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Afterword: The Economics of Infrastructure

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Katrina Consequences: What Has the Government Learned?

***1287** AFTERWORD: THE ECONOMICS OF INFRASTRUCTURE

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One year later, buried under a mountain of editorials and graphic news footage, Katrina was still spinning. The costliest storm on record still fueled a storm of incautious rhetoric. Conservatives were calling Katrina an indictment of big government and people's over-reliance on services that can never be delivered. Progressives framed Katrina as a cautionary tale against clueless leadership, cronyism, and the over-promotion of Arabian horse executives. Rapper Kanye West, who had memorably reflected that "George Bush doesn't care about black people," [FN1] was lionized. And some conservative preachers (white and black) continued to allege that God had lost patience with the Big Easy's winking irreverence and breast-baring tourists. [FN2] For some, the flooding of New Orleans was a "natural" disaster; [FN3] for others, an "unnatural" one. [FN4] Harry Shearer, a political blogger (and the voice of "Mr. Burns" on *The Simpsons*) repeatedly called the destruction of his hometown an "engineering" disaster. [FN5] On some days, it seemed ***1288** nearly everyone was right.

The articles in this symposium cut through some of this confusion. At the invitation of Loyola University's newly inaugurated Center for Environmental Law and Land Use and the Center for Progressive Reform, [FN6] some of the top scholars in their fields assembled in New Orleans last August to assess the regulatory landscape one year after Katrina.

In one way the articles in this symposium can be said to run the gamut, examining issues as diverse as levee-wall standards, wetlands permits, and limits on carbon dioxide. But there is a binding theme. These articles are about infrastructure and the economic forces that help shape them. "Infrastructure," as I use the term, is a broad concept. It includes the highways, bridges, and dams that Americans rely on everyday and which experts continually tell us are in alarming disrepair. [FN7] It includes the nation's system of energy production and distribution, from coal mines to offshore oil platforms. And, finally, America's infrastructure must be understood to include the country's awesome array of ecosystem services, including wild fisheries, the carbon sequestration of forests, and the medicine chest hidden within the continent's biodiversity.

Laura Steinberg [FN8] and co-authors Ivor van Heerden and G. Paul Kemp [FN9] focus

on infrastructure of the first kind, namely the region's failed levee system and its surge-funneling navigational channels. Their two articles document a shocking array of scientific and engineering mistakes made over two generations, from a poorly conceived storm analysis, [FN10] to sloppy construction and design*1289 of storm walls, [FN11] to unconscionably low "factors of safety." [FN12] Because of evidence like this, the U.S. Army Corps of Engineers is now swamped with legal claims demanding hundreds of billions of dollars in compensation, despite assertions of government immunity under the 1928 Mississippi River Flood Control Act and the Federal Tort Claim Act. [FN13] Looking forward, the authors recommend a range of improvements from "risk-based" design engineering, [FN14] to higher margins of safety, [FN15] to a federal "8-29 Commission" that would investigate "how mistakes with such tragic consequences were made." [FN16]

Oliver Houck marches in to defend the coastal wetlands, and he's loaded for bear. Coastal wetlands represent infrastructure of the more natural sort. These "linear levees" cut storm surge, shielding people and industry from powerful floods. [FN17] Louisiana's coastal plain offers habitat to countless species, including commercially significant sea life and waterfowl. [FN18] The marshes also function as huge water treatment plants, filtering out tons of nitrogen and other pollutants from incoming waters. [FN19] But for years this impressive infrastructure has been in a sorry state. Louisiana's coastal wetlands--25% of all such wetlands in the Lower 48--have been sliced and diced to accommodate offshore oil, dramatically compromising their ability to nurture wildlife, filter water, and slow hurricanes. [FN20] Houck suggests that the Army Corps (abetted by Congress) showed no more respect for nature's handiwork than it did for its own monuments of cement and steel.

In separate articles, Robert Glicksman [FN21] and Joseph Tomain [FN22] *1290 tackle the intersecting infrastructures of energy and climate. The global network of energy production facilities, transportation routes, and power grids is, indeed, a house of cards, sensitive to the tremors of politics, storms, terrorism, and international economic collusion. As Tomain points out, America's energy infrastructure is also unsustainable, environmentally destructive, and pathetically inefficient. [FN23] Glicksman's comprehensive examination shows how the energy choices we've made threaten to lock us into a course of disruptive climate change. With his careful discussion about the state of storm science and global warming patterns, we glimpse the workings of one of the largest and most sophisticated natural infrastructures in the world: the physical mechanism of global climate stability.

Each of these articles, in various ways, raises a question that should be on everyone's mind after Katrina: If public infrastructure--man-made or natural-- is so important to American life and property, why have we done such a bad job at maintaining it? One answer has to do with the second concept in this essay's title--economics.

In the United States, laws protecting health, safety, and the environment are strongly influenced by a set of neo-classical economic thought that suggests a "market-based" model for government policy. The market-based model presumes and enforces a strong market in private goods and services, while seeking to minimize the landscape of public goods and services. Or, to put it another way, the model favors market-based ways of pairing goods and services with users over entitlement or rights-based ways of pairing goods and services with users. As an

example, in establishing federal drinking water standards, the law does not ask what amount of purity citizens are “entitled to” or have a “right” to expect based on health or technological feasibility. The law instead asks (and here I am skipping some steps in the cost-benefit analysis) what amount of purity would a rational citizen be willing to pay for? [FN24]

***1291** Many kinds of infrastructure discussed in this symposium (flood protection, storm buffering, climate stability) are what most people would consider publicly consumed services. That is, they are things that everyone (within reason) gets to use--like the shade of a tree in Audubon Park. Or, to put it another way, they would think of these things as “rights” or “entitlements” (a trend that is promoted in modern constitutions with environmental guarantees). But the trend in our legal system is to think of these things as “private” goods or services that are purchased in either actual or (through cost-benefit analysis) virtual markets. [FN25]

The problem is that by their nature, man-made services like city flood protection or natural services like climate stability are public. You can't invest your money to stabilize the climate without benefiting others who don't pay. In southern Louisiana we are paying the price for the mismatch between a private market-based system and a geography of public goods and services. For instance, before Katrina, most serious discussion about natural goods and services involved preserving goods that could be captured privately and maintained exclusively, like fisheries or access to oil and gas reserves. The environmental laws designed to protect the ecosystem were vulnerable to small, focused lobby groups that stood to gain from privatizing natural goods. No one spoke up as strongly about storm protection because, ironically, too many people stood to benefit; the diffuse nature of the problem, coupled with an uncertain time horizon led to complacency among many. No well-heeled or influential group had a special interest or special motivation to make this the number one priority. Recall Oliver Houck's explanation for why the Army Corps had not inquired more into the possibility of monster storms before Hurricane Betsy in 1965: “there was no money to be made in asking the question.” [FN26]

There are at least two solutions to this problem, both of which the authors in this symposium investigate. The first solution***1292** is to use law to put more of the social costs of bad practices onto the balance sheet. Thus, Ivor van Heerden and G. Paul Kemp recommend a re-examination of the “unique blanket of immunity” that may protect the Army Corps from being financially accountable for harm that it may have negligently caused. [FN27] Similarly, Houck praises Louisiana Governor Blanco's “willingness to fight for restoration monies” by challenging federal oil and gas leases, noting that her tactic resembles a claim of “mitigation damages.” [FN28] Joseph Tomain, perhaps, goes farthest, briefly entertaining the idea that energy policy be thrown naked into the market, shorn of “all subsidies, tax incentives, and other financial supports.” [FN29] But he wisely steps back from that precipice.

The second solution, endorsed by all authors, is to force government to be more public-minded. For instance, it simply makes no sense for levee designs to be based on a cost-benefit analysis that by agency policy is not allowed to consider the lives, the community ties, or the extant property in danger. Thus, Houck, Steinberg, and co-authors van Heerden and Kemp all endorse the Army Corps's movement toward more risk-informed decision making. [FN30] De-

pending on its final form, this new process could have enormous implications, as it appears to reject one-size-fits-all “project storm” and the discounting of future benefits, while recognizing non-market benefits like saved lives and protected ecosystems on their own terms (that is, without monetizing them, a practice that often fails to capture their true value). [FN31] Similarly, Glicksman and Tomain urge government to consider policy changes that will not only save money in the future, but that will protect citizens everywhere from the worst of potential climate disruptions. Thus everyone in this symposium is making not just economic arguments, but moral ones too. We should care about public infrastructure not only because it helps everyone live more economically productive lives, but because it is right to do it. Protecting citizens from catastrophe and insuring a minimum means ***1293** of survival is what government is for. If, as Houck suggests, agencies like the Army Corps become burdened by too many conflicting goals and policy missions, Congress has the public duty to realign those goals, even if that means establishing a new agency focused only on flood protection in the Gulf (with powers over the Corps).

At one point, Tomain writes that “[a]lthough Hurricanes Katrina and Rita drew our attention to energy policy, those events by themselves did not stimulate new energy thinking.” [FN32] The same can be said for new ways of thinking about all of our infrastructure needs. After Katrina, it became fashionable to liken the storm to a “wake-up call,” or an alarm bell. The idea was that finally, after the most costly natural-unnatural-engineering disaster in our history, government would heed the call for wide-eyed public and environmental protection. That is possible. But we will need the tenacious advocates of the public good, like the contributors to this symposium, to keep us from hitting the snooze button.

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[FN2]. Lisa de Moraes, Kanye West's Torrent of Criticism, Live on NBC, Wash. Post, Sept. 3, 2005, at C1 (quoting Kanye West).

[FN3]. See Michael Eric Dyson, Come Hell or High Water: Hurricane Katrina and the Color of Disaster 180-81 (2006) (describing reactions of conservative clergy).

[FN4]. S. Comm. on Homeland Security and Governmental Affairs, Hurricane Katrina: A Nation Still Unprepared 2 (2006), available at http://hs-gac.senate.gov/_files/Katrina/FullReport.pdf.

[FN5]. Center for Progressive Reform, An Unnatural Disaster: The Aftermath of Hurricane Katrina 1 (2005), available at http://www.progressivereform.org/Unnatural_Disaster_512.pdf.

[FN6]. See, e.g., Posting of Harry Shearer to the Huffington Post, Costliest Engineering Mistake in American History, ht-

[tp://www.huffingtonpost.com/harry-shearer/costliest-engineering-mis_b_11493.html](http://www.huffingtonpost.com/harry-shearer/costliest-engineering-mis_b_11493.html) (Nov. 30, 2005).

[FN6]. Readers can learn more about the Loyola University Center for Environmental Law and Land Use at <http://www.law.loyno.edu/environmentallaw-landuse/> and about the Center for Progressive Reform at <http://www.progressivereform.org>.

[FN7]. See, e.g., American Society for Civil Engineers, Report Card for America's Infrastructure, <http://www.asce.org/reportcard/2005/page.cfm?id=103> (last visited Mar. 23, 2007) (assigning “grades” of “C,” “D,” and “D” for America's bridges, dams, and roads, respectively, for the year 2005).

[FN8]. Laura J. Steinberg, Making Good Project Design Choices: Critical Decisions Contributing to the Failure of the New Orleans Hurricane Protection System, 52 Loy. L. Rev. 913 (2006).

[FN9]. Ivor Ll. van Heerden & G. Paul Kemp, The Failure of the New Orleans Levee System During Hurricane Katrina and the Pathway Forward, 52 Loy. L. Rev. 871 (2006).

[FN10]. *Id.* at 876-78; Steinberg, *supra* note 8, at 915-20.

[FN11]. van Heerden & Kemp, *supra* note 9, at 878-79; Steinberg, *supra* note 8, at 923-24.

[FN12]. van Heerden & Kemp, *supra* note 9, at 879-81; Steinberg, *supra* note 8, at 925-26.

[FN13]. See Sheila Grissett, Forms Filed with Corps so far Seek \$400 Billion, Times Picayune, Mar. 23, 2007, at A1.

[FN14]. van Heerden & Kemp, *supra* note 9, at 886; Steinberg, *supra* note 8, at 930.

[FN15]. Steinberg, *supra* note 8, at 930-31.

[FN16]. van Heerden & Kemp, *supra* note 9, at 886.

[FN17]. Oliver A. Houck, Hurricane Katrina and Flood Protection: Lessons Unlearned, 52 Loy. L. Rev. 893 (2006).

[FN18]. Oliver A. Houck, [Land Loss in Coastal Louisiana: Causes, Consequences, and Remedies](#), 58 Tul. L. Rev. 3, 84-86 (1983).

[FN19]. *Id.* at 80.

[FN20]. Houck, *supra* note 17, at 901-04. There are other causes for coastal erosion too, including rising sea levels and the diversion of soil replenishing sediments originally deposited by the Mississippi River.

[FN21]. Robert L. Glicksman, Global Climate Change and the Risks to Coastal Areas from Hurricanes and Rising Sea Levels: The Costs of Doing Nothing, 52 Loy. L. Rev. 773 (2006).

[FN22]. Joseph P. Tomain, *To a Point*, 52 Loy. L. Rev. 847 (2006).

[FN23]. *Id.* at 848-53.

[FN24]. See generally, Lisa Heinzerling, *Markets for Arsenic*, 90 *Geo. L.J.* 2311 (2002). While many environmental statutes passed in the 1970s do not work this way, the trend in statutory revision is toward the market approach as is the trend in agency enforcement.

[FN25]. Because cost-benefit analysis often involves speculating about a consumer's "willingness to pay" for an item or state of being not voluntarily traded in actual markets, I have elsewhere argued that such analysis amounts to a system of "forced trades" in "virtual" markets. See Robert R.M. Verchick *The Case Against Cost-Benefit Analysis*, 32 *Ecology L.Q.* 349 (2005) (reviewing Frank Ackerman & Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* (2004)).

[FN26]. Houck, *supra* note 17, at 896.

[FN27]. van Heerden & Kemp, *supra* note 9, at 889.

[FN28]. Houck, *supra* note 17, at 910.

[FN29]. Tomain, *supra* note 22, at 868.

[FN30]. Houck, *supra* note 17, at 908-09; Steinberg, *supra* note 8, at 930; van Heerden & Kemp, *supra* note 9, at 886.

[FN31]. See Robert R.M. Verchick, *Risk, Fairness, and the Geography of Disaster at 27, Issues in Legal Scholarship, Symposium on Catastrophic Risks: Prevention, Compensation, and Recovery* (2007): Article 6, available at <http://www.bepress.com/ils/iss10/art6> (discussing the Army Corps's new proposal for risk-informed decision making).

[FN32]. Tomain, *supra* note 22, at 856.
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