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Determining Climate Responsibility: Government Liability for Hurricane Katrina?

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D I A L O G U E

Determining Climate Responsibility: Government Liability for Hurricane Katrina?

Summary

In *St. Bernard Parish Government v. United States*, Louisiana property owners argued that the U.S. government was liable under takings law for flood damage to their properties caused by Hurricane Katrina and other hurricanes. The U.S. Court of Appeals for the Federal Circuit disagreed, however, noting that the government cannot be liable on a takings theory for inaction, and that the government action was not shown to have been the cause of the flooding. On September 6, 2018, the Environmental Law Institute hosted an expert panel to explore this ruling and its potential implications for future litigation in a world of changing climate, extreme weather, and uncertain liability. Below, we present a transcript of the discussion, which has been edited for style, clarity, and space considerations.

Teresa Chan (moderator) is a former Senior Attorney at the Environmental Law Institute.

Michael Burger is Executive Director of the Sabin Center for Climate Change Law at Columbia Law School.

Vincent Colatriano is a Partner at Cooper & Kirk, PLLC.

John Echeverria is a Professor of Law at the Vermont Law School.

Teresa Chan: Thank you for joining us as we discuss government liability for Hurricane Katrina. We are going to focus on the *St. Bernard Parish Government v. United States* case.¹ To provide some background, this case was started in 2005 in the Court of Federal Claims. As the appellate court noted, the plaintiffs are Louisiana property owners who argued that the federal government was liable for flood damage to their properties caused by Hurricane Katrina and other hurricanes as a taking. The lower court agreed

with the plaintiffs, but on appeal earlier this year, the Federal Circuit Court of Appeals reversed that decision.

We want to focus on this case for a few different reasons. One, it certainly adds to the body of cases on takings law and, as our panelists will dig into the details, perhaps clarifies some issues on that front. Also, we want to focus on this case because of its potential implications for future litigation of this type. As we start to see more extreme weather and more disasters, we expect that we might see an increase in these sorts of cases.

To help me navigate through this case as well as the potential implications, I have a wonderful panel of experts. We have Vincent Colatriano, who has represented the plaintiffs in this case, and we have John Echeverria, a professor at Vermont Law School, and Michael Burger, who is at the Sabin Center for Climate Change Law. With that, I'm going to turn things over to our first speaker, Vincent, who is a partner at Cooper & Kirk. As I mentioned, he's also counsel for the plaintiffs in this case and he's going to tell us about the background for this case as well as the decision.

Vincent Colatriano: I'm delighted to have the opportunity to talk about this case and to contribute to this discussion. I can't and won't claim to be a completely neutral observer or analyst because, as Teresa mentioned, I've been litigating this case. I've been part of a team that has litigated the case for more than a decade along with some other attorneys at my law firm, including Chuck Cooper, as well as a great team of lawyers who are based in both Washington, D.C., and Louisiana.

Because of that and because it is an ongoing case, I believe my best role here is not to provide extensive commentary on the case, but rather to provide some background about the case and about the decisions. I think that I could provide a useful summary that will contribute to the wider discussion that the other panelists will be focusing on.

Let me begin by saying that from my admittedly narrow perspective, I think the title of this program is probably not entirely accurate. Our case is not, strictly speaking, about the government's liability for Hurricane Katrina. We aren't seeking to hold the government responsible for the storm in some general sense or even for most of the flooding associated with the storm.

Editor's Note: Mr. Colatriano is one of the attorneys representing the property owner plaintiffs in the St. Bernard Parish Government litigation.

1. *St. Bernard Parish Government v. United States*, 887 F.3d 1354, No. 2016-2301, 2016-2373, 48 ELR 20065 (Fed. Cir. Apr. 20, 2018).

The case is rather about the government's responsibility for some of the flooding, in a confined geographic area, that was associated with Hurricane Katrina. It was flooding that was stemming, in our view, from a discrete federal government project called the Mississippi River Gulf Outlet, or, as I've been referring to it for 10 years, the MRGO.

As I'm sure everybody knows, huge swaths of the city of New Orleans and the Greater New Orleans metropolitan area flooded during Hurricane Katrina. Our case is about one relatively small subset of that metro area: an area called St. Bernard Parish, which is outside New Orleans, and the Lower Ninth Ward—a community or neighborhood within New Orleans. The image in Figure 1 shows a close-up on the right of St. Bernard Parish and the Lower Ninth Ward.² In the upper right-hand corner is Lake Borgne, and next to Lake Borgne—which is really a part of the Gulf of Mexico rather than an actual lake—is what looks like a river or a canal. That's the MRGO, which was a canal dug by the U.S. Army Corps of Engineers (the Corps), as a federal navigation project in the 1960s.

Figure 1.



On the left side of the Lower Ninth Ward is the Port of New Orleans. The MRGO was a way for shipping to have a more direct route to the Port of New Orleans from the Gulf of Mexico. Prior to the construction of the MRGO, deep-draft shipping had to come up the Mississippi River, which meanders—it takes a while to get from the Gulf to the Port of New Orleans by using the Mississippi River. So, the MRGO was a navigation channel that was intended to provide a shortcut for that shipping.

It was authorized by the U.S. Congress in 1956. It was built during the 1960s and substantially completed by 1968 or so. It's about 76 miles long. It was authorized to be about 500 to 650 feet wide in most places. It has two main "reaches" or segments. The segment that goes along Lake Borgne is known as Reach 2. That then links up with a portion of the Gulf Intracoastal Waterway, called Reach

1. That links up with what's known as the Inner Harbor Navigation Canal or the Industrial Canal, which was a canal built between Lake Pontchartrain and the Mississippi River, and that's where the Port of New Orleans is.

To keep the MRGO operational, it had to be dredged periodically by the Corps to ensure that it had the right depth for shipping. The MRGO was ultimately closed to deep-draft shipping in 2009. It was "closed" in the sense that there was a rock barrier constructed at one location on the MRGO channel to block shipping from coming up the MRGO and reaching the Port of New Orleans that way.

This was a controversial project from the start because of its anticipated environmental effects. Because it was carving a channel through wetlands to the Gulf of Mexico, there was going to be a lot of salt water that would intrude into these wetlands. And salt water destroys certain types of wetlands. Prior to the MRGO, this area had a lot of cypress and tupelo forests and other types of wetlands. The MRGO destroyed a lot of those wetlands. It converted some of those forests into different types of wetlands, more marshy types of wetlands, and it converted other wetlands to open water. That's important because wetlands retard hurricane surges. They buffer against hurricane surges. So, when you destroy wetlands, you are destroying a natural barrier to hurricanes.

The other thing that was anticipated at the time was that because of ship wakes from ships using this channel and because of maintenance dredging, the channel banks were going to widen. They were going to erode. That was fully anticipated, and over time, that expansion was quite severe in some places, so that the MRGO expanded up to 3,000 feet from its authorized width of 500 feet. In most areas it at least tripled to 1,700 or 1,800 feet in width.

And that channel widening would lead to a number of other impacts. For example, the erosion created a greatly increased "fetch" or expanse of water that allows waves to generate and strengthen during storms. It was also anticipated that the MRGO would create a hydraulic connection basically to downtown New Orleans and the Lower Ninth Ward and St. Bernard Parish, by increasing the connectivity between those areas and other waterways and the Gulf. That was another anticipated effect of the MRGO. In addition, the expansion of the channel destroyed what was known as the land bridge between the banks of the MRGO and Lake Borgne. This exposed areas south of the channel directly to Lake Borgne and the Gulf. Those were some of the effects of the MRGO.

The other thing that was going on was that the Corps and other government agencies were warned about the risks that were posed by the MRGO, and specifically risks relating to flooding. As early as 1957, the Corps was warned that during times of hurricanes, the MRGO would be a danger to heavily populated areas by increasing the connectivity of water, and would allow surges to reach the protected areas much more quickly and much more destructively.

The Corps understood at the time it was designed that erosion of the MRGO's banks would occur due to wave

2. St. Bernard Parish Gov't v. United States, Nos. 16-2301, 16-2373 (Fed. Cir. Mar. 24, 2017).

wash unless the banks of the MRGO were armored using rocks or some other form of armoring. But the Corps decided as a policy matter not to do that. It understood that erosion would occur, but it didn't armor the banks for its own policy reasons.

By the 1980s, the Corps was acknowledging in internal studies that the erosion had led to an expansion in the width of the MRGO, that the Lake Borgne land bridge had been destroyed, and that once that was broken, development to the southwest—which was St. Bernard Parish basically—would be exposed to hurricane attacks from Lake Borgne. So, the Corps, the government, was aware of or was warned about some of these risks.

There's another federal project that is relevant to this case, and that's the flood protection system that was in place at the time of Hurricane Katrina. That was known as the Lake Pontchartrain and Vicinity (LPV) flood protection system. To understand this case, you need to know a little bit about the LPV as well as the MRGO.

Congress passed legislation in the 1940s and 1950s authorizing the Corps to study various flood protection schemes for this area. In 1965, Congress authorized the construction of the LPV. The LPV was basically a system of levees and floodwalls that protected the entire Greater New Orleans area. In Figure 2, the white lines depict some of those levees and floodwalls.³ The levees by the Mississippi River were part of a separate project. They preexisted the LPV, but pretty much all of the other levees and floodwalls were built as part of the LPV. These levees and floodwalls were built during the 1970s basically and, as you can see, the LPV protected the entire area, not just St. Bernard Parish and the Lower Ninth Ward.

Figure 2.

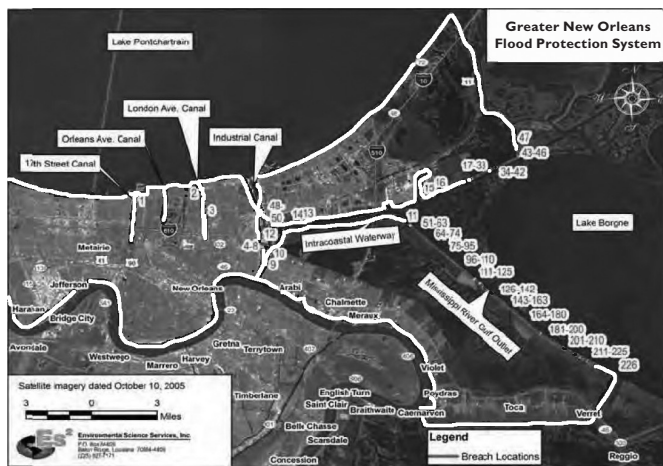
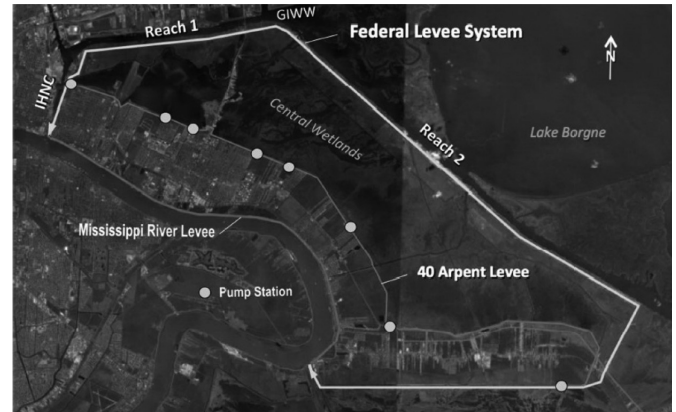


Figure 3 shows some of the LPV protections in the area that are relevant to this lawsuit.⁴ There was a levee built near the MRGO protecting the area from Lake Borgne. There was a Mississippi River levee that was already in exis-

tence. There was also a state levee known as the 40 Arpent that that was built earlier. The 40 Arpent levee was not a federal project. It was a state project that was left in place after the LPV was built. So, that's the flood protection system.

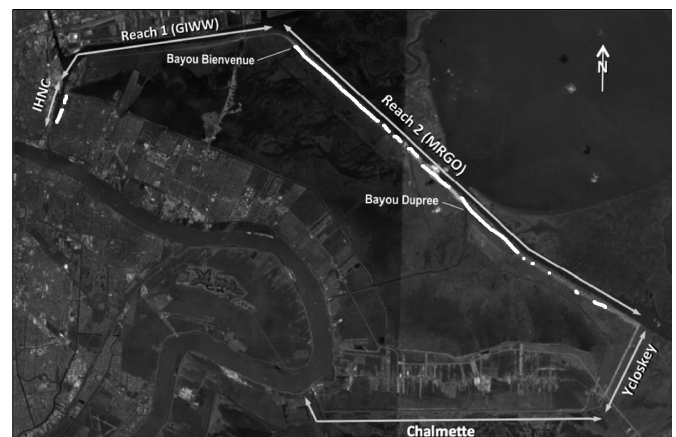
Figure 3.



For our purposes, it's important to understand that the MRGO and LPV were separate and independent projects. The MRGO is a navigation project. The LPV was not. It was a flood control project. They were authorized separately by Congress. They were funded differently. They were authorized and built at different times, although some of those times overlapped. They have different geographical footprints. The LPV actually protected a lot more than the area around the MRGO.

So, that brings us to Hurricane Katrina, which made landfall in late August 2005 as a Category 3 storm. The eye of the storm passed right over Lake Borgne and it pushed a huge storm surge and destructive waves directly at St. Bernard Parish as the storm passed over. Those waves strengthened considerably as they built up over the increased "fetch" of the expanded MRGO channel. This led to the breaching of the LPV levees that were along the MRGO. Almost all of the water that flooded St. Bernard Parish came through levee breaches along the MRGO.

Figure 4.



3. St. Bernard Parish Gov't v. United States, No. 18-359 (U.S. Sept. 17, 2018).
 4. St. Bernard Parish Gov't v. United States, 121 Fed. Cl. 687, 704, 45 ELR 20084 (Fed. Cl. 2015).

Figure 4 depicts some of those levee breaches.⁵ The white lines show where the breaches were in the levees along the MRGO. As you can see, the levees breached primarily along the MRGO and did not really breach significantly elsewhere. So, the levees breached early during the storm. The waters cascading through those breaches flowed into an area of wetlands called the Central Wetlands Unit. They filled up the Central Wetlands Unit to the point where they then overtopped the 40 Arpent levee and flooded all the developed areas of St. Bernard Parish and the Lower Ninth Ward. That led, as you can imagine, to some pretty extensive, and catastrophic, flooding.

The case is primarily about the flooding during Katrina, but there's also an element of flooding in areas outside the LPV that happened during other storms. Even when there wasn't a severe storm, some areas outside the LPV would flood periodically. But this case focuses primarily on the flooding during Hurricane Katrina.

As you can imagine, that flooding led to a lot of litigation over the responsibility for the destruction it caused. For our purposes, there are two main groups of cases that dealt with the flooding associated with or caused by the MRGO. One, the *Robinson* case, was a tort case.⁶ Our firm was not involved in that litigation. It was tried by a very capable group of lawyers based primarily in Louisiana. That case was brought under the Federal Tort Claims Act,⁷ and claimed that the Corps was negligent in how it maintained and operated the MRGO, and that negligence led to the flooding.

There were a series of decisions in that case. There was a summary judgment decision in which the district court rejected the government's argument that the Corps was immunized under the Flood Control Act⁸ for the flood damage because the flooding stemmed from a flood control project. The district court said no, the MRGO and the LPV were separate projects, and the Corps' MRGO-related activities were not flood control activities. Thus, the Corps was not entitled to immunity under the Flood Control Act.⁹

That then led to a 19-day bench trial that featured extensive expert testimony and computer modeling. At the end of that trial, the district court issued a decision finding the government liable for how it operated the MRGO, and finding that but for the MRGO as it existed in 2005, the LPV levees would not have breached, and much of the flooding would not have occurred.¹⁰

That decision was appealed by the Government, and there were two decisions by the U.S. Court of Appeals for the Fifth Circuit panel in that appeal. The first panel deci-

sion affirmed the trial court's liability decision that rejected the government's claim for immunity under either the Flood Control Act or the Federal Tort Claims Act's discretionary function exemption.¹¹

The government then petitioned for rehearing, and the same panel issued a new decision in which it reversed course. Significantly, the second panel decision did not dispute the trial court's factual rulings about the MRGO's causal role in the flooding, and it agreed that the government was not immune under the Flood Control Act for this flooding. But the panel did rule that the government was entitled to immunity under the discretionary function exemption of the Federal Tort Claims Act. So, even though the panel accepted the findings about the MRGO's role in the flooding, it said the government was immunized from tort liability. That decision pretty much ended the tort litigation, but there was still the separate takings litigation that brings us here today.

I know some of the other panelists will go over takings law generally, but let me give you some very basic principles. The Fifth Amendment says that private property should not be taken for public use without just compensation. Physical invasions of property have been held to amount to takings for which the government can owe just compensation. There has been a series of decisions by the U.S. Supreme Court in which the government has been held liable when it floods property.¹²

Most of these cases have to do with federal dam projects that led either to permanent flooding or to recurring flooding in various contexts. But the Court has on numerous occasions held the government liable for taking when it floods land. The most recent decision that I'll summarize was the *Arkansas Game & Fish Commission* decision from 2012.¹³ There, the Court rejected an argument that the government can never be liable when it floods property temporarily; the government argued that it can only be liable for a taking when flooding is permanent. The Court ruled that such blanket exceptions from takings liability are disfavored. It stressed that most takings claims have to be assessed on a situation-by-situation basis, and there's no categorical immunity from liability for temporary flooding.

The Court laid out a series of non-exhaustive factors that the courts were to look at in determining whether temporary flooding amounted to a taking. Those factors included the duration of the flooding, the severity of the flooding, the degree to which the flooding was intended or was the foreseeable result of government actions, and things like that. That's the basic background on takings law as it relates to flooding.

So, the MRGO case was filed in 2005 in the Court of Federal Claims. That's the court that hears most takings

5. *St. Bernard Parish Gov't v. United States*, No. 05-cv-1119 (Fed. Cl. Nov. 12, 2013), Doc. 240.

6. *In re Katrina Canal Breaches Litigation*, 696 F.3d 436, 42 ELR 20197 (5th Cir. 2012).

7. 28 U.S.C. ch. 171.

8. 33 U.S.C. ch. 15.

9. *In re Katrina Canal Breaches Litigation*, 577 F. Supp. 2d 802 (E.D. La. 2008).

10. *In re Katrina Canal Breaches Litigation*, 647 F. Supp. 2d 644 (E.D. La. 2009).

11. *In re Katrina Canal Breaches Litigation*, 673 F.3d 381 (5th Cir. 2012).

12. *See, e.g.*, *Pumpelly v. Green Bay Co.*, 13 Wall. 166 (1872); *United States v. Lynah*, 188 U.S. 445 (1903); *United States v. Cress*, 243 U.S. 316 (1917); *United States v. Dickinson*, 331 U.S. 745 (1947); *United States v. Kansas City Life Ins. Co.*, 339 U.S. 799 (1950).

13. *Arkansas Game & Fish Commission v. United States*, 133 S. Ct. 511, 42 ELR 20247 (2012).

claims against the U.S. government. The main plaintiffs include owners of residential, commercial, industrial, and municipal properties in this area, and it was filed as a class action. There were two trials held. One was in late 2011 focusing on liability.¹⁴ The second was in 2013 focusing on just compensation/damages.¹⁵ In the liability decision from 2015, the Court of Federal Claims applied the *Arkansas Game* factors in an exhaustive analysis and issued a lengthy decision concluding that the government was liable for a temporary taking.

The court found that it was foreseeable to the Corps that the construction, operation, and failure to maintain the MRGO would substantially increase storm surge and waves and cause flooding. It then engaged in a lengthy analysis of causation and concluded that, yes, it was the MRGO that led to increased storm surge and increased destructive waves. That set a chain of events into motion that exposed the LPV levees to waves and surge that they wouldn't have otherwise been exposed to, and led to the breaching of the levees and then the catastrophic flooding of St. Bernard Parish and the Lower Ninth Ward.

So, the MRGO caused the breaching of the levees, which led to the flooding of St. Bernard Parish and the Lower Ninth. The court also found that the flooding was severe, as can hardly be denied, and that this amounted to a temporary taking that lasted from the day before Katrina made landfall until July 2009, which was when the MRGO was closed to deep-draft shipping.

As noted, there was later a damages and class certification decision by the Court of Federal Claims. The court basically awarded damages for the loss of improvements, the damages to improvements, and the rental value for some of the land that was subjected to flooding, and then certified the class.

The government appealed, raising a number of issues, and earlier this year, a panel of the Court of Appeals for the Federal Circuit reversed. The panel didn't reach a lot of the issues raised by the government, and it didn't really disturb any of the court's factual findings. Instead, the panel announced two legal rulings.

The first was that it pivoted off of the Court of Federal Claims' observation that the Corps had failed to maintain the MRGO in such a way as to mitigate the flood risk that it had created. The panel ruled that that observation amounted to a claim premised on government "inaction," and it held that the government can never be liable under the Takings Clause for a failure to act, but only for affirmative acts. So, according to the panel, the theory that the government failed to maintain or modify this project to avoid or mitigate the flood risk created by the project does not support the takings claim. That was holding number one.

The second holding had to do with causation. Here, the court basically said that in the causation analysis, it wasn't enough to show that the MRGO led to the breaching of the LPV levees and that those breaches led to flooding. The court said we needed to show instead whether flooding would have occurred if the levees had never been built, because the levees were also a government project. And the panel basically said we needed to remove all effects of all government actions that are related to flood risk, regardless of whether those actions were independent from, or would have taken place even in the absence of, the action we were challenging, in this case the MRGO project. Because, according to the panel, we could not show that the flooding would not have occurred in the absence of both the MRGO and the LPV, we could not establish a taking.

Those are the basic holdings of the case. The case is still ongoing, as a cert petition was filed and remains pending.¹⁶

Teresa Chan: We're going to turn now to our second panelist, John Echeverria. John is a professor of law at Vermont Law School, where he teaches property law, public law, and a wide range of environmental and natural resources law courses. He's also an expert on takings and has a takings litigation blog. John is going to talk about some of the takings issues here.

John Echeverria: I'm going to cover some of the same ground that Vince covered, but from a slightly different perspective. I'm going to talk about the basic rules governing flooding takings cases. I want to focus first on *Arkansas Game & Fish Commission*, and then I'll turn to *St. Bernard Parish*.

It's important to start with the *Arkansas Game & Fish Commission* case because prior to that decision the United States had taken the position, and that position had been upheld on numerous occasions by the Federal Circuit, that government-induced flooding will provide a basis for takings liability only if it's a permanent flooding. There were some venerable Supreme Court decisions that seemed to strongly support that position and the Federal Circuit had embraced those decisions.

So, a case such as *St. Bernard Parish*, based on a temporary flooding theory, would have been dead in the water in the Federal Circuit prior to the *Arkansas Game & Fish Commission* decision. The *Arkansas Game & Fish Commission* decision changed everything. It said that just as you can bring a takings claim based on a regulatory restriction that is temporary in nature—not likely to be a winning claim but a permissible claim—so, too, in the case of flooding, one can bring a takings claim based on temporary inundation.

Another important issue in flooding taking cases relates to the foreseeability of harm. This issue was addressed by Judge Susan Braden. It was not addressed by the court of appeals in the *St. Bernard Parish* case. The appeals court said there was a substantial issue about whether or not the

14. *St. Bernard Parish Government v. United States*, 121 Fed. Cl. 687, 45 ELR 20084 (2015).

15. *St. Bernard Parish Government v. United States*, 126 Fed. Cl. 707, 46 ELR 20087 (2016).

16. *St. Bernard Parish Gov't v. United States*, No. 18-359 (U.S. Sept. 17, 2018).

requirement of foreseeability of harm had been met, but did not attempt to resolve the issue.

There is also the question on when a government-caused inundation represents a taking versus a tort. Self-evidently, the convoluted history of litigation arising from Hurricane Katrina illustrates the difficulty that even experienced lawyers can have in trying to figure out whether a legal challenge is best mounted under a tort theory or under a takings theory. Obviously, an effort was made to mount a tort suit and that failed based on the discretionary function exception after many, many years of litigation. One of the conclusions in the current takings litigation is that there is no taking here, but there might have been a tort. But if there was a tort, the tort claim is defeated by the immunity defense that blocked the first round of litigation.

And then there is the question of to what extent takings claims arising from inundation need to be based on affirmative government action, or whether they can be based on government inaction.

To begin at the beginning, the Supreme Court has long recognized that government-caused permanent inundations of private property likely constitute takings on a so-called per se basis, as in the granddaddy case *Pumpelly v. Green Bay Co.*¹⁷ from the late 19th century. The rule that permanent inundations of private property represent per se takings is consistent with the general rule that permanent occupations of property of whatever sort are subject to a per se rule. The leading permanent occupation case is *Loretto v. Teleprompter Manhattan CATV Corp.*¹⁸

What the per se test apparently means is that even if only a small portion of a property is inundated, takings liability will result. And even if there's no showing of any significant economic harm, takings liability will also be recognized. A primary defense that is available, at least in some cases, is that, based on applicable background principles of state or federal law, the property owner has no property entitlement to claim a right to be free from inundation. For example, if the government is exercising its federal navigational servitude and flooding results, there would be no basis for a takings claim.

The question presented in *Arkansas Game & Fish* was whether a taking may occur within the meaning of the Takings Clause when a government-induced flood invasion, although repetitive, was merely temporary. The Supreme Court in a unanimous decision ruled that yes, a takings claim can potentially succeed in that circumstance, that is, when inundation is only temporary.

The *Arkansas Game & Fish* case involved flooding damage to the Dave Donaldson Wildlife Management Area in Arkansas along the Black River. This is a wildlife management area that borders a river and is frequently flooded. There is duck hunting. There is a lot of game hunting. And most importantly for present purposes, there's a substantial timber resource that prior to the events leading to this litigation was periodically flooded

from time to time over the course of the year, but in a way that did not interfere with timber growth.

But about 100 miles upstream from the wildlife management area is the Clearwater Dam operated by the Corps. It's really quite an enormous distance along the Black River from the dam up in Missouri to the wildlife management down in Arkansas.

In 1993, the Corps, which of course had a water control manual governing the operations of the dam, adopted an amendment to its water control manual. This amendment was in response to a request made by local farmers, who wished to see slower releases from the dam from September to November that would allow them more time to go into their flood-prone fields adjacent to the river and harvest their crops. To accommodate that constituent request, the Corps agreed to modify the schedule of releases from the dam.

But there's a fixed quantity of water coming down the river and behind the dam, of course. So the slower releases from the dam to benefit the farmers, done in the fall, meant a larger release had to be made from the dam in the spring and the summer to compensate. Those larger releases led to more flooding of the wildlife management area in that period.

Probably because it was so far downstream, the Corps wasn't very alert to what was going on. The wildlife management area managers objected that too much water was coming downstream, and eventually brought the takings lawsuit and established in the trial court that the increased water releases in the spring and summer had led to substantial damage to the timber resources of the wildlife management area. The trial court upheld the takings claim.

The Federal Circuit, applying its long-standing rule that only a permanent inundation can give rise to takings liability, reversed, saying that compensation may be sought only when flooding is permanent or inevitably recurring. So, if it's inherently temporary, as the flooding was in this case because it only lasted about five years, no liability would lie. The Federal Circuit relied heavily on the Supreme Court's 1924 decision in *Sanguinetti*.¹⁹ But the Supreme Court reversed, holding that even a temporary inundation may amount to a taking.

One of the interesting things about this decision in terms of larger doctrinal developments is that the Supreme Court, although it had insisted for many years that a claim of permanent inundation should be governed by a per se test, rejected the argument that a per se test should apply in the case of a temporary inundation. Instead, the Court said that a multifactor takings analysis should apply involving a variety of factors including the duration of the temporary government-caused inundation, the degree to which invasion was intended or was the foreseeable result of authorized government action, the character of the land at issue, the owner's reasonable investment-backed expectations regarding the land's use, and the severity of the interference caused by the inundation.

17. 80 U.S. (13 Wall.) 166 (1871).

18. 458 U.S. 419 (1982).

19. *Sanguinetti v. United States*, 264 U.S. 146 (1924).

These factors are not completely unlike the factors the Court considers in the traditional multifactor analysis it uses in partial or regulatory takings cases based on the *Penn Central*²⁰ precedent. That analysis consists of three issues: economic impact, degree of interference with investment-backed expectations, and the character of the governmental action. But for whatever reason, even though in the *Arkansas Game & Fish Commission* decision the Supreme Court rejected the notion that a per se analysis should apply, it didn't simply apply the traditional *Penn Central* analysis. It developed a brand new, distinctive multifactor analysis for application to flooding cases.

Importantly, in *Arkansas Game & Fish Commission*, the Supreme Court was very careful to emphasize that it was not authorizing a takings recovery for flooding damages that would have been even greater if the dam had never been built at all. The Court said the plaintiff's land had not been exposed to flooding comparable to the 1990s inundation, the inundation that gave rise to this lawsuit, at any other time either prior to or after the construction of the dam.

In effect, the Court said that you cannot claim a taking if construction of the dam reduced flooding risk and then a particular operating plan was put in place and then there was a change in the operating plan that caused some new flooding risk, if at the end of the day the landowner was still better off because the dam had been built in the first place. If a landowner plaintiff is not getting the full suite of flood control benefits originally received, but there is still at least some net flood control benefits, the Court said there would not be a taking in that situation.

On remand, the Federal Circuit, in accordance with the reasoning of the Supreme Court, said the proper comparison for the purpose of takings analysis is between the flooding that occurred prior to the construction of the dam and the flooding that occurred during the deviation from the original operating plan—not between the flooding that occurred prior to the adoption of the deviation and after the adoption of the deviation.

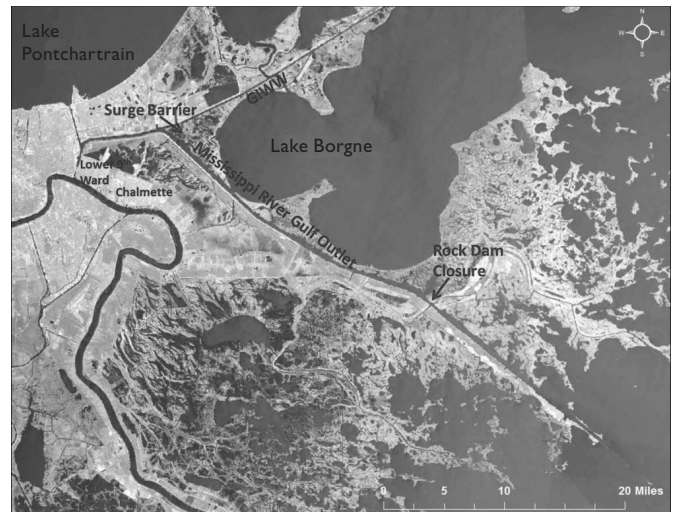
One of the interesting issues that was left on the table in *Arkansas Game & Fish* was the role of state water law in analyzing these kinds of claims. One of the important features of the reasonable use riparian doctrine that's applicable in Arkansas and in many U.S. states is that no one owning land along a river can claim an entitlement to any fixed quantity of water flowing down the river. A river is inherently variable and the amount of water will change naturally. In addition, each person operating along a river has a right to make a reasonable use of the water and is permitted to alter its quality and quantity to some degree in exercising their own property rights. Therefore, no downstream riparian party, including the Arkansas Game and Fish Commission, has a right to assume that they are going to get exactly the level of water they have been expecting to receive.

So at the Supreme Court level, a group of academics tossed in an amicus brief that said, in effect, the whole case has been litigated on a false premise—that is, that the character of the underlying state water rights don't matter. Justice Ruth Bader Ginsburg writing for the Court said, well, this is a very interesting argument, but nobody raised it below, so it's too late for us to consider it in this case. But she did recognize the significance of the issue that was raised.

I think going forward, in thinking about flooding cases, it's important not simply to take the takings ruling offered by *Arkansas Game & Fish* and by *St. Bernard Parish* and other decisions, but to recognize that there are important questions having to do with the nature of the entitlement to use water and what limitations are attached to that right. Whenever a landowner claims flooding damage consistent with the limitations that are built into his or her water right to begin with, there'll be no basis for takings liability.

This leads us to the *St. Bernard Parish* case. This map in Figure 5 shows the MRGO shortly after it was excavated and before the channel was expanded through a process of erosion.

Figure 5.



Source: Lake Pontchartrain Basin Foundation.

The plaintiff's theory of liability was that the government was liable under the Takings Clause, first, because of government inaction including the failure to properly maintain or modify the channel as time went on, and second, based on government action, the construction and operation of the MRGO channel. So, there are two distinct theories of liability at issue in the case.

With respect to the claim based on inaction, the Federal Circuit ruled that the claim failed as a matter of law. A property loss compensable as a taking only results when the asserted invasion is a direct natural or probable result of an authorized government action. Inaction cannot lead to a taking. At the same time, the court said inaction might

20. *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 8 ELR 20528 (1978).

conceivably be the basis for a viable tort claim if it weren't barred by an immunity doctrine. But the court's square ruling on inaction in the context of a takings case knocked out half the case.

Generally speaking, I think it's fair to say that the Federal Circuit ruling on this issue is consistent with the weight of authority. A number of courts, mostly at the state level but around the country, have from time to time addressed this issue. These largely consistent rulings, with some modest exceptions, conclude that inaction is not a basis for takings liability.

The rationale for this conclusion has never been elaborated on in any great detail, as far as I am aware. But let me offer what I think are the best arguments for it. One is that from the time the Takings Clause was drafted and litigated up to modern times, takings cases have consistently arisen from affirmative governmental actions. All the takings cases you can think of and that you have read over the years involved the government doing something, and to expand takings liability to a whole new universe of government inaction would be, at least in historical terms, a major expansion of the doctrine.

The second reason has to do with the effect of takings liability on the ability of government to operate. Justice Oliver Wendell Holmes, when he famously applied the Takings Clause to regulation in a meaningful way for the first time in the *Mahon*²¹ decision, cautioned that government could hardly go on if every time it acted it were liable under the Takings Clause. Takings liability, if taken too far, would be a major impediment to the implementation of legislative policy decisions as well as executive policy decisions. Expanding liability under the Takings Clause to the realm of inaction would seriously undermine the ability of government to function.

I think, finally, there's the concern that subjecting government to liability based on inaction really opens up takings litigation to an unlimited set of actions. The set of actions the government takes represent an identifiable universe of actions. The actions that government hasn't taken are really limitless. Only the limitations of the imagination of a plaintiff's lawyer to dream of something that the government should have done and might have done, would provide the outer limits on this expansive version of takings doctrine.

So, for all those reasons, I think this is a well-founded legal rule and I would doubt very much that the Supreme Court wants to take this issue up. I'd be curious to see whether the cert petition tries to bring this issue before the Supreme Court.

With respect to claims based on the actions of building and operating the MRGO, the Federal Circuit said the takings claim failed because the plaintiffs failed to establish that these actions caused the asserted property damage. As I explained earlier, in *Arkansas Game & Fish*, the plaintiffs were under an obligation to show that the damage would not have occurred in the absence of the governmental

action in order to show causation. For the purpose of causation analysis, the Federal Circuit ruled that the relevant government action included not only the MRGO project, but also the actions taken by the government to mitigate the impact of the MRGO, specifically the construction of the levee system protecting the parish and New Orleans against hurricane damage.

Basically, the Federal Circuit faulted the Court of Claims for focusing on the MRGO and not taking the levee system into account. The court struggled to some degree in trying to define the relevant governmental action and how to define the scope of the governmental action or the bits and pieces of governmental action that need to be taken and considered together for the purposes of assessing takings liability. The court said, "When the government takes actions that are directly related to preventing the same type of injury on the same property where the damage occurred, such action must be taken into account even if the two actions are not the result of the 'same project.'"²²

It seems to me this ruling is both fair and just, while obviously there may be limits to how frequently givings or mitigation measures can or should be taken into account. In this instance, it seems to me that the levees were so directly related to the flood risk associated with the construction of MRGO they should have been taken into account.

What the court seems to be saying is that, although the plaintiffs didn't present any direct evidence on this, if all the levees had fully counteracted the risk created by the MRGO, then as far as the evidence on record would show, the logical conclusion would have been that the damage was caused by the monster storm and not by any governmental action.

Teresa Chan: We're going to turn to our final speaker, Michael Burger. He is the executive director of the Sabin Center for Climate Change Law at Columbia Law School, where he oversees a team of attorneys working to combat climate change. His own research and advocacy focus on the legal strategies to reduce greenhouse gas emissions, as well as to promote climate change adaptation. Michael is going to expand our discussion and talk about this case in the context of climate change litigation generally.

Michael Burger: Vince and John have already provided an extensive treatment of the particulars of the *St. Bernard Parish* litigation, of the takings analysis, and of the potential role that the case will play in defining takings jurisprudence moving forward. What I hope to do is broaden the lens and look at the case in the context of climate change litigation—in particular, the mode of litigation that seeks to use the courts to force government adaptation to climate change risks and impacts, either through seeking compensation or requiring adaptive action.

Climate change poses a wide range of risks to essentially all of our critical infrastructure. On the energy front,

21. *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922).

22. *St. Bernard Parish Government v. United States*, 887 F.3d 1354, 1366, 48 ELR 20065 (Fed. Cir. 2018).

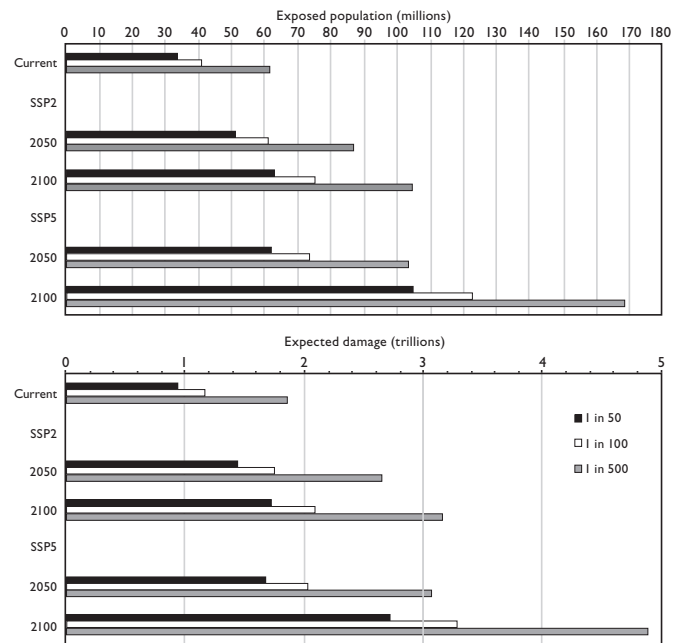
dams, power plants, the electric grid, fossil fuel exploration and production, facilities and operations, pipelines, railways, bioenergy supplies, and energy demand are all exposed to increasing temperatures, increasing precipitation, increasingly intense and frequent extreme weather events, declining water availability, wildfire, sea-level rise, and storm surge.

Wastewater treatment plants in coastal states across the country are exposed to sea-level rise-induced flooding subjecting millions of residents and the nation's coastal waterways to increasing risks of overflows and contamination. Communities and individual properties are also exposed to increasing risks associated with sea-level rise. Climate Central has developed a tool²³ that allows people to downscale projections to see how sea-level rise will impact individual neighborhoods under a range of global warming scenarios. This is one of a number of such tools, but it's the one I like to use when I'm playing around online and imagining dire futures for me, my children, their children, and so on.

Of course sea-level rise is not the only source of flood risk associated with climate change. Increasing incidents in intensity of extreme precipitation events exposes people in floodplains both along the coast and inland to flood-related damages, including the temporary and potentially even permanent loss of property.

Figure 6 illustrates a recent study that shows higher numbers of people currently exposed to flood risk than provided in most estimates and the increasing numbers of people who will be exposed to flood risk by mid-century—that's 2100—under a couple different scenarios.²⁴ The study also shows the dollars associated with property damage in different zones—one in 50-year, one in 100-year, and one in 500-year floodplains. Almost \$2 trillion worth of property is presently exposed to flooding in the one in 500-year floodplain, according to these estimates. Looking out to 2100, this study estimates almost \$5 trillion in property would be at risk. Again, this is just one study. There are any number of analyses one could look to for a closer look at the economic risks to property, infrastructure, and economic sectors. A couple that I might refer you to would be the Risky Business report and the U.S. Environmental Protection Agency's Climate Change Impacts and Risk Analysis from 2015.²⁵

Figure 6.



Given the extraordinary risks that climate change presents to the nation and its residents, one question that naturally arises in our litigious society is whether the courts provide an avenue to force action that will either compensate those harmed by climate impacts, or force action to reduce the risks from them. One approach to such litigation would and does focus on private actors. One can look to the recent lawsuits filed by 13 state and local governments against fossil fuel companies seeking compensation for the costs of adaptation under a variety of state common-law, public trust, and statutory theories as an example of that kind of litigation-based approach.²⁶

But takings claims are filed against the government. So my focus here will remain primarily on the claims that might be made against governments either for the failure to take action that adapts to climate change, or else for taking actions that increase the harms associated with climate change impacts. In analyses that are more fully spelled out in our book chapter and article,²⁷ the staff at the Sabin Center have looked at potential claims for failure to adapt based on three primary theories: negligence, fraud, and takings.

In short, negligence and fraud face a preliminary obstacle in sovereign immunity. In negligence cases where sovereign immunity does not bar a claim, proving duty, breach, harm, and causation will be difficult if not impossible in some cases. In fraud cases where sovereign immunity does not bar a claim, proving a knowing misrepresentation, the

23. *Surging Seas*, CLIMATE CENTRAL, <http://sealevel.climatecentral.org/> (last visited Nov. 20, 2018).

24. Oliver E.J. Wing et al., *Estimates of Present and Future Flood Risk in the Conterminous United States*, 13(3) ENVTL. RES. LETTERS, 034023 (2018).

25. RISKY BUSINESS, THE ECONOMIC RISKS OF CLIMATE CHANGES IN THE UNITED STATES (2014), available at https://riskybusiness.org/site/assets/uploads/2015/09/RiskyBusiness_Report_WEB_09_08_14.pdf; U.S. EPA, CLIMATE CHANGE IN THE UNITED STATES: BENEFITS OF GLOBAL ACTION (2015), available at <https://www.epa.gov/sites/production/files/2015-06/documents/cirareport.pdf>.

26. CLIMATE CHANGE LITIGATION DATABASES, SABIN CENTER FOR CLIMATE CHANGE LAW, <http://climatecasechart.com/case-category/common-law-claims/> (last visited on Dec. 10, 2018).

27. Jennifer Klein, *Potential Liability of Governments for Failure to Prepare for Climate Change*, SABIN CENTER FOR CLIMATE CHANGE LAW, COLUMBIA LAW SCHOOL (2015), available at <http://columbiaclimatelaw.com/files/2016/06/Klein-2015-08-Liability-US-Gov-Failure-to-Prep-Climate-Change.pdf>.

intent to have others rely on that misrepresentation, and the plaintiffs' reasonable reliance on the misrepresentation will also be difficult in all but the most extreme cases.

Prior to the Federal Circuit's decision in *St. Bernard Parish*, it seems that these taking claims may offer an end run around the significant obstacles confronting prospective plaintiffs. However, the decision as it stands and if it stands, does pose a significant bar to takings claims for failure to adapt either through inaction or affirmative measures. On one hand, the decision creates what I think of as a bright-line rule that the failure to take action to adjust to climate change impacts cannot be construed as a compensable taking under the Fifth Amendment.

Thus, governments that are aware of increased risk of floods or complete inundation or other impacts but do nothing to decrease the risk they pose to residents and their property won't be required to compensate those who temporarily or impermanently lose their land. On the other hand, the case articulates a causation analysis that John went through in some detail for government action that may be difficult to satisfy in climate-related cases.

There are a wide range of cases that might be brought involving sea-level rise, floods, maybe even wildfire claims. I'm not going to run through a hypothetical analysis of them. But the burden of showing the alternate outcome in the absence of the government actions taken in relation to a given risk or harm, and showing that things would have been better under that alternate scenario, will prove difficult and without question involve a great deal of complexity in every case.

I want to look briefly at a few examples of ongoing or recent climate change litigation that may help flesh out some of the importance of this case. First, in *Juliana v. United States*,²⁸ a coalition of youth plaintiffs had sued the federal government alleging that a wide range of government activities, including air pollution standards and permits and permitting and leasing of public lands for fossil fuel development, constitute a violation of their substantive due process rights and of the government's public trust obligations. Tucked into the complaint is something about a prospective claim that continued actions along the business-as-usual trajectory "will effect a complete taking of some of Plaintiffs' property interests by virtue of the sea level rise that is an incident of Defendants' unlawful action."²⁹

This is, or maybe it would be if it were a fully stated claim, a far different type of case than *St. Bernard Parish*, which focuses on management of water infrastructure, not federal environmental energy and natural resources policy. But I think it provides a useful and perhaps entertaining example. First, the claim, if it were to be fully litigated, would not ostensibly be precluded by the inaction bar, as it focuses on affirmative measures undertaken by the government rather than inaction. Second, plaintiffs

would have to show that but for the U.S. government's actions, sea-level rise would be less and the impacts on the plaintiffs' individual property would be less than it is or will be.

This would be a tough point to make as it involves global climate modeling and scenario analysis, along with downscaled projections of localized climate impacts that adequately prove things would have been discernibly different had the United States not pursued its existing energy, environmental, and resources management strategies. As it stands, the particular claim is not the focus of continued litigation in *Juliana*. And I don't expect that that will play out in detail in that case.

In *Illinois Farmers Insurance*,³⁰ the Illinois Farmers Insurance Company and Farmers Insurance Exchange and their subsidiaries and related entities sued the Water Reclamation District for Greater Chicago, Cook County, the city of Chicago, and numerous other cities, towns, and villages in Illinois in a class action alleging that the municipalities' failure to implement reasonable stormwater management practices and increased stormwater capacity resulted in increased payouts to the plaintiffs' insurance after heavy rains in April 2013.

The rains resulted in sewer water flooding the insured properties. And plaintiffs alleged that the rainfall was within the anticipated 100-year storm, or alternatively that it was within the climate change-adjusted 100-year rainfall return frequency based on the city of Chicago's own climate action plan. They asserted claims of negligence, maintenance liability, failure to remedy known dangerous conditions, and takings without just compensation. The case was withdrawn, so we won't know how it would have turned out and exactly how this new precedent would have played in. But certainly it would pertain to the ability of the plaintiffs to prove their takings case in any event.

The *Burgess*³¹ case is somewhat directly analogous except that it is set outside the United States. The plaintiffs in that case are seeking compensation based on negligence rather than takings. There, Ontario's Ministry of Natural Resources manages the water levels in several lakes whose services would otherwise rise higher and fall lower with snowmelt and precipitation. Historically, the area around the lakes has not seen flooding, but since 2010, three different floods have damaged and destroyed private property there.

In September 2016, property owners filed a class action suit seeking \$900 million Canadian in damages from the ministry for the most recent flood events. The plaintiffs alleged that the ministry had a duty to avert foreseeable flooding, knew that the lakes had reached dangerously high levels, yet negligently allowed the lakes to flood, which in turn destroyed adjacent structures.

28. 217 F. Supp. 3d 1224 (2016).

29. Complaint at 287, *Juliana v. United States*, 217 F. Supp. 3d 1224 (2016) (No. 6:15-CV-01517-TC).

30. *Illinois Farmers Insurance Co. v. Metropolitan Water Reclamation District of Greater Chicago*, No. 1:14-cv-03251 (N.D. Ill. June 3, 2014).

31. *Burgess v. Ontario Minister of Natural Resources and Forestry*, [2016] No. 16-1325 CP (Can.).

This case highlights the two points of a takings claim made along similar lines in a similar factual scenario we'd have to make in the United States. First, that the flooding was due to actions by the government rather than the failure to take some sort of action, and second, that the flooding was worse than it would have been if the government was not managing the water levels at all.

Turning now to what I framed as cases with related but distinct issues: the *Cangemi* case.³² In that case, the federal jury found in favor of property owners on Montauk out on Long Island under intentional private nuisance and trespass claims against the town of East Hampton. The plaintiffs alleged that jetties in the harbor owned by the town have caused erosion on the shoreline of their properties, and in many cases have entirely stripped the properties of beach frontage, leaving them more vulnerable to storm damage associated with climate change.

The town has appealed this decision. In its appeal, it raised arguments that are notable in this context. First, they argued that no reasonable jury could find, based on the evidence that was submitted, that the jetties were the proximate cause of the plaintiffs' damages or that the jetties interfered with the plaintiffs' use and enjoyment of their properties. The town also argued that the plaintiffs' expert could not isolate interference by the jetties from other factors that caused erosion on the shoreline, and that the expert acknowledged that sea-level rise was among a number of factors causing erosion but did not include sea-level rise in the expert presentation. These types of fact-specific debates will dominate future battles over proving causation whether in a negligence or a takings context.

Finally, in *Harris County Flood Control District v. Kerr*,³³ plaintiffs consisted of about 400 homeowners whose homes suffered flood damage one or more times due to Tropical Storms Frances in 1998, Allison in 2001, and another storm in 2002. A summary of the Supreme Court of Texas' decision in the case is as follows:

This long-running dispute poses a question of constitutional law: whether governmental entities that engage in flood-control efforts are liable to homeowners who suffer flood damage, on the theory that the governments effected a taking of the homeowners' property by approving private development without fully implementing a previously approved flood-control plan. Under the circumstances presented, we answer no.³⁴

Finally, I want to address the question of where this all leaves would-be plaintiffs seeking to force government adaptation. Departing from the takings context, I want to note a few potential strategies. The Conservation Law Foundation has filed two different lawsuits against fossil fuel companies in New England, arguing that their storm-water and hazardous waste management plans are not

adequate to protect against releases given the current level of storm-related risks.³⁵ The lawsuits also originally complained of future risks related to climate change. But at least in one of those cases, the time window that the judge is allowing the parties to argue has been foreshortened.

These suits could provide a model for similar lawsuits under the Clean Water Act³⁶ and the Resource Conservation and Recovery Act,³⁷ seeking to force governments and private actors to update their preparedness for climate-related impacts to a wide range of coastal infrastructure.

The National Environmental Policy Act (NEPA)³⁸ and the "little NEPAs," or the state equivalents to NEPA, also provide an opportunity for the public to seek to force the government and project sponsors undergoing project review to analyze and disclose the risks that climate change poses to proposed projects, as well as the ways in which projects might contribute to climate change. Similarly, the public can seek to encourage and perhaps force utility regulators to require climate hazard assessment in a range of different ratemaking and other types of proceedings.

Finally, the National Flood Insurance Program is clearly in need of significant reform.

Teresa Chan: We're going to move now to questions. I'm going to start things off by asking our panelists if they want to respond to something that they heard in one of the other panelists' talks or if one of the other talks sparked an idea that they didn't have a chance to address yet.

John Echeverria: One of the things that struck me about the *St. Bernard Parish* litigation is the fact that, whichever way you slice it, the U.S. taxpayer is the loser. I understand that the Corps built the project, but it was built at the behest of political leaders in Louisiana who thought it was a good idea, even if at great expense to the American taxpayer. I think everyone who is familiar with the political process for organizing and getting a Corps project built understands that these are driven by local political forces.

In addition, so far as I know, no one ever really thought that the MRGO project was a sensible or useful project to serve navigation interests. Now that this boondoggle project has allegedly caused flooding damage, Louisianans have turned around and tried to sock the U.S. taxpayer again for the injuries caused by this project paid for with U.S. taxpayer dollars. I think this is one of the most painful lessons in the whole story surrounding the MRGO project.

Vincent Colatriano: I'd like to address that. I'm not familiar with the entire history of the political background of the MRGO project, but I do think you're painting with a little bit of a broad brush when you say that it was politically supported throughout Louisiana. From the very

32. *Cangemi v. Town of East Hampton*, No. 2:12-cv-03989 (E.D.N.Y. July 30, 2018).

33. No. 13-0303 (Tex. 2016).

34. *Id.*

35. *Conservation Law Foundation, Inc. v. Shell Oil Products US*, No. 1:17-cv-00396 (D.R.I. Aug. 28, 2017); *Conservation Law Foundation v. ExxonMobil Corp.*, No. 1:16-cv-11950 (D. Mass. Sept. 29, 2016).

36. 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607.

37. 42 U.S.C. §§6901-6992k, ELR STAT. RCRA §§1001-11011.

38. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209.

beginning, there were communities, including St. Bernard Parish, that were raising warnings about the effects that the MRGO would have in St. Bernard Parish.

I mentioned the 1957 warning that came from I think a St. Bernard Parish Council—I'm not sure if it was a government body but it was at least a citizens' council—saying that the MRGO is going to create a flood risk. So, there were at least many citizens and taxpayers who were not clamoring for this project and were in fact clamoring against it. I do think that needs to be mentioned here, although I'm not sure to what extent it bears on the legal analysis.

Switching gears, I do want to make a point about inaction. The Federal Circuit announced a pretty categorical rule: that inaction can never amount to a taking. I'm not sure that that is completely consistent with *Arkansas Game* in which the Supreme Court said these types of categorical or blanket rules are disfavored.

But even leaving that issue aside, I think there's a real problem characterizing this case as one that involves "inaction." The claim here was predicated on affirmative action, the construction of the MRGO, which created a flood risk. It is true that the Corps then failed to mitigate the effects of its affirmative action. I don't think that in any sense can be fairly characterized as government "inaction." It is just that the government decided as a matter of policy that it wasn't going to address the effects of its earlier action. I think to claim that that is "inaction" that is immune from Takings Clause liability really does set a precedent that is quite troublesome.

Teresa Chan: That actually brings up the question whether there is potentially a fuzzy line between action and inaction in a takings case.

John Echeverria: I think it's a pretty clear line. I think it's a pretty manageable line. I guess my concern is the full scope of government liability that might be opened up once you talk about inaction. The government builds a seawall that looked good enough for the time. But the claim is, well, they should have built it higher and stronger. Their failure to upgrade the seawall becomes a basis for liability.

Michael Burger: I think it is a bit fuzzy. I think that we'll probably see some future litigation that will wind up defining more clearly what the lines are. The seawall example is a great one. You could even look at a situation where there's no seawall, but there is a risk of sea-level rise. So there, the decision not to build the seawall at all would be inaction and sensibly would be barred by this precedent. That will be quite clear. But the decision to permit some other development that falls into the area that is exposed to risks from sea-level rise in the area where they're not building a seawall would be government inaction.

I think a lot of it will depend on how the lawyers frame it. Obviously, the litigators will seek to frame things as involving government action rather than government

inaction. Judges will be asked to determine which bucket things fall into. I think that we'll see this develop a bit more over the next few years.

John Echeverria: There's a larger concern I have about this whole suite of climate litigation. It's that the projections of property damage over the next 50 or 100 years from sea-level rise are just jaw-dropping in their magnitude. I think the question is how does society deal with those damages. And is it sensible to go after local governments for failure to anticipate and deal with, mitigate, and divert the impacts of sea-level rise, when in fact the major responsibility by any sensible measure in the vast majority of cases—setting aside the dispute we're having about the MRGO—falls on corporate actors and government at the national level?

The idea that some poor local community along the New Jersey Shore should be saddled with liability for failing to stick a finger in an eroding dike when they had so little responsibility for causing the global problem seems kind of lacking in common sense to me. Somehow the legal effort seems misdirected when it's aimed at these poor local communities that are on the front edge of climate impacts and are going to be suffering the worst impacts. The governments themselves are going to be suffering significant losses. They're going to be suffering an erosion of their tax bases, and are going to be the least capable going forward of providing compensation for those who claim injuries as a result of sea-level rise.

Teresa Chan: John, you bring up a really interesting point, which is who will pay for damages if people are going to be looking in the coming years to cover their damages as we see more extreme weather. I'm wondering, Vince or Mike, if you want to weigh in as to where you think that liability lies.

Michael Burger: I think that we're seeing a variety of attempts to figure that out in the courts. Obviously at the largest scale, at the global scale, there have been negotiations for a quarter of a century over who bears responsibility, and where the financing should come from in order to deal with loss and damage for the most vulnerable nations and those that are least well-prepared to deal with the economic realities of adapting to climate change while at the same time being the least responsible for climate change. So, there's sort of that bucket where this is playing out.

Then, there are the lawsuits that I referenced where we have Rhode Island, New York City, Baltimore, Boulder County, eight different local governments across California, and King County up in Washington. I think that I've touched on all of the ones that have been filed to date against the so-called carbon majors. There's a number of different defendants who have been named in those cases, but you can think of the five biggest ones as the most common defendants in those cases. Those are along the lines that John was suggesting, where the claim is being made that these particular companies bear a significant burden

and a degree of responsibility for climate change, and that they should be contributing directly to local governments' adaptation costs.

To date, we have seen two of those cases dismissed at the trial court level, one in the Northern District of California and one in the Southern District of New York.³⁹ Both of those cases are going to move forward on appeal. The decisions in those cases are not binding on the jurisdictions hearing the other cases, at either the state or the federal level. So, I think basically the question of whether these companies should and can bear the liability in a litigation context or in a court-based context will play out over the next 12 months as we see more and more of these decisions come down.

Teresa Chan: This brings up another question as to whether litigation is the right avenue for trying to get governments to act. Mike, you've talked about the other cases we're seeing out there. Is this the appropriate avenue or are there better avenues to get governments to act in the face of climate change?

Michael Burger: My own view on that is that we're in an all-hands-on-deck situation and a by-any-means-necessary kind of situation. I think we've seen an increase in these kinds of cases, these more novel theories coming forward. Certainly, the city lawsuits, the municipal lawsuits against the fossil fuel companies, in my view express a degree of frustration with the rollbacks on climate policy that we're seeing at the federal level and the abdication of leadership and responsibility at the federal level.

In a situation where the federal government is fundamentally failing to take action on climate change, we're left with state and local governments and private actors to demonstrate leadership. We are seeing that, but we're also seeing that we're still falling well short on both mitigation and adaptation, the levels of ambition on both fronts that we need. So, I think the court cases are inevitable, if not a necessary complement to those other political, regulatory, and other efforts.

John Echeverria: I think there's an interesting parallel between the current situation and Superfund. The country recognized that we had legacy toxic waste sites, some of which had been abandoned and were completely orphaned sites, and others that had some identifiable culprits who had contributed to the problem. But this whole collection of waste sites is recognized as a national problem. A

national effort was mounted to clean up the sites. A whole liability regime was put in place to try to assign liability on a retroactive basis to those who were responsible for creating the situation.

It seems to me that the current situation cries out for national leadership. Elected officials have not moved on this idea because in the current political environment it's such a nonstarter. But in a sensible world, if we might eventually live again in a sensible world, Congress would take leadership on this and would formulate policies on resettlement of communities and populations that are threatened with sea-level rise; define and try to cover the enormous costs that are going to be associated with sea-level rise; and set up a legal regime that would assign liability in sensible and comprehensive ways. But short of that kind of national leadership, I'm very pessimistic about the ability of litigation involving individual landowners against particular communities to make much of a dent in this problem. And I see even less hope at the international level.

Teresa Chan: Any final thoughts?

Vincent Colatriano: Thanks for this opportunity, and thanks to my co-panelists for this very interesting discussion. I don't have a background in public policy relating to climate change or the broader scope of climate change litigation writ large. But I do think there is a role for litigation in certain narrow circumstances. We have a Fifth Amendment that protects property from government seizure and from government invasions. I think, in those discrete circumstances where it can be proven that the government has been responsible for a destructive invasion of property, the Fifth Amendment is there for a reason. I think it could provide a useful check on government action.

John Echeverria: I'm going to be looking forward to the cert petition in this case, to see how the challenge is framed to the Federal Circuit's ruling on inaction.

Michael Burger: The one thing that I would underscore is that litigation has an important role to play in adaptation. When I say that, I'm not limiting it to the Fifth Amendment and to takings cases or to the common-law cases, but also to statutory modes of causes of action in using existing environmental, energy, and resources statutes to force government to assess climate risks and then take action to adapt to the risks in order to avoid the secondary environmental impacts that would result in failing to do so.

39. *Oakland v. BP*, No. 3:17-cv-06011-WHA (N.D. Cal. Nov. 24, 2018); *City of New York v. BP*, No. 1:18-cv-00182-JFK (S.D.N.Y. July 26, 2018).