong, but this is HUD post Sandy, massive hurricane, huge impact on the Eastern Seaboard.

**Stuart Yasgur:** HUD says, okay, we need some kind of innovation. This huge challenge. You step forward and say, we have an idea for what we're gonna do. That's a huge grant. So now you have federal government, you have the city government, you also have the state adding to funds there. And then you're going ahead and creating a nonprofit that can anchor kind of innovation and attract and fund small for-profit companies that create employment and businesses and et cetera. And then you can go ahead and work with them through your procurement process to actually implement some of the solutions that they're generating.

**Kyle Spencer:** We call 'em challenges but it's hard for a city to be innovative that way to provide seed money, RISE does all that. If we see a solution as viable, we will sign on to see it through.

**Kyle Spencer:** And one case with Flood Map, we said, look, we wanna buy this product now. What was neat was because we went through this competitive challenge process with RISE, we were able to justify a sole source procurement for it and fast track it into our program or into our regular budget and pay for this. And since then, that company's been able to expand into other localities.

**Kyle Spencer:** 'Cause now they have an example they can point to.

**Stuart Yasgur:** That's great. And it does give people a concrete understanding what you mean when you say it's a living laboratory, right? This is a problem; a new solution is coming up. Then moving forward with that solution, actually implementing it.

**Kyle Spencer:** Yeah. If it's not technology, in this case, that was a technology solution, but if you have, like a widget or a way to maybe build green infrastructure better, then we will find you a place on our streetscape or in our city to dig up and put it, and let's see it in action and watch it for a little while.

**Kyle Spencer:** And just help these companies get through all these steps. Maybe a little bit easier than just coming off the street blindly, doesn't take a huge amount of time and effort on our end. But we see a huge return on that because

of these neat and innovative solutions.

**Stuart Yasgur:** That's really interesting. So that's also, that's for folks who have innovative companies or are working on technology or different solutions, potentially you should be on their radar as a place where they can actually help bring their solutions to fruition at an accelerated pace.

**Kyle Spencer:** Yeah. As long as it's tackling these resilience problems, it doesn't have to be flooding necessarily. It could be energy; we've done stuff with insurance. That's exactly what we mean by that living laboratory.

**Stuart Yasgur:** That's fantastic. Walk us through a little bit about what you're doing with the Army Corps of Engineers. What does that project look like if we were to see it?

**Kyle Spencer:** Yeah, well, it starts out as a feasibility study where they look to see if there's a federal interest in investing in coastal flood protection.

**Kyle Spencer:** In our case, that looks like flood walls, levies if there's space on the ground. Again, we're very built out about 95%, so we don't have a ton of open space to put a levee, but flood walls, pump stations, some nature-based solutions to help mitigate impacts, and also knock down waves and all these sorts of things.

**Kyle Spencer:** A good portion of it is home raising and basement building. So, it's really a system of systems that all have to work together in sync. And so, we started that again around 2016 and got it authorized by Congress and the Water Resource Development Act of 2020. And then the IIJA, the Infrastructure Investment Jobs Act, provided 400 million of federal dollars to start it into construction and design.

**Kyle Spencer:** And it's a 65% federal, 35% non-federal cost share.

**Kyle Spencer:** Hopefully, in a few years from now, you'll see some of these structures have been built. A lot of times, they're following the edge of our shoreline and coincide with maybe a walking trail, up on top of it. We're looking at public art along it as well, but trying to integrate it into the urban fabric of our city, especially downtown. There are other places where we're gonna build large surge barriers out in the water. Much like you see in, in Holland or some other places in Europe.



**Kyle Spencer:** There's a few of these in the U.S. They built some in New Orleans after Katrina. And these are just big gates that are always open, but they'll close ahead of a storm and hold back that storm surge from inundating the city and flooding everything, and really catastrophic level flooding.

**Kyle Spencer:** So, these are quite large pieces of infrastructure.

**Kyle Spencer:** They're providing that, that protection and preservation of our city. And all the assets, really, mission readiness for the navy and the poor, and all these kinds of things, supporting their goals as well, on just being able to operate right after a storm event.

**Kyle Spencer:** You're not operating during a hurricane necessarily, but you wanna go back to business as quick as possible. And that's what this is about is looking at that big picture and large-scale events.

**Stuart Yasgur:** That's amazing. So you're talking about large surge gates around Norfolk that are gonna be out off the coast. Is this protecting the city itself?

**Kyle Spencer:** Yeah. The mouth of the creeks and rivers in Norfolk. So the way these programs are authorized, they're only authorized typically by locality, 'cause you have to have the administrative sort of pieces worked out to manage the program and operate and maintain it. And so we're independent cities in Virginia, and it's just a little bit complicated to do that.

**Kyle Spencer:** Hurricane Sandy again was the triggering event that started this program. We had enough unmet need here. So, we're the first locality in the country doing this pre-disaster. We haven't had that major storm, the Katrina or the Sandy, where Congress just sends in billions of dollars to rebuild. We're doing this prior to that, makes it a little bit challenging sometimes because we haven't had a Cat 3 storm hit us, and pretty much every year there's a percent chance it can happen. So we just are trying to

get ahead of that and show a new model of doing these things with the Army Corps.

**Kyle Spencer:** The Army Corps historically does these feasibility studies. They sit on the shelf when a storm hits, they dust it off, and they get all this money; they implement it. We're doing it a different way, and we're trying to show like this is the right way. And the Army Corps should do this more outside of Norfolk, right?

**Kyle Spencer:** Get ahead of the game. That's the right thing to do because we see a huge return on that investment. Resilience investment is recent studies we've seen. It's every dollar you spend; you get about \$13 back. So that's, that makes a lot of sense to us, right? It should to most people.

**Stuart Yasgur:** That is incredible. You have not yet experienced the storm that you're anticipating, but all will say the storm is coming. It's a matter of when, not if, and you've created enough kind of political will to say, okay, let's act in advance of this coming to actually put the protections in place 'cause otherwise, without these kind of surge gates, all those rivers and creeks, they become the conduits through which this water can surge through communities and destroy homes, and so by putting these gates up, you're creating that protection in advance of this occurring. After an event happens, everybody's, people say why didn't we do this before?

**Stuart Yasgur:** But this is really an example of a community stepping forward and saying, let's do this before. The economics are there, the science is there. It's feasible for us to do it. It just takes hard work to build the support and keep everybody focused on what's really important. And here's an example of you're doing that hard work.

**Kyle Spencer:** Yeah. It's not cheap. It does come at a cost that is significant. And so, with that, we can't do it alone. So, we're building relationships and partnerships at the state level. The non-federal match

doesn't mean local; it can be state dollars, it can be really anything that's not a federal dollar.

**Kyle Spencer:** So, we're looking and working with the current administration at the state, the incoming administration, flooding is a very bipartisan or nonpartisan issue. Our goal yeah, is to get some of this done before we get one of those storms.

**Kyle Spencer:** Like the first constructible feature will probably be this pump station. That will, it's out to bid. Like we started the procurement, it's gonna be a design-build, so we would probably be in construction in early '27 with that right about the same time or right after the flood wall that goes with. It's a hybrid flood wall levee right there near our downtown area.

**Kyle Spencer:** We'll start with the construction in 2027, let's say. And it'll take two or three years, depending on what feature we're talking about, to finish those constructable features.

**Kyle Spencer:** It just depends on how much funding we can bring in, right? So, we have the 400 federal currently, we match that with 35%. Say we got about \$600 million right now to get quite a bit done, but as we show progress, we can ask for more through the budgetary processes at the federal, state, and local levels.

**Kyle Spencer:** So really, it'll start being more funding dependent. The schedule will be because we'll probably have most of it designed, a few years from now. And then it'll just be ready for construction when the funding's available. It's about \$3 billion. It is 2.6 in 2023 dollars. We're expecting that to go up some, and we're working on those new numbers, everything seems to go up right over time. So, we're expecting it to go up for sure. But the faster we can do this, the cheaper it'll be, just the time value of money kind of issue. So, we're just pressing hard again to do it as soon as possible so that it helps with that issue.

**Stuart Yasgur:** I think one of the other things that's remarkable about this is, unfortunately, it's a little bit fashionable to point fingers at government and things not being able to move forward because of regulations and regulatory pieces that have been put in place to protect communities, environment, et cetera.

**Stuart Yasgur:** And certainly, there are examples where things have not gone forward that should have gone forward, but on the other side of it, there's also examples like this of things really moving forward in impressive ways at a large scale that are not receiving the attention and awareness that they probably should. I think this is a wonderful kind of counterpoint example to so many of those kinds of common conversations.

**Kyle Spencer:** Yeah, I mean that, that's how we see it as well, especially when you, it's about storytelling and connecting these dots of the military's largest navy base in the world, and we have the regional trauma center in Norfolk. We have the downtown sort of business core of our region, and so when you put this all together, it just makes a lot of sense to get at it as soon as possible. And try to avoid some catastrophic thing happening. So.

**Stuart Yasgur:** That's remarkable. But even as big as this is, it's not the only thing you're working on.

**Kyle Spencer:** This project stops at the coast. It's a coastal storm mismanagement program. There's a lot of interior drainage work. Again, we have these old pipes. They're way too small. So, we've been doing a lot of analysis over the years to look at where things need to be improved on the stormwater side.

**Kyle Spencer:** And we've identified at least a billion dollars of projects there. Now we have a stormwater department and public works, but we work really closely with them. 'Cause these all work together, these systems.

**Kyle Spencer:** So there's some other programs we're doing with even the Department of Defense, or I guess the Department of War now.

**Kyle Spencer:** They have a program that does have funding available to sprinkle outside the fence to help make our locality more resilient. That's called the Defense Community Infrastructure Program. It's a grant program. We've gotten some grant funding for that. And that's like raising some roads and doing some of these backflow preventers and our stormwater pipes.

**Kyle Spencer:** We're also doing a lot of trying to teach people to strengthen their own resilience muscles. So, what can you do on your property, right? So, retain your rain, capture rainfall where it lands, soak it up best you can, before you release it to the system.

**Kyle Spencer:** And if you release it slowly, so that we can handle it. And so, if everybody does it a little bit, then it really helps alleviate the total on the whole system. And so, we have a little mini grant we offer twice a year to like churches and nonprofits. We have a pattern book with 10 home projects that you can look at. Rain garden, like how to do a rain garden, how to do a rain barrel, how to do pervious pavers.

**Kyle Spencer:** And there's a whole plant menu 'cause planting a tree is great, right? Like, it doesn't have to be a big project.

**Kyle Spencer:** We have a nutritional equity fund that we helped get created in the city budget that we can offer grants to folks trying to help serve folks that are underfed.

**Kyle Spencer:** We did a similar thing with banking called Bank On, which is, it's a national program, but we started it in Norfolk, here in our office, that helps people with financial literacy and just learning about getting a bank account and saving. So there was like match savings involved that we partnered with banks that would bring that funding in.

**Kyle Spencer:** We're really looking now as well into the future of insurance. So once these systems are billed, these big flood control systems, we don't necessarily want people to drop their flood insurance. We actually have a very high rate of uptake in flood insurance. About 80% of the people that should have flood insurance that are in the flood plain, do have it in our city. That's very high. Usually, it's 30 to 50%.

**Kyle Spencer:** So, we wanna maintain that because there is always a storm or a situation we can't protect against. You think of hurricane Harvey, which is 30 inches of rain when no stormwater system is made. So, you could flood from a different source, and we want you to keep that insurance, but maybe there's something we can do, maybe a community-based policy. So, we make your premiums as low as possible, raise your deductible, obviously, but we will create a community policy. This is what we've been looking into that could pay that deductible.

**Kyle Spencer:** So you stay in your home, you get what, you get your deductible paid as quickly as you can so that you can get to work on fixing things back. And so, we've been working with some of our folks, like RISE, and some of the reinsurance groups, to look at what does that look like in our city?

**Kyle Spencer:** And we have a few places we can test this idea and model it. So that's something we've been doing. Actually, this past summer with Resilient Cities Network helped us through a partnership program they offer for free. So that Resiliency's network, that is what the Rockefeller Foundation's 100 Resilient Cities used to be, is really great 'cause it connects all of us cities, especially here in North America, together.

**Kyle Spencer:** And we actually, we just had our monthly call a few minutes ago. We're able to do this knowledge exchange, we share resources all the time, strategies.

**Stuart Yasgur:** Yeah, I think it's an interesting aspect of this, right? Even this in community-based insurance product that you're mentioning, it's certainly something we've seen a need for in other communities, and other people are starting to wrestle with this. Okay, insurance costs are so high for folks. You wanna make sure that they maintain the insurance, one way to make it affordable could be increasing that deductible.

**Stuart Yasgur:** But then maybe there's a community-based approach to pay that deductible so that people aren't left exposed if they need that insurance product. And the fact that you're exploring this and you're living laboratory there, but then also sharing it with other cities that are also on the cusp of trying to figure out some of these problems.

**Kyle Spencer:** Yeah. New York and Miami have done a pilot similar to this and that's what we're trying to do, maybe here, but it's been a little bit different. Maybe it's parametric-based or something like that, but which is what New York did.

**Kyle Spencer:** But what we're worried about is when this thing is built, this big project to stop the catastrophic flooding, is FEMA may remap our flood zone, and they may map a lot of the city out of the flood zone. And people are like I don't need flood insurance anymore.

**Kyle Spencer:** It's like a mentality shift. And so, your insurance, keep it 'cause it'll be way cheaper. Just keep it 'cause you might need that. And then we'll help you, we'll help figure this out. Perhaps, especially for the folks that need it the most.

**Kyle Spencer:** There's definitely neighborhoods that can maybe handle that themselves. But there's definitely we have the highest concentration of low-income people in the region. And so, we're really keen on trying to help them and start our focus.

**Kyle Spencer:** And really, that's the flood wall that we're starting, this first piece is actually for some of those marginalized communities, and work our way around to some of the more affluent communities because they have cars, they can get out, they can take care of themselves a little bit better. So, let's just focus our energy right now in some of those other areas that don't happen to have resources, and eventually we'll get the whole thing done.

**Stuart Yasgur:** As people are listening to this and they're starting to see that Norfolk is a city in this regard, is really on a leading edge right of how cities are thinking about these things and tackling the challenges that we're experiencing today, and are gonna be growing for all of us. They can see where you're pushing today, but also in a way, you're describing the future of what other cities start to look like. What does the future of Norfolk start to look like?

**Kyle Spencer:** We're a Dillon rule state, which means the state provides the authority to the localities of what they can and can't regulate. And one of the things they let us do is the zoning, our zoning ordinances, and land use.

**Kyle Spencer:** We wrote in 2018, one of the most resilient, or probably the most resilient, zoning code in the country that doesn't allow slab on grade anymore, doesn't allow certain types of development, certain areas where you have to get a quotient, you have a scoring criterion.

**Kyle Spencer:** Around that same time, we did a thing called Vision 2100, where we said what do we look like basically a hundred years from now, relative to sea level rise, and things like that, that we're anticipating.

**Kyle Spencer:** There are places that we're gonna have to stay away from. And so, what we thought about was densifying development and moving towards the interior of the city, where it's a little bit higher ground or much higher ground in some cases, and concentrating folks there. But it takes a



long time to like move a city, if you will. And so that's why I think of it as like timescales, right? So, it's gonna take me a decade or more to build the coastal protection.

**Kyle Spencer:** In the meantime, I got RISE helping me come up with new things. We can help you get around the city with the WAZE app and flooding in real time, like no one else, and those tools help us buy time to build a big project.

**Kyle Spencer:** And then that big project, they're typically designed to last 50, 75 years. Will give us some time to figure out how we do the next thing, which is maybe migrate or move away strategically from the edge, from the coast.

**Kyle Spencer:** What Vision 2100 was about was thinking about what that future city looks like. What areas would we gradually, over time, change how we develop or redevelop, and so with this project, now that it's really going to construction, we've really got more time to sort that out and figure it out a lot better. And I think that hopefully that helps give people a little bit of ease. Oh, okay, you're not gonna move me out of my house that has this great view of the water anytime soon because I'm protected for a while. My kids will be protected for a while, and over time we'll figure out how we move away from that part of the city into this more safer, and probably more dense development to support that.

**Stuart Yasgur:** You're describing a very kind of intentional and thoughtful approach to creating a viable and vibrant Norfolk over decades into a hundred-year kind of time horizon. I don't think that's, that's not often the tenor of the conversation about living with, as the climate is changing and extreme weather's becoming more common and more severe.

**Stuart Yasgur:** But it helps people recognize how we can be active with regard to it and be intentional and thoughtful about how we're charting a course forward. How widespread is this kind of orientation? Or do you feel

like you have a large number of peers who share this kind of orientation is just further removed from the public conversation? Or is this still a relatively smaller group of people in resilient cities, for example, across the country?

**Kyle Spencer:** Yeah, I think especially the Eastern Coast, even in Hampton Roads, I mean, when we did the Dutch dialogues, it wasn't just a Norfolk Dutch dialogues, we had the city of Hampton, which is right across the river from us.

**Kyle Spencer:** And even in this last 10-year celebration we did a few weeks ago, we looked more broadly at the region. So, I think definitely parts of the coastal plain here in Virginia, that are tracking this or looking into this, there's definitely some nonprofits that are helping folks understand things like the legalities of it all and how stewardship of the land looks in the future, right?

**Kyle Spencer:** Yeah, there may be a loss of tax base, but you may be able to make up for it over here, but who's taking care of this? That's a burden on the city. And so maybe there's folks that can step in. It's not a, it's not a common conversation, a regular one, so to speak.

**Kyle Spencer:** But it is coming up quite a bit with the region here and places like Charleston, places like Miami, like we all talk to each other. A lot of us are in these same, like the Army Corps programs, and we wanna learn from each other.

**Kyle Spencer:** Say with the Army Corps, where you're doing home elevations and basement filling, and there could be buyouts, right? So, there could be other tools in that toolbox you could use. And those are, maybe fund it differently than another federal program like FEMA, where the owner has to pay a certain amount or to raise their house. This program's a little bit different. It's a hundred percent paid for. Maybe it's a better way to do it.

**Kyle Spencer:** It doesn't mean we would stop doing the FEMA program, 'cause there are parts of the city we won't be able to close the gates for every little minor event, but there may be low-lying areas that are susceptible to flooding that we still may need to tackle for those scenarios.

**Stuart Yasgur:** And so, let me ask you a question that goes in a totally different direction. But you're an individual. You're you live along the coastline, along creek, along river. Someplace where these kinds of issues might be manifest. What can an individual do to take action tomorrow?

**Kyle Spencer:** Yeah, there's a lot of programs that actually can help you stabilize your shoreline or provide funding assistance, technical assistance if you need it. Depending on if you're a homeowner or a business, we just encourage people to reach out to us. We're happy to help connect you to either the right city department or a group that could help you sort this out. But I think folks need to start looking at different... start to get used to the idea that, what it is today is gonna be different in the future.

**Kyle Spencer:** Change is hard, and it's always, that's a hard conversation a lot of times. Look at what other folks are doing and learning from them, and be willing to just try something a little bit different. We hear a lot about, I just wanna bulkhead, I wanna make my shoreline hard. Hold back that water.

**Kyle Spencer:** And that's actually maybe not the best solution. It needs to be more of a living shoreline. It's really about educating. Or help us helping educate them. And so, we do a lot of outreach. So come out to those events. We have a giant map of our city that goes on the floor, and you can walk on it. It's 25 by 25 feet.

**Kyle Spencer:** You can come to these events where we walk you around. Talk about what you can do. And then we have all the city departments in the room. So, if you are like I wanna figure out what kind of trees I should plant, there's the tree guy, or there's the stormwater department, or there's,

if you don't know your evacuation zone, emergency management, he's right here. And being really thoughtful about how we engage with the public.

**Kyle Spencer:** And not just I don't know that answer. You have to call 3 1 1. We're trying to bring it all to you where you're at, and hopefully get an answer right, right then and there if we can. That's our main goal. Something we should have been doing probably a long time ago. And it, we've gotten great feedback on that.

**Stuart Yasgur:** I said if we're gonna tell people that they should reach out to you, we gotta tell 'em how, what's the best way for people to reach out to you or to your office?

**Kyle Spencer:** Oh, yeah. We have a website on [norfolk.gov](http://norfolk.gov), but resilient [norfolk.com](http://norfolk.com) is a great place to learn more about the Army Corps project. You can sign up for newsletters there, you can reach out to us to come talk to your organization. So we go to civic leagues, we go to churches, we go to any group really that asks basically.

**Kyle Spencer:** Norfolk RC Norfolk stands for Norfolk Resilience City, Norfolk [rc@norfolk.gov](mailto:rc@norfolk.gov) is a sort of a general inbox that folks can email us.

**Kyle Spencer:** But yeah, check us out online. We've even done like open houses at city hall, or office hours where we were just there if you're just coming to pay your water bill, and you might see us and can stop by and ask questions.

**Stuart Yasgur:** That's great. Kyle, thank you so much for taking the time. I really appreciate hearing more, learning more about what you're doing, and it's remarkable to hear about everything that Norfolk is pioneering.

**Kyle Spencer:** Oh, you're welcome. Thanks so much for having me.

**Stuart Yasgur:** In previous episodes of Economic Architecture, we've talked about the cornerstone of our work, which really focuses on identifying structural innovations and the innovators behind them.

**Stuart Yasgur:** Kyle's work is a great example of an innovation with the potential to mitigate climate-related damage, but interestingly, it doesn't require an entire change to the market structures.

**Stuart Yasgur:** Instead, they're innovating in other key ways.

**Stuart Yasgur:** First of all, they're not waiting for a catastrophe to put these changes in place. They know the potential for damage, and they've designed solutions around it, solutions that will hopefully be implemented long before the damage itself takes place.

**Stuart Yasgur:** It's innovation with an eye towards the future by preventing damage to coastal communities today.

**Stuart Yasgur:** Second, they know the potential for damage, and they've designed solutions around it.

**Stuart Yasgur:** They know that implementing these solutions is gonna take time. So, they're also focused today on creating a living laboratory that can identify innovations that can have an immediate impact.

**Stuart Yasgur:** Things like working with the GPS app, WAZE, to help residents avoid flooding that's occurring now.

**Stuart Yasgur:** They're talking about camera scoping and the sewage pipes, so they can get a sense of how to reduce the risk from back flooding into people's homes from high tides. They're actively advancing innovations that can have an impact on people immediately.

**Stuart Yasgur:** Norfolk is an incredible example of fostering innovations today while they're waiting for large-scale solutions to come online.

**Stuart Yasgur:** And once the large-scale solutions that we're working on today come online, that will create a window of opportunity to address the fundamental issues like how, when, and where can we intentionally and equitably think about moving the city so it remains viable and vibrant a hundred years from now.

**Stuart Yasgur:** The last key point for me is something that Shalini Vajjhala brought up in an episode earlier this year. She talked about the fact that bringing large-scale solutions to create climate resilience often requires a relay race to be successful. What's happening now in Norfolk is a great example of exactly that kind of relay race.

**Stuart Yasgur:** As Kyle mentioned, all this really started with a decision that was made at the federal level when HUD was responding to Hurricane Sandy in 2012.

**Stuart Yasgur:** The funding pool that was created at the federal level was then mobilized at the state level in Virginia. Now we have the city of Norfolk, one city working with other cities, towns, and communities around them to bring the innovations to fruition.

**Stuart Yasgur:** The more we see innovations like these in Norfolk and how they come to fruition, the more we can recognize them, and collectively we can learn how to create the large-scale change we all need to address a changing climate.

**Stuart Yasgur:** I'm Stuart Yasgur, and this is Economic Architecture, the podcast.