



## Policy Tools for Minimizing Public Health and Environmental Effects of Cigarette Waste

The Tobacco Control Legal Consortium in partnership with the Cigarette Butt Pollution Project (CBPP), a 501(c)(3) organization registered in California, has created this publication to serve as a starting point for governmental authorities and organizations interested in implementing measures to minimize the adverse public health and environmental effects of cigarette waste.<sup>1</sup> Before attempting to implement any of these measures, be sure to consult with local legal counsel. For more details about policy considerations, please contact the [Consortium](#) and the [Cigarette Butt Pollution Project](#).

### Overview

In sheer numbers, cigarette butts constitute the most common type of litter today, with approximately 4.95 trillion cigarette butts thrown away annually.<sup>2</sup> An estimated 30 percent of the total waste (by count) on U.S. shorelines, waterways and land is cigarette waste.<sup>3</sup> This is a significant public health problem: used cigarette butts have been found to contain many toxins including ammonia, formaldehyde, benzene, butane, acrylonitrile, toluene, and alkaloid nicotine.<sup>4</sup> This waste can affect the health of humans and animals by direct consumption of used cigarettes<sup>5</sup> and through leachates (chemical soups produced when cigarette butts are wet) that enter storm drains, groundwater, recreational bodies of water, and other environments.<sup>6</sup>



Proposed policies to reduce or eliminate the public health and environmental effects of cigarette butt waste have focused on two discrete methods: 1) making cigarette butt waste less toxic and persistent, and 2) reducing the number of cigarettes smoked. The first method more directly addresses cigarettes as the source of butt waste, but some policymakers have expressed concerns that making cigarettes less harmful might discourage some smokers from attempting to quit.<sup>7</sup> The second method has broader public health benefits and thus, though difficult to accomplish, may be a more effective long-term solution.

## Background

Cigarette butt waste is a negative environmental externality, which means that the market price of cigarette products does not reflect the costs paid by municipalities to deal with the waste.<sup>8</sup> Not only is cigarette waste toxic, unsightly, and pervasive, but it is expensive to manage.<sup>9</sup> The direct costs of cigarette waste include the cost of litter management, collection, and abatement.<sup>10</sup> Indirect costs include the effects of toxicity, as well as impacts on the environment and tourism, which are often too complex to calculate accurately.<sup>11</sup> Many communities have proposed policies to address cigarette waste but few have been successfully implemented due to public resistance and concern about unforeseen consequences.<sup>12</sup>

## Policy Benefits

Municipalities today devote significant time and money to cleaning public areas and removing litter, including cigarette waste.<sup>13</sup> An effective cigarette butt waste mitigation or reduction program could financially benefit municipalities because it would reduce the amount of toxic waste improperly disposed of in public areas. Reducing cigarette butt waste could also substantially benefit the environment, because tobacco contains many toxic substances that can adversely affect wildlife, fish, and aquatic ecosystems.<sup>14</sup> Moreover, reducing the amount of toxic waste on public streets, sidewalks, and other outdoor areas could enhance the quality of public life<sup>15</sup> and also lower the risk of cigarette-caused fires.<sup>16</sup>

## Policy Options

To reduce cigarette waste, municipalities have adopted several different policies, including mitigation fees, deposit and refund policies, biodegradable filters or unfiltered cigarettes, product stewardship, filter recycling, and smoke-free laws.

**Mitigation Fees.** Some governments impose mitigation fees to offset costs they incur to deal with improperly disposed of cigarette butts.<sup>17</sup> These costs cover such services as litter collection and disposal, public education, signage, and administration of the self-funding program.<sup>18</sup> A mitigation fee is also likely to result indirectly in an increase in cigarette prices.

Bear in mind that a fee is distinct from a tax. To avoid being considered a tax, a mitigation fee should be set at a level reasonably designed to correspond to the public cost of addressing the waste problem and administering the fee program. Revenues generated by the fee must be directed to activities that address the problem, rather than to general revenues. Because the definitions of fees and taxes, and the legal standards governing the use of fees, vary among jurisdictions, be sure to consult local and state law when considering a cigarette litter mitigation fee.

**Deposit and Refund Programs.** A deposit and refund program requires that consumers pay an extra fee when purchasing cigarettes. Consumers then recoup the fee by returning used filters to the manufacturer or place of purchase. Unreimbursed deposits can be used to fund cigarette butt waste cleanups, public education programs about the negative consequences of smoking and butt flicking, smoking cessation services, and environmentally suitable butt waste management

processes.<sup>19</sup> One way to implement this type of program might be to require that each pack of cigarettes include a bag for used filters which could then be returned to a deposit center where employees would count the filters and issue a refund based on the number of filters returned. This method would require considerable cost and could raise health concerns for individuals collecting used cigarette ends or for employees counting returned filters. States considering this type of program need to be aware of such possible implementation difficulties.<sup>20</sup>

**Biodegradable Filters or Unfiltered Cigarettes.** After World War II, when cigarette manufacturing became largely automated, the industry switched from making filters out of biodegradable materials like cotton and wool to materials that were not biodegradable.<sup>21</sup> Today, cigarette filters are typically made out of a synthetic material called cellulose acetate.<sup>22</sup> Like most plastics, cellulose acetate is non-biodegradable. Instead, it photodegrades, which means it eventually breaks into smaller pieces in the presence of ultraviolet rays, but the component parts never truly decompose.<sup>23</sup> Cellulose acetate is derived from wood pulp that has been exposed to an acid reagent and a catalyst.<sup>24</sup> Because of its synthetic makeup, cellulose acetate can persist in the environment for ten to fifteen years before it photodegrades enough for its harmful effects to be neutralized, but it still does not disintegrate completely. Cellulose acetate fibers have even been found embedded in the lungs of smokers.<sup>25</sup>

Some companies have developed biodegradable and compostable cigarette filters using natural fibers like hemp, cotton, and food-grade starch. These alternative filters are intended to help reduce environmental pollution from cigarette butts, since they decompose more quickly in the environment, as well as in smokers' lungs.<sup>26</sup> Nevertheless, some public health proponents are concerned that the sale of these filters might increase improper disposal of butts because smokers will think that it is safe, or even desirable, to discard their used cigarette filters outside. Biodegradable and compostable cigarette filters still contain chemical residues from contact with tobacco smoke, and these toxic elements will continue to be released to the environment through combustion or contact with water, or as residue when the filter decomposes. These filters do not change the components of the cigarette or smoke. Moreover, starch filters may be less costly to produce than cellulose acetate filters, which could decrease the cost of producing cigarettes and possibly decrease the cost to consumers, making smoking more affordable.<sup>27</sup> Advertising for these products is misleading and glamorizes smoking as a natural and environmentally conscientious activity, which could ultimately increase the prevalence of smokers, especially in the environmentally conscientious market.

Another way to address the filter problem might be to target the production and sale of filtered cigarettes. As early as 1964, the Surgeon General issued statements indicating that cigarette filters are useless in reducing harm to the average smoker.<sup>28</sup> The U.S. Food and Drug Administration has exclusive authority to set tobacco product standards.<sup>29</sup> State and local governments, however, have the authority to prohibit the sale and distribution of tobacco products.<sup>30</sup> Thus, absent conflicting state law, state and local governments could consider prohibiting the sale of filtered cigarettes or cigarettes without biodegradable filters, on the basis of the adverse environmental impact of these products.

**Product Stewardship.** The product stewardship approach requires that a manufacturing industry assume responsibility for the entire lifecycle of its products.<sup>31</sup> Under this model, the tobacco

industry's liability would not end with the consumer but would extend to the environmental consequences caused by improperly discarded butts. The European Union has implemented a modified version of product stewardship called "extended producer responsibility" (EPR) to deal with environmental issues.<sup>32</sup> In the U.S., several states have enacted EPR laws for a variety of products including batteries, electronic devices, and pesticide bottles.<sup>33</sup> Some EPR programs replace returned products like batteries or car tires with new versions at a discounted price as a way to simultaneously encourage return of the waste product and to ensure brand loyalty. Product stewardship and EPR programs shift the financial burden of environmentally harmful waste to the manufacturer and may encourage industry innovation to make products less harmful over their life cycles.

Today, the cigarette manufacturing industry does not pay for costs related to the disposal of cigarette waste. Under a project stewardship model, tobacco companies could be held financially responsible for costs related to waste hauling, street cleaning, landfills and waste collection on public parks and beaches.<sup>34</sup> The industry would then have an incentive to encourage more thoughtful disposal practices and to make cigarette waste less hazardous. If such a policy were in place, the cost of cigarettes could increase.

**Filter Recycling.** Several programs and processes have been developed to recycle used filters into useful materials, such as sealants or adhesives, with the goal of keeping cigarette butts out of landfills and off streets and beaches. Filter recycling programs may reduce the local government's burden to fund mitigation programs. However, unlike other consumer products, no current process exists for segregating and collecting butts for reuse or disposal, although a number of new proprietary efforts have been proposed.<sup>35</sup>

Filter recycling programs could help address some of the environmental and public health effects of cigarette litter, but they would not address the root problem – cigarette use. In fact, these types of programs might encourage smoking by making it seem more socially acceptable or environmentally responsible because butt waste is collected for recycling. Also, although proponents of filter recycling express confidence that cigarette waste can be cleaned of toxic residue, concerns have been raised about whether these technologies can successfully remove all the toxins in cigarette filters.<sup>36</sup> Used cigarette filters contain toxins from contact with cigarette smoke, but even unused filters have been found to contain harmful materials that are toxic to marine and freshwater fish.<sup>37</sup> Use of these materials in products that are in close contact with humans, such as residential insulation or articles of clothing, may have unanticipated health effects, while use of recycled cigarette filters in sealants, adhesives, and lubricants may result in additional environmental concerns such as toxic runoff and groundwater pollution.<sup>38</sup>

**Smoke-Free Laws.** Another way to minimize cigarette butt litter is to pass more restrictive smoke-free laws, particularly outdoor smoke-free (or tobacco-free) laws in sensitive areas like parks and beaches.<sup>39</sup> By April 2013, a total of 160 municipalities in the United States had passed laws prohibiting smoking on public beaches<sup>40</sup> and 801 had prohibited smoking in at least some city parks.<sup>41</sup> Beaches are often targeted in smoke-free laws: an estimated 28 percent of litter collected on beaches comes from a tobacco-related source.<sup>42</sup> Even so, many cigarette butts found on beaches may have been smoked remotely and discarded near a sewer or rainwater system that emptied into a water body and eventually washed up on the beach.<sup>43</sup>

Other outdoor venues that have increasingly become smoke-free are college campuses. As of April 2013, 1,159 U.S. colleges and universities have enacted smoke-free campus policies.<sup>44</sup> Although the prevalence of smoking among young adults has dropped,<sup>45</sup> smoking among U.S. college students is still common.<sup>46</sup> Approximately 16 to 26 percent of U.S. college students smoke, with community college students smoking at higher rates than university students.<sup>47</sup> As a result, cleanup costs related to tobacco-related waste on college grounds can be significant. For example, Penn State University reportedly spends \$150,000 annually cleaning up cigarette butt waste, operating and maintaining butt-gathering machinery, and providing and emptying trash cans, ashtrays, and other receptacles.<sup>48</sup> For more information about smoke-free campus policies, see the U.S. Department of Health and Human Services' Tobacco-free Campus Initiative.<sup>49</sup>

**Additional Policy Options.** Other proposed methods to address the cigarette waste problem include stronger litter laws, increased public education on smoking and littering, and more ashtrays and receptacles in public spaces. Also, of course, on a more general level, any policy that raises the price of cigarettes or otherwise discourages cigarette use will have an indirect effect on reducing cigarette waste.

### **Other Policy Considerations**

**Implementation Costs.** Local or state governments considering policies to address cigarette waste need to identify who will be ultimately responsible for the costs of implementation. The cigarette waste problem negatively affects the environment and human health, and programs to address this issue are expensive. In jurisdictions where cigarette litter has not yet been addressed, the municipality is typically responsible for street cleaning, landfill maintenance, transportation of waste, and cleaning of parks and public spaces, and then passes these costs on to taxpayers. In contrast, programs that include mitigation fees and filter deposits place the costs on smokers, while product stewardship shifts costs to cigarette manufacturers.

**Involvement of the Tobacco Industry in Environmental Groups.** Another complication in addressing cigarette butt waste has been the tobacco industry’s alliances with environmental groups. Some analysts suggest that these alliances help the tobacco industry in its efforts to prevent cigarette waste from affecting the social acceptability of smoking, to “remove” cigarette waste as an issue, and to ensure that the tobacco industry is not held practically or financially responsible for cigarette waste.<sup>50</sup> For example, the tobacco industry has had financial and personnel ties with environmental campaigns and anti-litter programs such as Keep America Beautiful (KAB) since the late 1950s.<sup>51</sup> In the 1990s, tobacco companies used anti-litter campaigns to build positive relationships with conservationists, opinion leaders and consumers.<sup>52</sup> These anti-litter campaigns tend to promote education, voluntary cleanup programs, and portable public ashtrays and receptacles, rather than cigarette butt deposition/return policies, litter fees or taxes, or many of the other options mentioned above.<sup>53</sup> The industry approach generally tends to shift responsibility for cigarette waste to the consumer.<sup>54</sup> By reframing cigarette waste as an “upstream” problem created by the tobacco industry, communities could build partnerships between environmental and tobacco control groups, leading to more innovative policy solutions that discourage smoking and place the cost and consequences of filter waste on the tobacco industry.<sup>55</sup>

### Select Legislation and Policies

Below are examples of a few policies and proposed programs that states and localities have considered to reduce cigarette waste. The Tobacco Control Legal Consortium does not endorse or recommend any particular approach. In evaluating these options, local and state governments should determine the most effective and workable approach that best meets their community’s needs.

Locality/State	Policy
<p><b>San Francisco, CA: <a href="#">Litter Abatement Fee</a> (2011)</b></p>	<p>San Francisco, California implemented a cigarette litter abatement fee by increasing the per pack price of all cigarettes by \$0.20.<sup>56</sup> Although the subject of litigation, the litter abatement fee was upheld in court in 2011.<sup>57</sup></p> <p>San Francisco did multiple street litter audits to calculate the maximum permissible fee.<sup>58</sup> In 2007, the City spent more than \$7 million to clean up improperly discarded cigarettes and butts.<sup>59</sup> San Francisco residents consume approximately 30.6 million packs a year.<sup>60</sup> Based on these numbers, the maximum permissible fee was \$0.22 per pack.<sup>61</sup> The fee serves a dual purpose: by increasing the price of cigarettes, it discourages smoking and corresponding litter, and the proceeds from the abatement fee are used to finance street cleaning and environmental remediation directly related to cigarette waste.</p>
<p><b>Maine: Product Stewardship Policy</b></p>	<p>In 2010, the state of Maine passed a law making product stewardship state policy.<sup>62</sup> The Act defines product</p>

<p><b>(2010) and Proposed Deposit Program</b></p>	<p>stewardship as “a requirement that a producer take responsibility for managing and reducing the entire life-cycle impacts of the producer’s product, from product design to end-of-life management.”<sup>63</sup> The legislation outlines the program’s procedures and requirements and assigns the Department of Environmental Protection the responsibility for identifying products and industries to be regulated.<sup>64</sup> Although the law does not apply to the tobacco industry, it could provide a model for future product stewardship programs targeting cigarette manufacturers.</p> <p>Back in 2001, Maine state legislators considered a proposal to increase the price of cigarettes by \$1.00 per pack and provide a \$0.05 refund per cigarette butt returned to a redemption center.<sup>65</sup> All cigarette filters sold within the state would be marked with a five cent deposit stamp.<sup>66</sup> Uncollected deposit money would have been used to fund anti-smoking education in state schools or deposited in a Returnable Tobacco Products Fund that would be responsible for allocating any funds generated.<sup>67</sup> Maine was one of the first states to set up a deposit program for cans and bottles and would have used that existing infrastructure. Cigarette butts could have been returned to existing bottle recycling centers and the existing staff could expand their duties to counting cigarette butts and issuing refunds.<sup>68</sup> The program would not have resulted in any extra burden on convenience stores or other businesses that sell cigarettes because they would not be responsible for collection.<sup>69</sup></p> <p>However, the idea of cigarette recycling centers was slow to garner support. Residents expressed concern about the cleanliness and safety of handling used cigarette ends. Supporters of the proposal stressed that each carton of cigarettes would be sold with a transparent bag for collection of butts so that recycling center employees would be able to count the butts without removing them from the bag, but concerns remained that this type of program would encourage collection of other people’s littered butts in order to collect the deposit money.<sup>70</sup> Maine’s governor at the time, Angus King, did not support the bill because he did not think it was realistic and instead proposed increasing cigarette taxes by \$0.26 per pack to fund anti-smoking programs.<sup>71</sup></p>
<p><b>New York: Proposed Recycling Program (2010, 2013)</b></p>	<p>New York considered legislation in 2010 and 2013 that would create a statewide cigarette recycling program.<sup>72</sup> The bill would mandate a minimum \$0.01 deposit per cigarette sold and would place the program under the joint purview of the Department of Health and the Department of Environmental Conservation.<sup>73</sup></p>

## Potential Legal Challenges

**Unauthorized Tax.** Litter abatement fees have been challenged on the ground that they are unauthorized taxes. For example, Philip Morris challenged the legality of San Francisco’s litter abatement fee on grounds that the \$0.20 per pack increase was actually a tax that was mislabeled and disguised as a fee. The cigarette manufacturer claimed the abatement scheme imposed charges on smokers who did not illegally discard their butts and thus did not directly target the problem as required under the law.<sup>74</sup> The industry contended that because it was a tax, it required voter approval before it could legally be implemented.<sup>75</sup>

City officials in San Francisco argued that the litter abatement charge qualified as a fee because it put the cost of litter mitigation directly on smokers without affecting non-smokers.<sup>76</sup> On July 18, 2011, the San Francisco County Superior Court agreed and upheld the measure, concluding that the fee is “reasonably related to the estimated costs of the services it funds and is reasonably apportioned so that the charges allocated to the fee payer bear a fair or reasonable relationship to the payer’s burdens on or benefits from the regulatory activity.”<sup>77</sup>

**Due Process.** Smoke-free restrictions have occasionally been legally challenged on the ground that they deny smokers constitutionally guaranteed rights such as due process of law or equal protection.<sup>78</sup> However, such legal challenges generally fail because there is no constitutional right to smoke and smoking is not a specially protected liberty right.<sup>79</sup> In addition, any law restricting the sale of tobacco products or increasing the price of cigarettes might face these or other legal challenges. Communities should consult with attorneys familiar with the laws of their jurisdictions when considering such measures.

**Preemption.** Any state or local restrictions on the sale of filtered cigarettes would likely be challenged on preemption grounds. The Family Smoking Prevention and Tobacco Control Act (“Act”) gives the U.S. Food and Drug Administration regulatory authority over tobacco product manufacturing and sales, and the sale of filtered cigarettes is not restricted at the federal level. However, in many aspects of tobacco regulation, the federal law does not preempt states or localities from passing more stringent regulations.<sup>80</sup> Section 916 of the Act preserves the right of state and local governments to “enact, adopt, promulgate, and enforce any law, rule, regulation, or other measure with respect to tobacco products that is in addition to, or more stringent than, requirements established under this chapter.”<sup>81</sup> Until the issue has been litigated, it is difficult to say definitively whether restrictions on the sale of filtered cigarettes would be preempted by federal law.

## Other Helpful Resources

Many non-profit organizations feature useful online information about the negative consequences of smoking, including the harm posed by cigarette waste. The following resources provide specific information about the environmental impact of cigarette waste:

- **Cigarette Butt Pollution Project:** An advocacy and research focused non-profit organization dedicated to the eradication of cigarette butt waste.  
<http://www.cigwaste.org/>

- **Americans for Nonsmokers' Rights:** America's leading advocacy organization dedicated to nonsmokers' rights, with a [web section](#) containing news, research and related resources on cigarette butt waste. <http://www.no-smoke.org/>
- **CigaretteLitter.Org:** A nonprofit organization with an informational website intended to educate people about the negative effects of cigarette litter. <http://www.cigarettelitter.org>
- **Litter Butt:** A [website](#) that encourages concerned citizens to report people who throw cigarette butts from vehicles. In participating states (Texas, Pennsylvania, and North Carolina), the state will mail a warning to the registered owner of the vehicle with information about litter laws and fines. <http://www.litterbutt.com>

## Contact Us

Please feel free to contact the Tobacco Control Legal Consortium at [publichealthlawcenter@wmitchell.edu](mailto:publichealthlawcenter@wmitchell.edu) or the Cigarette Butt Pollution Project at [www.cigwaste.org](http://www.cigwaste.org) with any questions about the information included in this guide or to discuss local concerns you may have about implementing cigarette waste policies.

*Last updated: June 2013*

## Endnotes

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<sup>1</sup> The information contained in this document is not intended to constitute or replace legal advice.

<sup>2</sup> Elli Slaughter et al., *Toxicity of Cigarette Butts, and Their Chemical Components, to Marine and Freshwater Fish*, 20 TOBACCO CONTROL i25 (2011), available at [http://tobaccocontrol.bmj.com/content/20/Suppl\\_1/i25.full.pdf+html](http://tobaccocontrol.bmj.com/content/20/Suppl_1/i25.full.pdf+html).

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

<sup>4</sup> See Jessica W. Moerman & Gretchen E. Potts, *Analysis of Metals Leached from Smoked Cigarette Litter*, 20 (Suppl. 1) TOBACCO CONTROL i30 (2011), available at [http://tobaccocontrol.bmj.com/content/20/Suppl\\_1/i30.full.pdf+html](http://tobaccocontrol.bmj.com/content/20/Suppl_1/i30.full.pdf+html).

<sup>5</sup> Thomas E. Novotny et al., *Tobacco and Cigarette Butt Consumption in Humans and Animals*, 20 TOBACCO CONTROL i17, i18 (2011), available at [http://tobaccocontrol.bmj.com/content/20/Suppl\\_1/i17.full.pdf+html](http://tobaccocontrol.bmj.com/content/20/Suppl_1/i17.full.pdf+html).

<sup>6</sup> Slaughter et al., *supra* note 2, at i25.

<sup>7</sup> Thomas E. Novotny et al., *Cigarette Butts and the Case for an Environmental Policy on Hazardous Cigarette Waste*, 6 INT'L J. ENVTL. RES. & PUB. HEALTH 1691, 1691 (2009).

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<sup>8</sup> John E. Schneider et al., *Tobacco Litter Costs and Public Policy: A Framework and Methodology for Considering the Use of Fees to Offset Abatement Costs*, 20 TOBACCO CONTROL i36 (2011) [hereinafter Schneider et al., *Tobacco Litter Costs and Public Policy*], available at [http://tobaccocontrol.bmj.com/content/20/Suppl\\_1/i36.full.pdf+html](http://tobaccocontrol.bmj.com/content/20/Suppl_1/i36.full.pdf+html).

<sup>9</sup> *Id.* at i-38.

<sup>10</sup> See, e.g., John E. Schneider et al., *Estimates of the Cost of Tobacco Litter in San Francisco and Calculations of Maximum Permissible Per-Pack Fees* 11, Health Economics Consulting Group LLC (2009) [hereinafter Schneider et al., *Estimates of the Cost of Tobacco Litter in San Francisco*] (estimating that the City of San Francisco spent \$7,487,916 in 2009 on direct costs such as removal and disposal of tobacco litter), available at [http://www.sfdpw.org/ftp/uploadedfiles/sfdpw/director/annual\\_reports/tobacco\\_litter\\_study\\_hecg\\_062209\[1\].pdf](http://www.sfdpw.org/ftp/uploadedfiles/sfdpw/director/annual_reports/tobacco_litter_study_hecg_062209[1].pdf).

<sup>11</sup> *Id.* at 11-13.

<sup>12</sup> Novotny et al., *Cigarette Butts and the Case for an Environmental Policy*, *supra* note 7, at 1702.

<sup>13</sup> Schneider et al., *Estimates of the Cost of Tobacco Litter in San Francisco*, *supra* note 10, at 9.

<sup>14</sup> Novotny et al., *Tobacco and Cigarette Butt Consumption in Humans and Animals*, *supra* note 5, at i17-i20; see also Novotny et al., *Cigarette Butts and the Case for an Environmental Policy*, *supra* note 7, at 1694-95.

<sup>15</sup> *Tobacco Product Waste Reduction Toolkit*, Calif. Dep't of Public Health, Calif. Tobacco Control Program 6 (2013) (finding the presence of cigarette litter may influence residents' perceptions of decline and disorder in their surroundings), available at <http://69.195.124.81/~cigwaste/wp-content/uploads/2013/04/Tobacco-Waste-Toolkit.pdf>.

<sup>16</sup> Sara Markowitz, *Where There's Smoking, There's Fire: The Effects of Smoking Policies on the Incidence of Fires in the United States*, Nat'l Bureau of Econ. Research Working Paper Series, Paper No. 16625 (2010), available at <http://www.nber.org/papers/w16625>.

<sup>17</sup> Schneider et al., *Tobacco Litter Costs and Public Policy*, *supra* note 8, at i38-i39.

<sup>18</sup> *Id.* at i38. See, e.g., SAN FRANCISCO, CAL., ORDINANCE 173-09, 105.3(e) (June 29, 2009), available at [http://www.greencitiescalifornia.org/assets/waste/SF\\_cigarette-litter\\_ordinance.pdf](http://www.greencitiescalifornia.org/assets/waste/SF_cigarette-litter_ordinance.pdf).

<sup>19</sup> See, e.g., S. S650, 2013 Leg., 236<sup>th</sup> Sess. (N.Y. 2013) (which would create a cigarette butt recycling program, including a 1 cent deposit per cigarette or cigar butt recycled, and would require each county to have at least one redemption facility); see also Jim Burns, *Cigarette Butt Deposit Bill Being Considered in Maine*, CNSNEWS.COM, July 7, 2001, <http://cnsnews.com/news/article/cigarette-butt-deposit-bill-being-considered-maine-0>.

<sup>20</sup> Elizabeth Smith & Patricia McDaniel, *Covering Their Butts: Responses to the Cigarette Litter Problem*, 20 TOBACCO CONTROL 100, 103 (2011).

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<sup>21</sup> Bradford Harris, *The Intractable Cigarette 'Filter Problem,'* 20 (Suppl. 1) TOBACCO CONTROL i10, i12 (2011).

<sup>22</sup> *Id.* at i11.

<sup>23</sup> Thomas E. Novotny et al., *Cigarette Butts and the Case for an Environmental Policy on Cigarette Waste,* *supra* note 7, at 1693.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.* at 1692.

<sup>26</sup> *Stanelco to Launch Starch-based Cigarette Filters,* NATURAL PRODUCTS INSIDER, Dec. 5, 2005, <http://www.naturalproductsinsider.com/articles/2005/12/stanelco-to-launch-starch-based-cigarette-filters.aspx>.

<sup>27</sup> *Id.*

<sup>28</sup> *See* Harris, *supra* note 21, at i15; *see also* Editorial, *The Government Should Act,* BERKSHIRE EAGLE, Jan. 14, 1964, at 13, available at <http://legacy.library.ucsf.edu/tid/isl28e00>.

<sup>29</sup> Family Smoking Prevention and Tobacco Control Act, Pub. L. No. 111-31, 123 Stat. 1776 (2009) (codified as amended in relevant part at 21 U.S.C. §§ 301, 321, 387), available at [www.govtrack.us/congress/bills/111/hr1256/text](http://www.govtrack.us/congress/bills/111/hr1256/text).

<sup>30</sup> 21 U.S.C. §§ 387 p(a)(1).

<sup>31</sup> Richard L. Barnes, *Regulating the Disposal of Cigarette Butts as Toxic Hazardous Waste,* 20 TOBACCO CONTROL i45, i46 (2011), available at [http://tobaccocontrol.bmj.com/content/20/Suppl\\_1/i45.full.pdf+html](http://tobaccocontrol.bmj.com/content/20/Suppl_1/i45.full.pdf+html).

<sup>32</sup> *Id.* at i46.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at i45.

<sup>35</sup> *Id.*

<sup>36</sup> *See, e.g.,* Emily B. Hager, *A Call to Recycle Cigarette Butts,* N.Y. TIMES (May 25, 2010), available at <http://cityroom.blogs.nytimes.com/2010/05/25/a-call-to-recycle-cigarette-butts>.

<sup>37</sup> Slaughter et al., *supra* note 2, at i25.

<sup>38</sup> Barnes, *supra* note 31, at i45.

<sup>39</sup> *See, e.g.,* Jordana Ossad, *New York City Outdoor Smoking Ban Begins,* CNN, May 23, 2011, [http://articles.cnn.com/2011-05-23/us/new.york.smoking.ban\\_1\\_smoking-on-public-beaches-smoking-ban-secondhand-smoke?s=PM:US](http://articles.cnn.com/2011-05-23/us/new.york.smoking.ban_1_smoking-on-public-beaches-smoking-ban-secondhand-smoke?s=PM:US).

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- <sup>40</sup> Am. Nonsmokers Rights Found., *Municipalities with Smoke-free Beach Laws* (2013), available at <http://www.no-smoke.org/pdf/SmokefreeBeaches.pdf>.
- <sup>41</sup> Am. Nonsmokers Rights Found., *Municipalities with Smoke-free Park Laws* (2013), available at <http://www.no-smoke.org/pdf/SmokefreeParks.pdf>.
- <sup>42</sup> Schneider et al., *Tobacco Litter Costs and Public Policy*, *supra* note 8, at i36.
- <sup>43</sup> Novotny et al., *Cigarette Butts and the Case for an Environmental Policy*, *supra* note 7, at 1694.
- <sup>44</sup> Am. Nonsmokers Rights Found., *U.S. Colleges & Universities with Smokefree and Tobaccofree Policies* (2013), available at <http://www.no-smoke.org/pdf/smokefreecollegesuniversities.pdf>.
- <sup>45</sup> Centers for Disease Control and Prevention, *Trends in Current Cigarette Smoking Among High School Students and Adults, United States, 1965–2011*, Youth Risk Behavior Survey, 1991–2011), available at [http://www.cdc.gov/tobacco/data\\_statistics/tables/trends/cig\\_smoking/index](http://www.cdc.gov/tobacco/data_statistics/tables/trends/cig_smoking/index).
- <sup>46</sup> See, e.g., Joseph Lee et al., *Cigarette Butts Near Building Entrances: What is the Impact of Smoke-free College Campus Policies?*, 22 TOBACCO CONTROL 107, 107 (2013); Michael Sawdey et al., *Smoke-free College Campuses: No Ifs, Ands, Or Toxic Butts*, 20 TOBACCO CONTROL i21, i21 (2011) (finding that in 2007, an estimated 3.72 million U.S. college students smoked).
- <sup>47</sup> Joseph Lee et al, *supra* note 46, at 107 (2013).
- <sup>48</sup> *Penn State Cost of Litter Cleanup*, PHILADELPHIA DAILY NEWS, Mar. 27, 2000 ("School officials say landscapers who should be planting flowers and pruning shrubs are spending time instead picking up butts on the 15,000-acre campus: Some 13 landscapers spend 10 hours a week picking up discarded cigarettes at an estimated cost of \$150,000.").
- <sup>49</sup> U.S. Dep't Health & Human Servs., Tobacco-Free College Campus Initiative, available at <http://www.sph.umich.edu/tfcci/index.html>.
- <sup>50</sup> Elizabeth Smith & Patricia McDaniel, *Covering Their Butts: Responses to the Cigarette Litter Problem*, 20 TOBACCO CONTROL 100, 100-6 (2011).
- <sup>51</sup> *Id.* at 101-2.
- <sup>52</sup> *Id.* at 102.
- <sup>53</sup> *Id.* at 104.
- <sup>54</sup> Thomas E. Novotny et al., *Cigarette Butts and the Case for an Environmental Policy*, *supra* note 7, at 1702.
- <sup>55</sup> Elizabeth A. Smith & Thomas E. Novotny, *Whose Butt Is It? Tobacco Industry Research about Smokers and Cigarette Butt Waste*, 20 TOBACCO CONTROL (Supp. 1), i2-i9, i7 (2011).

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<sup>56</sup> SAN FRANCISCO, CAL., ORDINANCE 173-09, 105.3(e) (June 29, 2009), *available at* [http://www.greencitiescalifornia.org/assets/waste/SF\\_cigarette-litter\\_ordinance.pdf](http://www.greencitiescalifornia.org/assets/waste/SF_cigarette-litter_ordinance.pdf).

<sup>57</sup> Saker Kaleh v. City and County of San Francisco, No. CGC-09-495326, San Francisco Cnty. Super. Ct. (2011).

<sup>58</sup> See Schneider et al., *Tobacco Litter Costs and Public Policy*, *supra* note 8, at 138; *see also* Schneider et al., *Estimates of the Cost of Tobacco Litter in San Francisco*, *supra* note 10, at 6.

<sup>59</sup> Schneider et al., *Estimates of the Cost of Tobacco Litter in San Francisco*, *supra* note 10, at 9.

<sup>60</sup> *Id.* at 15 n.31.

<sup>61</sup> *Id.* at 16-17.

<sup>62</sup> ME. REV. STAT. ANN. tit. 38, §§ 1771-1775 (2011).

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> Burns, *supra* note 19.

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> See Amanda Onion, *Maine Proposes Cigarette Butt Redemptions*, ABC News, Feb. 23, 2001, *available at* <http://abcnews.go.com/US/story?id=94011&page=1>.

<sup>71</sup> *Id.*

<sup>72</sup> See Hager, *supra* note 36; *see also* S. S650, 2013 Leg., 236<sup>th</sup> Sess. (N.Y. 2013).

<sup>73</sup> See Christina Caldwell, *New York Senator Proposes 1 Cent Deposit for Cigarette Butts*, Earth 911, Jan. 3, 2013, *available at* <http://earth911.com/news/2013/01/03/proposed-cigarette-butt-recycling-deposit/>

<sup>74</sup> Heather Knight, *S.F.'s 20-Cent Cigarette Fee Headed to Court?*, SAN FRANCISCO CHRON., Jan. 10, 2010, at C1, *available at* <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/01/09/BAOI1BF5BT.DTL>.

<sup>75</sup> See California Taxpayers Association, *Understanding Proposition 26*, CalTex, Aug. 15, 2011, *available at* <http://www.caltax.org/UnderstandingProposition26.pdf> (explaining that under California's Proposition 26, which passed in November 2010, a policymaker can establish that any "levy, charge or

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exaction” is a fee, rather than a tax, if (1) it falls under an exception outlined in Proposition 26; (2) the charge is used to specifically and exclusively benefit the people who pay the charge; and (3) the government imposing the charge can establish by a preponderance of the evidence that the charge is reasonable in amount and effect. If a charge fails to meet any of these three criteria, then it is a tax and therefore requires a two-thirds vote of the State Legislature to pass. Proposition 26 was intended to remedy a perceived “loophole” that allowed many charges to be adopted by a majority vote because they were labeled as fees, even though critics claimed that, in application, they had the effect of taxes.)

<sup>76</sup> *Id.*

<sup>77</sup> *Id.*

<sup>78</sup> See, e.g., Tobacco Control Legal Consortium, *Legal Authority to Regulate Smoking and Common Threats and Challenges* (2009), available at [http://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-authority-2009\\_0.pdf](http://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-authority-2009_0.pdf).

<sup>79</sup> See, e.g., Tobacco Control Legal Consortium, *There Is No Constitutional Right to Smoke: 2008* (2008), available at [http://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-constitution-2008\\_0.pdf](http://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-constitution-2008_0.pdf).

<sup>80</sup> See, e.g., *U.S. Smokeless Tobacco Manufacturing Company, LLC v. City of New York*, 703 F.Supp.2d 329 (S.D.N.Y. 2010) (finding that the Family Smoking Prevention and Tobacco Control Act did not preempt New York City’s more stringent restrictions on the sale of flavored tobacco products).

<sup>81</sup> 21 U.S.C. § 387p(a)(1).