

# CAPTURING INDIVIDUAL HARMS

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*The aggregated lifestyles and behaviors of individuals impose significant environmental harms yet remain largely unregulated. A growing literature recognizes the environmental significance of individual behaviors, critiques the failure of environmental law and policy to capture harms traceable to individual behaviors, and suggests and evaluates strategies for capturing individual harms going forward. This Article contributes to the existing literature by approaching the problem of environmentally significant individual harms through the lens of environmental federalism. Using climate change and individual greenhouse gas (“GHG”) emissions as an exemplar, the Article illustrates how local information, local governments, and local implementation can enhance policies designed to capture individual environmental harms. Local information and community-level implementation may enhance norm management efforts designed to influence GHG-emitting behaviors by (1) allowing for the identification of concrete behaviors that are feasible to target through norm management in a given community; (2) informing the design and content of norm campaigns, including the selection of the abstract norm that will form the basis of the appeal for specific behavioral change; and (3) facilitating effective implementation strategies. This framework supports a preference for local action expressed, but to date largely unexamined, in the broader norm management literature.*

*Additionally, the Article argues that obstacles to using mandates to influence GHG-emitting behaviors may be less formidable when mandates are developed and enforced locally. Local development and enforcement of mandates can reduce intrusion objections because (1) individuals are accustomed to local control over day-to-day behaviors; (2) familiarity with local attitudes and practices enables the design of mandates that avoid intrusion objections; and (3) local governments are in a better position to structure time, place, and manner restrictions that channel behavior while preserving some individual choice. Local design and enforcement of mandates may also minimize the key enforcement challenges of expense, numerosity, and (in)visibility.*

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INTRODUCTION

It is not hard to summon the ghosts of environment past. Industrial facilities deluged waterways with chemical waste, causing them to periodically catch fire.<sup>1</sup> Smelters belched thick soot that blanketed the land and choked vegetation, turning tens of thousands of acres into virtual moon-scapes.<sup>2</sup> Industry treated the ground “as a kind of bottomless sponge,” dumping toxic wastes until “a toxic soup bubb[ed] up,” cancer clusters were traced to contaminated groundwater, and hundreds of water supply wells had to be capped after the discovery of industrial toxins.<sup>3</sup> Environmental law — the modern statutory regime as well as, in some cases, common law litigation — has largely rendered these egregious manifestations of industrial pollution specters of the unregulated past. These specters, however, loom large, informing a conception of the industrial or corporate polluter that persists even when most industries have operated for decades under the strictures of an alphabet soup of environmental laws.

In stark contrast to the social opprobrium and legal strictures directed at corporate polluters stands the legal and social sanction of common individual behaviors — everything from solo commuting to discarding household waste — that harm the environment.<sup>4</sup> Common individual behaviors, how-

<sup>1</sup> Jonathan H. Adler, *Fables of the Cuyahoga: Reconstructing a History of Environmental Protection*, 14 *FORDHAM ENVTL. L. REV.* 89, 103–05 (2002) (observing that burning was not uncommon in heavily polluted “industrial rivers”); see also *The Cities: The Price of Optimism*, *TIME*, Aug. 1, 1969, at 41 (providing this now-famous description of the Cuyahoga River: “Chocolate-brown, oily, bubbling with subsurface gases, it oozes rather than flows.”).

<sup>2</sup> The harms from these smelters occasioned two notable nuisance cases, *Madison v. Ducktown Sulphur, Copper & Iron Co.*, 113 *Tenn.* 331 (1904) and *Georgia v. Tenn. Copper Co.*, 206 *U.S.* 230 (1907). See M. L. Quinn, *Industry and Environment in the Appalachian Copper Basin, 1890–1930*, 34 *TECH. & CULTURE* 575, 582–83 (1993).

<sup>3</sup> PERCIVAL ET AL., *ENVIRONMENTAL REGULATION LAW, SCIENCE, AND POLICY* 311 (5th ed. 2006) (referencing the discovery of contamination at Love Canal and the discovery of a cancer cluster in an area of Woburn, Massachusetts with heavily contaminated groundwater).

<sup>4</sup> For example, to avoid a criminal or financial penalty, an industrial facility must evaluate the wastes that it generates; it must also label, ship, and dispose of waste deemed hazardous in accord with a complex set of regulations. Failure to comply risks EPA prosecution, citizen suits, and public outrage. Resource Conservation and Recovery Act §§ 3008, 7002, 42 *U.S.C.* §§ 6928, 6972 (2006) [hereinafter “RCRA”]. Individuals, meanwhile, legally discard an estimated 1.6 million tons of household hazardous wastes annually, destined primarily for municipal landfills where they can leach and contaminate ground and surface water. Michael P. Vandenberg, *From Smokestack to SUV: The Individual as Regulated Entity in the New Era of Environmental Law*, 57 *VAND. L. REV.* 515, 542–43 (2004) [hereinafter Vandenberg, *From Smokestack to SUV*] (estimating the volume of hazardous waste disposed of by individuals based on data contained in a 2003 EPA draft report on the environment). Household hazardous waste disposed of by individuals is not considered “hazardous” for purposes of RCRA. 40

ever, impose significant impacts on the environment that can rival or exceed the impacts of industrial practices that are now largely regulated.<sup>5</sup> Hope M. Babcock summarizes these impacts in a recent article, relying primarily on data compiled originally by Michael P. Vandenberg.<sup>6</sup> With respect to water pollution, “[h]ouseholds discharge as much mercury to wastewater as do all large industrial facilities combined.”<sup>7</sup> With respect to air pollution, “[i]ndividuals release almost a third of the chemicals that form low-level ozone or smog,” tailpipes and minor emissions contribute ninety-five percent of urban carbon monoxide emissions, and “[m]otor vehicles, consumer products, and other small, non-industrial sources now contribute 76% of all air toxins.”<sup>8</sup> With respect to climate change, “[i]ndividuals directly generate approximately one-third of U.S. greenhouse gas emissions, and one-third of the energy consumed by this country is used by households.”<sup>9</sup>

Both resource depletion and industrial pollution are ultimately traceable to the demand created by individual consumption.<sup>10</sup> A community’s impact on the environment can be roughly calculated using the I=PAT formula: I (Impact) = P (Population) × A (Affluence, or per capita level of consumption) × T (Technology, or impact per unit of consumption/pattern of consumption).<sup>11</sup> Since “[p]roducts have environmental impacts throughout their lifecycle, from extraction, transport, and production, to distribution, use, and disposal,”<sup>12</sup> the environmental impact of typical individual acts of consumption, such as the purchase of a pair of jeans or a pair of leather

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C.F.R. § 261.4(b)(1) (2009) (exempting “household waste,” or “any material . . . derived from households” from being deemed hazardous waste under RCRA).

<sup>5</sup> Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 546–72 (identifying specific volumes of pollutants traceable to individual behaviors). These types of environmental harms, arising from small contributions from numerous individual sources, are frequently referred to as “second generation” environmental problems. Michael P. Vandenberg, *The Social Meaning of Environmental Command and Control*, 20 VA. ENVTL. L.J. 191, 191 (2001) [hereinafter Vandenberg, *Environmental Command and Control*].

<sup>6</sup> Hope M. Babcock, *Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm*, 33 HARV. ENVTL. L. REV. 117, 120–21 (2009) [hereinafter Babcock, *Assuming Personal Responsibility*] (footnotes omitted).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 122–23 (describing the environmental impacts of consumption). *See also* James Salzman, *Sustainable Consumption and the Law*, 27 ENVTL. L. 1243, 1250, 1255–56 (1997) (explaining the connection between consumption and environmental harm); Paul Ekins, *The Sustainable Consumer Society: A Contradiction in Terms?*, 3 INT’L ENVTL. AFF. 243, 249 (1991) (“[T]he environmental crisis . . . must be laid squarely at the door of northern industrial consumer lifestyles and their imitations now in nearly all countries of the Third World.”). *See generally* Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 539–40 (declining to include environmental harms arising from the production of consumer goods and services in the tally of harms attributable to individuals to avoid over-inclusiveness, but recognizing that these harms could be attributed to individuals).

<sup>11</sup> Salzman, *supra* note 10, at 1250, 1256 (1997). Level of consumption refers to the amount, or volume, of consumption. *Id.* at 1253. Patterns of consumption refer to “how well we consume.” *Id.* For example, two families may use the same number of rolls of paper towels in a given year, but if one family uses paper towels made from recycled materials and the other does not, the consumption will have different impacts on the environment.

<sup>12</sup> *Id.* at 1255–56.

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boots, can be significant.<sup>13</sup> Notably, in a manner similar to legal efforts to reduce pollution, policies aimed at reducing the environmental impacts of consumption have focused on improving the patterns of consumption by imposing requirements on manufacturers (with respect to product content, performance, or labeling) while largely declining to address levels of consumption or impose restraints on individuals.<sup>14</sup> Traditionally, “consumption is a category beyond questioning.”<sup>15</sup>

A variety of factors help to explain the dichotomous treatment of individuals compared to industry and pollution compared to consumption. Large, industrial sources of pollution present easier targets for regulation. It is easier to apply and enforce environmental requirements to a discrete number of large polluters than it is to apply and enforce requirements against individuals. Enforcement against individuals is difficult and costly because individuals are greater in number, the behavior being regulated is frequently recurrent and hard to detect, and limiting individual choice and proscribing individual conduct may meet strong objections and prove uncomfortably intrusive.<sup>16</sup> Moreover, intrusiveness objections, the “myth” of the corporate polluter,<sup>17</sup> and cognitive limitations may frustrate development of the political and personal will necessary to support government regulation of individuals. The connection between individual actions and environmental harms

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<sup>13</sup> By some estimates, it requires 10,000 liters of water to produce one pair of jeans. Samiha Shafy, *H2O Woes: Measuring the Damage of Our 'Water Footprint,'* SPIEGEL ONLINE (Aug. 26, 2009), <http://www.spiegel.de/international/world/0,1518,644867,00.html> (reporting the results of a water footprint analysis conducted by Dutch hydroengineer Arjen Hoekstra). It also takes up to 220 pounds of carbon emissions to produce one pair of leather boots. Jeffrey Ball, *Six Products, Six Carbon Footprints*, WALL ST. J., Mar. 1, 2009, at R1. With respect to energy use, levels of consumption have far eclipsed improvements in patterns of consumption (energy efficiency) because “[o]ver the past 30 years we have built bigger homes, stocked them with a multitude of electricity-drawing gadgets and appliances, bought more and larger refrigerators and televisions, and purchased more and larger personal transportation vehicles.” Jack N. Barkenbus, *Supersizing the American Dream in an Era of Climate Change*, 38 ENVTL. L. REP. (Envtl. Law Inst.) 10857, 10861–62 (2008). In 1949, the average single-family home was 1100 square feet, while the average single-family home today is 2500 square feet; the typical refrigerator in the 1970s housed 17–18 cubic feet, while the typical refrigerator today has a capacity of 21–26 cubic feet. *Id.* at 10858–60.

<sup>14</sup> Salzman, *supra* note 10, at 1259–70 (describing policy approaches for addressing consumption); John C. Dernbach, *Pollution Control and Sustainable Industry*, NAT. RESOURCES & ENV'T, Fall 1997, at 101, 147 (recommending that “a cautious approach [to reducing the environmental impacts of consumption] would also include nontechnological approaches that more directly affect lifestyles” but noting that “changes in taxes and subsidies . . . may or may not be tolerable to the public”).

<sup>15</sup> Doug Kysar & Michael P. Vandenbergh, *Introduction: Climate Change and Consumption*, 38 ENVTL. L. REP. (Envtl. Law Inst.) 10825, 10827 (2008) (introducing symposium articles speaking to the connection between consumption and climate change and describing the historical lack of attention to consumption from environmental policy, defining the concepts of consumer and consumption, discussing the relationship between law and consumer preferences, and explaining why consumption must now be addressed head on by environmental policy).

<sup>16</sup> Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 598–600.

<sup>17</sup> Vandenbergh, *Environmental Command and Control*, *supra* note 5, at 208; Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 126.

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can be difficult for individuals to appreciate.<sup>18</sup> Environmental harms occasioned by individuals are generally distant in time and space from the individual behavior that causes them — the harms occur much later, through complex processes, and only after aggregation with the contributions of many others.<sup>19</sup> Moreover, existing environmental controls, by focusing on industrial polluters, convey the social meaning that “industrial polluters are the source of environmental problems, and individual citizens are enforcers allied with the government to stop them.”<sup>20</sup> In addition, a series of cognitive limitations, including the desire to avoid the cognitive dissonance created by condemning pollution but recognizing one’s own behaviors as polluting, hamper individuals’ ability to recognize their own environmental significance and culpability.<sup>21</sup> That consumption is a chief source of individual environmental harms further complicates matters. Just as individuals present a more challenging regulatory target than industrial point sources, developing policies aimed at consumption proves more complex than designing measures to reduce pollution. As James Salzman explains, both the goals to be achieved by reducing consumption, and the means of doing so, present difficult questions. As contrasted with a “straightforward goal of minimizing pollution, sustainable consumption’s ultimate objective remains indistinct, blurred by disagreement over appropriate measures, issues of international and intergenerational equity, and, most important, implications on individual lifestyle.”<sup>22</sup> Moreover, “issues of sustainable consumption go to the very heart of societal norms such as lifestyle, equity, and cultural identity — issues that cannot be easily resolved in the legislature or courtroom.”<sup>23</sup> Environmental law and policy’s traditional focus on industrial sources and pollution is thus understandable, if not justified. Developing environmental policy that captures and limits harms from individuals, including by addressing levels of consumption, may be the most difficult (from a policy perspective) and important (in terms of environmental health) long-term challenge in environmental law. “[R]e-conceptualizing individuals as a source category will require a fundamental reexamination of the theories and methods of environmental regulation”<sup>24</sup> and “[e]ntirely new approaches will be needed to address the issue of levels of consumption.”<sup>25</sup>

A growing literature recognizes the environmental significance of individual actions and consumption, critiques the failure of environmental law

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<sup>18</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 119 (“One of the serious challenges to changing behavior is the perception that individual contributions to environmental problems are small and, therefore, inconsequential.”).

<sup>19</sup> *Id.* at 130–31 (describing the difficulty overcoming the perception that individual contributions are *de minimis*).

<sup>20</sup> Vandenbergh, *Environmental Command and Control*, *supra* note 5, at 208.

<sup>21</sup> *Id.*; *see also* Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 128 (discussing the influence of the alarmist and optimistic biases); Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 592.

<sup>22</sup> Salzman, *supra* note 10, at 1255.

<sup>23</sup> *Id.* at 1256.

<sup>24</sup> Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 597.

<sup>25</sup> Salzman, *supra* note 10, at 1292.

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and policy to capture harms traceable to individuals, and suggests and evaluates strategies for capturing individual harms going forward.<sup>26</sup> This work indicates that a mix of policy approaches will likely be needed to successfully capture individual harms, but emphasizes the promise of informational regulation and norm management for influencing individual behaviors.<sup>27</sup> In

<sup>26</sup> This literature is anchored by the work of Michael P. Vandenbergh. See Kysar & Vandenbergh, *Introduction: Climate Change and Consumption*, *supra* note 15, at 10827; Michael P. Vandenbergh & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. 1673, 1724 (2007); Michael P. Vandenbergh, Jack Barkenbus, & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008) (identifying individual GHG-emitting behaviors most susceptible to change and suggesting strategies for changing them); Michael P. Vandenbergh, *Order Without Social Norms: How Personal Norm Activation Can Protect the Environment*, 99 NW. U. L. REV. 1101 (2005) [hereinafter Vandenbergh, *Order Without Social Norms*] (advocating personal norm management to address individual behavior in negative-payoff, loosely knit group situations); Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 542–43; Vandenbergh, *Environmental Command and Control*, *supra* note 5, at 191; see also Babcock, *Assuming Personal Responsibility*, *supra* note 6; Hope M. Babcock, *Civic Republicanism Provides Theoretical Support for Making Individuals More Environmentally Responsible*, 23 NOTRE DAME J.L. ETHICS & PUB. POL'Y 515 (2009) [hereinafter Babcock, *Making Individuals More Environmentally Responsible*]; Hope M. Babcock, *Global Climate Change: A Civic Republican Moment for Achieving Broader Changes in Environmental Behavior*, 26 PACE ENVTL. L. REV. 1, 12 (2008) [hereinafter Babcock, *Achieving Broader Changes*] (outlining challenges to changing individual environmental behaviors, arguing that the abstract environmental protection norm must be expanded to embrace personal responsibility, and suggesting that environmental groups take the lead in educating individuals about the environmental effects of their actions); Barkenbus, *supra* note 13, at 10861–62; Andrew Green, *Creating Environmentalists: Environmental Law, Identity and Commitment*, 17 J. ENV. L. & PRAC. 1 (2006) [hereinafter Green, *Creating Environmentalists*] (considering the policy ramifications of theories of individual identity choice and commitment development); Andrew Green, *Norms, Institutions, and the Environment*, 57 U. TORONTO L.J. 105 (2007) (assessing the potential for government to influence environmental values and norms); Andrew Green, *Self Control, Individual Choice, and Climate Change*, 26 VA. ENVTL. L.J. 77, 81 (2008) (assuming that individuals “have values or norms that favor environmental action,” but questioning the individuals’ capacity to make choices consistent with such values and norms); Andrew Green, *You Can’t Pay Them Enough: Subsidies, Environmental Law, and Social Norms*, 30 HARV. ENVTL. L. REV. 407 (2006) [hereinafter Green, *You Can’t Pay Them Enough*] (arguing that subsidies may undermine environmental values); Albert C. Lin, *Evangelizing Climate Change*, 17 N.Y.U. ENVTL. L.J. 1135 (2009) (emphasizing the role of values and evaluating strategies for changing behaviors within the American evangelical community); Salzman, *supra* note 10, at 1255–56 (explaining the connection between consumption and environmental harm); Jed S. Ela, Comment, *Law and Norms in Collective Action: Maximizing Social Influence to Minimize Carbon Emissions*, 27 UCLA J. ENVTL. L & POL'Y 93 (2009) (arguing for a national norm campaign to reduce individual GHG emissions that targets highly visible behaviors). See generally Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 28 (2001) (characterizing small sources as second generation environmental problems and observing that “discharges from small, non-point or area sources must be significantly curtailed, including those in the consumer, services, and agricultural sectors”).

<sup>27</sup> E.g., Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 608 (“Perhaps the most important implication of the new focus on individuals as polluters is the need to look beyond the command and control versus economic incentives debate to informational regulation and norm management.”); Vandenbergh & Steinemann, *The Carbon-Neutral Individual*, *supra* note 26, at 1724 (recommending, with respect to reducing individual carbon footprints, the integration of informational regulation and norm management with traditional regulatory measures, such as “taxes or subsidies, cap-and-trade schemes, standards that regulate the efficiency of consumer products made by industrial firms, and support for new technologies and

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contrast to the focus on informational regulation and norm management, comparatively little attention has been directed to the use of mandates to influence individual behavior except to note the obstacles to the use of mandates to control individual behavior, primarily intrusion objections and enforcement difficulties.<sup>28</sup>

This Article seeks to add to the existing literature by approaching the problem of individual harms through the lens of environmental federalism. Using climate change and individual GHG emissions as an exemplar, the Article evaluates the potential role of local information, local governments, and local implementation in designing policy to capture individual environmental harms.<sup>29</sup> This analysis leads to two conclusions relevant to the design of policy to capture individual GHG emissions and perhaps, more generally, individual environmental harms. First, it identifies concrete ways that local information, local governments, and local implementation may enhance efforts to manage norms and recommends a robust local role in efforts to address individual GHG emissions using norm management.<sup>30</sup> Second, it demonstrates that obstacles to the use of mandates may be less formidable when mandates are developed and enforced locally and argues for increased openness to the use of local mandates to influence environmentally significant individual behaviors.

Part I of the Article begins by providing background on environmental federalism, local governments and environmental protection, and local efforts to reduce GHG emissions. Part II suggests how local governments, local information, and local implementation can strengthen norm management aimed at reducing individual GHG emissions. Part III considers the use of mandates to reduce individual GHG emissions and explains how local

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infrastructure”). See generally RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE* 188–96 (2008) (recommending a carbon tax or cap and trade approach to controlling greenhouse gases but further suggesting — in light of the present political infeasibility of such approaches — information disclosure designed to reduce individual energy consumption). Research suggests that a single policy tool may be insufficient to change individual and household behavior and that “interventions that combine appeals, information, financial incentives, informal social influences, and efforts to reduce the transaction costs of taking the desired actions” are most effective. Thomas Dietz et al., *Household Actions Can Provide a Behavioral Wedge to Rapidly Reduce U.S. Carbon Emissions*, 106 Proc. Nat’l Acad. Sci. No. 44, 18452, 18453 (2009).

<sup>28</sup> E.g., Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 123 (identifying obstacles to the use of mandates and concluding that “[i]t is unlikely that Congress will amend our environmental laws to reach individual actions”). As discussed *infra* note 201 and accompanying text, prior scholarship has identified a possible role for mandates at the local level without subjecting that proposition to more sustained consideration.

<sup>29</sup> The analysis captures some, but not all, individual consumption relevant to climate change. It does consider individuals’ direct consumption of energy. However, it does not go further and consider the energy required to produce consumer goods and services. As discussed *infra* note 64 and accompanying text, law-and-norm scholarship has recognized a number of potential benefits of local involvement in norm management efforts.

<sup>30</sup> For present purposes, I use the term “local” in its loose, traditional sense to signify communities organized under state government (such as counties and municipalities). I am reminded, however, by the work of Hari Osofsky and others that “what constitutes ‘the local’ emerges from complex, multiscale interactions of sociolegal spaces across networks.” Hari M. Osofsky, *Scaling “Local”*: *The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 MICH. J. INT’L L. 689, 704 (2009).

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development and enforcement of mandates may render their use more feasible.

## I. LOCAL GOVERNMENTS AND ENVIRONMENTAL PROTECTION

Domestic environmental law involves state and, indirectly, local governments in the design and implementation of environmental policy through a cooperative federalism framework that imposes federal minimum standards but largely reserves decisions about implementation to state authorities.<sup>31</sup> One of the chief rationales for this division of authority is that it “allow[s] . . . pollution [control] strategies to be tailored to individual geographic areas,”<sup>32</sup> thereby (at least potentially) maximizing social welfare and efficiency by allowing policy to incorporate local conditions and local preferences.<sup>33</sup> Proponents of the devolution of even greater authority to the states and local government than that afforded by cooperative federalism also emphasize the benefits of local tailoring.<sup>34</sup> Local tailoring is hypothesized to require state and local involvement because “[a] national bureaucracy like EPA, with its limited resources and knowledge, cannot possibly take into account . . . regional and subregional differences.”<sup>35</sup> Moreover, “EPA has relatively little incentive to reflect local preferences about how to assign . . . pollution reduction burden[s] — about whether, for instance, to tighten automobile emissions inspection programs or to impose stricter limits on small businesses.”<sup>36</sup> This traditional account of the benefits of cooperative federalism and local tailoring is subject to robust debate. A voluminous environmental federalism literature evidences continuing and deep divisions about the advisability and efficacy of cooperative federalism

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<sup>31</sup> PERCIVAL ET AL., *supra* note 3, at 103–04 (describing cooperative federalism and observing its employment in the Clean Air Act, Clean Water Act, Safe Drinking Water Act, and RCRA).

<sup>32</sup> Craig N. Oren, *Getting Commuters Out of Their Cars: What Went Wrong?*, 17 STAN. ENVTL. L.J. 141, 191 (1998) (describing cooperative federalism and air pollution control strategies under the Clean Air Act). The adoption, design, and implementation of cooperative federalism strategies has received extensive scholarly treatment. For a good recent overview of federalism considerations in the context of land use, see Ashira P. Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. ON LEGIS. (forthcoming Spring 2011).

<sup>33</sup> E.g., Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 606–07, 623 (1996) (arguing that the characteristics of an environmental problem should dictate the level of government at which it is addressed and identifying benefits of local involvement).

<sup>34</sup> Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397, 429–42 (2008) (reviewing arguments offered in support of devolved federalism, including increased opportunities for local tailoring or “flexibility”).

<sup>35</sup> Oren, *supra* note 32, at 191.

<sup>36</sup> *Id.*

approaches as well as about the appropriate role of local governments in environmental regulation and the benefits of local tailoring.<sup>37</sup>

With respect to climate change, over one thousand mayors have signed the U.S. Conference of Mayors Climate Protection Agreement,<sup>38</sup> and the actions taken by local governments to reduce GHG emissions include everything from targeted energy conservation campaigns to the adoption of green building and zoning codes.<sup>39</sup> This aggressive action by state and local governments has also attracted significant scholarly attention. Notably, this plethora of state and local climate initiatives contravenes a core theory of environmental federalism — that governments have little incentive to control environmental harms with spillover effects, particularly where the costs (in this case, the cost of reducing GHG emissions) are locally concentrated while the benefits (in this case, mitigating climate change) are widely shared.<sup>40</sup> The scholarship thus examines both how best to allocate authority in responding to climate change and also what the behaviors of different governmental actors in addressing climate change reveal about theories of environmental federalism.<sup>41</sup>

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<sup>37</sup> Compare Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1215 (1977) (arguing for greater centralization of environmental policy, or federal control) with Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535, 536–38 (1997) (defending a presumption in favor of the decentralization of authority to regulate the environment); David E. Adelman & Kirsten H. Engel, *Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority*, 92 MINN. L. REV. 1796, 1798–99 (2008) (arguing for overlapping federal, state, and local authority). For an account that questions traditional views of the utility of local tailoring, see Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225, 251–57 (1997).

<sup>38</sup> *List of Participating Mayors*, THE U.S. CONFERENCE OF MAYORS, <http://usmayors.org/climateprotection/list.asp> (last visited Dec. 1, 2010) (on file with Harvard Law School Library). As of the end of 2009, six hundred U.S. cities had joined ICLEI — Local Governments for Sustainability, an international association of local governments that helps localities achieve sustainability objectives, including climate change mitigation. *Global Members*, ICLEI - LOCAL GOV'TS FOR SUSTAINABILITY, <http://www.iclei.org/index.php?id=11454> (last visited Dec. 1, 2010) (on file with Harvard Law School Library).

<sup>39</sup> For an overview of local climate mitigation efforts, see J. Kevin Healy, *Local Initiatives*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 421–43 (Michael B. Gerrard ed., 2007).

<sup>40</sup> Adelman & Engel, *supra* note 37, at 1846–47 (characterizing local climate change mitigation efforts as being in “direct contravention” to traditional principles of environmental federalism). R

<sup>41</sup> This scholarship includes (but is by no means limited to): Adelman & Engel, *supra* note 37, at 1846–49 (using the example of state and local climate change mitigation efforts as support for a theory of adaptive federalism); Kevin L. Doran, *U.S. Sub-Federal Climate Change Initiatives: An Irrational Means to a Rational End?*, 26 VA. ENVTL. L.J. 189 (2008); Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006); Laura H. Kosloff, Mark C. Trexler, & Hal Nelson, *Outcome-Oriented Leadership: How State and Local Climate Change Strategies Can Most Effectively Contribute to Global Warming Mitigation*, 14 WIDENER L.J. 173, 204 (2004) (arguing that “we should think of state and local policies and measures as a key source of policy experimentation and learning, as a source of public and corporate education, and as a source of pressure and encouragement to national and international policy development ef-

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Scholars offer a variety of explanations for the (at least theoretically) surprising climate mitigation activities of state and local governments. These explanations include everything from doubt about state and local commitment to climate mitigation (i.e., characterization of state and local efforts as largely window dressing) to suggestions that state and local action reflect local voter preference and/or the influence of transnational advocacy networks.<sup>42</sup> Some explanations accord with the traditional account of the jurisdictional incentives created where environmental harms create spillover effects (by suggesting, for example, that there may be local economic or other benefits to climate mitigation efforts, such as job creation in the field of renewable energy);<sup>43</sup> others use state and local climate mitigation to critique traditional theories of environmental federalism.<sup>44</sup>

To situate this Article within the larger environmental federalism literature, it takes one potential benefit of local involvement frequently identified in that literature — local tailoring — and suggests that it may be particularly salient with respect to an issue that is emerging as a new focus for environmental policy (the control of individual behaviors, in particular with respect to GHG emissions). It does not, however, directly engage the larger environmental federalism debate about the appropriate role for local government or seek to understand the apparent contradiction between local self-interest and local climate mitigation.<sup>45</sup>

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forts”); Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT’L L. 409 (2008) (using local climate mitigation efforts to consider how localities function in transnational environmental networks); Sovacool, *supra* note 34 (providing a comprehensive overview of environmental federalism, critically evaluating state and local efforts to mitigate emissions, and arguing for a strong federal role in responding to climate change); Katherine Trisolini & Jonathan Zasloff, *Cities, Land Use, and the Global Commons: Genesis and the Urban Politics of Climate Change*, in ADJUDICATING CLIMATE CHANGE: SUB-NATIONAL, NATIONAL, AND INTERNATIONAL APPROACHES 80–98 (William C.G. Burns & Hari M. Osofsky eds., 2009).

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<sup>42</sup> See Engel, *supra* note 41, at 1023–25; Trisolini & Zasloff, *supra* note 41, at 83–97 (applying urban theory and international relations theory to suggest a variety of explanations for local and state climate mitigation).

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<sup>43</sup> Engel, *supra* note 41, at 1023–24.

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<sup>44</sup> Adelman & Engel, *supra* note 37, at 1847–48 (critiquing the matching principle and discussing state and local climate initiatives).

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<sup>45</sup> Thus, the Article does not purport to resolve two key deficiencies of local regulation identified in the environmental federalism literature — the will of local entities to address spillover harms (externalities) or local recalcitrance in implementing federally developed environmental goals. Nor does it seek to resolve significant questions about local resources and capacities. See Katrina F. Kuh, *Using Local Knowledge to Shrink the Individual Carbon Footprint*, 37 HOFSTRA L. REV. 923, 939–41 (2009) (identifying potential limitations on local action, including expertise, resources, and environmental justice concerns). Moreover, it does not consider whether or how local governments possess or could be authorized to undertake some of the policy actions discussed herein, such as the adoption of public information campaigns and mandates aimed at reducing emissions. See generally John R. Nolon, *In Praise of Parochialism: The Advent of Local Environmental Law*, 26 HARV. ENVTL. L. REV. 365, 377–86 (2002) (examining the limited power of local governments to adopt local environmental laws). The Article seeks to persuade that a strong local role is warranted, but does not address how best to achieve and structure that local involvement.

Others have similarly noted that local tailoring may be particularly important in developing policy to address second-generation (individual) environmental harms. In a recent article, Holly Doremus and W. Michael Hanemann endorse the use of the Clean Air Act's cooperative federalism framework to address climate change, and in particular, to capture emissions from individual behaviors. They posit that decisions about where and how to make emission reductions should be made locally to the extent possible because "[t]here is considerable variation in the way that states contribute to climate change, as well as in the relative economic costs and social disruption that would be associated with various emission reduction measures," and "the details of how to reach a given level of GHG emission reduction can be enormously important to states and localities."<sup>46</sup>

In an article examining how local governments can use norms to create public-private partnerships with the business community, Victor B. Flatt uses the example of the climate mitigation efforts of Seattle and Houston to "illustrate how locally tailored social norm creation is more effective than a national approach."<sup>47</sup> And in his article, *In Praise of Parochialism: The Advent of Local Environmental Law*, John R. Nolon argues that local governments are particularly well suited to address second-generation environmental problems that arise primarily from aggregated individual behaviors. In particular, Nolon asserts that "[l]ocal environmental regulations address this generation's environmental problems, those associated with the diffuse, diverse, and very local causes of water and air pollution in the twenty-first century: sprawling development patterns, traffic congestion, and the high cost of development."<sup>48</sup> Finally, an impressive body of existing

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<sup>46</sup> Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act's Cooperative Federalism Framework Is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799, 826–27 (2008); see also Thomas D. Peterson, Robert B. McKinstry, Jr., and John C. Dernbach, *Developing a Comprehensive Approach to Climate Change Policy in the United States, That Fully Integrates Levels of Government and Economic Sectors*, 26 VA. ENVTL. L.J. 227, 266 (2008) (recommending that states and local governments retain control over energy demand reduction efforts because "[m]any of the measures that can be employed to reduce demand from the electric utility industry are best employed at the state and local level").

<sup>47</sup> Victor B. Flatt, *Act Locally, Affect Globally: How Changing Social Norms To Influence the Private Sector Shows a Path to Using Local Government To Control Environmental Harms*, 35 B.C. ENVTL AFF. L. REV. 455, 477–78 (2008).

<sup>48</sup> Nolon, *supra* note 45, at 413. Agenda 21, a detailed blueprint for the implementation of sustainable development adopted at the 1992 Rio Earth Summit, likewise recognizes localities as central to the achievement of sustainable development, explaining that "[l]ocal authorities construct, operate and maintain economic, social and environmental infrastructure, . . . establish local environmental policies and regulations, and assist in implementing national . . . policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development." U.N. Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Agenda 21*, ¶28.1, U.N. Doc. A/CONF.151/PC/100/Add ("Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives."). Since 1992, over 6400 local authorities in 113 U.S. counties have become involved in Local Agenda 21 ("LA21") activities. U.N. Dep't of Economic and Social Affairs, *Second Local Agenda 21*

scholarship demonstrates that local governments can reduce GHG emissions by using zoning and related land use authorities to change the locally built architecture — i.e., encouraging high density, mixed-used development located near public transportation, improving public transportation infrastructure, etc.<sup>49</sup> The capacity of local governments to change the physical architecture of communities is an important way that local governments influence individual lifestyles and behaviors and the environmental harms they occasion. This also supports local involvement in climate mitigation efforts. However, while this Article incorporates local control over the built environment into its analysis, the Article focuses on two different types of regulation of behavior: norm management and direct mandates.<sup>50</sup>

## II. DEPLOYING NORMS TO INFLUENCE GHG-EMITTING BEHAVIORS: BENEFITS OF LOCAL INFORMATION AND IMPLEMENTATION

Norms are obligations that guide behavior without relying on enforcement through formal legal rules and sanctions.<sup>51</sup> The influence of norms on

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*Survey*, U.N. Doc. DESA/DSD/PL2/BP15 8 (2002), available at [www.un.org/jsummit/html/documents/backgrounddocs/icleisurvey2.pdf](http://www.un.org/jsummit/html/documents/backgrounddocs/icleisurvey2.pdf). See also Robert R.M. Verchick, *Why the Global Environment Needs Local Government: Lessons from the Johannesburg Summit*, 35 URB. LAW. 471, 473 (2003) (identifying advantages that local governments have in pursuing sustainable development, including: (1) their proximity to ecological effects; (2) their potential for democratic participation; (3) their ability to integrate different priorities; and (4) their ability to shield against distributional inequalities).

<sup>49</sup> E.g., Judi Brawer & Matthew Vespa, *Thinking Globally, Acting Locally: The Role of Local Government in Minimizing Greenhouse Gas Emissions from New Development*, 44 IDAHO L. REV. 589, 599 (2008); Doremus & Hanemann, *supra* note 46, at 827–28 (observing that state and local governments “have greater political and practical abilities than the federal government to deal with a substantial share of emissions, particularly those connected to individual behaviors” because “[s]tate and local governments have authority over key infrastructure choices that mediate behavioral decisions and the emission consequences of those decisions”); Healy, *supra* note 39, at 421–43.

<sup>50</sup> See generally Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661, 662–63 (1998) [hereinafter Lessig, *The New Chicago School*] (identifying four distinct modalities of government regulation of behavior — law (mandates), social norms, markets, and architecture). Notably, Lessig defines architecture broadly to encompass constraints on behavior arising from “features of the world — whether made, or found — [that] restrict and enable in a way that directs or affects behavior” thereby including built architecture as well as a variety of other government-controlled factors. *Id.* at 663.

<sup>51</sup> Robert C. Ellickson, *The Evolution of Social Norms: A Perspective from the Legal Academy*, in SOCIAL NORMS 35 (Michael Hechter & Karl-Dieter Opp, eds. 2001) [hereinafter Ellickson, *Evolution of Social Norms*] (observing that the new norms scholars “share a common conception of norms . . . as a rule governing an individual’s behavior that is diffusely enforced by third parties other than state agents by means of social sanctions”); Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 350 (1997) [hereinafter McAdams, *Origin, Development, and Regulation*] (distinguishing between obligations and tendencies of behavior); Robert Cooter, *Do Good Laws Make Good Citizens? An Economic Analysis of Internalized Norms*, 86 VA. L. REV. 1577, 1580 (2000) [hereinafter Cooter, *Do Good Laws Make Good Citizens?*] (“[A] norm can be defined as an obligation backed by a nonlegal sanction . . . .” (emphasis omitted)).

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ior.<sup>56</sup> There is no proven model for regulating environmentally significant individual behavior,<sup>57</sup> let alone behavior as diverse and widespread as that related to energy consumption and GHG emissions. Prudence thus suggests that it would be unwise to reject norm management as a policy approach because it is unproven and novel, particularly because norm management has the potential to enhance the efficacy of other, more proven policy approaches.<sup>58</sup> Indeed, many scholars agree that it will be necessary to employ a variety of policy approaches, including norm management, to reduce individual GHG emissions.<sup>59</sup>

However, just as there is no tried and tested method for successfully regulating environmentally significant individual behaviors, there is no tried and tested method of norm management. The law-and-norms literature houses numerous competing theories<sup>60</sup> and invites lively critique,<sup>61</sup> and leading scholars concede that the precise mechanisms of how norms arise and influence behavior remain uncertain.<sup>62</sup> In this Part, I seek to contribute to the growing literature about how norm management efforts aimed at GHG-emitting behaviors can be structured and implemented to achieve the most success<sup>63</sup> by focusing on environmental federalism and considering where best to locate or orient norm management efforts. In particular, I suggest that local information and community-level implementation can offer significant advantages for norm management campaigns aimed at influencing in-

<sup>56</sup> Vandenbergh, Barkenbus & Gilligan, *supra* note 26, at 1704 (describing studies suggesting that behavior does not always respond to price signals); *see also infra* notes 203–04 and accompanying text (identifying the challenges of directly regulating individual behavior).

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<sup>57</sup> Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 521 (describing the myopic focus on industrial polluters, critiquing the application of traditional regulatory instruments to address harms arising from individual behavior, and proposing a “mix of traditional and new approaches” to regulate individual behaviors that negatively affect the environment).

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<sup>58</sup> *E.g.*, Ela, *supra* note 26, at 116–17 (“[W]hile there is no doubt that convenience, economic incentives, and personal norms can outweigh social influences in many cases, this does not mean that social influences have no effects in large-scale environmental collective action problems. Such a conclusion is not only a mistake, but a mistake with consequences, if it leads policymakers to pass up easily available opportunities to improve behavior change through attention to social influences.”).

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<sup>59</sup> *See id.*; *see also* Vandenbergh & Steinemann, *supra* note 26, at 1724 (explaining the need to use both norm activation and traditional regulatory measures, “includ[ing] taxes or subsidies, cap-and-trade schemes, standards that regulate the efficiency of consumer products made by industrial firms, and support for new technologies and infrastructure”).

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<sup>60</sup> *See, e.g.*, Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 149–50 (charting scholarly disagreements about the proper role of government with respect to norm management).

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<sup>61</sup> *E.g.*, Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603 (2000).

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<sup>62</sup> Michael Hechter & Karl-Dieter Opp, *Introduction to SOCIAL NORMS* xi, xviii (Michael Hechter & Karl-Dieter Opp, eds., 2001) (“[N]o adequate theory of the emergence of social norms can be said to exist at this juncture.”); Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 117 (“There is a range of unanswered questions relating to when norms develop spontaneously, the role of particular individuals in the process, and how the context (*e.g.*, the nature of the community or issue) affects the development of the norm.”).

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<sup>63</sup> *See, e.g.*, Babcock, *Assuming Personal Responsibility*, *supra* note 6; Vandenbergh & Steinemann, *supra* note 26; Ela, *supra* note 26.

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dividual GHG-emitting behaviors. Although a number of scholars have recognized the potential value of local information and/or implementation in norm management,<sup>64</sup> the analysis that follows uses the law-and-norms literature to expand on, explain, and endorse the until-now largely unexamined preference for a local role. The analysis that follows does not endorse or apply a single theory of law-and-norms. Instead, although it periodically references particular mechanisms or theories of norm origination, the analysis builds mainly from a few broad principles distilled from a review of the law-and-norms literature. These principles include: (1) Concrete or narrow norms define specific behaviors as consistent or inconsistent with broader abstract norms;<sup>65</sup> (2) Observation of behavior and informal sanction or reward contribute to the formation and strength of social norms;<sup>66</sup> (3) Even when a concrete norm exists, barriers may prevent individuals from behaving consistently with that norm;<sup>67</sup> (4) Conditions in smaller groups tend to be more supportive for norm development and behavior change consistent with those norms;<sup>68</sup> and (5) Largely unenforceable formal legal rules can influ-

<sup>64</sup> See Victor B. Flatt, *supra* note 47, at 456–57 (advocating local government development of public-private partnerships to protect the environment and positing that “the nature of local governments’ relationship to social norms means that local governments can in fact be vehicles for the use of such norms as policy tools”); Richard H. McAdams, *An Attitudinal Theory of Expressive Law*, 79 OR. L. REV. 339, 373–74 (2000) (explaining that, with respect to the expressive function of law, “local legislative bodies have a comparative advantage over state and national bodies because their actions are a stronger signal of the local attitudes that matter most”); Sunstein, *supra* note 52, at 952 (“[A] nation that is concerned about existing norms should exploit the possibilities that exist in a system committed to federalism.” (footnote omitted)); Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 621 (observing that “[f]or some issues, states and localities may be better positioned to tailor public information campaigns and other informational regulatory efforts to local populations”); Michael P. Vandenberg, *Taking Individual Behavior Seriously*, 31 ADMIN. & REG. L. NEWS 2, 4 (2005) (“[N]ational norm campaigns may fail if they overlook regional differences in beliefs, norms or even language.”); Ela, *supra* note 26, at 130 (describing the benefits of local implementation of anti-idling laws).

<sup>65</sup> See, e.g., Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1595–96 (“Behind our particular preferences lie more general, abstract preferences.”); McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 382–86 (explaining the difference between broad and narrow norms); Vandenberg & Steinemann, *supra* note 26, at 1706 (observing that “[n]orms scholars have begun to converge on several fundamental understandings regarding norms and norm activation,” including “that norms include both specific, concrete norms and generalized, abstract norms” (footnote omitted)).

<sup>66</sup> See McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 358–65.  
<sup>67</sup> See, e.g., Vandenberg & Steinemann, *supra* note 26, at 1697–98 (identifying barriers that may inhibit behavior change even where a norm is activated).

<sup>68</sup> E.g., Carlson, *supra* note 55, at 1236, 1245 (observing that “[a] number of empirical studies demonstrate that social norms are most likely to emerge and resolve problems of collective action among small, relatively homogenous groups who have repeated interactions with one another and whose economic interests often will be served by the emergent norms”); McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 388 (“None of the norm conditions are as likely for a society as a closely knit or even loosely knit group, but all may occur.”). *But see* Ela, *supra* note 26, at 115–23 (arguing that the characteristics of behavior are more important than the characteristics of groups in predicting the influence of norms).

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ence norms and behavior.<sup>69</sup> Applying these principles in the context of climate-relevant individual behavior, I conclude that local information and community-level implementation may enhance norm management efforts designed to influence GHG-emitting behaviors by (1) allowing for the identification of concrete behaviors that are feasible to target through norm management in a given community; (2) informing the design and content of norm campaigns, including the selection of the abstract norm that will form the basis of the appeal for specific behavioral change; and (3) facilitating effective implementation strategies.

#### A. *Choosing Concrete Behaviors and Norms to Target*

The first step in using policy to influence norms and change GHG emission-relevant behavior is to select the particular concrete norm (i.e., a norm dictating a specific behavior) that the policy will attempt to create or activate. A wide variety of individual behaviors — everything from leaving electronics plugged in to idling a vehicle — contribute to GHG emissions, and policymakers thus may choose between a number of potential concrete norms in selecting policy targets. Selecting the appropriate concrete norm and behavior to target is vitally important to successfully deploying norms to change behavior.<sup>70</sup> There are two reasons for this. First, some concrete norms and behaviors may be much harder to create or activate than others. Second, and perhaps more importantly, even if a policy succeeds at instilling a concrete norm, that norm will not change individual behavior if there are sufficient barriers to such change. Significantly, local governments possess community information important for ascertaining which concrete norms are feasible to activate and translate into behavior change in a community.<sup>71</sup>

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<sup>69</sup> E.g., McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 397–407 (discussing the expressive function of law). R

<sup>70</sup> Ela, *supra* note 26, at 125 (“Selecting the most promising behaviors to target — and the right interventions with which to target them — are key factors in designing such a [norm-based individual emissions reduction] program.”); see also Michael P. Vandenberg et al., *Implementing the Behavioral Wedge: Designing and Adopting Effective Carbon Emissions Reduction Programs*, 40 *Env'tl. L. Rep.* (Env'tl. Law Inst.) 10547, 10551 (2010) (recommending that policymakers target actions with both “*technical potential* (the amount of impact an action has when it is undertaken)” and “*behavioral plasticity* (the proportion of households that can be induced to take the action by effective policies)”); Amanda R. Carrico et al., *Costly Myths: An Analysis of Idling Beliefs and Behavior in Personal Motor Vehicles*, 37 *ENERGY POL'Y* 2881, 2882 (2009) (criticizing policymakers’ “focus on behaviors” with high elasticity, or potential for environmental impact, and recommending that efforts to achieve voluntary changes in behavior focus more on plasticity). R

<sup>71</sup> But see Ela, *supra* note 26, at 100 (“Because so many different individual behaviors contribute to carbon dioxide emissions, a logical approach to creating short-term aggregate reductions is a single national program targeting a number of separate, easily changed behaviors.” (citations omitted)). R

### 1. Assessing Visibility

Leading accounts of norm formation (the external or social models) posit that norms arise and influence behavior because individuals anticipate that others will informally sanction behavior that does not comply with the norm and reward behavior that does comply with the norm.<sup>72</sup> A key condition necessary for the development of a norm under this model is that the behavior subject to the norm be visible, i.e. that there be “some risk that others will detect whether one engages in” the norm-subject behavior.<sup>73</sup> Purely private behavior does not provide opportunity for the judgment and subsequent sanction or reward necessary to support the development of a social norm.

Significantly, whether or not a behavior is visible may depend on community-specific conditions. Take, for example, decisions about the temperature at which water heaters should be set. This decision can have a significant impact on individual emissions.<sup>74</sup> In many communities, that decision will be largely invisible to others. However, in communities characterized by older apartment complexes, co-ops, or condominiums where tenants or owners share the use of a water heater, that decision may be more observable, made in the course of open, semi-public discussion at shareholder or board meetings. Another useful example is the decision about how

<sup>72</sup> DAVID HUNTER, JAMES SALZMAN & DURWOOD ZAEKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 104 (3d ed. 2007); McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 358–66 (setting forth an esteem theory of norm development); *see also* Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 112–13 (comparing and contrasting internal and external norms). Although this dynamic is relevant both to the origination of a norm and an individual’s decision to conform behavior to an existing norm, I will focus here on norm origination and discuss norm compliance below.

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<sup>73</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 358, 361–62 (describing the “inherent risk of detection” condition for norm development); *see also* Ela, *supra* note 26, at 123 (describing when behavior is visible and noting that behavior can be directly or indirectly visible through discussion or reporting). Of course, some environmentally damaging behaviors that are public may be harder to change precisely because they are intentionally conspicuous. *See* THORNSTEIN VEBLÉN, THE THEORY OF THE LEISURE CLASS: AN ECONOMIC STUDY OF INSTITUTIONS 59–60 (Oxford Univ. Press 2007) (1899) (describing the phenomena of “conspicuous consumption” and criticizing the concomitant “conspicuous waste”). Many individual behaviors that increase GHG emissions, such as driving a luxury SUV, may be considered examples of conspicuous consumption. Thus, to change behavior, norm management efforts may need to overcome competing current norms extolling consumption as a sign of social status, perhaps by replacing them with norms that extol “conspicuous non-consumption.” *See* COLIN BEAVAN, NO IMPACT MAN: THE ADVENTURES OF A GUILTY LIBERAL WHO ATTEMPTS TO SAVE THE PLANET, AND THE DISCOVERIES HE MAKES ABOUT HIMSELF AND OUR WAY OF LIFE IN THE PROCESS 141 (2009) (“I keep coming up against the idea that, here in the United States, to be a good citizen is to be an aggressive consumer. To be patriotic is to shop.”). Of course, for present purposes, the relevance of visibility is that it renders behavior subject to social norms at all — good or bad. Thus, public behavior presents an opportunity for changing or offering competing norms; with respect to private behavior, social norms (good or bad) may not influence behavior.

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<sup>74</sup> Vandenberg, Barkenbus & Gilligan, *supra* note 26, at 1746 (noting that simply reducing the temperature of a water heater from 140–150 degrees Fahrenheit to 120 degrees Fahrenheit “could produce as much as 1,466 pounds of CO<sub>2</sub> emissions reductions per year”).

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to set the thermostat, which can also have a significant impact on individual emissions.<sup>75</sup> In some communities, such as widely dispersed rural communities where visits between neighbors are rare, thermostat settings may be largely invisible. Where there are large buildings divided into apartments, however, decisions about the heating of common spaces (and even private spaces in older buildings where units share heat) may be communal and semi-public. And even in a community characterized by individual family homes, thermostat settings might be observable if neighbor visits are common, leading to the development of settled expectations about the appropriate warmth of clothing to wear when visiting others.<sup>76</sup>

The intensity and quality of observation of behavior may also vary between communities in ways relevant to norm formation. For example, there are a number of transportation choices, such as carpooling, driving habits, and the type of car driven, that can significantly impact an individual's emission of GHGs.<sup>77</sup> All of these transportation choices are observable in some sense. However, the relative anonymity of driving alongside thousands of other drivers in a large urban area, where one's car may be parked in a subterranean garage with three hundred others, is much different than the experience of driving in a smaller community where neighbors cross paths frequently and recognize one another's vehicles on the road and in their driveways at night.<sup>78</sup> The opinions of other urban expressway drivers, whether real or imaginary, "are likely to have at least some bearing upon the driver's decisions, even though he may never meet them."<sup>79</sup> However, one could expect an individual to place greater value on the esteem and potential

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<sup>75</sup> *Id.* at 1744 (noting that a two degree change in thermostat temperature could produce savings ranging from 1000 to 2000 pounds of CO<sub>2</sub> emissions per household, depending on, among other things, the source of energy used for heating and cooling, the efficiency of existing equipment, and current temperature settings).

<sup>76</sup> One interesting local take on making thermostat settings observable is that adopted by the community of West Bridgford in the United Kingdom. Residents are encouraged to sign a pledge card committing to take five out of a list of environmentally-friendly actions, including "[t]urn thermostat down 1 degree C," and then post the pledge card in their window. *The Pledges*, WEST BRIDGFORD IN TRANSITION: THE GREENING CAMPAIGN, <http://greeningwestbridgford.blogspot.com/2010/04/pledges-please-commit-to-5-of-them-and.html> (last visited Dec. 1, 2010) (on file with Harvard Law School Library). *But see* Ela, *supra* note 26, at 133 (recognizing that visitors to a home may render some in-home behavior visible, but concluding that "[a]lthough guests can theoretically observe some actions," the "small differences in temperature or upgraded thermostats, are likely to escape guests' notice completely").

<sup>77</sup> Vandenbergh & Steinemann, *supra* note 26, at 1700 tbl. 3 (estimating a possible reduction in total household energy consumption of 20% for purchasing a more efficient car, 4-6% for carpooling with two others, and 2% for altering driving habits).

<sup>78</sup> *See generally* Richard H. McAdams, *Signaling Discount Rates: Law, Norms, and Economic Methodology*, 110 *YALE L.J.* 625, 665 (2001) [hereinafter McAdams, *Signaling Discount Rates*] (contrasting the power of norms in "anonymous cities" and "smaller, more stable communities," and observing that "[l]ife in small towns is more regimented by social norms than is life in large, transient, anonymous urban centers").

<sup>79</sup> Ela, *supra* note 26, at 126 (footnote omitted). While Ela states that observation by many anonymous witnesses may influence driver behavior, he further recognizes the "stronger social influence[]" of passengers and those with greater social and physical proximity to the driver, suggesting that observation by one's neighbors would be more powerful than observation by strangers. *Id.* at 127.

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for sanction or reward of someone they know and can reasonably expect to see again. Thus, the type of observation, such as the identity of observer or possibilities for future contact, may impact the value an individual places on judgments about a behavior.<sup>80</sup>

Individual behaviors that contribute to environmental harms, and emission-relevant behaviors in particular, have been characterized as predominantly private and unobservable, and therefore difficult to influence using social norms.<sup>81</sup> However, as described above, whether that is in fact the case will depend, for some behaviors, on community-specific conditions. Local governments, with their intimate knowledge of community lifestyles, can readily discern whether (and how) a behavior is observed, an important consideration in assessing the feasibility of attempting to use social norms to change a behavior. Local governments can thus contribute much to determinations of which behaviors may be the best targets for social<sup>82</sup> norm campaigns in their communities.

<sup>80</sup> See generally McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 366–67 (explaining that the “intensity” of esteem/disesteem associated with a behavior can vary depending on the number of individuals who engage in the behavior).

<sup>81</sup> Green, *You Can’t Pay Them Enough*, *supra* note 26, at 422 (“It may be particularly hard for third parties to monitor and sanction behavior related to an issue like climate change, which requires individuals to take a broad range of largely non-observable actions (from using the car less to insulating homes). It is much harder to monitor and collectively sanction such activities than it is to sanction littering, which involves a distinct, relatively observable act.”); Lin, *supra* note 26, at 1156 (recognizing that some emission-relevant behaviors, such as purchasing a car or installing solar panels, are observable, but concluding that “many other behaviors, such as the amount of energy use within one’s home or the frequency of vehicle use, are much more difficult to monitor and sanction” (footnote omitted)). GHG-emitting individual behaviors may be characterized as high-visibility, lower-visibility, or inherently low-visibility. Ela, *supra* note 26, at 126–43. Generalizing about the visibility of behavior may, however, miss some local or regional differences. For example, drivers in some communities may be “especially prone to idle in busy waiting areas.” *Id.* at 128. In rural Minnesota, drivers may be most likely to idle in driveways to warm up their cars; in communities located near popular trucking routes, idling may be most common by napping truck drivers at isolated rest stops. Thus, it might be useful to ask where drivers are “especially prone to idle” in a specific community. Notably, Ela seems to appreciate this possibility, observing that some behaviors may not be visible in society at large, but may nonetheless be visible in subgroups, including towns and neighborhoods. *Id.* at 121.

<sup>82</sup> Some conclude that campaigns targeting social norms will not succeed in changing environmentally significant individual behavior, both because the behavior might not be readily observable and because, even if observable, the behavior might not occur in closely knit contexts where social sanctions can be imposed. See, e.g., Lin, *supra* note 26, at 1155–56 (“Social norms can serve as effective means of addressing collective action problems where individuals have face-to-face contact with other potential cooperators who can enforce those norms. However, . . . in loose-knit, large-group situations, social sanctions are likely to have little effect. In these circumstances . . . one must rely instead on personal norms . . . .” (footnotes omitted)). However, that the conditions required for social norms to develop or influence behavior are not always present with respect to individual environmental behaviors does not suggest that we should not attempt to identify instances where those conditions are present and social norm management may be deployed. Knowledge about visibility can be used to evaluate the feasibility of a social norm campaign. See generally Ela, *supra* note 26, at 117 (arguing that “the strength of social influences should vary according to the visibility of behavior — so that interventions which maximize visibility should, other things being equal, also maximize the effect of social influences”), 124 (“[S]ocial influences have the strongest

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2. Recognition of Barriers

Local governments are also in a good position to identify barriers that may frustrate compliance with the specific behavior prescribed by a concrete norm. This holds true for the external model of norms discussed above, as well as for another leading theory of norm formation and compliance, the internal (or personal) norms model. Under the internal model, an individual “intrinsically values obeying a social norm [and] will pay something to obey the norm for its own sake, independent of any resulting advantage or disadvantage. In the language of economics, intrinsic value implies a ‘taste’ for obeying the norm.”<sup>83</sup>

The recognition of a norm and desire to follow that norm (whether as a result of external or internal factors or a combination of the two) is simply one component of a decision process informed by a wide variety of considerations. Contextual factors thought to influence environmentally significant behavior include

attributes individuals typically carry from birth (cultural background, religion, family economic condition, social class, etc.), the individual’s acquired capabilities (e.g., education, skills in home maintenance that enable certain consumer behaviors or in political organizing that enable committed activism), the individual’s immediate situation (e.g., rural or urban residence, status as homeowner or renter, local climatic characteristics, ownership of motor vehicles and appliances), constraints and opportunities coming from public policy (regulation, energy taxes, incentive programs), economic variables (e.g., income, prices and availability of goods and services, access to financing) and many other factors.<sup>84</sup>

Barriers to compliance are those considerations that weigh against or prevent the behavior prescribed by a norm and can include everything from lack of information to cognitive limitations to simply the effort or sacrifice required to conform with the norm.<sup>85</sup> Competing norms and values may also pose a

effects where behaviors are most visible,” and thus “scarce resources should be directed toward the most visible behaviors first . . .”).

<sup>83</sup> Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1583; *see also* Robert D. Cooter, *Three Effects of Social Norms on Law: Expression, Deterrence, and Internalization*, 79 OR. L. REV. 1, 7 (2000) [hereinafter Cooter, *Three Effects of Social Norms on Law*] (differentiating between instances where an individual internalizes a norm and therefore places an “intrinsic value on obeying a norm” and where individuals place only “instrumental value” on norm compliance). The external/esteem/social norms model and internal/personal norms model are sometimes viewed as complementary and sometimes as competing accounts of norm formation and compliance. Compare McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 376–81 (reconciling esteem and internalization theories) with POSNER, *supra* note 53, at 43–44 (2000) (offering a signaling theory of norms and dismissing internalization theories as “methodologically sterile” and “unsatisfying”).

<sup>84</sup> Paul C. Stern, *Information, Incentives, and Proenvironmental Consumer Behavior*, 22 J. CONSUMER POL’Y 461, 465 (1999) [hereinafter Stern, *Proenvironmental Consumer Behavior*].

<sup>85</sup> Vandenbergh & Steinemann, *supra* note 26, at 1697–98; *see also* Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 6 (“Obeying a norm often costs something in terms

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barrier to norm compliance because “normative constraints are frequently not complementary but in tension.”<sup>86</sup> So, for example, “within an individual, there may be conflicting norms competing for control . . . any one of which might command greater community or social approval” and therefore “trump the environmental protection norm and cause the individual to behave in an environmentally irresponsible manner.”<sup>87</sup>

Under the internal or personal norms model, barriers may prevent an individual from behaving in accordance with a norm even where the individual has internalized the norm. A norm may cause an individual to feel a “sense of obligation” and form a “behavioral intention” to comply with the norm, but the individual may not act on that intention (and conform her behavior to the norm) because of the above-described barriers.<sup>88</sup> Under the external model, barriers are relevant both to norm formation and compliance. A norm will arise only if “the esteem benefits exceed, for most people, the costs of engaging in” an esteemed behavior or “for most people, the esteem costs exceed the benefits of engaging in” a disesteemed behavior.<sup>89</sup> Similarly, after a norm arises, a rational individual deciding whether to comply with an existing norm is expected to tabulate the costs and benefits, including loss or accrual of esteem, and behave consistently with the outcome of that utility calculus.<sup>90</sup>

Ultimately, then, compliance with a norm — even when internalized or widely accepted — is simply one consideration among many that inform an individual’s behavioral choices.<sup>91</sup> And the presence of barriers that weigh against norm compliance can prevent a norm from arising or from successfully changing behavior. Barriers that frustrate norm compliance thus effectively circumscribe the behaviors that norms can be expected to influence.<sup>92</sup>

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of money, time, effort, unpleasantness, or risk. To illustrate, complying with tax law costs money, cleaning up after a dog is unpleasant, shunning someone can be risky, and forbearing from smoking may require effort.”)

<sup>86</sup> Scott, *supra* note 61, at 1612 (discussing the competing values and norms weighed by individuals contemplating compliance with a rule barring dogs from a nature trail); *see also* Vandenberg & Steinemann, *supra* note 26, at 1708–09 (“Other social norms also can serve as barriers . . . . [S]omeone . . . may want to show [her affluence] by not being influenced by the cost of home heating, or a business executive may use a large car, air travel, and a large office to demonstrate her importance.” (footnote omitted)).

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<sup>87</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 152.

<sup>88</sup> Vandenberg & Steinemann, *supra* note 26, at 1708.

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<sup>89</sup> McAdams, *The Origin, Development and Regulation of Norms*, *supra* note 51, at 358.

<sup>90</sup> *See, e.g.*, Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 7–8 (“Obeying a norm often imposes direct costs . . . . In addition, obeying a norm often has instrumental value . . . . Obeying a norm also conveys the benefit of avoiding a social sanction . . . . The net cost of obeying a norm equals the direct costs minus the instrumental benefit.”).

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<sup>91</sup> Sunstein, *supra* note 52, at 940 (identifying “competing norms, intrinsic value, and effects on self-conception” as, in addition to norms, “other ingredients in choice”); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2031 (1996) (identifying “the intrinsic utility of choice, the reputational utility of choice, and the effects of choice on a person’s self-conception”).

<sup>92</sup> Lin, *supra* note 26, at 1160–61 (explaining that even individuals who intend to comply with a norm may not do so because “[e]ven if a concrete norm is activated, structural constraints and other external factors can limit behavioral choices and influence individual actions” (footnote omitted)); Stern, *Proenvironmental Consumer Behavior*, *supra* note 84, at 466

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Leading environmental law-and-norms scholars concede that “norm activation is not a panacea. Reducing many carbon-emitting behaviors could have negative monetary payoffs for the individual, require changes in deeply rooted habits, or face financial or infrastructure barriers. For these behaviors, studies suggest that norm activation may have limited effects.”<sup>93</sup> Efforts to use norms to change behavior will be most successful when aimed at “behavior changes” with low barriers, namely barriers that “require little effort or sacrifice to implement . . . do not require significant upfront financial expenditure or sophisticated cognitive processing, and . . . are not subject to major expenditures of effort or psychic cost.”<sup>94</sup> Identifying and evaluating barriers to norm compliance thus narrows the playing field for policymakers seeking to use norms to influence behavior in a vitally important way. Barrier identification allows policymakers to target behaviors where barriers are low (or can be made so) and avoid wasting resources where barriers will frustrate adoption of or compliance with a norm.

Although some barriers to behavior change can be readily ascertained and generalized for most individuals (for example, the increased purchase price of a hybrid car), important barriers to behavior change, such as habit, inconvenience, level of effort, community infrastructure, and competing norms/values, are much more context- and community-dependent.<sup>95</sup> Local information about contextual factors that affect behavior can help predict if the time and place is right for a norm campaign and which concrete norms (and associated behaviors) are feasible to target in a given community.<sup>96</sup>

A few examples help to illustrate the relevance of local information to barrier identification and norm target selection. Imagine a national campaign aimed at instilling a concrete norm in favor of fuel-efficient cars. This campaign is designed to occasion the following behavior change: individuals

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(“When capabilities and constraints strongly predispose for or against action, attitudes and other personal-domain variables matter little in the short run.”); Ela, *supra* note 26, at 127–28 (lamenting that even “high-visibility behaviors” may not be the appropriate target for a norm campaign if they are “costly (in money or time)”).

<sup>93</sup> Vandenbergh & Steinemann, *supra* note 26, at 1724 (footnote omitted).

<sup>94</sup> *Id.* at 1699 (referring to these types of behaviors as “low-hanging fruit” and advocating that norm campaigns focus on such behaviors); see also Vandenbergh, Barkenbus & Gilligan, *supra* note 26, at 1709 (describing the low-hanging fruit criteria).

<sup>95</sup> For example, as part of New York City’s GreeNYC campaign, the City exhorts citizens to consider selling their cars, explaining: “[i]f you don’t drive every day, carsharing is a feasible alternative to owning a car. Sell your vehicle to save yourself money, energy, and the hassle of parking your car in the City.” *GreeNYC — On the Go*, THE CITY OF NEW YORK, <http://www.nyc.gov/html/greenyc/html/onthego/onthego.shtml> (last visited Dec. 1, 2010) (on file with Harvard Law School Library). This account of barriers and benefits is indelibly shaped by the realities of life in New York City — public transportation is available, parking a car is a significant expense and inconvenience, and so on. An exhortation to sell your car would seem to be an impossibly uphill battle in many other places where the rationales offered in the GreeNYC campaign do not apply.

<sup>96</sup> Stern, *Proenvironmental Consumer Behavior*, *supra* note 84, at 464 (“[T]he extent to which behavior can be changed by interventions in the personal domain, such as education and information, depends on the strength of contextual forces: There are times and places when personal-domain interventions are likely to be effective and others when they will predictably fail.”).

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replace their trucks and SUVs with smaller, more fuel-efficient compact cars. What are the barriers (and benefits) to giving up a truck or SUV in favor of a smaller, more fuel-efficient car? The answer to that question is context and community specific.

Consider a suburban community without access to mass transportation where vehicles are primarily used for commuting and a relatively rural community populated largely by actual and gentlemen farmers. The utility calculus for the average resident of these communities could differ greatly. Although some differences between a truck or SUV and a compact car can be roughly generalized — a truck or SUV rides higher and is perhaps more comfortable, has different functionality (towing, passenger capacity), and uses more gas than a compact car — these kinds of variables would have different salience for the suburban and rural driver. The suburban driver might place little value on the loss of functional use, such as an inability to haul loads or tow; the rural driver might place a very high value on the loss of functional use. It is likely that the set of competing norms and values would be quite different for a suburban and a rural driver. For example, a rural driver who has internalized the abstract norm “be a good neighbor” might well view use of a truck to assist neighbors as a concrete behavior supportive of the good neighbor norm. Other possible competing norms that might be particularly relevant for a rural driver include the abstract norms of self-reliance and personal responsibility. These might translate into concrete norms of “be able to plow my own access road” or “be able to navigate snowy, unplowed roads.” A summary of the utility calculus employed by drivers from these types of communities when considering a truck or SUV versus compact car might look something like this:

	<b>Suburban, no mass transport</b>	<b>Rural</b>
<b>Barriers to fuel-efficient compact car</b>	Limited competing norms Limited loss of use	Significant competing norms Significant loss of use
<b>Benefits from fuel-efficient compact car</b>	Significant gas savings Possible “halo” effect, guilt avoidance, or informal sanction/reward (if norm accepted)	Limited gas savings Possible “halo” effect, guilt avoidance, or informal sanction/reward (if norm accepted)
<b>Outcome of utility calculus</b>	Norm compliance more likely	Norm compliance less likely

It is easy to foresee how a range of community characteristics could change the nature of barriers and benefits and the ultimate utility calculus. For example, a suburban community with access to mass transportation where vehicles are primarily used for local errands would not experience the same gas savings from a switch to compact car as a suburban community without such access. A community with dominant religious affiliations re-

sulting in larger family size might place greater value on passenger carriage capabilities and safety. A suburban community near outdoor recreation and accustomed to weekend camping, rafting, and trail riding might place greater value on functions such as towing and four-wheel drive.

Members of a community may also share a similar “reference point” — a background of existing behaviors, lifestyle habits, or expectations — that affects the utility calculus:

[I]t is not the outcome *per se* that determines the well-being or utility an individual obtains from a particular activity, but the change from some reference point. The reference point can come from different sources such as “past consumption, expectations, social comparison, status quo, and such.” Peoples’ decisions to take action to reduce GHG emissions would then depend in part on the reference point. The reference point for the type of automobile or amount of use of the car, for example, may depend on past consumption (the type or size of car driven in the past, or how much one drove in the past) or social comparison (what type of car others in one’s neighborhood drive or how much they drive).<sup>97</sup>

Individuals thus understand the costs and benefits of a choice in part by comparing the change from a preexisting reference point. “Both existing norms and the ability of norms to change depend heavily on the social, economic, and historical context of the community in which these norms developed.”<sup>98</sup> As policymakers attempt to predict the utility calculus and the potential for changing a given behavior, understanding a community’s reference points may prove useful.

Moreover, predictions about utility calculus should also weigh the strength of competing norms. As with the presence or absence of norms, the strength of norms relevant to an applicable behavior may vary between local communities. Much of the information needed to assess the strength of a norm — “[H]ow much opprobrium attaches to a violation?” “[W]hat kind of attitude is signaled by a violation? [W]hat kind of attitude is provoked by violators?”<sup>99</sup> — might be more readily understood at the community level. In short, it may be easier at the community level both to identify and assess the strength and significance of competing norms that may pose barriers to compliance.<sup>100</sup> Local knowledge may thus enhance predictions about

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<sup>97</sup> Green, *Self Control, Individual Choice, and Climate Change*, *supra* note 26, at 89 (footnotes omitted).

<sup>98</sup> Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 116 (citation omitted). In regard to the background culture with respect to choice of vehicle, consider this description of the residents of Tulsa, Oklahoma: “To drive large pick-up trucks or SUVs is to many Tulsans a badge of local patriotism, a means to support the petroleum-based local economy . . . .” Osofsky & Levit, *supra* note 41, at 421.

<sup>99</sup> Sunstein, *supra* note 52, at 939–40 (describing the factors relevant to assessing the strength of a norm).

<sup>100</sup> Although the norms terminology can be complex, the intuitions of local officials or other community members about the types of behaviors most susceptible to norm change may

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the utility calculus likely to predominate in a community and thereby inform decisions about the concrete norms and behaviors most readily influenced.

3. *Navigating Local Social Meaning*

Similarly, context, defined in part by local or regional conditions and attitudes,<sup>101</sup> can dictate the social meaning of behavior and thereby influence the utility calculus.<sup>102</sup> As noted above, the benefit flowing from compliance with a norm or the cost of violating a norm (e.g., avoidance of guilt, avoidance of informal social sanction, cultivating esteem) is one of the costs/benefits that an individual may weigh. Thus, whether an action implicates a norm and the strength of the norm may both affect the utility calculus. Additionally, understanding the social meaning underlying a norm can define the options for altering it. Knowledge of local context can thus be crucial for understanding whether or not an action implicates a norm and, if so, the content and relative strength of the norm.<sup>103</sup>

Thus, for example, the decision to risk death by accepting a duel in the American South could be viewed as rational because the social sanction for declining a duel was so high.<sup>104</sup> Government efforts to reduce dueling might have greatly benefited from an understanding of the region-specific social meaning of dueling. With respect to dueling, laws barring duelists from holding public office might have been more effective than laws simply prohibiting dueling because the public office disqualification would “ambiguate” the social meaning of declining a duel, allowing decliners to cast their declination as an effort to preserve their gentlemanly opportunity to serve the public.<sup>105</sup> Accordingly, the social meanings underlying the norm of dueling shaped the response to policies designed to stop dueling.

The social meaning of a specific behavior may further differ between communities even where those communities subscribe to a shared abstract norm. For example, “[i]n some neighborhoods, asking lots of questions

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nonetheless prove prescient. “Because each of us spends much of each day swimming in social waters, we each have a deep intuitive understanding of [the] social phenomena” that complicated norm analysis often yields. Ellickson, *Evolution of Social Norms*, *supra* note 51, at 63.

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<sup>101</sup> Sunstein, *supra* note 52, at 934 (“You may purchase an American car, or display the flag on July 4, or engage in risky behavior because of existing norms in your community.”).

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<sup>102</sup> Lawrence Lessig, *Social Meaning and Social Norms*, 144 U. PA. L. REV. 2181, 2183–84 (1996) [hereinafter Lessig, *Social Meaning and Social Norms*]; Lessig, *The Regulation of Social Meaning*, *supra* note 53, at 962–72 (describing the context-specific meaning of actions, such as dueling and helmet-wearing, in different temporal and geographic communities).

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<sup>103</sup> The “salience that particular norms have within a given social context” is related to the “price” of violating the norm, and “[p]rice is always a function of context.” Lessig, *Social Meaning and Social Norms*, *supra* note 102, at 2184–88.

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<sup>104</sup> Lessig, *The Regulation of Social Meaning*, *supra* note 53, at 970 (“[B]y rightfully and properly executing a duel, though risking death, one could establish oneself as a gentleman, a person to be trusted and engaged, and thus awarded significant social advantages. Social meanings could well be such that there would be a net benefit from engaging in a duel . . .”).

<sup>105</sup> *Id.* at 971–72.

shows a friendly interest and means one is a good neighbor; in other neighborhoods, asking unnecessary questions is nosy and means that one is a poor neighbor.”<sup>106</sup>

One can similarly imagine instances where social meaning varies in different communities and could enhance or undermine efforts to influence GHG-emitting behaviors. For example, consider an effort to reduce car use by encouraging elementary school students to walk to school. In some communities, driving to school might signal wealth and walking relative poverty. A program that successfully casts walking to school as a “green” activity could ambiguate the social meaning of walking to school — a walker could be forced to walk out of poverty or could choose to walk because of a desire to help the environment. This would reduce the price of foregoing a car for walking. However, in a community where being “green” is not embraced or respected (perhaps the abstract environmental norm is not accepted or valued within that community),<sup>107</sup> such a program could backfire and make the “price” for giving up a car in favor of walking even higher because walking would signal two undesirable traits — poverty and greenness. Many individual behaviors that result in GHG emissions occur as a result of individuals’ day-to-day activities, and thus the context in which they occur is also largely local. Understanding the social meaning of behavior locally may therefore prove helpful in designing effective campaigns to change behavior.

### *B. Framing the Appeal*

Local information, including knowledge of local attitudes and values, may also be important for structuring a norm campaign to activate a particular concrete norm or behavior. Specifically, local information may prove useful for (1) identifying the abstract norm(s) that the desired concrete norm will service; and (2) guiding decisions about how to communicate information designed to connect abstract and concrete norms. Local information may thus be important not only to establish the goal of a norm campaign (the specific concrete norm(s) or behavior(s) to be targeted) but also for its design — structuring the norm campaign to achieve that goal.

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<sup>106</sup> McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 386.

<sup>107</sup> See, e.g., JACQUELINE VAUGHN SWITZER, GREEN BACKLASH: THE HISTORY AND POLITICS OF THE ENVIRONMENTAL OPPOSITION IN THE U.S. 191, 195 (1997) (describing the “wise-use” movement and anti-environmentalism in communities dependent on the timber industry); Jeffrey J. Rachlinski, *The Psychology of Global Climate Change*, 2000 U. ILL. L. REV. 299, 317 (2000) (doubting that social norms will suffice to respond effectively to climate change and referencing the “[p]olarization in attitudes about global climate change”); LUNTZ RESEARCH COMPANIES, STRAIGHT TALK. THE ENVIRONMENT: A CLEANER, SAFER, HEALTHIER AMERICA 142 (2002), available at <http://www2.bc.edu/~plater/Newpublicsite06/suppmats/02.6.pdf> (noting in a political strategy document that the term “environmentalist” and some environmental groups and advocates have “an extremist image that turns off many”).

1. *Grounding Norm Campaigns in Locally-Salient Abstract Norms*

Concrete norms and the specific behaviors that they support are particular manifestations of broad, abstract norms.<sup>108</sup> Thus, policymakers seeking to encourage an individual to behave in a particular way need to link that concrete behavior or norm to one of the abstract norms held by the individual.<sup>109</sup> Notably, a concrete norm or behavior may find support in different abstract norms.<sup>110</sup> For example, a neighborhood school carpool could be grounded in an abstract norm of environmental protection<sup>111</sup> or perhaps the desire to be a good neighbor.<sup>112</sup>

Campaigns to promote concrete behaviors that reduce GHG emissions could, of course, be grounded in an appeal to an abstract norm of environmental protection. However, relying wholly on the abstract norm of environmental protection may be unwise. Although some evidence suggests that a norm of environmental protection is common, evidence also indicates that it may be weak (or “shallow”) and frequently subverted to other prevailing norms.<sup>113</sup> Think, for example, of the warnings sounded about the import of an apparent growth in “green consumerism.” That many individuals sup-

<sup>108</sup> Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1595–96; McAdams, *The Origin, Development, and Regulation of Norms*, *supra* note 51, at 382–86, 395–96 (defining abstract and concrete norms and discussing how critics can change noninternalized esteem-based norms quickly by providing a new “analysis of the relationship between concrete behavior and the abstract norm; Vandenberg, *Order Without Social Norms*, *supra* note 26, at 1114 (“Norms theorists in the legal literature have asserted that individuals hold specific, first-order or concrete norms, as well as generalized, second-order or abstract norms.” (citation omitted)); *see also* Green, *You Can’t Pay Them Enough*, *supra* note 26, at 417 (describing the relationship between first order and second order preferences).

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<sup>109</sup> Vandenberg & Steinemann, *supra* note 26, at 1707 (“Many legal scholars and social psychologists agree that behavior change frequently arises from shifts in beliefs that connect concrete and abstract norms.”).

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<sup>110</sup> *Id.* at 1713. Richard McAdams also recognizes the importance of information and beliefs about the relationship of a concrete norm to the supporting abstract norm. McAdams, *Origin, Development and Regulation*, *supra* note 51, at 385–86, 395–96.

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<sup>111</sup> Michael P. Vandenberg, *Beyond Elegance: A Testable Typology of Social Norms in Corporate Environmental Compliance*, 22 *STAN. ENVTL L.J.* 55, 95–99 (2003) (describing norms relevant to environmental protection).

<sup>112</sup> McAdams, *Origin, Development, and Regulation*, *supra* note 51, at 383 (identifying “be a good neighbor” as a stable, abstract norm).

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<sup>113</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 152 (conceding that “the abstract environmental protection norm may not be sufficiently robust or widely enough held to overcome all the barriers to responsible environmental behavior . . . and activate concrete personal norms favoring specific beneficial environmental action.” (citation omitted)); Andras Takacs-Santa, *Barriers to Environmental Concern*, 14 *HUM. ECOLOGY REV.* 26, 26 (2007) (questioning the prevalence and meaning of professed environmental concern and identifying barriers to increasing environmental concern); Green, *Self Control, Individual Choice, and Climate Change*, *supra* note 26, at 78 (contrasting polls showing strong support for environmental protection with contradictory consumption and voting decisions); Green, *You Can’t Pay Them Enough*, *supra* note 26, at 415 (“[C]oncern of the general public appears to be ‘wide’ but ‘shallow.’”); Lin, *Evangelizing Climate Change*, *supra* note 26, at 1162–63 (explaining that although “the environmental protection norm is more widespread today than a half-century ago,” it is a “‘shallow’ norm that is unlikely to be a strong motivator of carbon-neutral individual behavior” (citation omitted)).

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port protection of the environment generally and are willing to spend more for a hip pair of organic Levis may suggest little about their willingness to reduce their overall consumption or take other, less hip or convenient, actions to reduce environmental harms.<sup>114</sup>

The shallowness of the environmental protection norm presents a significant difficulty since, as explained above, norms vary in strength, or the “pull” that they exert, and the desire to comply with even a strong norm is simply one of many frequently countervailing factors (such as extra effort or reduced convenience) that influence behavior. Norm management succeeds by tipping the utility calculus in favor of the adoption of a particular behavior; where the value individuals place on compliance with a norm is already low because the norm is weak, only those few behaviors with virtually no barrier to their adoption can feasibly be targeted. Accordingly, scholars question whether the norm of environmental protection is adopted widely enough or embraced strongly enough to support broad behavioral change.<sup>115</sup> Moreover, even if a general environmental protection norm is widespread, terms such as “environmentalist” can be polarizing.<sup>116</sup> Information campaigns attempting to appeal to a more general environmental protection norm would need to be carefully designed to avoid limiting the receptive audience by triggering an ideological reaction.

One solution to the limited utility of the abstract norm of environmental protection is to identify an alternate, widely held and robust abstract norm that could support appeals to virtually all citizens for behavior changes that reduce emissions.<sup>117</sup> However, the feasibility of this project is unclear. “[N]orms are highly context-sensitive. Norms are both specific and soft; that is, they apply to particular environments and populations, and, even within those constraints, normative meaning changes with particular circumstances.”<sup>118</sup> Another proposed solution is to augment the values that underlie the environmental protection norm to make the environmental norm itself more pervasive and robust and hence capable of supporting widespread behavior change.<sup>119</sup> In a similar vein, it might be possible to encourage more

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<sup>114</sup> See Alex Williams, *Buying into the Green Movement*, N.Y. TIMES, July 1, 2007, § 9 (Style Desk), at 1 (correction appended July 8, 2007) (describing a critique offered by some environmentalists of green consumerism).

<sup>115</sup> Green, *You Can't Pay Them Enough*, *supra* note 26, at 414–15 (describing disputes about how widespread an environmental protection norm is in the United States); Vandenberg & Steinemann, *supra* note 26, at 1713.

<sup>116</sup> LUNTZ, *supra* note 107 at 142 (“The mainstream, centrist American now sees the excesses of so-called ‘environmentalists,’ and prefers the label ‘conservationist’ instead.”).

<sup>117</sup> Vandenberg & Steinemann, *supra* note 26, at 1713 (observing that “[g]iven the vast number of people who must change their behavior, the challenge posed by climate change is to identify abstract norms that are sufficiently widespread to influence individuals who do not identify with environmentalism,” and suggesting that a concrete norm of carbon neutrality could be supported by appeal to the abstract norm of personal responsibility).

<sup>118</sup> Scott, *supra* note 61, at 1638 (arguing that the context-specific nature of norms frustrates attempts to develop general theories of norm origination and internalization).

<sup>119</sup> Lin, *supra* note 26, at 1163–67 (arguing that value change is necessary to support meaningful behavioral changes with respect to climate change); see also Babcock, *Achieving Broader Changes*, *supra* note 26, at 13 (suggesting that “a partial solution [to limitations of

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individuals to adopt personal environmental “identities” or “commitments.”<sup>120</sup> However, changing abstract norms (or values, identities or commitments) would likely prove to be a difficult and long-term task,<sup>121</sup> and, moreover, a task that may not be necessary, at least in the near term. As described below, rationales for changing behaviors that emit GHGs can be presented in ways that do not require an individual to accept that climate change is a problem or otherwise rely on the environmental protection norm.

A focus on behavior change in local communities with the benefit of local information opens up another possibility: tailoring norm campaigns to the existing abstract norms (or values, identities and commitments) most widely accepted and strongly held in a particular community.<sup>122</sup> In explaining how identity affects choices, Andrew Green provides the following environmental example:

[A]ssume that there are two types of people, Greens and Reds, and that everyone thinks of themselves as Greens in the sense of “environmentally conscious.” Everyone believes someone who is Green should drive a Smart car and anyone who drives an SUV is not a “true” Green. An individual choosing to drive an SUV therefore experiences a cost in the form of anxiety at not matching his identity.<sup>123</sup>

One way to get more people to drive Smart cars instead of SUVs is to make more people Greens and fewer people Reds. This is perhaps a useful long-term goal, but a difficult task. Robert Cooter, for example, argues that “the state has only limited power to cause citizens to internalize values” and posits that the state should instead “prompt family, friends, and colleagues to instill civic virtue in each other” by “aligning law with morality.”<sup>124</sup>

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reliance on the abstract norm of environmental protection] lies in modifying the abstract environmental protection norm to address individual environmental responsibility.”); Green, *Creating Environmentalists*, *supra* note 26, at 7–11, 13–25 (describing how identity and commitments shape behavior and exploring possibilities for using law to encourage individuals to adopt environmentally friendly identities and commitments). R

<sup>120</sup> Green, *Creating Environmentalists*, *supra* note 26, at 17–26 (reviewing literature suggesting that progress on environmental issues requires a “shift in individuals’ values” and analyzing “ways in which environmental policy instruments may impact identities and commitments”). R

<sup>121</sup> Lin, *supra* note 26, at 1167 (recognizing the challenges of achieving value shifts); *see also* Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 143 (“Changing the existing abstract norm of environmental protection and creating a new norm are each difficult and lengthy processes.”). R

<sup>122</sup> *See* Sunstein, *supra* note 52, at 939–40 (stating that the strength of a norm will depend upon a number of factors that are perhaps most easily weighed at the community level). R

<sup>123</sup> Green, *Creating Environmentalists*, *supra* note 26, at 9–10. Of note, Green does not suggest that this anxiety will cause *all* Greens to avoid SUVs — he identifies a variety of factors that will influence a Green’s car choice. However, the anxiety at identity mismatch will presumably make it less likely that a Green (as opposed to a Red) will choose to drive an SUV. R

<sup>124</sup> Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 19–20. Cooter proceeds from the premise that “people tend to make moral commitments to increase their opportunities,” and thus they will internalize a norm if they perceive it is in their benefit to do so R

Thus, another approach (that does not require changing preexisting abstract norms, values or identities) is to let Reds be Reds and either (1) encourage them to drive Smart cars by changing the meaning of Smart car driving (perhaps by communicating that it is not a Green or Red activity, but an economically sensible activity) or (2) if the unpalatable “Green” association of a Smart car is too powerful, focus on different activities that could reduce Reds’ transportation emissions without triggering this negative meaning (such as taking fewer grocery trips, keeping tire pressure maintained, and carpooling).<sup>125</sup> For example, an effort to get citizens to carpool in a community with a widespread and strong environmental protection norm (Boulder, Colorado) could be grounded in an appeal to environmental protection; an effort to get citizens to carpool in a community lacking that norm could instead appeal to neighborliness or another, more locally salient, abstract norm. Texas, for example, a state where the environmental protection norm may be of limited utility, grounded an anti-littering campaign in an autonomy, or individual liberty, norm: “Don’t Mess with Texas — Real Texans Don’t Litter.”<sup>126</sup> The different approaches adopted by Seattle and Houston to reduce GHG emissions provide good examples of tailoring to local norms. As described by Victor B. Flatt in a recent article examining how local governments can use norms to create public-private partnerships with the business community, the mayors of both Seattle and Houston have taken steps to mitigate climate change “but their actions are shaped by their community. In Seattle, the mayor appeals to the local norm of environmentalism, while in Houston, the mayor appeals to the business advantages of controlling GHGs.”<sup>127</sup> Hari M. Osofsky and Janet Koven Levit provide a similarly interesting account of the distinct motivations and mechanisms undergirding climate mitigation measures in two very different cities: Portland, Oregon (characterized by a progressive political base) and Tulsa, Oklahoma (a “quintessential oil and gas city”).<sup>128</sup> Portland’s comprehensive mitigation

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because others with whom they have relationships will infer their “good” character from their behavior, thereby increasing opportunities. *Id.* at 19.

<sup>125</sup> One objection to this approach is that it constitutes a democracy-reducing bait and switch. As Robert Cooter observes, “[t]he controversy over what norms exist . . . is mild compared to the controversy over what norms ought to exist.” *Id.* at 5. This approach assumes state adoption of the goal of reducing emissions (at least for purposes of this Article to mitigate climate change) but advocates securing citizen participation in achieving that goal through sleight of hand, or masking the goal. A thoughtful consideration of this objection requires more attention than this Article can provide. At a minimum, however, it is worth noting that the initial state decision to limit emissions is subject to democratic review and that tailoring to existing abstract norms seems less intrusive than an effort by the state to actually shape or change those norms. The state could, for example, “learn to use the techniques of commercial advertising” to shape individuals’ preferences by linking desired behaviors with “traits desired by partners in relationships.” Instead of issuing speeding tickets a state could fund an ad campaign — “Women prefer men who drive carefully.” Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1598. For a discussion of the concerns raised by state efforts to change social meaning and the resulting “Orwell effect,” see Lessig, *The Regulation of Social Meaning*, *supra* note 53, at 1016–19, 1034–44.

<sup>126</sup> Babcock, *Achieving Broader Changes*, *supra* note 26, at 12.

<sup>127</sup> Flatt, *supra* note 47, at 478.

<sup>128</sup> Osofsky & Levit, *supra* note 41, at 420–22.

effort is grounded in “environmental[ ] altruis[m]” and represents “sustained effort backed by political will.”<sup>129</sup> In Tulsa, however, the impetus for local climate mitigation is not grounded in a simple appeal to environmental protection and instead arises from a confluence of “socio-economic, political, and cultural forces,” including the pressures of a municipal budget shortfall, competition between local businesses, and the development of a local nonprofit sector that embraces sustainable development (linking environmental protection to economic growth).<sup>130</sup>

Knowledge about the number, type, and relative strength of abstract norms continues to grow.<sup>131</sup> With respect to GHG emissions, there are a number of recognized abstract norms that could support GHG-reducing behaviors, including environmental protection, human health protection, and personal responsibility. It is easy to imagine a number of other values, including citizenship, patriotism, thrift, that might also form the basis for an abstract norm supportive of an appeal for emissions-reducing action.<sup>132</sup>

Divorcing norm campaigns from substantive, underlying goals (for example, convincing people to carpool because it is thrifty when the government’s true purpose is to reduce GHG emissions) does, however, potentially present two what might be termed “democratic” difficulties. First, it could be argued that divorcing will reduce or negate the utility of norm campaigns for generating or sustaining the political support necessary for government intervention in the first instance.<sup>133</sup> We cannot expect government to engage or continue to engage in norm campaigns designed to reduce GHG emissions if reducing GHG emissions is not accepted as a valid governmental aim. Second, divorcing may reduce accountability. For example, when government implements a norm campaign that seems on its face only to encourage thriftiness, but actually seeks to reduce GHG emissions, the bait-and-switch may effectively forestall objection from pro-thrift, climate skeptic citizens. These difficulties warrant more consideration than time and space constraints permit. For present purposes, I note only that the accountability question is hardly unique to this situation — it can and does arise in a

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<sup>129</sup> *Id.* at 413, 415.

<sup>130</sup> *Id.* at 421–27.

<sup>131</sup> See, e.g., Vandenberg, *supra* note 111, at 58 (identifying eight abstract norms: “law compliance, human health protection, environmental protection, autonomy, fair process, good faith, reciprocity and conformity”), 80–117 (reviewing empirical studies regarding the aforementioned norms). Vandenberg and Steinemann also identify the abstract “personal responsibility norm,” which they argue, when activated, can be linked to global warming and change individual carbon-emitting actions. Vandenberg & Steinemann, *supra* note 26, at 1678.

<sup>132</sup> See, e.g., Leslie Kaufman, *In Kansas, Climate Skeptics Embrace Cleaner Energy*, N.Y. TIMES, Oct. 18, 2010, at A1 (describing the Climate and Energy Project’s success in encouraging communities skeptical of climate change to nevertheless embrace practices limiting GHG emissions by “focusing on thrift, patriotism, spiritual conviction and economic prosperity”).

<sup>133</sup> I have commented on the potentially advantageous “feedback loops” between norm campaigns and civic behavior. See Kuh, *supra* note 45, at 929.

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similar fashion when the government engages in indirect regulation (as by regulating behavior through other modalities, such as markets).<sup>134</sup>

## 2. Using Local Knowledge to Communicate Effectively

Even after policymakers choose a concrete/abstract norm pairing to target, local information may offer another advantage in framing the appeal for behavior change by providing clues to policymakers about the kind of information most likely to cause individuals to connect the concrete norm to the abstract norm. With respect to personal norms, the Values-Beliefs-Norms (“VBN”) theory posits that “information can activate norms and induce behavior change if it creates a new belief that a value is threatened and that the individual can act to reduce the threat.”<sup>135</sup> Specifically, two kinds of belief may encourage activation of a concrete norm: “(1) an awareness of the consequences of the individual’s act regarding the objects of an abstract norm (referred to as ‘AC’), and (2) an ascription of personal responsibility for causing or preventing those consequences (referred to as ‘AR’).”<sup>136</sup> Educating an individual about whether and how a behavior affects an abstract norm can, however, prove complex.

Cultural cognition theory, for example, posits that “individuals’ positive and normative beliefs about the world around them are shaped by their core values, which inevitably color how people interpret information.”<sup>137</sup> Cultural cognition studies indicate that, particularly when it comes to climate science, simply “telling” individuals that their GHG emissions will have a given effect is unlikely to convince individuals of certain groups.<sup>138</sup> Individuals may accept or reject the scientific premises underlying climate change (including that GHG emissions contribute to climate change and pose risks to health and the environment) depending upon their cultural outlook as hierarchical, egalitarian, individualistic, or communitarian, and how that information is presented.<sup>139</sup> Individualists and hierarchs, for example, are

<sup>134</sup> Lessig, *The New Chicago School*, *supra* note 50, at 690 (describing how indirect regulation “may allow the government to achieve a regulatory end without suffering political cost”).

<sup>135</sup> Vandenberg & Steinemann, *supra* note 26, at 1707 (citing Paul C. Stern et al., *A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism*, 6 HUMAN ECOLOGY REV. 81, at 83–86, 92 (1999) [hereinafter Stern, *A Value-Belief-Norm Theory*]); *see also* Stern, *Proenvironmental Consumer Behavior*, *supra* note 84, at 462–63.

<sup>136</sup> Vandenberg & Steinemann, *supra* note 26, at 1707–08 (citing Stern et al., *A Value-Belief-Norm Theory*, *supra* note 135, at 83–86, 92).

<sup>137</sup> Lin, *supra* note 26, at 1174 (providing an overview of cultural cognition theory and describing its lessons for efforts to deploy norms to change emitting behaviors); *see also* Dan M. Kahan, *The Cognitively Illiberal State*, 60 STAN. L. REV. 115, 116–18 (2007); Dan M. Kahan et al., *The Second National Risk and Culture Study: Making Sense of — and Making Progress In — The American Culture War of Fact* (GWU Legal Studies Research Paper No. 370; Yale Law School, Public Law Working Paper No. 154; Harvard Law School Program on Risk Regulation Research Paper No. 08-26), *available at* <http://ssrn.com/abstract=1017189> [hereinafter Kahan et al., *The Second National Risk and Culture Study*].

<sup>138</sup> *E.g.*, Kahan et al., *The Second National Risk and Culture Study*, *supra* note 137.

<sup>139</sup> *Id.* at 3.

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unlikely to “credit information about climate change” when told that climate change should be addressed through the adoption of more pollution controls but are more receptive to that same information when told that climate change should be addressed by increasing nuclear capacity.<sup>140</sup> Thus, an information campaign designed to “change beliefs about the economic and human health harms that individual carbon emissions will cause” in order to effect behavior changes based on an appeal to the personal responsibility norm<sup>141</sup> could founder with respect to individualists and hierarchs unless the information is carefully presented so as not to trigger resistance arising from their cultural outlook. Communication approaches should therefore be structured to take account of cultural outlook.<sup>142</sup>

Cultural cognition effects are one consideration in the design of effective information campaigns; other considerations include everything from the identity of the author to the proximity between information provision and target behavior<sup>143</sup>, to the method for accounting for cognitive biases<sup>144</sup>, and to the avoidance of information overload.<sup>145</sup> When norm activation requires the communication of information to change beliefs, the method of communication and the framing of the message will likely prove integral to achieving the desired belief change.<sup>146</sup> For many of the same reasons, local information may prove as useful to selecting and packaging a message as to selecting concrete and abstract norms to target.<sup>147</sup> To be effective, “environmental information must ‘resonat[e] with the values of the recipient,’ especially with people who have self-enhancing values, such as material and personal

<sup>140</sup> *Id.* at 4–6.

<sup>141</sup> Vandenberg & Steinemann, *supra* note 26, at 1717.

<sup>142</sup> See generally Kahan, *The Cognitively Illiberal State*, *supra* note 137, at 145 (suggesting that laws be explained in terms that appeal to divergent worldviews through a process of “expressive overdetermination”).

<sup>143</sup> Vandenberg & Steinemann, *supra* note 26, at 1729, 1731–32 (observing that “public information campaigns will need to reflect a sophisticated understanding of how information is received, processed, and used by individuals,” and describing research identifying factors important for communicating information to effect behavior change); see also Sunstein, *supra* note 52, at 950 (observing that “reactions to information turn a good deal on how the information is framed” and providing as an illustration that “energy conservation programs are far more effective if they point to the dollars lost through failure to conserve than if they point to the dollars saved through conservation”).

<sup>144</sup> Lin, *supra* note 26, at 1158–59 (describing how difficulties in communicating information may frustrate efforts to activate norms relevant to climate change).

<sup>145</sup> See Babcock, *Achieving Broader Changes*, *supra* note 26, at 16 (describing a series of challenges to educating the public).

<sup>146</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 167–70 (describing the complexity of structuring environmental information campaigns). See generally Stern, *Proenvironmental Consumer Behavior*, *supra* note 84, at 467–68 (discussing strategies for communicating information to change behavior and observing that “[w]hat makes information effective is not so much its accuracy and completeness as the extent to which it captures the attention of the audience, gains their involvement, and overcomes possible skepticism about its credibility and usefulness for the recipient’s situation”).

<sup>147</sup> See generally Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 621 (“For some issues, states and localities may be better positioned to tailor public information campaigns and other informational regulatory efforts to local populations.”).

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success and independence.”<sup>148</sup> Thus, information about predominant cultural outlook, education level, and other variables (even spoken language) that can characterize local communities may all help to structure effective information campaigns.<sup>149</sup>

Of course, local tailoring of norm campaigns in the manner suggested above may prove unduly expensive and/or administratively complex. Even if locally tailored norm campaigns can be more effective at inducing adoption and compliance, a national norm campaign focused on a common behavior with high associated emissions might well prove more *cost* effective.<sup>150</sup> This is a valid and important consideration in a world of limited resources. This Article identifies potential benefits of local tailoring but leaves for another day difficult practical questions that would need to be answered before costs or related administrative questions could be meaningfully considered. However, insights about the value of local input or involvement are potentially relevant and applicable to structuring even the kind of simple, national norm campaign noted above. Namely, this Article suggests that in structuring that kind of campaign it would be useful to consider whether there are cost effective, administratively feasible ways to obtain some of the benefits of local tailoring — perhaps, for example, by drawing connections between a concrete norm and a number of abstract norms.<sup>151</sup>

C. Structural Advantages of Community-Level Implementation

Implementing policies designed to deploy norms to help change behavior at the community level also capitalizes on three structural advantages. Community-level implementation facilitates (1) the use of face-to-face con-

<sup>148</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 167 (citing P. Wesley Schultz & Lynette Zelezny, *Reframing Environmental Messages to be Congruent with American Values*, 10 HUM. ECOLOGY REV. 126, 134 (2003)).

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<sup>149</sup> John C. Dernbach, *Harnessing Individual Behavior to Address Climate Change: Options for Congress*, 26 VA. ENVTL. L.J. 107, 157 (2008) (suggesting that Congress “requir[e] or allow[ ] states to adopt individual or public engagement plans . . . [that] would allow states to tailor individual engagement efforts to their own economic, geographic, and demographic situations”); Peterson, McKinstry Jr. & Dernbach, *supra* note 46, at 265–66 (2008). If a locale harbors conflicting values or sentiments, one strategy is to offer different justifications for the law grounded in these competing worldviews. See Kahan, *The Cognitively Illiberal State*, *supra* note 137, at 145–46 (describing a process of “expressive overdetermination” wherein political actors “self-consciously construct[ ] a discourse of overlapping dissensus comprising a plurality of justifications distinctive of the plural and opposing worldviews held by society’s members” (emphasis omitted)). This should not be taken to suggest that local governments are the sole source of knowledge about community values and norms. Proxies (such as voting trends) or other methods (such as surveys) could likely be developed to identify the presence of relevant norms or values in a community without relying on the input of local government. However, care would need to be taken to avoid reliance on inaccurate proxies.

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<sup>150</sup> *E.g.*, Ela, *supra* note 26, at 100 (commenting on the commonsense utility of a national approach).

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<sup>151</sup> This is similar to Kahan’s concept of “expressive overdetermination.” Kahan, *The Cognitively Illiberal State*, *supra* note 137, at 145.

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tact; (2) beneficial activation of the reciprocity, or conformity, norm; and (3) the use of behavioral mandates, which have all been shown to increase the effectiveness of norm campaigns designed to change behavior.<sup>152</sup>

1. *Face-to-Face Contact, Feedback, and the Reciprocity Norm*

Efforts to encourage recycling in areas with curbside recycling programs have proven most successful when they incorporate either face-to-face communication (for example, visits by a block captain) or feedback that provides data about how a family’s recycling performance compares to that of their neighbors.<sup>153</sup> These intensive interventions cause more people to recycle, and in greater amounts, than strategies such as mailing informational brochures.<sup>154</sup> More recent studies likewise demonstrate that one of the most effective approaches for reducing a household’s energy consumption is to provide detailed information regarding household energy use and, in particular, about how the household’s energy use compares to neighboring households.<sup>155</sup>

These findings are consistent with principles of norm theory described above. Face-to-face communication and feedback about recycling or energy-conservation behaviors publicize those behaviors and thereby increase the possibilities for informal sanction or reward.<sup>156</sup> Under an external, esteem, or social norms model, the possibility of informal sanction or reward will encourage behavior in compliance with the norm.<sup>157</sup> Under a personal norms model, if an individual has internalized a norm — for example, a norm that recycling is good for the environment — feedback that indicates

<sup>152</sup> Carlson, *supra* note 55, at 1263, 1287–91 (describing how mandates, face-to-face communication, and feedback on group performance promote recycling behaviors).

<sup>153</sup> *Id.* at 1287–91 (summarizing the results of several studies of curbside recycling programs).

<sup>154</sup> *Id.* at 1288–89.

<sup>155</sup> The Sacramento Metropolitan Utility District has begun a pilot program to reduce residential energy use through indirect feedback that compares residential customers’ energy consumption to that of their neighbors. This approach is supported by behavioral science research showing that individuals are highly motivated by perceptions of what others find acceptable. MINN. DEP’T OF COMMERCE, OFFICE OF ENERGY SECURITY, RESIDENTIAL ENERGY USE BEHAVIOR CHANGE PILOT 18 (2009), available at [http://www.state.mn.us/mn/externalDocs/Commerce/Franklin\\_Energy\\_Behavioral\\_Programs\\_Report\\_050809034016\\_ResEnergyBehavior.pdf](http://www.state.mn.us/mn/externalDocs/Commerce/Franklin_Energy_Behavioral_Programs_Report_050809034016_ResEnergyBehavior.pdf); see also, Workje Abrahamse et al., *The Effect of Tailored Information, Goal Setting, and Tailored Feedback on Household Energy Use, Energy-related Behaviors, and Behavioral Antecedents*, 27 J. ENVTL. PSYCHOL. 265 (2007) (reporting on a study that exposed one group to an internet tool providing information on efficient energy use while the control group was not given any information and discovering that “[a]fter 5 months, households exposed to the combination of interventions saved 5.1%, while households in the control group used 0.7% more energy.”); Uwe Dulleck & Sylvia Kaufmann, *Do Customer Information Programs Reduce Household Electricity Demand? — The Irish Program*, 32 ENERGY POL’Y 1025 (2004) (describing an empirical study showing that the Irish program, by providing information on increasing efficient energy use, reduced household electricity demand by 7%).

<sup>156</sup> Carlson, *supra* note 55, at 1290.

<sup>157</sup> See McAdams, *The Origin, Development and Regulation of Norms*, *supra* note 51, at 355–75 (setting out an esteem theory of norms).

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that he or she is not behaving in accordance with that norm can lead to feelings of guilt and encourage behavior consistent with the norm.<sup>158</sup> Face-to-face contact and performance feedback may also, by signaling that others are engaging in or will engage in the desired behavior, induce individuals to change their behavior by activating an abstract norm of reciprocity or conformity.<sup>159</sup> Belief that others are complying with a norm strongly encourages individual norm compliance;<sup>160</sup> the reciprocity norm explains why “an individual often will cooperate more than narrow rational actor models predict if the individual believes that others are cooperating or will cooperate.”<sup>161</sup>

In analyzing recycling behavior, Ann Carlson concludes that “face-to-face communication and feedback may make large-number, small-payoff collective action problems,” where it may be difficult to use norms to influence behavior, “more like small-number, small-payoff [problems,]” where norms have proven to be more effective at influencing behavior.<sup>162</sup> It is frequently posited that norms are more likely to arise and to wield greater influence on behavior in smaller groups.<sup>163</sup> As one scholar explains, “groups usually have stronger norms than societies” because groups tend to be more homogenous and consensus is easier to publicize and violation of that consensus is easier to detect.<sup>164</sup>

Although the group that creates the climate change *problem* (and experiences its effects) is by definition all citizens of the world, *solutions* (such as behavior modified through norm campaigns) can be targeted to much

<sup>158</sup> *Id.* at 381 (“Without internalization, one obeys the norm to avoid external sanctions . . . . After internalization, there is yet another cost to violating a norm: guilt. The individual feels psychological discomfort whether or not others detect her violation.”).

<sup>159</sup> Carlson, *supra* note 55, at 1289–90 (describing how the “norm of cooperation” may explain the efficacy of face-to-face communication and feedback in influencing recycling behaviors).

<sup>160</sup> *Id.* at 1290; *see also* Sunstein, *supra* note 52, at 945 (“Experimental work shows that . . . agents are willing to cooperate, and hence to solve collective action problems without coercion, if most people are seen as cooperators.”).

<sup>161</sup> Vandenberg, *Order Without Social Norms*, *supra* note 26, at 1118–19.

<sup>162</sup> Carlson, *supra* note 55, at 1290. Large-number, small-payoff collective action problems occur when many individuals contribute to a problem, but only a small benefit would accrue to each individual by solving the problem. Individual emissions of greenhouse gases and resulting climate change are considered a large-number, small-payoff collective action problem. *See generally* Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 115 (concluding that while small-number, large-payoff problems “may be relatively amenable to the development of social norms because members can frequently interact with each other, observe compliance, and punish non-compliance,” large-number, small-payoff problems create conditions where “social norms preserving the common resource are less likely to develop, or to be effective”).

<sup>163</sup> *See* ELICKSON, *ORDER WITHOUT LAW*, *supra* note 53, at 182. For an interesting take on this point, *see* Ela, *supra* note 26, at 97–98 (noting the general view that “when it comes to social norms solving collective action problems, it seems that size matters: smaller groups are better, while the largest ones may be hopeless,” but arguing that “large collective action problems can always be broken down into — or analyzed in terms of — smaller groups”).

<sup>164</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 389.

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smaller groups, including local communities.<sup>165</sup> “Each individual is a member of dozens or hundreds of different groups, including . . . town [and] neighborhood,” and such “subgroups . . . provide opportunities for social influences.”<sup>166</sup> Although the pay-off to individuals of solving climate change (shared by everyone in the world) may not outweigh, in an individual utility calculus, costs borne solely by the individual to reduce individual GHG emissions, the pay-off of complying with group norms may outweigh emission reduction costs, particularly where the characteristics of the group<sup>167</sup> allow for strong informal sanctions and thus make the costs of non-compliance high.

Community-level implementation can make it easier to employ the specific tools noted above — face-to-face contact and feedback. Local governments already have personal contact with citizens at a variety of junctures (such as the local police force or garbage pick-up) and may be better positioned to collect and disseminate relevant feedback information. Notably, some existing local efforts to reduce GHG emissions include face-to-face contact. The SWITCH Project in Seattle, Washington, seeks “to increase residential energy efficiency and reduce greenhouse gas (GHG) emissions through incremental behavior change” and employs door-to-door canvassing to educate and assist lower income residents in adopting energy efficient technology.<sup>168</sup> Positing that “the key to long-term sustainability may be how we relate to each other in our own neighborhoods, the ways we connect in daily life,” Lawrenceville, New Jersey, has launched the SWELL (Sustainable Where we Live in Lawrence) Neighbors campaign to enlist neighbors to campaign and encourage neighborhood efforts to reduce energy use.<sup>169</sup>

Moreover, in the context of GHG emissions, meaningful feedback designed to compare performance must take account of community-specific factors that define baseline emission rates, such as the availability of public

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<sup>165</sup> Ela, *supra* note 26, at 121 (noting that even where “the highest-level group in a collective action problem — world citizenship — may on the whole appear to be ‘loose-knit,’” subgroups offer opportunities for norms to influence behavior).

<sup>166</sup> *Id.*

<sup>167</sup> ELLICKSON, ORDER WITHOUT LAW, *supra* note 53, at 177–78 (reasoning that norms will be strongest in “close-knit” groups where “informal power is broadly distributed among group members and the information pertinent to informal control circulates easily among them”).

<sup>168</sup> *The SWITCH Project*, MOONTOWN FOUND., [http://www.moontownfoundation.org/?page\\_id=32](http://www.moontownfoundation.org/?page_id=32) (last visited Oct. 28, 2010) (on file with Harvard Law School Library). Irvine, California similarly implements a Community Energy Partnership program credited with achieving a reduction of approximately one million pounds of GHG emissions per year. Personal interaction with citizens is viewed as a labor-intensive but critical component of the program’s success. See ICLEI, *Irvine, Calif., Wins Flex Your Power Award for Education and Media (12/08)*, <http://www.icleiusa.org/success-stories/outreach-and-engagement/irvine-calif-wins-flex-your-power-award-for-education-and-media-12-08> (last visited Oct. 28, 2010) (on file with Harvard Law School Library).

<sup>169</sup> *Our Swell Neighborhoods*, SUSTAINABLE LAWRENCE, <http://sustainablelawrence.org/swell.html> (last visited Oct. 28, 2010) (on file with Harvard Law School Library).

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transportation.<sup>170</sup> More generally, the simple act of using a community to define a smaller group as the target of a norm campaign may prove beneficial. It is generally recognized that “[t]he most powerful norms — causing people to bear the greatest costs — are found in small, integrated groups.”<sup>171</sup> As described above, the conditions for norm development and operation — consensus-building, publicity, and detection<sup>172</sup> — may be more easily satisfied when limited to a smaller group. This is perhaps particularly so when that group is a community, the chief group attribute is geographic proximity, and the norms involve GHG-emitting behaviors.<sup>173</sup> Although local communities are certainly not always homogenous or integrated,<sup>174</sup> as described above they do exhibit relative homogeneity with respect to certain architectural variables that help to define both baseline GHG emissions and the costs and benefits of changing behaviors to reduce those emissions. For example,

<sup>170</sup> Indeed, when it comes to comparing GHG-emissions, such comparisons are likely to be more salient the more homogenous and localized the group. Ela, *supra* note 26, at 135–36 (proposing a “localized billing community program” that would compare energy use between “relatively localized and homogenous ‘billing communities’ — like single blocks or apartment buildings — so that users can compete against small numbers of similar users” and noting that “[c]itywide averages . . . are less than ideal because they include customers of such a wide variety of social classes and lifestyles”). Alexandria, Virginia, for example, coordinates with utility companies to provide customers with data comparing their energy consumption with that of average users in Alexandria in their category (residential, office, restaurant, etc.). See CITY OF ALEXANDRIA, VA, ECO-CITY ALEXANDRIA: ENVIRONMENTAL ACTION PLAN, EPC DRAFT at 36 (2009), available at [http://www.alexandriava.gov/uploadedFiles/tes/oeq/Environmental%20Action%20Plan%20Phase%20II\(2\).pdf](http://www.alexandriava.gov/uploadedFiles/tes/oeq/Environmental%20Action%20Plan%20Phase%20II(2).pdf).

<sup>171</sup> McAdams, *Signaling Discount Rates*, *supra* note 78, at 665.

<sup>172</sup> Robert Cooter’s work suggests another intriguing advantage to smaller groups. He posits that “officials in large states are remote from most citizens,” and thus have difficulty “[i]nferring character from behavior” in order to reward or punish character and encourage the internalization of values. Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1597. Cooter’s model raises at least the possibility that local governments, with more “intimate knowledge” of their residents, may be able to directly “reward people for acquiring civic virtue” and thereby succeed at instilling values where state or national governments cannot. *Id.*

<sup>173</sup> As described above, for example, the communities where we live and work offer the opportunity to observe behavior and trigger the reciprocity and conformity norms. Of course, this can also reify undesirable behaviors. See Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 153–54 (explaining how the conformity norm can cause “a norm of bad environmental behavior [to] take hold, for example, if people observe other people wasting water or electricity, driving SUVs, or littering”).

<sup>174</sup> Communities may also be very large, in the case of urban centers. However, even New York City is small compared to the entirety of the United States — the “group” targeted by national norm campaigns. Moreover, local governments are in a good position to identify discrete communities within their jurisdiction (boroughs or city council districts, for example) and structure norm campaigns accordingly. Norms may in fact function quite differently in small communities and urban centers. Karen S. Cook and Russell Hardin argue, for example, that mutual assistance in small communities is premised on collective norms “enforced through individual-level incentives of the threatened sanction of exclusion,” while in urban areas norms develop in “networks of ongoing relationships that are embedded within the much larger context” and “are enforced dyadically.” Karen S. Cook & Russell Hardin, *Norms of Cooperativeness and Networks of Trust*, in SOCIAL NORMS 327–34 (Michael Hechter & Karl-Dieter Opp eds., 2001). This characteristic underscores a potential benefit of structuring norm campaigns with reference to variables such as community size and the dominant method of norm activation.

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some communities have access to good public transportation and others do not. Some communities are organized around densely populated, apartment living, others around suburban, single-family living. Residents of the same community can more readily detect, without bearing any special costs of monitoring, the behavior of their co-residents. For example, community members in Pocatello, Idaho, may be able to detect at relatively low cost those who routinely waste energy by leaving the porch light burning; residents of Fargo, North Dakota, would certainly not be in a position to report on wasteful porch light burning in Pocatello. Thus, community-specific information can aid in *designing* effective norm campaigns, and community infrastructure and organization can aid in *implementing* effective norm campaigns.

2. *The Expressive Function of Mandates*

Law most directly influences behavior by imposing punishments (or the threat of punishment) on violators.<sup>175</sup> Individuals may obey a law because of the cost of its enforcement against them. Law also influences behavior by signaling societal values and ascribing social meaning to actions, a capacity referred to as law’s “expressive” function.<sup>176</sup> Although scholars debate the precise mechanisms by which law influences behavior through its expressive function, many posit that law influences behavior expressively by affecting norms.<sup>177</sup> Laws may assist in norm creation and compliance and thereby change behavior by “publiciz[ing] a societal consensus,”<sup>178</sup> “provid[ing] the concrete norms that define compliance with internalized abstract

<sup>175</sup> Sunstein, *supra* note 91, at 2032 (observing that in this capacity, “legal mandates . . . take the place of good norms, by requiring certain forms of behavior through statutory requirements accompanied by significant enforcement activity”).

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<sup>176</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 398–99; Sunstein, *supra* note 91, at 2031 (describing the expressive function of law and observing that one “goal is to reconstruct existing norms and to change the social meaning of action through a legal expression or statement about appropriate behavior”).

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<sup>177</sup> Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 159–60; McAdams, *Origin, Development and Regulation*, *supra* note 51, at 399; *see also* Sunstein, *supra* note 91, at 2032 (“[S]uch laws are rarely enforced through the criminal law, but they have an important effect in signaling appropriate behavior and inculcating the expectation of social opprobrium and, hence, shame in those who deviate from the announced norm. With or without enforcement activity, such laws can help reconstruct norms . . . .”); Sunstein, *supra* note 52, at 958–59 (observing that even laws that are rarely enforced shape social norms and meanings “because there is a general norm in favor of obeying the law” and because the laws “inculcate both shame and pride”). *But see* Scott, *supra* note 61, at 1626–31 (arguing that the expressive effects of law are unproven, but recognizing that, under traditional rational choice theory, unenforceable mandates may influence behavior by increasing the possibility of informal sanction).

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<sup>178</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 400; *see also* Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 10 (arguing that law works in an expressive manner by “influencing people’s beliefs about what others will do” and can thereby give rise to the belief that more than 20% of individuals will obey the norm incorporated into the law and cause others to comply).

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norms,”<sup>179</sup> defining the “social meaning of action,”<sup>180</sup> and capitalizing on an internalized “respect for law.”<sup>181</sup> “If the law publicizes a consensus that certain behavior is required in order to comply with an abstract internalized norm, then violating the concrete (legal and esteem-based) obligation will produce guilt.”<sup>182</sup> Prohibiting behavior may change the social meaning associated with that behavior, perhaps by tying the behavior to a stigma of illegality, or by rendering the social meaning of the behavior ambiguous.<sup>183</sup>

Take, for example, the habit of many air-conditioned stores of leaving store doors open in the summer. The Natural Resources Defense Council estimates that this practice, apparently motivated by a desire to signal a welcome to heat-weary potential customers,<sup>184</sup> wastes about one ton of carbon dioxide per business per summer.<sup>185</sup> After this practice received some negative comment in the media,<sup>186</sup> New York City passed an ordinance prohibiting air-conditioned stores from propping doors open in the summer.<sup>187</sup> Backers of the ordinance explained that the door-propping behavior wasted energy, harmed the environment, and could contribute to local blackouts.<sup>188</sup> Proprietors may, of course, change their behavior and shut their doors out of fear of enforcement of the ordinance. However, passage of the ordinance likely encourages proprietors to shut their doors even in the absence of a perceived threat of government enforcement of the ordinance by creating and/or strengthening a norm against door-propping.

As noted above, there are a number of explanations for how the ordinance might function in this expressive manner. First, the ordinance may publicize a consensus, in this case the community view that door-propping is bad, and thereby support the development of a norm against door-propping and, in turn, increase the proprietors’ perception of potential informal sanctions for noncompliance.<sup>189</sup> If the proprietors adhere to abstract norms of

<sup>179</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 400.

<sup>180</sup> Sunstein, *supra* note 91, at 2032.

<sup>181</sup> Cooter, *Do Good Laws Make Good Citizens?*, *supra* note 51, at 1581.

<sup>182</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 407.

<sup>183</sup> Lessig, *The Regulation of Social Meaning*, *supra* note 53, at 1010–12.

<sup>184</sup> David Richardson, *NYC Says “Cool It” to Air-Conditioning the Sidewalk*, MILLER-MCCUNE, Sept. 11, 2008, available at [http://miller-mccune.com/science\\_environment/nyc-says-%E2%80%9Ccool-it%E2%80%9D-to-air-conditioning-the-sidewalk-694](http://miller-mccune.com/science_environment/nyc-says-%E2%80%9Ccool-it%E2%80%9D-to-air-conditioning-the-sidewalk-694).

<sup>185</sup> Press Release, Natural Res. Def. Council, Mayor Bloomberg Signs First-of-its-Kind Energy Conservation Law (Sept. 3, 2008), available at <http://www.nrdc.org/media/2008/080903.asp>.

<sup>186</sup> See, e.g., Clyde Haberman, *When Shops Keep Doors Agape, Think of Cold Air at \$140 a Barrel*, N.Y. TIMES, June 17, 2008, at A1, available at [http://www.nytimes.com/2008/06/17/nyregion/17nyc.html?\\_r=1](http://www.nytimes.com/2008/06/17/nyregion/17nyc.html?_r=1).

<sup>187</sup> N.Y.C. ADMIN. CODE, tit. 20, § 20-910(b) (2008) (“[I]t shall be unlawful to keep open any exterior door of a commercial building or structure while an air conditioner or central cooling system is operating that cools the area adjacent to such door, except as needed to permit the ingress and egress of people and the delivery and shipping of goods.”).

<sup>188</sup> Press Release, Natural Res. Def. Council, *supra* note 185.

<sup>189</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 358–60, 400–07 (explaining the importance of public knowledge of a consensus to norm creation and describing how law can signal consensus); Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 118–19 (“[An unenforced] law prohibiting littering may lead to a change in beha-

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environmental protection, being a good neighbor, or perhaps thrift, then the ordinance may function to define the concrete behavior of door-propping as contrary to those abstract norms and cause the proprietors to feel guilt, thereby increasing the cost of door-propping through internal sanction.<sup>190</sup> The ordinance might also be viewed as changing or at least complicating the social meaning of door-propping in a way that affects proprietors' perceptions of the utility of door-propping. Instead of signaling a welcome to customers, the act (or "text") of door-propping may be understood as wasteful, illegal, selfish, and environmentally damaging.<sup>191</sup>

Thus formal behavioral mandates can act on norms to change behavior even absent consistent enforcement. Of course, federal, state, and local governments can all impose mandates on behavior, so this proposition by itself does not presume an advantage for local governments. And mandating changes in individual behavior poses some difficult challenges for any government.<sup>192</sup> However, the following Part argues that for many GHG-emitting individual behaviors, local governments may be better situated to develop and impose mandates on individual behavior.

### III. MINIMIZING OBSTACLES TO THE USE OF MANDATES THROUGH LOCAL DESIGN AND ENFORCEMENT

Traditional command and control regulation of industrial point sources relies heavily on the use of mandates, or direct proscriptions against environmentally harmful activities, and has achieved significant gains in reducing pollution from these sources.<sup>193</sup> Scholars likewise recognize the potential utility of mandates in achieving changes in environmentally significant individual behavior, particularly when deployed in combination with other policy approaches.<sup>194</sup> Most directly, mandates could, by imposing external sanctions for their violation, raise the costs of behaviors that harm the environment and change the calculation of a rational actor deciding whether to undertake the behavior.<sup>195</sup> Coupling mandates with norms can have a syner-

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viour . . . because individuals may view the law as an expression of societal disapproval of littering. They may then not litter either because they internalize this disapproval or because they fear external sanction . . .").

<sup>190</sup> McAdams, *Origin, Development and Regulation*, *supra* note 51, at 407.

<sup>191</sup> See Lessig, *The Regulation of Social Meaning*, *supra* note 53, at 1008–11 (describing semiotic techniques for changing social meaning).

<sup>192</sup> See *infra* notes 200–06 and accompanying text.

<sup>193</sup> Vandenbergh, *Environmental Command and Control*, *supra* note 5, at 191.

<sup>194</sup> Vandenbergh, *From Smokestack to SUV*, *supra* note 4, at 600 ("In sum, although command and control measures are unlikely to be effective as the exclusive instrument for steering individual environmentally significant behavior, their expressive effects, in combination with informational regulation and other measures, may be quite important."); Vandenbergh, Barkenbus & Gilligan, *supra* note 26, at 1727 (describing research suggesting that public education campaigns "may function better in conjunction with laws that exact penalties for excessive idling").

<sup>195</sup> Green, *Norms, Institutions, and the Environment*, *supra* note 26, at 118 (2007) (describing the connections between formal laws and norms).

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gistic effect because “[w]hen law aligns with social norms, the law can use state sanctions to supplement social sanctions” and thereby “increase . . . the total sanction from disobeying a norm” and encourage norm compliance.<sup>196</sup>

For example, in a municipality with an anti-idling ordinance, a driver deciding whether to idle would balance the benefits (convenience, ease, etc.) against the costs (the possibility of a ticket). And, as described above, mandates could function in an expressive manner to influence behavior by triggering personal and/or social norms.<sup>197</sup>

Direct proscriptions on environmentally harmful individual behaviors may in fact prove to be a necessary complement to other policy tools for regulating individual behavior, such as informational regulation, norm management, and price signals. Notably, there is uncertainty about the potential efficacy of norm management in changing individual behaviors<sup>198</sup> and even champions of the use of norm management recognize that there are some behaviors that norm campaigns cannot succeed in changing and concede that a variety of policy approaches, beyond norm management, will likely be needed.<sup>199</sup>

The application of mandates to individuals has, however, received little sustained attention in the literature focused on reducing individual environmental harms. This is likely so because of identified obstacles to the adoption and enforcement of mandates. In the words of one scholar:

The use of command and control requirements to change individual environmentally significant behavior has been less successful and, at least in the near term, is unlikely to be effective, efficient, or politically feasible. The thousands or millions of potential regulatory targets for any given environmental problem, the widespread belief that individuals are not significant pollution sources, and the cognitive barriers to changing that belief all make individual behavior extremely difficult to regulate through command and control instruments, particularly at the federal level . . . . In particular, the cost of enforcement against large numbers of individuals makes behavior change based solely on the threat of formal legal sanctions unlikely. To the extent environmental harms caused by individuals are difficult to detect, enforcement is expensive and intrusive. Even if sufficient resources were devoted to the effort,

<sup>196</sup> Cooter, *Three Effects of Social Norms on Law*, *supra* note 83, at 15–16 (“For example, fines can supplement the shame associated with being a tax cheater.”).

<sup>197</sup> Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 600, 613–14 (describing the expressive function of command and control regulation as applied to individual behavior and observing that “[e]nactment of command and control measures may signal a social consensus regarding a particular behavior, and thus may influence personal or social norms”).

<sup>198</sup> Carlson, *supra* note 55, at 1299–1300.

<sup>199</sup> Ela, *supra* note 26, at 142 (conceding that for some inherently low-visibility behaviors “interventions to change these behaviors must be designed to work with little, if any, assistance from social influences”); *see also* Vandenberg & Steinemann, *supra* note 26, at 1724.

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trols over individual behavior, where combined with other regulatory instruments, thus may be effective.”<sup>208</sup> And in his detailed account of the failure of a federal trip reduction mandate included in the 1990 Clean Air Act Amendments, Craig N. Oren draws a distinction between federal and local mandates. He argues that federal mandates on mobile sources of air pollution (primarily individual drivers) in particular are “acceptable” only under certain conditions, in part because “[s]uch mandates impose a cost in loss of local autonomy, and deprive states and localities of their role as ‘laboratories’ for innovation.”<sup>209</sup> Although his critique of the federal trip reduction mandate is devastating, Oren’s analysis leaves room for the possibility that locally tailored trip reduction measures could prove more successful.<sup>210</sup>

A closer examination of the identified obstacles to the use of mandates to address individual behaviors supports the view that mandates may prove more feasible at the local level. Local development and enforcement of mandates addressed to individual behavior can minimize two chief obstacles to imposing mandates on individual environmental behavior, that such mandates are uncomfortably intrusive and difficult to enforce. These obstacles are explained in greater detail below, along with possibilities for minimizing these obstacles through local design and enforcement.

A. *Intrusion Objections*

Mandates are the most intrusive policy approach for changing behavior.<sup>211</sup> By prohibiting or requiring conduct, mandates foreclose choice and, as applied to individual behaviors, can be “seen as an interference with individual liberty and an invasion of privacy.”<sup>212</sup> These objections may be particularly pronounced when the individual behavior subject to regulation “occur[s] at home or in the immediately surrounding area,” as with many environmentally significant behaviors.<sup>213</sup> Additionally, individuals may find government regulation more objectionable where the proscribed behavior is perceived to be in their self-interest, perhaps because it is convenient, is ingrained as a personal habit, or provides other value.<sup>214</sup>

Local governments are, however, in a position to blunt some of the aforementioned intrusion objections. First, local governments already impose restrictions on day-to-day behaviors in myriad ways. Don’t park on the south side of the street on Tuesdays between 10 a.m. and 1 p.m.<sup>215</sup> Don’t

<sup>208</sup> Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 599; Ela, *supra* note 26, at 130.

<sup>209</sup> Oren, *supra* note 32, at 196.

<sup>210</sup> *Id.* at 242 (discussing the trip reduction efforts of Portland, Oregon).

<sup>211</sup> Sunstein, *supra* note 52, at 949–52 (“The most intrusive kind of government action is of course straightforward coercion.”).

<sup>212</sup> Babcock, *Assuming Personal Responsibility*, *supra* note 6, at 123.

<sup>213</sup> *Id.*

<sup>214</sup> *Id.* at 130 (describing the power of habit).

<sup>215</sup> RULES OF THE CITY OF NEW YORK tit. 34, § 4-08(12)(iii)(B)(d) (2009).

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cross the street against the light.<sup>216</sup> Shhhhh — you’re being too loud.<sup>217</sup> Get a license for your dog and keep it on a leash.<sup>218</sup> Put your trash out no earlier than 5 p.m. the night before collection and retrieve it no later than 9 p.m. on the day of collection.<sup>219</sup> Remove junk from your yard within forty-eight hours.<sup>220</sup> Yard-sale signs must be smaller than six square feet in area, must be posted no earlier than 12 p.m. the day prior to the sale and taken down no later than 12 p.m. the day after the sale, and cannot be placed within ten feet from the street pavement.<sup>221</sup> Indeed, localities already impose mandates on individual behaviors that harm the environment, including anti-idling, recycling, and air pollution ordinances.<sup>222</sup> Many of these local mandates on behavior seem ripe for intrusion objections because the behavior being regulated occurs in or near the home and/or complying is inconvenient. However, these types of local rules are widely accepted. In a sense, then, individuals are already habituated or conditioned to accept local restrictions on behavior.

By way of specific example, imagine a hypothetical municipal ordinance setting an upper limit on water heater temperature.<sup>223</sup> The ubiquity of municipal building, electrical, and fire codes that impose a variety of detailed requirements on property maintenance and operation<sup>224</sup> makes the

<sup>216</sup> RULES OF THE CITY OF NEW YORK tit. 34, § 4-04(b)(2) (2009).

<sup>217</sup> ALBION, N.Y., CODE § 74-2 (2008) (prohibiting noise from “[r]adios, televisions, record players, tape players and/or other like devices [that is] reasonably likely to annoy or cause discomfort to surrounding neighbors”).

<sup>218</sup> ALBION, N.Y., CODE §§ 45-1 to 45-6 (2008).

<sup>219</sup> N.Y.C. ADMIN. CODE § 16-120(c) (2009).

<sup>220</sup> TWIN FALLS, IDAHO, CODE § 6-5-2(B) (2010).

<sup>221</sup> TWIN FALLS, IDAHO, CODE § 10-9-9(E) (2010).

<sup>222</sup> Vandenberg, *From Smokestack to SUV*, *supra* note 4, at 599 n.321; *see also, e.g.*, N.Y.C. ADMIN. CODE § 24-163(a) (2009) (“No person shall cause or permit the engine of a motor vehicle, other than a legally authorized emergency motor vehicle, to idle for longer than three minutes . . . .”); N.Y. COMP. CODES R. & REGS. tit. 6, § 217-3.2 (2007) (“No person who owns, operates or leases a heavy duty vehicle including a bus or truck . . . shall allow or permit the engine of such heavy duty vehicle to idle for more than five consecutive minutes when the heavy duty vehicle is not in motion . . . .”); RULES OF THE CITY OF NEW YORK tit. 16, § 1-08(g) (2009) (“Residents of residential buildings shall: (1) separate from other materials designated recyclable materials that are required to be recycled and shall place such separated materials in the appropriate containers . . . .”). The City of Burlington, Vermont, has launched a “No Idling Campaign” with public outreach, education, and policy advocacy efforts. *No Idling Campaign*, Burlington Legacy Project, [http://www.cedo.ci.burlington.vt.us/legacy/no\\_idling.html](http://www.cedo.ci.burlington.vt.us/legacy/no_idling.html) (last visited Dec. 1, 2010) (on file with Harvard Law School Library). Signs have been installed in Burlington that read “No Idling: Idling Pollutes and Is Illegal — Per Burlington Code of Ordinances, Sect. 20-55E.” *Id.*; *see also* BURLINGTON, VT., CODE § 20-55(e) (2009) (“No person shall leave idling for more than three (3) minutes any motor vehicle in any area of the city [with certain limited exceptions].”).

<sup>223</sup> It is estimated that if half of all households in the U.S. lowered the temperature setting of their water heaters by twenty degrees Fahrenheit, it would reduce annual CO<sub>2</sub> emissions by between twenty-eight and thirty-nine million tons. Vandenberg, Barkenbus & Gilligan, *supra* note 26, at 1746. As discussed *supra* note 45 and accompanying text, I do not consider whether municipalities currently possess the authority to enact this and other measures discussed, but presume that they could be afforded that authority.

<sup>224</sup> *See, e.g.*, Uniform Fire Prevention and Building Code, N.Y. COMP. CODES R. & REGS. tit. 19, §§ 1219–1228 (2007).

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prospect of this type of regulation seem far less jarring and intrusive than, for example, a similar federal requirement. This may be especially true in particular areas (the Sagebrush Rebellion West) or moments in time (perhaps the present, as evidenced by the Tea Party movement) where opposition to an expanded role for the federal government characterizes the political mood.<sup>225</sup>

Additionally, for many of the same reasons that local information can help identify barriers to behavior change, local information may also prove crucial when ascertaining whether a particular restriction will trigger insurmountable intrusion objections in a community and/or when designing mandates to avoid intrusion objections. For example, the Albion, New York Municipal Code cited above imposes a requirement that dogs be leashed, but includes an exception for hunting. It provides that a dog must be leashed “unless [it] is accompanied by its owner or a responsible person and under the full control of such owner or person. For the purpose of this chapter, a dog or dogs hunting in company of a hunter or hunters shall be considered as accompanied by its owner.”<sup>226</sup> Local knowledge about the use of hunting dogs is reflected in the design of the ordinance and helps to avoid resistance to the rule by avoiding interference with a locally-valued behavior. Knowledge about community attitudes and practices can thus help local governments select and structure mandates to be less intrusive.<sup>227</sup>

Finally, while behavioral mandates can take the form of “straightforward coercion” such as bans or requirements, they can also impose less intrusive “time, place, and manner restrictions” that channel behavior while preserving some individual choice.<sup>228</sup> As one scholar describes, with respect to how the law influences consumption, “lawmaking [can] frame[ ] indi-

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<sup>225</sup> See Bruce Babbitt, *Federalism and the Environment: An Intergovernmental Perspective of the Sagebrush Rebellion*, 12 ENVTL. L. 847, 853 (1982) (explaining the movement’s desire to have federal lands in the West turned over to the States and observing that “the considerable support that the Sagebrush Rebellion has gained in the West reflects a deep-seated frustration with what is perceived to be heavy-handed, arbitrary, and unreasonable federal regulation of public lands”). The Tea Party movement also appears to evince anti-federal sentiment. The Contract from America, for example, encourages congressional candidates and elected officials to “[c]reate a Blue Ribbon taskforce that engages in a complete audit of federal agencies and programs, assessing their Constitutionality, and identifying duplication, waste, ineffectiveness, and agencies and programs better left for the states or local authorities.” *Contract from America*, <http://www.thecontract.org/the-contract-from-america> (last visited Dec. 1, 2010) (on file with the Harvard Law School Library).

<sup>226</sup> ALBION, N.Y., CODE § 45-5 (2004).

<sup>227</sup> Ela, *supra* note 26, at 130 (recommending that anti-idling laws be enacted “at the most local level possible,” in part because local governments could use local knowledge to designate no-idling zones in areas that would “improve compliance and chances for adoption, by reducing the laws’ intrusiveness”). See generally Craig N. Oren, *How a Mandate Came from Hell: The Making of the Federal Employee Trip Reduction Program*, 28 ENVTL. L. 267, 328 (1998) (charting the failure of the federal trip reduction mandate and questioning “the utility of any uniform trip reduction requirement [because] . . . even communities with a historic interest in ridesharing might resist any national mandate because of different local needs and preferences”).

<sup>228</sup> Sunstein, *supra* note 52, at 951–52 (discussing, in particular, policy tools for changing norms).

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vidual choices in a way that directs them in a socially desirable way,” or “benevolently guide[ ]” the decisions of its citizens.<sup>229</sup> With respect to individual GHG emissions, for example, a municipality could reduce driving without altogether prohibiting it by closing roads to vehicle traffic during certain times, eliminating or reducing on-street parking, or barring single-occupancy vehicles from parking facilities at, for example, large sports arenas. The design and implementation of these types of restrictions is inextricably local.

### *B. Enforcement*

Enforcement — in terms of both its practical and political feasibility — is frequently identified as the chief obstacle to mandates on environmentally significant individual behavior. A law aimed directly at individual behavior would need to be enforced against individuals. Individuals are, however, numerous, and may engage in environmentally significant behaviors in private spaces. Monitoring individual behavior can thus prove costly and pose serious logistical challenges. Significantly, however, local design and enforcement of mandates on individual behaviors can minimize the key enforcement challenges of expense, numerosity, and (in)visibility.

Local governments already possess an infrastructure that brings them into regular contact with their citizens and provides opportunities for both observation and enforcement. Local governments, for example, usually control household garbage collection, enforce local ordinances that address everything from noise to parking, issue permits for activities like sporting events, concerts, and parades, own and operate local parks and recreation facilities, and maintain local police, fire, and emergency response forces. Moreover, a variety of local special-use districts (school districts, water districts, local electric utilities, etc.) touch even more aspects of citizens’ daily lives.<sup>230</sup>

This existing infrastructure and contact could reduce both the expense associated with the enforcement of mandates on individual behavior and the challenges posed by numerosity. Enforcement of new mandates might be piggybacked on the enforcement of existing municipal rules and requirements, thereby potentially reducing expense. Local governments do not, for example, need to hire new “tire inspectors” to enforce a requirement that

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<sup>229</sup> James Salzman & Jedediah Purdy, *Corn Futures: Consumer Politics, Health, and Climate Change*, 38 *Envtl. L. Rep. (Envtl. Law Inst.)* 10851, 10854 (2008).

<sup>230</sup> Irvine, California, for example, implements a Community Energy Partnership program that includes a standards-based science curriculum for fourth grade students focused on energy conservation. *Awards and Distinctions*, CITY OF IRVINE, CAL., [http://www.ci.irvine.ca.us/about/awards\\_and\\_distinctions/default.asp](http://www.ci.irvine.ca.us/about/awards_and_distinctions/default.asp) (last visited Nov. 23, 2010) (on file with Harvard Law School Library). Brattleboro, Vermont’s Climate Action Plan recommends developing an education program on climate change to be incorporated into the public school curriculum. TOWN OF BRATTLEBORO, VT., *THE CLIMATE ACTION PLAN 31* (2003), available at <http://www.brattleboro.org/vertical/Sites/%7BF60A5D5E-AC5C-4F97-891A-615C172A5783%7D/uploads/%7B8E554F52-EB49-422F-8E2A-C90242FDF15B%7D.PDF>.

tires be kept inflated to appropriate levels. Tickets could be issued by the existing police force during traffic stops that would occur anyway. A requirement to lower water heater temperatures could be incorporated into the enforcement of the existing building code. And with respect to numerosity, local governments are accustomed to enforcing myriad laws on those individuals. Local governments are also in a better position to assess the visibility of behavior and make determinations about whether behavior can feasibly be subject to enforcement. As explained above, whether and how conduct is “visible” may depend on a variety of community-specific variables that local governments are in a better position to understand.

Local governments can also capitalize on knowledge of existing local norms to design laws so that they will be reinforced by existing norms. “[L]aw might purposefully choose rules — that law would on its own have avoided — in order to gain this reinforcement . . . . There is, in other words, a cost to law’s straying from norms, and law best does whatever it is that it is trying to do by [avoiding] these costs.”<sup>231</sup> Localities can deploy knowledge of local norms to craft mandates to piggyback on those norms, thereby increasing the likelihood of compliance apart from any independent enforcement efforts.

Finally, law may function to influence behavior even absent meaningful enforcement. Public involvement in state and federal policymaking is perhaps more limited and constrained than at the local level, where there may be more opportunities for democratic participation. Involvement at the local level may encourage compliance with local laws (regardless of opportunities for enforcement) because “[p]eople are more likely to comply with decisions and agreements they have played a role in formulating.”<sup>232</sup> Also, as described above, laws can influence behavior through their expressive function even in the absence of consistent enforcement. And, for a variety of reasons, the expressive value of *local* law may be particularly powerful. As one scholar argues, local laws may provide “a stronger signal of the local attitudes that matter most,” and “[a]n individual cares primarily about local attitudes because judgments of approval and disapproval are mostly local.”<sup>233</sup> Thus, we might expect “a larger expressive effect from local laws than state or federal laws, from local ordinances regulating smoking, recycling, and dogs more than state or federal statutes regulating speeding, motorcycle helmets or drunk driving.”<sup>234</sup> Accordingly, local governments may not only be in a better position to identify circumstances where enforce-

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<sup>231</sup> Saul Levmore, *Norms as Supplements*, 86 VA. L. REV. 1989, 2010 (2000) (discussing the work of Paul Robinson and Robert Cooter).

<sup>232</sup> Gary C. Bryner, *Policy Devolution and Environmental Law: Exploring the Transition to Sustainable Development*, 26 ENVIRONS ENVTL. L. & POL’Y J. 1, 31 (2002).

<sup>233</sup> McAdams, *supra* note 64, at 373; *see also* Ellickson, *Evolution of Social Norms*, *supra* note 51, at 60–61 (observing that local residents may “follow the lead” of local officials as norm makers “because a city resident is apt to sense that local elected officials possess better social knowledge than ordinary citizens do”).

<sup>234</sup> McAdams, *supra* note 64, at 374.

ment is not feasible, they may also be best able to influence behavior through concededly unenforceable mandates by relying on their expressive function.

#### CONCLUSION

Mitigating the environmental harms arising from aggregated individual behaviors presents a pressing and unprecedented challenge for environmental law and policy. Designing effective policy will require weaving together a mix of regulatory tools, some familiar and some novel, including economic incentives, informational regulation, norm management, product mandates, land use, planning, and zoning, and traditional command and control mandates. The above analysis provides guidance about the method of applying and relative emphasis to be afforded to two of these regulatory tools in the context of individual GHG-emitting behaviors: norm management and mandates.

Local information, local governments, and local implementation may enhance efforts to manage norms to reduce individual GHG emissions. Specifically, local information and community-level implementation may enhance norm management efforts designed to influence GHG-emitting behaviors by (1) allowing for the identification of concrete behaviors that are feasible to target with a norm management effort in a given community; (2) informing the design and content of norm campaigns, including the selection of the abstract norm that will form the basis of the appeal for specific behavioral change; and (3) facilitating effective implementation strategies. This conclusion both offers insight into the most beneficial way to construct norm management policy and provides support for using norm management as a policy tool for reducing individual GHG emissions.

Similarly, with respect to mandates, obstacles to the use of mandates may be less formidable when mandates are developed and enforced locally. Specifically, local development and enforcement of mandates may reduce intrusion objections because individuals are accustomed to local control over day-to-day behaviors, information about local attitudes and practices enables the design of mandates to avoid intrusion objections, and local governments are in a better position to structure time, place, and manner restrictions that channel behavior while preserving some individual choice. Local design and enforcement of mandates may also minimize the key enforcement challenges of expense, numerosity, and (in)visibility. This recommends increased openness to the use of local mandates as a policy tool for reducing individual GHG emissions.

Notably, these insights into the use of norm management and mandates to change individual behaviors that result in the emission of GHGs became apparent after analyzing that problem through the lens of environmental federalism. This suggests a broader lesson: namely that considering environmental federalism question — where to locate regulatory authority and

whether and how to incorporate local governments — in the earliest stages of developing policies intended to influence environmentally significant behaviors may improve the design of those policies.