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ARTICLES

TERRITORIALITY, RISK PERCEPTION, AND COUNTERPRODUCTIVE LEGAL STRUCTURES: THE CASE OF WASTE FACILITY SITING

By
MICHAEL B. GERRARD*

The siting of hazardous and nuclear waste facilities has proven to be a task of enormous difficulty in our federal system. In this Article, the Author argues that one of the major causal factors for this difficulty is that the legal regime surrounding waste facility siting decisions is not structured in a manner sensitive to the human factors involved. The siting of a hazardous waste facility is likely to generate a negative community response where the imposition of externally made decisions and externally generated wastes fails to take into account the innate human trait of territoriality. Territoriality is a powerful and instinctive trait embedded in the dynamics of all human communities. When laws attempt to run counter to such a basic aspect of the human psyche, they are likely to be unable to accomplish their purpose. This has been the outcome of the current waste facility siting legal regime. The Author addresses these concerns and ends this Article with a model of comprehensive waste facility siting legislation which takes into account the territorial instinct of states and local communities and would therefore be much more effective in achieving the national goal of providing safe long-term disposal of waste material in a fair and equitable manner.

I. INTRODUCTION

Law is a civilizing influence, but it has limits. When law attempts to run against a fundamental human instinct or a deep prejudice, immense conflict is inevitable. This is well known in such areas as the regulation of

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sexual conduct and racial integration. However, it does not seem to have been observed how territoriality, an innate human trait, has rendered certain important structures in environmental law wholly ineffective.

For more than twenty years, Congress has been passing and periodically fine-tuning laws designed to find sites for the disposal of hazardous and radioactive waste. Several billion dollars have been spent in this quest. For all this effort, in the last twenty years only two landfills for hazardous and radioactive waste have been built on new sites anywhere in the United States.¹ Scores of other efforts have floundered.²

This Article argues that a major reason for this failure is that the current system of environmental law unwittingly runs counter to the territorial instinct. This is an instinct that takes several forms, all revolving around the importance of *borders*. Outsiders—those on the other side of the border—should not be sending their trash into your territory, or telling you what to do. If they try, the natural, deep-seated reaction is to fight back. Part II describes how students from multiple disciplines have recognized the central place of territoriality in human affairs. Part III explores the effects of territoriality on the perception of risks. Part IV shows how aspects of certain environmental laws have ignored these effects in a counter productive manner. Part V recounts several failed efforts to respect territoriality in waste facility siting. Part VI concludes with a description of a proposal intended to reconcile environmental laws with territoriality. This proposal is premised on the theory that it is easier to change statutes than human nature.

II. TERRITORIALITY AND THE URGE FOR SELF-DETERMINATION

Territoriality has been defined as “a behavioral phenomenon associated with the organization of space into spheres of influence or clearly demarcated territories which are made distinctive and considered at least partially exclusive by their occupants or definers.”³ Essential to the concept is that territories are defended from encroachment,⁴ by violence if necessary.⁵

This phenomenon did not begin with human beings. Indeed, the biologist Edward O. Wilson has written that “nearly all vertebrates and a large number of the behaviorally most advanced invertebrates, conduct their

¹ These include a hazardous waste landfill in Last Chance, Colorado and a radioactive waste landfill in Tooele County, Utah. Significantly, both of these facilities were built with the support, or at least acquiescence, of their local communities. This number does not include expansions of existing facilities. See MICHAEL B. GERRARD, *WHOSE BACKYARD, WHOSE RISK: FEAR AND FAIRNESS IN TOXIC AND NUCLEAR WASTE SITING* 3 (1994).

² See *id.* at 3, 50-51.

³ EDWARD SOJA, *THE POLITICAL ORGANIZATION OF SPACE* 19 (1971), quoted in DAVID SEAMON, *A GEOGRAPHY OF THE LIFEWORLD* 70-71 (1979).

⁴ MIRILLA BONNES & GIANFRANCO SECCHIAROLI, *ENVIRONMENTAL PSYCHOLOGY: A PSYCHOSOCIAL INTRODUCTION* 88 (Claire Montagna trans., Sage Publications 1995) (1992).

⁵ See William E. Connolly, *Tocqueville, Territory, and Violence*, in *CHALLENGING BOUNDARIES: GLOBAL FLOWS, TERRITORIAL IDENTITIES* 141 (Michael J. Shapiro & Hayward R. Alker eds., 1996).

lives according to precise rules of land tenure, spacing, and dominance. These rules mediate the struggle for competitive superiority."⁶

Expanding on this idea, Robert Ardrey has declared that man:

is as much a territorial animal as is a mockingbird singing in the clear California night. We act as we do for reasons of our evolutionary past, not our cultural present, and our behavior is as much a mark of our species as is the shape of a human thigh bone or the configuration of nerves in a corner of the human brain. If we defend the title to our land or the sovereignty of our country, we do it for reasons no different, no less innate, no less ineradicable, than do lower animals. The dog barking at you from behind his master's fence acts for a motive indistinguishable from that of his master when the fence was built.⁷

Even those scholars who do not believe that territoriality in humans is an instinct agree on its vital importance. In the words of Robert David Sack, a geographer at the University of Wisconsin:

Space and time are fundamental components of human experience. They are not merely naively given facets of geographic reality, but are transformed by, and affect, people and their relationships to one another. Territoriality, as the basic geographic expression of influence and power, provides an essential link between society, space, and time. Territoriality is the backcloth of geographic contest—it is the device through which people construct and maintain spatial organizations. For humans, territoriality is not an instinct or drive, but rather a complex strategy to affect, influence, and control access to people, things, and relationships.⁸

Mary Douglas, a cultural anthropologist who has spent many years studying risk perception, also writes of the importance of being inside or outside of a society. She tells us that some primitive cultures blame outsiders for what we see as natural disasters and that this blaming mechanism enhances internal loyalty.⁹ Also using techniques from anthropology, Richard W. Stoffle and his colleagues have defined the "geocultural area" within which a population considers itself to be at risk from a proposed hazardous facility.¹⁰ The importance of territories and boundaries in human relations is also recognized by sociologists,¹¹ geographers,¹² and architects.¹³

Moving to the political sphere, territoriality, nationalism, and separatism are all intertwined. Lea Brilmayer concludes "that every separatist

⁶ EDWARD O. WILSON, *SOCIOBIOLOGY* 256 (1975).

⁷ ROBERT ARDREY, *THE TERRITORIAL IMPERATIVE* 5 (1966).

⁸ ROBERT DAVID SACK, *HUMAN TERRITORIALITY: ITS THEORY AND HISTORY* 216 (1986).

⁹ MARY DOUGLAS, *RISK ACCEPTABILITY ACCORDING TO THE SOCIAL SCIENCES* 59 (Social Research Perspectives: Occasional Reports on Current Topics No. 11, 1985).

¹⁰ Richard W. Stoffle et al., *Risk Perception Mapping: Using Ethnography to Define the Locally Affected Population for a Low-Level Radioactive Waste Storage Facility in Michigan*, 93 *AM. ANTHROPOLOGIST* 611-14 (1991).

¹¹ Stanford M. Lyman & Marvin B. Scott, *Territoriality: A Neglected Sociological Dimension*, 15 *SOCIAL PROBLEMS* 236 (1967).

¹² See Ladis D. Kristof, *The Nature of Frontiers and Boundaries*, in *POLITICS AND GEOGRAPHIC RELATIONSHIPS: TOWARDS A NEW FOCUS* 134-40 (W.A. Douglas Jackson & Marwyn S. Samuels eds., 2d ed. 1971).

¹³ OSCAR NEWMAN, *DEFENSIBLE SPACE* 51 (1972).

movement is built upon a claim to territory, usually based on an historical grievance, and that without a normatively sound claim to territory, self-determination arguments do not form a plausible basis for secession."¹⁴ She cites several provisions of the United Nations Charter endorsing the right to self-determination,¹⁵ and elsewhere she writes of the complex psychology underlying the related phenomenon of nationalism.¹⁶ Dov Ronen calls the quest for self-determination "a basic human motivation [which] was written in the American Declaration of Independence and became a motivating force with eventual universal applicability in the French Revolution . . . [a]nd has been spreading since then."¹⁷ A glance around the globe at Bosnia, Chechnya, Rwanda, Israel, Ireland, Quebec, and a dozen other places shows how powerful the urge toward self-determination is today.

Exactly a century ago, Oliver Wendell Holmes discussed this phenomenon in the context of the law of adverse possession:

Sir Henry Maine has made it fashionable to connect the archaic notion of property with prescription. But the connection is further back than the first recorded history. It is in the nature of man's mind. A thing which you have enjoyed and used as your own for a long time, whether property or an opinion, takes root in your being and cannot be torn away without your resenting the act and trying to defend yourself, however you came by it. The law can ask no better justification than the deepest instincts of man.¹⁸

Superficial as it is, this quick multidisciplinary survey should make clear that, whether by nature or by nurture, human beings deeply desire to determine what happens within their own territory, and to defend against intrusions from outside their territory. Every individual dwells within several concentric circles (such as a home, a town, a state, etc.) and perhaps several non-concentric circles as well (an ethnic group, an institutional employer, a profession), but each circle is its own kind of territory.

III. EFFECT OF TERRITORIALITY ON RISK PERCEPTION

Since territoriality is lodged so deeply within the human psyche, it is not surprising that it affects (among many other things) the perception of risks. This has frequently been seen in the context of the siting of unwanted facilities. Many governments have tried to impose landfills, incinerators, and the like on lower units of government. Localities see these attempts as an invasion of local territory by a hostile outside force. As such, they are swiftly, and often effectively, repulsed. Efforts to override local authority usually backfire and *increase* local opposition, in part be-

¹⁴ Lea Brilmayer, *Secession and Self-Determination: A Territorial Interpretation*, 16 YALE J. INT'L L. 177, 192 (1991).

¹⁵ See *id.* at 181-82.

¹⁶ Lea Brilmayer, *The Moral Significance of Nationalism*, 71 NOTRE DAME L. REV. 7, 26 (1995).

¹⁷ DOV RONEN, *THE QUEST FOR SELF-DETERMINATION* 7 (1979).

¹⁸ Oliver Wendell Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 477 (1897). I am indebted to Professor William Buzbee for bringing this passage to my attention.

cause these efforts increase the local perception of the facility's danger.¹⁹ Some studies have shown that people will accept voluntary risks approximately a thousand times more dangerous than risks they perceive as involuntarily imposed.²⁰ An externally-imposed risk is an involuntary one, and thus much more feared (and fought).

This sense of hostile invasion amplifies the perception of risk in numerous contexts. People are more likely to oppose the siting of a social service facility (such as a homeless shelter or a group home) in their neighborhood if it will serve people from outside the community.²¹ If toxic substances are seen as entering someone's home, they violate the most sacred territory and evoke an exceptionally strong response.²²

One study actually tested the relationship between territoriality and reactions to contamination.²³ In the study, a bag of litter was placed in various locations near residences in the United States and in Greece. The litter was placed in front yards, on the sidewalks in front of residences, and on street curbs in front of homes. Observers measured how long it took the unsuspecting residents to remove the bag. When the litter was placed in a yard, there was no difference in the speed of removal between the two countries. However, in the United States, residents removed litter significantly faster from the sidewalk and street than the residents of Greek homes. The researchers concluded that because sidewalks and street curbs are considered semi-public in the United States, but public in Greece, there was a greater sense of territorial intrusion (and thus a swifter response) in the United States tests.²⁴

The psychological link between territory and contamination expresses itself in other ways. As the historian Alan M. Kraut has explored at length, there is an American nativist tradition, dating back to at least the 1830s, of slandering immigrant groups as carriers of particular diseases—

¹⁹ See MICHAEL O'HARE ET AL., FACILITY SITING AND PUBLIC OPPOSITION 57-58 (1983); EMILIE SCHMEIDLER & PETER M. SANDMAN, GETTING TO MAYBE: DECISIONS ON THE ROAD TO NEGOTIATION IN HAZARDOUS WASTE FACILITY SITING 54 (1988); Daniel Burchard & Robert Hughes, *Beyond Capacity: Addressing the Concerns of Local Opposition in the Siting Process*, 6 STAN. ENVTL. L.J. 145, 151 (1986-87); see also Richard N.L. Andrews & Terrence K. Pierson, *Local Control or State Override: Experiences and Lessons to Date*, 14 POL'Y STUD. J. 90, 97 (1985) (stating that local opposition is sometimes increased as a result of efforts to override local authority).

²⁰ See DAVID MORELL & CHRISTOPHER MAGORIAN, SITING HAZARDOUS WASTE FACILITIES: LOCAL OPPOSITION AND THE MYTH OF PREEMPTION 63 (1982); see also Paul Slovic, *Perception of Risk*, 236 SCIENCE 280-81 (1987).

²¹ See Michael Dear, *Understanding and Overcoming the NIMBY Syndrome*, 58 J. AM. PLANNING ASS'N 288, 292 (1992).

²² See MICHAEL R. EDELSTEIN, CONTAMINATED COMMUNITIES: THE SOCIAL AND PSYCHOLOGICAL IMPACTS OF RESIDENTIAL TOXIC EXPOSURE 64 (1988); Janet M. Fitchen, *When Toxic Chemicals Pollute Residential Environments: The Cultural Meanings of Home and Homeownership*, 48 HUMAN ORGANIZATION 313-14 (1989).

²³ Stephen Worchel & Margaret Collis, *Reaction to Territorial Contamination as a Function of Culture*, 8 PERSONALITY & SOC. PSYCHOL. BULL. 370, 372-73 (1982).

²⁴ *Id.* at 373.

the Irish with cholera, Italians with polio, Jews with tuberculosis, and most recently in the 1980s and 1990s, Haitians with AIDS.²⁵

Noted researchers Paul Slovic and others have used psychometric techniques involving detailed interviews, focus groups, and polls to measure the factors that go into the perception of risks from various hazards, especially proposed facilities.²⁶ These studies have identified numerous such factors, and consistently among them are several that relate to territoriality (though not using that term), including the circumstances of the hazard's origin, whether the hazard is controlled by the respondent or by an outside force, and whether the hazard is equitably distributed.²⁷

The point about equitable distribution is especially important. People react adversely to risks that they see as being unfairly imposed, especially if the beneficiaries of the activity do not share in the risk.²⁸ Likewise, there is great resistance to paying the costs of cleaning up someone else's mess.²⁹ This sense of unfairness is one of the major motivators of the environmental justice movement, many of whose leading voices favor local control under the banner of "empowerment" which connotes "enabling those who will have to live with the results of environmental decisions to be those who actually make the decisions."³⁰ It is no coincidence that individuals with egalitarian viewpoints and anti-hierarchical personalities have been shown to be especially adverse to technological risks.³¹

²⁵ See ALAN M. KRAUT, *SILENT TRAVELERS: GERMS, GENES, AND THE "IMMIGRANT MENACE"* (1994); see also HOWARD MARKEL, *QUARANTINE! EAST EUROPEAN JEWISH IMMIGRANTS AND THE NEW YORK CITY EPIDEMICS OF 1892* (1997).

²⁶ See Slovic, *supra* note 20, at 283-84; Paul Slovic, *Perceptions of Environmental Hazards: Psychological Perspectives*, in *BEHAVIOR AND ENVIRONMENT: PSYCHOLOGICAL AND GEOGRAPHICAL APPROACHES* 223 (Tommy Garling & Reginald G. Golledge eds., 1993) [hereinafter *BEHAVIOR AND ENVIRONMENT*]; KENT E. PORTNEY, *SITING HAZARDOUS WASTE TREATMENT FACILITIES: THE NIMBY SYNDROME* 126-29 (1991).

²⁷ Slovic, *supra* note 20, at 283-84; PORTNEY, *supra* note 26, at 126-29.

²⁸ Roger E. Kasperson & Kirstin Dow, *Hazard Perception and Geography*, in *BEHAVIOR AND ENVIRONMENTS*, *supra* note 26, at 193, 206, 209-11; see also CHARLES PERROW, *NORMAL ACCIDENTS: LIVING WITH HIGH-RISK TECHNOLOGIES* 326-28 (1984) (characterizing such risks as "dread risks" which are associated with an inequitable distribution of risks and benefits).

²⁹ Roger E. Kasperson & Kirstin M. Dow, *Development and Geographical Equity in Global Environmental Change*, 15 *EVALUATION REV.* 149, 155 (1991).

³⁰ Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 *ECOLOGY L. Q.* 619, 661 (1992); see also NICHOLAS FREUDENBERG, *NOT IN OUR BACKYARDS! COMMUNITY ACTION FOR HEALTH AND THE ENVIRONMENT* 40 (1984). For a discussion of the role of geography in this context, see John J. Fahs Bender, *An Analytical Approach to Defining the Affected Neighborhood in the Environmental Justice Context*, 5 *N.Y.U. ENVTL. L.J.* 120 (1996).

³¹ Karl Dake, *Orienting Dispositions in the Perception of Risk*, 22 *J. CROSS-CULTURAL PSYCHOL.* 61, 78 (1991); Aaron Wildavsky & Karl Dake, *Theories of Risk Perception: Who Fears What and Why?* 119 *DAEDALUS* 41, 49, 54 (1990); see also Christina G.S. Palmer, *Risk Perception: An Empirical Study of the Relationship Between Worldview and the Risk Construct*, 16 *RISK ANALYSIS* 717 (1996).

IV. LAW'S COUNTERPRODUCTIVE DISREGARD FOR TERRITORIALITY

In the face of this compelling psychological evidence, much of it not only backed by solid information but much of it also intuitive, one would expect the legal system to try to accomplish its objectives with a minimum of unnecessary intrusion and other anti-territorial tactics. In the realm of waste facility siting, this would mean seeking disposal sites in communities that have volunteered for them, not compelling localities to take outsiders' waste, and seeking alternatives that do not involve siting new facilities at all.

Unfortunately, this is not what has happened. At least four aspects of our legal system for siting new facilities collide head-on with our deepest psychological impulses of territoriality. These four aspects are, the Commerce Clause, the use of the preemption doctrine, the framing of the issue as a locational problem, and the consideration of one waste stream at a time.

A. Commerce Clause

Hazardous waste is generated everywhere and it is constantly crossing state borders on its way to the cheapest or most suitable disposal spot. All fifty states export some hazardous waste to out-of-state treatment or disposal facilities and forty-eight states (all but Alaska and Montana) import hazardous waste.³²

Many states are very resentful about the importation of wastes into their borders.³³ However, there is little they can do about it. The United States Supreme Court has consistently held that waste (whether solid or hazardous) is an item in interstate commerce and that, under the Commerce Clause of the U.S. Constitution, the states may not ban or tax either

³² GERRARD, *supra* note 1, at 104; *Review of EPA's Capacity Assurance Program: Hearings Before the Subcomm. on Environment, Energy and Natural Resources of the House Comm. on Government Operations*, 101st Cong. 56, 69 (1991) (statement of Doug MacMillan, National Solid Wastes Management Association); *see also Interstate Transport of Solid Waste: Hearings Before Subcomm. on Transportation and Hazardous Materials of the House Comm. on Energy and Commerce*, 101st Cong. 171, 173 (1991) (statement of Doug MacMillan, National Solid Wastes Management Ass'n).

³³ Numerous U.S. examples are set forth in GERRARD, *supra* note 1, at 103-05 (1994). This phenomenon also occurs abroad. *See* Seth Faison, *Conspiracy Theories: China's Garbage War*, N.Y. TIMES, June 9, 1996, at E5 (reporting protests in China over allegations that the United States is importing garbage into that country); Seth Faison, *China Convicts American as Trash Smuggler*, N.Y. TIMES, Jan. 14, 1997, at A3 (reporting persistent protests in China over allegations that the United States is surreptitiously sending garbage into that country); *see also* Alan Cowell, *Nuclear Waste Convoy Stirs Angry Protests in Germany*, N.Y. TIMES, Mar. 4, 1997, at A8 (reporting that 30,000 police officers were needed to counter protests against transport of spent nuclear fuel from point of generation in southwestern Germany to interim disposal facility in northern Germany); Sheryl WuDunn, *North Korea Agrees to Take Taiwan Atom Waste for Cash*, N.Y. TIMES, Feb. 7, 1997, at A1 (recording protests by South Korea against North Korea's decision to accept nuclear waste from Taiwan for disposal near border).

its export or its import.³⁴ Several bills have been introduced into Congress to give states a limited right to regulate the interstate flow of municipal solid waste, but so far none have been enacted into law.

B. Preemption

The Supremacy Clause of the federal Constitution gives Congress the power to supersede state laws,³⁵ though there are some limits on this authority.³⁶ States have even greater control over municipalities. Local governments are not sovereigns and are traditionally seen as creatures of the states, with as much or as little autonomy as the states care to give them.³⁷

These preemptive powers are broadly exercised in the facility siting context. The federal government is (in legal theory) the sole decision maker in the siting of nuclear facilities.³⁸ With respect to hazardous wastes, the principal federal statute, the Resource Conservation and Recovery Act (RCRA)³⁹ cedes some authority to the states,⁴⁰ but this is significantly limited.⁴¹ At the state level, at least twenty-four states have laws that specifically override local zoning authority in the siting of hazardous waste facilities.⁴² Predictably, this external control over the placement of

³⁴ *C & A Carbone, Inc. v. Town of Clarkstown*, 511 U.S. 383 (1994) (holding that the town's flow control ordinance, which required all solid waste to be processed at a designated transfer station before leaving the municipality, violated the Commerce Clause because it deprives out-of-state competitors of access to the local market); *Chemical Waste Management, Inc. v. Hunt*, 504 U.S. 334 (1992) (finding that an additional disposal fee imposed on out of state hazardous waste was an impermissible barrier on interstate commerce); *Fort Gratiot Sanitary Landfill, Inc. v. Michigan Dep't of Natural Resources*, 504 U.S. 353 (1992) (holding that a Michigan statute which prohibited private landfill owners from accepting solid waste that originated outside the county in which the facility is located unless authorized by the county's solid waste management plan, violated the provisions of the Commerce Clause); *City of Philadelphia v. New Jersey*, 437 U.S. 617 (1978) (finding outright bans on the importation of solid or liquid waste are constitutionally impermissible).

³⁵ See *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 461 U.S. 190, 203-04 (1983).

³⁶ See *New York v. United States*, 505 U.S. 144, 155-59 (1992).

³⁷ See Richard Briffault, *Our Localism: Part I—The Structure of Local Government Law*, 90 COLUM. L. REV. 1, 6-18 (1990).

³⁸ See *Pacific Gas & Elec. Co.*, 461 U.S. at 205-16; *Northern States Power Co. v. Minnesota*, 447 F.2d 1143, 1148 (8th Cir. 1971).

³⁹ 42 U.S.C. §§ 6901-6992k (1994).

⁴⁰ *Id.* § 6929.

⁴¹ 40 C.F.R. § 271.4(b) (1996); see *ENSCO, Inc. v. Dumas*, 807 F.2d 743, 744-45 (8th Cir. 1986); *Ogden Envtl. Servs. v. City of San Diego*, 687 F. Supp. 1436, 1444 (S.D. Cal. 1988).

⁴² See, e.g., *NEW YORK STATE LEGISLATIVE COMMISSION ON TOXIC SUBSTANCES & HAZARDOUS WASTES, HAZARDOUS WASTE FACILITY SITING: A NATIONAL SURVEY 12* (1987); *OHIO REV. CODE ANN. § 3734.05* (Banks-Baldwin 1995) (allowing the Ohio hazardous waste facility board to disregard local zoning powers when selecting sites for hazardous waste dumps); *UTAH CODE ANN. § 19-6-207* (1997) (stating that the construction or operation of a hazardous waste treatment, storage, or disposal facility is not required to conform to any local zoning or other relevant land use regulation).

a much feared facility in a locality has often aroused tremendous resentment.⁴³

C. Locational Focus

The federal and state statutes and regulations governing the management of hazardous waste focus on where and how the waste should be disposed. They go into great detail on whether certain material falls within the hazardous waste regulatory scheme; if it does, it must be handled, treated, and disposed of in tightly defined ways.

There is very little regulatory attention paid to the *creation* of the waste, however. Though the Clean Air Act⁴⁴ and the Clean Water Act⁴⁵ impose elaborate regulatory control over the generation of air and water pollution, RCRA and other hazardous waste laws all but ignore this issue at the front end of the process and focus almost exclusively at the back end—disposal.⁴⁶ A great deal of discussion is now taking place concerning pollution prevention, but in the hazardous waste area, the programs have almost no regulatory teeth.

If hazardous waste is created, it does indeed have to go somewhere. By implicitly assuming current levels of hazardous waste creation as a given, RCRA makes inevitable the focus on localities as the final resting place for this waste. This point has been strongly made by Robert W. Lake and L. Disch:

By assuming private generation of toxic wastes and public jurisdiction for waste treatment and disposal, state hazardous waste policy inevitably leads to the necessity of finding sites for hazardous waste facilities. The basic assumptions of hazardous waste regulation define the hazardous waste problem as a *locational* problem for the state rather than a *production* problem for industry. This transformation enforces the externalization of wastes from the production process, translates an economic problem for capital into a political problem for the state, and insulates capital from the negative consequences of accumulation.⁴⁷

The derogatory term “NIMBY” (not in my backyard) is an expression of this basic assumption that hazardous waste is inevitable, that it must go somewhere, and that those who resist its importation into their communities are selfish and irresponsible.⁴⁸

⁴³ See Robert W. Lake, *Negotiating Local Autonomy*, 13 *POLITICAL GEOGRAPHY* 423, 431-32 (1994); R. Nils Olsen, Jr., *The Concentration of Commercial Hazardous Waste Facilities in the Western New York Community*, 39 *BUFFALO L. REV.* 473, 475-76 (1991).

⁴⁴ 42 U.S.C. §§ 7401-7671 (1994).

⁴⁵ 33 U.S.C. §§ 1251-1387 (1994).

⁴⁶ See, e.g., Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992k (1994).

⁴⁷ R.W. Lake & L. Disch, *Structural Constraints and Pluralist Contradictions in Hazardous Waste Regulation*, 24 *ENV'T & PLANNING* 663, 671 (1992).

⁴⁸ See BRUCE A. WILLIAMS & ALBERT R. MATHENY, *DEMOCRACY, DIALOGUE, AND ENVIRONMENTAL DISPUTES: THE CONTESTED LANGUAGES OF SOCIAL REGULATION* 170-73 (1995).

D. Focus on Individual Waste Types

There are dozens of types of waste streams. Each is regulated separately, with its own siting program (or non-program). Among non-radioactive materials, the different waste streams include 1) hazardous waste regulated under RCRA, 2) remedial waste from cleanup of civilian inactive hazardous waste sites, such as Superfund sites, 3) remedial waste from the cleanup of RCRA corrective action sites, 4) wastes from the removal or upgrading of underground storage tanks, 5) cleanup wastes from old military facilities, 6) obsolete chemical weapons requiring destruction, 7) asbestos, lead, PCBs, and other wastes from demolition of buildings and structures, 8) industrial, special and orphan wastes (often meeting some of the RCRA hazardous waste characteristics, but legally exempt), 9) mining wastes, 10) oil and gas extraction wastes, 11) sewage sludge 12) residue from air pollution control devices, 13) ash from incinerators, and 14) medical waste.⁴⁹

The radioactive wastes include 1) high-level waste and transuranic waste from nuclear weapons production, 2) spent fuel from nuclear reactors, 3) low-level radioactive waste from power plants and from medical, industrial, and scientific uses, 4) remedial waste from nuclear weapons production sites, 5) nuclear warheads facing retirement, 6) decommissioned nuclear power plants and nuclear fuel production facilities, 7) uranium mill tailings, 8) naturally-occurring radioactive materials, and 9) mixed radioactive/hazardous waste.⁵⁰

With this profusion of different waste types, it is easy for one state to feel that it handles an unfair share of the nation's RCRA hazardous waste disposal burden. For instance, if one state happens to have a large RCRA disposal facility, the state may feel that it is shouldering an unfair proportion of the nation's hazardous waste, while forgetting that other states are taking its radioactive waste, medical waste, sewage sludge, and all manner of other waste streams. The compartmentalization of disposal programs and laws fosters a sense of geographic inequity and leads to state rejection of offers from communities that have volunteered for certain facilities. Each state is sensitive to the few kinds of wastes that it takes in, but ignores the many more types of wastes that it exports.

V. FAILED EFFORTS TO RESPECT TERRITORIALITY

In the recent history of waste management in the United States, there have been several efforts to provide geographic equity and to reduce the forced importation of waste from one area into another.⁵¹ Most of these efforts have failed.⁵²

⁴⁹ GERRARD, *supra* note 1, at 7-24.

⁵⁰ *Id.* at 25-45.

⁵¹ *Id.* at 47-66.

⁵² *Id.*

One such effort was the Superfund Amendments and Reauthorization Act of 1986 (SARA).⁵³ Congress was concerned that most states were making little progress in siting new hazardous waste disposal facilities and that "Superfund money should not be spent in States that are taking insufficient steps to avoid the creation of future Superfund sites."⁵⁴ In an effort "to solve the 'NIMBY' . . . problems that arose because of political pressure and public opposition,"⁵⁵ Congress therefore provided that, after October 17, 1989, no state would be eligible for Superfund assistance for remedial actions at hazardous waste sites unless it provided satisfactory assurances of "the availability of hazardous waste treatment or disposal facilities which . . . have adequate capacity for the destruction, treatment, or secure disposition of all hazardous wastes that are reasonably expected to be generated within the State" during the next twenty years.⁵⁶ These facilities could be within the state or outside it if there was an interstate agreement for its use.⁵⁷

Acting under this authority, the United States Environmental Protection Agency (EPA) required every state to submit a "capacity assurance plan" detailing the sources, quantities, and characteristics of the hazardous wastes generated within its borders and explaining how those wastes would be handled.⁵⁸ Every state submitted a plan and EPA approved almost all of them, even where states relied on new facilities that were later rejected or on facilities in other states that opposed importation.⁵⁹ There is no evidence, however, that the capacity assurance requirement has led to the initiation or approval of any new hazardous waste facilities,⁶⁰ and EPA has all but abandoned the effort.

A second effort came in the Low-Level Radioactive Waste Policy Act of 1980 (LLRWPA).⁶¹ This statute declared that the states, acting alone or in compacts with other states, were responsible for disposing of their own low-level radioactive waste (LLRW). The LLRWPA gave South Carolina, Nevada, and Washington, the only states then with operating LLRW dispo-

⁵³ Pub. L. No. 99-499, 100 Stat. 1617 (1986) (codified at 42 U.S.C. §§ 9601-9675 (1994)).

⁵⁴ S. REP. NO. 99-11, at 22 (1985); *see also* 132 CONG. REC. S11563-02 (daily ed. Sept. 17, 1985) (statement of Sen. John H. Chafee (R-R.I.)).

⁵⁵ *Hazardous Waste Treatment Council v. South Carolina*, 945 F.2d 781, 784 (4th Cir. 1991).

⁵⁶ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9604(c)(9)(A) (1994).

⁵⁷ *Id.* § 9604(c)(9)(B).

⁵⁸ OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY, OSWER DIRECTIVE 9010.00, ASSURANCE OF HAZARDOUS WASTE CAPACITY: GUIDANCE TO STATE OFFICIALS (1988).

⁵⁹ *Review of EPA's Capacity Assurance Program: Hearings Before the Subcomm. on Environment, Energy and Natural Resources of the House Comm. on Government Operations*, 101st Cong. 281 (1991) (statement of Sylvia K. Lowrance, Director, Office of Solid Waste, EPA) (noting that the only plans not approved were those from Georgia, Mississippi, Arizona, Missouri, and District of Columbia); SHARON N. GREEN, PLANNING FOR HAZARDOUS WASTE CAPACITY: LESSONS FROM THE NORTHEAST STATES 96 (1990).

⁶⁰ GREEN, *supra* note 59, at xxiii.

⁶¹ Pub. L. No. 96-573, 94 Stat. 3347 (1980) (codified as amended at 42 U.S.C. §§ 2021b-2021d (1994)).

sal facilities, the power to exclude other states' waste after 1986. By 1985, little progress had been made in siting new LLRW facilities and Congress again stepped in with the Low-Level Radioactive Waste Policy Amendments Act of 1985.⁶² This new enactment extended the deadlines, provided interim milestones, and allowed the three sited states to exclude waste from states that missed the deadlines.⁶³ It also provided that, in 1993, states that had not made provisions for the disposal of LLRW generated in their borders would have to "take title" to this waste, thereby assuming liability for damage that it causes.⁶⁴

In 1990, New York State, struggling to site a LLRW facility and acting under pressure of two counties tentatively designated as the location for a potential LLRW facility, challenged the constitutionality of the 1985 amendments. In 1992, the U.S. Supreme Court invalidated the "take title" provision as a violation of the state's rights under the Tenth Amendment, but upheld the balance of the statute.⁶⁵ The federal requirement that states site LLRW facilities has sparked enormous controversy all over the country and, to date, no facility sited under this process is anywhere near licensing, much less opening.⁶⁶

The third effort came in the Nuclear Waste Policy Act of 1982 (NWPAA), which required the Department of Energy (DOE) to establish a system of "long term" or "permanent" deep geologic disposal facilities for both kinds of high-level radioactive waste (HLW)—waste from bomb production and spent fuel rods.⁶⁷ The Act instructed DOE to recommend to the President three sites to be studied in depth. DOE eventually recommended Yucca Mountain, Nevada, Deaf Smith County, Texas, and Hanford, Washington.⁶⁸ In 1986 President Reagan approved these three sites.⁶⁹

Just as the studies were about to begin, however, Congress stepped in. In a rider to a budget bill,⁷⁰ Congress ordered DOE to halt any investigations of the Texas and Washington sites, to bypass the preliminary studies, and to put the HLW facility at Yucca Mountain.⁷¹ In response, Nevada began a long campaign of litigation against the site.⁷² This campaign has

⁶² Pub. L. No. 99-240, 99 Stat. 1842, 1850 (1986) (codified at 42 U.S.C. §§ 2021b-2021d (1994) (repealed)).

⁶³ 42 U.S.C. § 2021e (1994).

⁶⁴ *Id.* § 2021e(d)(2)(C).

⁶⁵ *New York v. United States*, 505 U.S. 114 (1992) (holding that the Act's monetary and access incentive provisions are constitutionally permissible but that its "take title" provision transcends the scope of Congress's enumerated powers and therefore violates the 10th Amendment).

⁶⁶ See GERRARD, *supra* note 1, at 33-35.

⁶⁷ 42 U.S.C. §§ 10101-10226 (1994); see James H. Davenport, *The Law of High-Level Nuclear Waste*, 53 TENN. L. REV. 481 (1986).

⁶⁸ *Natural Resources Defense Council, Inc. v. United States Envtl. Protection Agency*, 824 F.2d 1258, 1262 (1st Cir. 1987).

⁶⁹ *Nevada v. Herrington*, 827 F.2d 1394, 1397 (9th Cir. 1987).

⁷⁰ Omnibus Budget Reconciliation Act of 1987, Pub. L. No. 100-203, 101 Stat. 1330 (1987).

⁷¹ See 42 U.S.C. § 10172(a) (1994).

⁷² See, e.g., *Nevada v. Watkins*, 939 F.2d 710, 715 (9th Cir. 1991) (concluding that the Secretary of Energy's promulgation of guidelines concerning the location of nuclear waste disposal facilities constituted "preliminary decision making" which is unreviewable under

not resulted in cancellation of the project, but it has disclosed many technical problems with the site and has considerably delayed the project. Today that opening is not projected for another fifteen to twenty years at the earliest. The sense of procedural fairness that DOE so wanted to cultivate has utterly evaporated, and residents call the statute designating Yucca Mountain the "Screw Nevada Bill."⁷³

Why did all three of these efforts to achieve geographic equity in waste facility siting—the hazardous waste, LLRW, and HLW programs—fail? I believe a primary reason is that each of them dealt with only one type of waste stream, so that facilities would be needed in only a few states. This created a scramble for states to be excluded from this select group. The results of successful siting efforts would inevitably have been inequitable, with a few losing states and a lot of free riders.

The failure of these and other efforts to site new facilities has led to the extensive use of on-site treatment and disposal. This is arguably the most equitable method of all, because the waste ends up where it was generated. However, the locations may be very poor from an environmental and public health standpoint.⁷⁴ Many factories and other waste generating facilities are located in population centers, near their labor force and markets,⁷⁵ thus increasing human exposure to any harmful emissions from the disposal facility. Many factories were also sited years ago with little attention paid to whether the site was one which would minimize adverse environmental impacts.

VI. TOWARD A RECONCILIATION

There is a way to give due regard to the territorial instinct in waste facility siting while at the same time building needed disposal facilities. It will now be described.⁷⁶

the APA); *Nevada v. Burford*, 918 F.2d 854, 858 (9th Cir. 1990) (finding that Nevada lacked standing to challenge federal Bureau of Land Management's decision granting the Department of Energy a right-of-way to conduct site characterization studies of Yucca Mountain); *Nevada v. Watkins*, 914 F.2d 1545, 1552-64 (9th Cir. 1990) (rejecting Nevada's constitutional and statutorily based challenges to the federal government's actions concerning the selection of Yucca Mountain as a nuclear waste disposal site); *Nevada v. Herrington*, 827 F.2d 1394, 1399 (9th Cir. 1987) (holding that states may not use Nuclear Waste Fund Grants to finance their participation in judicial review proceedings under the Nuclear Waste Policy Act).

⁷³ The designation of Yucca Mountain for HLW was one of the reasons that Nye County, where Yucca Mountain is located, has attempted to assert its sovereignty over the vast tracts of federal lands within its borders. See Alexander H. Southwell, *The County Supremacy Movement: The Federalism Implications of a 1990s States' Rights Battle*, 32 GONZ. L. REV. 417, 436-37 (1996).

⁷⁴ See Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 TUL. L. REV. 1046, 1090-91 (1994).

⁷⁵ *Id.* at 1091.

⁷⁶ This proposal is described in considerably greater detail in GERRARD, *supra* note 1 and Gerrard, *supra* note 74.

The numerous sources and types of hazardous and radioactive wastes are all regulated separately and are generally disposed of separately in a multitude of different sorts of facilities, even though the same physical characteristics, such as geological setting and transportation access, are desirable for most disposal facilities. There is no coordinated national effort to site disposal facilities for these varying waste streams.

A national program for allocating waste disposal facilities would have several advantages. If every state had at least one facility, and the larger states had the larger facilities, the states would have much less of a sense of regional unfairness. The larger states might have centralized facilities, taking a variety of waste streams and subjecting them to several different kinds of processes. Each kind of waste would be more likely to find its ideal treatment process. Such a comprehensive approach would also afford considerable economies of scale. Along these lines, several European nations—Denmark, Sweden, Finland, and the German states of Bavaria and Hessen—have successfully established centralized hazardous waste disposal facilities,⁷⁷ as have the Canadian provinces of Alberta and Manitoba.⁷⁸

For the waste streams included in the centralized process, the next step would be to prepare a disposal needs assessment. In order to determine the size and type of facilities needed, the siting process would require specific information on the nature, quantities, and generation patterns of waste. EPA would take the lead in assessing non-radioactive wastes and the Nuclear Regulatory Commission would assess radioactive wastes. This needs assessment would reveal how much new disposal capacity would be required. Once the capacity needs are known, the process of allocating the satisfaction of those needs among the states should be assigned to an independent federal entity, perhaps called the Federal Waste Disposal Commission (FWDC). The FWDC would have a thankless task—allocating hated facilities among reluctant states. To avoid unending, fruitless debate and rampant political interference, I suggest that the FWDC be a politically independent commission whose recommendations are subject only to the approval or rejection of the entire package by Congress under the model of the Defense Base Closure Commission (DBCC). The DBCC has performed admirably in carrying out a similarly unpopular mission.⁷⁹

The FWDC would have the job of determining what needed capacity should be provided by what states. Large centralized facilities would likely go to the largest exporting states and small transfer stations might go to importing states. Every state would be allocated at least one facility.

Once all of the needed facilities have been allocated to states, the FWDC would issue its comprehensive report on where all the facilities

⁷⁷ Gerrard, *supra* note 74, at 1192; GERRARD, *supra* note 1, at 173.

⁷⁸ BARRY G. RABE, *BEYOND NIMBY: HAZARDOUS WASTE SITING IN CANADA AND THE UNITED STATES* 61-106 (1994).

⁷⁹ See Natalie Hanlon, *Military Base Closings: A Study of Government by Commission*, 62 U. COLO. L. REV. 331, 333-40 (1991); GERRARD, *supra* note 1, at 186.

would be sited. The report would be submitted to Congress, which would be required to vote yes or no on the entire package. As with the Defense Base Closure and Realignment Act of 1990,⁸⁰ the statute establishing the FWDC would mandate that Congress consider the package as a whole and not modify the FWDC's recommendations.

After Congress has acted, states should then be able to trade allocations among themselves. The National Governors Association or a similar group could establish a trading mechanism. States might also want to trade disposal rights for waste streams not within the FWDC's jurisdiction, such as municipal solid waste. If New Jersey, for instance, wanted to export municipal trash to Indiana, then Indiana might agree so long as it could send some of its hazardous waste back to New Jersey.

Because every state generates hazardous waste and every state exports hazardous waste to other states, every state should have some disposal obligations. No state should think it can get a free ride. States would be given credit in this allocation process for existing private waste disposal facilities within their borders inasmuch as such facilities tend to make these states importers rather than exporters.

Once the state-by-state allocations have been established, each state should have the responsibility to find the necessary sites for any newly required facilities. Any site selected for a waste disposal facility would have to meet minimum technical criteria. Beyond that threshold, however, the site should be acceptable to the neighboring community. Otherwise, repeated experience has shown that the community's territorial response will likely lead to insurmountable opposition. Numerous communities in the United States have volunteered for hazardous or radioactive waste facilities. How does one find such communities and secure their consent?

Any effort to describe the communities that are most likely to accept facilities is perilous and can even involve invidious ethnic stereotyping. Consequently, it is neither possible nor wise to characterize the communities that might accept hazardous and radioactive waste facilities. A better approach to finding volunteer communities is simply to ask.

Herbert Inhaber has described a procedure he calls a "reverse Dutch auction," which would presumably be carried out through the newspapers.⁸¹ The auctioneer would propose a compensation amount payable to a volunteer community. Any county that might be willing to accept the facility for that amount would bid. For example, the auctioneer might declare a bid of \$10 million and keep it open for a month. If no bids were received, the bid amount would be raised to \$20 million the second month, \$30 million the third month, and so on until a bid was received.⁸² A bid would have to specify a proposed site. Once a bid was received, the auction would stop until the site was studied to determine if it was physically

⁸⁰ 10 U.S.C. § 2687 (1994).

⁸¹ Herbert Inhaber, *Can We Find a Volunteer Nuclear Waste Community?*, PUB. UNIT. FORT., July 15, 1991, at 19; Herbert Inhaber, *Of LULUs, NIMBYs and NIMTOOs*, PUB. INTEREST, Spring 1992, at 52, 61-64 [hereinafter *Of LULUs and NIMBYs*].

⁸² This is similar to the auction sometimes conducted by airlines seeking volunteers to give up their seats on overbooked flights.

acceptable. During this period, bidding communities would receive funds from the state to hire their own consultants to do their own studies and the communities could withdraw their bids at any time. Communities that did not want the facility under any circumstances would simply not bid.⁸³

Land on federal facilities would be made available to the extent it was physically suitable.⁸⁴ In any state that shirked its responsibility, the FWDC could step in and find sites itself. This resembles the process under the Clean Air Act in which a federal implementation plan can be prepared for any state that fails to submit a satisfactory state implementation plan.⁸⁵ Such a role for the FWDC would involve a limited violation of the anti-preemption principle, but may be necessary in order to induce states to provide sufficient incentives for volunteer communities to step forward. If a state failed to meet its FWDC-set allocation of waste disposal, another sanction could be that other states could initially tax and ultimately exclude its waste from their FWDC-allocated facilities.

Once sites were selected, the states would be responsible for overseeing the detailed characterization studies, permitting, and construction of the facilities, all under the applicable guidelines of EPA or the Nuclear Regulatory Commission (NRC).⁸⁶ Local communities should be given technical assistance grants to participate in the process. Perhaps each facility would have its own board of visitors, with federal, state, and local representation. This board should have full access to the site and its records and could conduct inspections at will to ensure that all environmental standards are met. It would also regularly meet with facility management to discuss mutual concerns and could make the discussions public if its recommendations were not followed. Additionally, the FWDC might set caps on how much waste each facility could accept, to avoid the creation of excess capacity that might encourage waste generation.

VII. CONCLUSION

The desire for self-determination, and the urge to seal one's borders against intrusions by outside people, wastes, or other threats (a bundle of sentiments that I call territoriality), is a fundamental part of the human psyche. However, many current legal structures disregard this instinct and, largely as a consequence, they have failed to achieve their objectives.

A prominent example of this phenomenon occurs in the context of siting waste disposal facilities. The Commerce Clause, the preemption doctrine, the focus on waste disposal rather than waste generation, and the consideration of one waste stream at a time defeat local self-determi-

⁸³ See Herbert Inhaber, *A Market-Based Solution to the Problem of Nuclear and Toxic Waste Disposal*, 41 J. AIR WASTE MGMT. ASS'N 808 (1991); Inhaber, *supra* note 81, at 19-20; *Of LULUs and NIMBYs*, *supra* note 81, at 61-62.

⁸⁴ Note that such land should be sold or leased to the state or the new facility operator at the prevailing price for comparable industrial land so as to not create a hidden subsidy.

⁸⁵ See 42 U.S.C. § 7410(c)(1) (1994).

⁸⁶ An exception would be the HLW and transuranic waste repositories, which would have to be in federal hands because they will contain fissile materials. See GERRARD, *supra* note 1, at 27-32.

nation and combine with a natural aversion to waste facilities to repel the neighbors of proposed facilities. This repulsion is usually successful in fomenting enough opposition to defeat the facility proposal.

To correct this problem, I have proposed a method of national allocation, state responsibility, and local control. The federal government would decide what waste disposal facilities are needed and would allocate them equitably among the fifty states. The states would no longer have the sense of unfairness and intrusion that comes from seeming to be the nation's (or the region's) dumping ground for a particular kind of waste. Facilities would ultimately be placed into volunteer communities so most local residents would also not feel intruded upon.

Facility siting is not the only problem in public policy that is heavily affected by territoriality, but it is one of the most prominent. The analysis suggested here could also be applied to other attempts to solve national problems on the backs of a few localities, such as the siting of prisons, energy production plants, and other undesirable facilities. Once the role of territoriality in human reactions to governmental decisions is better understood, more sound and more effective decisions can be reached.

