

*TX Energy Project*

# The Policy Implications of a Plastics User Fee & Recycling Program

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## Background and Introduction

Although Texas has made strides in educating its residents about the harmful effects of litter, littering remains a problem in the state. This paper examines the costs littering imposes on state and local governments in Texas and explores how to mitigate the problem.

“Littering” as discussed in this paper is activity meeting the Texas statutory definition of “illegal dumping.” A person commits the offense of illegal dumping if the person disposes or allows or permits the disposal of litter or other solid waste at a place that is not an approved solid waste site (including private property).<sup>1</sup> Similarly, a person commits an offense if he or she receives litter or other solid waste for disposal at a place that is not an approved solid waste site, or transports it for such disposal.<sup>2</sup>

“Litter” itself is:

- 1) decayable waste from a public or private establishment, residence, or restaurant, other than sewage, body wastes, or industrial by-products; or
- 2) non-decayable solid waste, except ashes, that consists of:

- (i) combustible waste material, including paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, or similar materials;
- (ii) noncombustible waste material, including glass, crockery, tin or aluminum cans, metal furniture, and similar materials that do not burn at ordinary incinerator temperatures of 1800 degrees Fahrenheit or less; and
- (iii) discarded or worn-out manufactured materials and machinery, including motor vehicles and parts of motor vehicles, tires, aircraft, farm implements, building or construction materials, appliances, and scrap metal.<sup>3</sup>

In turn, “solid waste” is generally “garbage, rubbish, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities.”<sup>4</sup>

## Data

Accurate data on the current extent of littering in Texas is difficult to find. The best available sources are the 2013 survey carried out Environmental Resources Planning, LLC in cooperation with Sherry Matthews Advocacy Marketing and the Texas Department of Transportation (TxDOT), and the 2017 “Don’t Mess with Texas” survey.

### 2013 TxDOT Survey

The most recent comprehensive study on the extent of littering in Texas was carried out in 2013 by Environmental Resources Planning, LLC on behalf of Sherry Matthews Advocacy Marketing and with the assistance of the Texas Department of Transportation (“TxDOT”).<sup>5</sup> This study estimated that the total number of all items littered in the state annually was 1.48 billion. Cigarette butts and tire debris were the two most common items of litter, with more than half a billion cigarette butts being littered in the state annually.

The figure of 1.48 billion was a 34 percent increase over the estimated 1.1 billion littered items in 2009. Despite this significant increase, progress was evident in some areas over that time period. In 2013, an estimated 435 million pieces of “visible litter”- items larger than two square inches- accumulated on Texas roads, a *reduction* of 34 percent compared to 2009. This reduction is particularly impressive given that the state’s population increased during that period. In addition, tire debris- a common type of litter-is not intentionally littered.



The increase in annual littering from 2009 to 2013 was attributable to “micro litter,” or litter that is smaller than two square inches. While small items of litter are preferable to larger items of litter in some respects, they unfortunately tend to be more difficult to clean up.

Plastic litter is an especially concerning form of litter for at least three reasons. First, it takes much longer to decompose than most other types of litter; in a landfill, the estimated time for plastic to decompose is between 100 and 400 years.<sup>6</sup> Second, it poses a severe threat to marine life and marine-dependent wildlife, such as seabirds and sea turtles.<sup>7</sup> Third, its tendency to end up in waterways can lead to storm drainage problems.

This last point deserves special emphasis. Over the last few years, Texas has had to deal with catastrophic flooding, and all of the human misery and economic damage it causes. While this flooding was primarily attributable to natural disasters

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(particularly Hurricane Harvey), flooding can also be caused by faulty drainage systems. As the Environmental Protection Agency has stated, storm drains “help prevent flooding by draining rainwater and melted snow off of streets and other paved surfaces.”<sup>8</sup> Similarly, a study on storm drainage in developing countries has remarked that “Storm water runoff control is the crucial purpose of any urban drainage system.”<sup>9</sup> Given that storm

drains are critical for handling stormwater, it is not surprising that the Federal Emergency Management Agency (FEMA) grants are sometimes used for storm drain improvements to mitigate flooding.<sup>10</sup> FEMA also advises homeowners to clear storm drains of debris to minimize the potential for flooding.<sup>11</sup>

Storm drains which are clogged or blocked cannot carry out their purpose of draining stormwater, which increases the risk of flooding. Many cities around the country recognize this danger. The city of Oakland, for example, launched an “Adopt a Storm Drain” program in 2014, which recruits volunteers who clean drains which are blocked with trash and leaves.<sup>12</sup>

The tendency of plastic litter to accumulate in storm drains is well known. Perhaps the most notorious case of this happening is in Bangladesh. In 1989 and 1998, severe floods struck the country, and the plastic litter clogging storm drains played a key role in the floodwaters being unable to drain.<sup>13</sup> Bangladesh banned the use of polythene bags starting in 2002.<sup>14</sup> A 2005 study found that the ban appeared to have had positive results,<sup>15</sup> although the country will always be prone to flooding because of its proximity to sea level.

These problems are not confined to areas outside Texas. News reports from Houston consistently document the plastic litter on the Buffalo Bayou and its

tendency to clog storm drains.<sup>16</sup> Similarly, Galveston has found that “trash, especially plastic bags” plays a key role in clogging storm drains.<sup>17</sup> Because of plastic litter’s adverse effects on storm drainage, the scope of littering in the state should be viewed with concern by policymakers.

Litter composed of plastic accounted for 17 percent of littered items in Texas 2013, down from 19 percent in 2009 and 25 percent in 2005. Plastic litter can take many forms, including jars, bottles, bags, and packaging. The following are some of the commonly littered plastic items in 2013, along with the estimated percentage of visible litter which each comprises:

- Miscellaneous plastic: 4.2%
- Water bottles: 2.0%
- Plastic packaging (film): 2.0%
- Plastic retail bags: 2.0%
- Plastic soft drink containers: 1.4%
- Plastic drink cups: 1.3%
- Plastic bottles (energy drinks): 1.0%
- Plastic bottles, jars, and lids (non-beverage) 0.7%
- Milk or juice bottles: 0.5%

#### 2017 “Don’t Mess with Texas” Survey

The 2017 “Don’t Mess with Texas Survey” also indicated that littering remains a problem in the state despite progress in recent years.

Ninety-six percent of respondents supported the anti-littering Don’t Mess with Texas campaign and wish for it to continue. Half of respondents admitted to littering in the past month, with the most commonly-littered items being food, organic materials, and small pieces of paper. When asked to rate the seriousness of various types of litter, respondents’ most common answer was plastic litter. Nine percent of respondents admitted to littering plastic items in the last month. Interestingly, there is a correlation between age and littering; 68 percent of respondents ages 16-24 admit to littering in the past month, whereas the corresponding figure for people over age 50 is less than half of that (33%).

#### Current Sanctions for Littering

A person convicted of littering must perform community service and faces fines and even jail time. Littering, or “illegal dumping” as it is termed in the applicable state statute, carries a punishment that depends on the quantity of the matter littered. Generally, the punishment classifications are as follows:

Littering an item(s) that weighs no more than five pounds or has a volume of no more than five gallons is a Class C misdemeanor, which is punishable by a fine of up to \$500.<sup>18</sup>

Littering an item(s) which weighs more than five pounds but less than 500 pounds, or that has a volume of more than five gallons but less than 100 cubic feet, is a Class B Misdemeanor, which is punishable by a fine of up to \$2,000 and/or a term of up to 180 days in jail.<sup>19</sup>

Littering an item(s) which weighs more than five pounds but less than 1,000 pounds, or that has a volume of more than 100 cubic feet but less than 200 cubic feet, is a Class A Misdemeanor, which is punishable by a fine of up to \$4,000 and/or a term of up to one year in jail.<sup>20</sup>

Littering an item(s) which weighs more than 1,000 pounds, or that has a volume of 200 cubic feet or more, is a state jail felony, which is punishable by a fine of up to \$10,000 and/or a term of up to two years in jail.<sup>21</sup>

If a person is convicted of littering and has a previous conviction for littering, the penalty for the second offense may be “upgraded” one level. For example, a Class B misdemeanor would be upgraded to a Class A misdemeanor.<sup>22</sup>

In addition, a court must order a person convicted of littering to perform up to 60 hours of community service, which must consist of picking up litter or working at a recycling facility.<sup>23</sup>

Finally, local ordinances may subject litterers to additional fines. For example, the Burns & McDonnell report on the cost of littering to cities (discussed in the following section) states that the Harris County District Attorney requires illegal dumpers to pay \$300 in restitution and a cleanup fee based on the costs of the applicable cleanup.

### The Costs of Littering to State Government and Cities

The Department of Transportation spent \$47 million and \$37 million in 2012 and 2013, respectively, on cleaning up litter.<sup>24</sup> A 2015 press release by TxDOT estimated TxDOT’s annual litter cleanup costs at \$35 million.<sup>25</sup> In 2016, TxDOT stated that it annually spends on average more than \$30 million on cleaning up litter.<sup>1</sup>

In addition to state spending, many local governments fund litter abatement efforts. A 2017 study by Burns & McDonnell (the “Burns report”) found that nine Texas cities- Austin, Corpus Christi, El Paso, Fort Worth, Houston, Laredo, Lufkin, Midland, and San Antonio- spend a combined \$50 million on combatting littering each year. These funds are spent primarily by government bodies, but the \$50 million figure

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<sup>1</sup> Per conversations with TxDOT staff, the agency is currently compiling updated figures.

includes spending by non-governmental organizations as well (spending by private businesses and the value of volunteer labor are not included in the \$50 million figure). Spending on anti-littering efforts in each of these nine cities averaged \$5.6 million, with the breakdown of this average as follows:

- \$133,100 for litter prevention;
- \$910,700 for illegal dumping prevention;
- \$187,800 for education and outreach;
- \$2,890,300 for litter abatement (i.e., cleanup);
- \$781,000 for illegal dumping abatement; and
- \$691,500 for enforcement of littering law.

Notably, the above figures include certain costs that could reasonably be viewed as distinct from costs arising from litter. For example, maintaining facilities at which people may drop off bulk items presumably decreases illegal dumping, but people disposing of such items at these facilities cannot accurately be described as littering. While offering such facilities may be a form of litter prevention, the same is true of any costs a city incurs in running a routine residential trash collection operation, yet those latter costs are not counted. Nevertheless, it is clear that the nine cities examined in the study incur significant costs combatting littering, with the bulk of these costs being directed at cleanup and enforcement.

### Recent Efforts in Texas to Combat Littering

In 2020, proposed federal legislation termed the “Break Free from Plastic Pollution Act” would have imposed a 10-cent deposit charge on beverage containers made of plastic, metal, or glass. Under this proposed legislation (S.3263 in the Senate and H.R. 5845 in the House of Representatives), retailers would pay this deposit when they receive bottles for retail, and then pass this charge on to consumers. Both consumers and retailers could obtain a refund of the deposit by returning the bottles for recycling. This proposed legislation did not become law, but was an indication that lawmakers are now recognizing the problem of plastic litter.

Legislation targeting litter is not confined to the federal level. A number of states have enacted “bottle deposit” bills- which impose a refundable deposit on the purchase of bottles made of certain materials, including plastic<sup>26</sup>- and at least eight have banned single-use plastic bags.<sup>27</sup> Various bills filed by Texas legislators over the last two sessions suggest that many policymakers are aware of the importance of combatting littering and encouraging recycling. Table 1 below lists select bills over this time period and the extent to which they progressed through the legislative process.

Table 1: Select Bills on Recycling and Littering during the 85th and 86th Legislative Sessions

Bill	Author	Bill Content	Final Disposition
HB 1437 (85R)	Wu	Authorize counties to use revenue from motor vehicle inspections to combat litter	Hearing in Environmental Regulation
SB 570 (85R)	Rodriguez	Regulate the storage, transportation, use, and disposal of used or scrap tires	Vetoed by the Governor
HB 2140 (85R) (see also similar legislation by the author, HB 2948 (86R))	Guillen	Create an advisory panel to issue a study on best management practices and funding mechanisms for the prevention and abatement of litter	Hearing in Environmental Regulation
HB 1884 (85R)	Anderson, "Doc"	Provide that penalties for illegal dumping must include performing community service in the form of litter pickup or recycling work	Passed into law
HB 3085 (85R)	Keough	Require the Geo-Technology Research Institute to conduct a study on prevention and removal of trash on waterways	Passed the House; referred to Senate Committee on Agriculture, Water, & Rural Affairs
HB 489 (85R)	González, Mary	Impose a fee on the sale of used and new tires, which funds grants to combat illegal tire dumping	Referred to Environmental Regulation
HB 3067 (86R)	Ashby	Provide an oil and gas tax credit for recycling produced water	Hearing in Ways & Means
SB 649 (86R)	Zaffirini	Require TCEQ to produce a market development plan to stimulate the use of recyclable materials as feedstock in processing and manufacturing.	Passed into law
SB 1850 (86R)	Rodríguez	Require the posting of a bond for a registration for the transportation, storage, or processing of scrap tires and the filing of an annual report.	Passed the Senate; placed on General State Calendar in the House
SB 2308 (86R)	Taylor	Requires Comptroller to study feasibility of a user fee on certain plastic items and an associated rebate for recycling plastic items	Referred to Business & Commerce



The last of these bills, Senate Bill 2308 (86R), is particularly interesting because it focuses on combatting the unique problem of plastic litter. Under the proposed bill, the Comptroller would have conducted a study examining the feasibility of the following:

- Imposing a user fee on beverage containers, single-use bags, or single-use cups which a retailer sells or distributes to consumers;
- Granting rebate to consumers who returned such items to designated centers, with the rebate effectively being paid out the revenue from the user fee; and
- Paying a handling fee to processors who process the returned plastic items.

In performing the study, the Comptroller would have consulted with various stakeholders and considered which government or private organization would administer the program, whether the fees generated by the program would be sufficient to fund anti-litter and flood mitigation programs, and how different user fees, rebate amounts, and processing fees would affect the program.

In addition to the bills listed in Table 1, the following bottle bills, filed in the 2011, 2013 and 2015 legislative sessions, would have required refundable deposits on the purchase of certain bottles, including plastic bottles: SB 1119 and HB 2114 in 2011; SB 645 and HB 1473 in 2015; and SB 1450 and HB 2425 in 2015 (each pair of bills was a pair of companion bills).

Although SB 2308 raised an interesting approach to addressing the problem of plastic litter, it failed to become law. However, in the current (87<sup>th</sup>) Legislative Session, Senate Bill 1276 (Taylor) and House Bill 4022 (Morrison) propose that the state adopt an approach similar to that which would have been studied by the Comptroller under SB 2308.

### Anti-Littering Proposals

Based on the study proposed by SB 2308, and the approach proposed by SB 1276/HB 4022, a program could be initiated that would combine a small user fee on plastic items with a rebate program to encourage recycling of plastic items. This approach assumes that this hypothetical user fee would be set at 1 cent per plastic item (thus, a 12-pack of bottled water would be subject to a 12-cent user fee).

“Plastic items” would include a plastic bottle with a volume of less than a gallon, a plastic cup which holds a beverage purchased from the retailer which provided the cup, and a plastic bag designed for a single use. People who qualify for certain government aid programs would be exempt from paying the user fee, and the user fee could be suspended in times of disaster.

The retailer would collect the one-cent user fee and transmit the funds to the Comptroller. People could obtain (partial) rebates of user fees by returning plastic items to designated rebate centers, with the rebate being 25 cents per pound of plastic. Notably, to further encourage recycling, rebates would also be issued for certain plastic items even though these items were not subject to the one cent user fee. These items would include food packaging (e.g., bags holding frozen vegetables or bread), dry cleaning plastic garment bags, plastic wrapping such as that used for toilet paper, paper towels, diapers, cases of beverages, and plastic packaging used in e-commerce (e.g., “bubble wrap”). The rebate centers would transfer plastic items to entities which process the plastic and then sell it to recyclers. Alternatively, the rebate centers could process the plastic and sell it directly to recyclers. The party that processes and sells plastic to recyclers would receive a handling fee from the Comptroller. This handling fee would be set at 60 cents per pound of plastic in urban areas and 90 cents in rural areas; the discrepancy reflects the greater costs (such as transportation costs) that processors in rural areas must bear. The Comptroller would be authorized to adjust the handling fee as advisable. The revenue raised by the user fees would be used in part to reimburse rebate centers for rebates they pay to people who return plastic and to pay handling fees to processors. The excess revenue would be used by the state to disburse grants for several purposes, including litter abatement and enforcement of anti-littering laws by counties, construction of rebate centers, the development of a marketing plan to increase the use of recycled plastic in manufacturing, and flood prevention, mitigation, and recovery.

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The benefits of these programs could be quite diffuse. For example, advancements in using recycled plastic in manufacturing could create new jobs in the state. Grants for litter abatement and enforcement of anti-littering laws would presumably have the effect of reducing litter in general, not just plastic litter. Counties all across the state would be eligible to apply for these grants, which could substantially increase the funds counties use to combat littering. Counties would be eligible to apply for these grants, but would not be guaranteed to receive one. A possible default starting point for these grants to counties would be \$100,00, with a fixed-amount increase for every 500,000 people residing in the county. This \$100,000 default starting point could be adjusted downward if a county has a very small population. Approximately 85 counties in Texas have a population of less than 10,000. Some of these counties have such small budgets that a \$100,000 grant could make up a meaningful percentage of their total annual budgets. For example, Borden County in 2017 had total approved budgeted expenditures of just \$3.14 million.<sup>28</sup> Alternatively, the starting amount for a grant could be a much smaller figure- perhaps \$10,000- and then increases could be made in proportion to population.

Finally, the Comptroller would administer the program with the assistance of a council comprised of various stakeholders, such as producers of plastic items, retailers, rebate centers, and processors. The benefits of this program would include increased and dedicated funding to combat littering in the state, as well as increased economic activity and job creation in the recycling industry.

### *Analysis*

Despite its laudable intentions, it must be noted that the above proposed program raises several concerns. First, the imposition of any form of tax or fee must be carefully weighed against the need for the revenue that such a tax or fee would generate, the economic and behavioral impact of a new tax or fee, and whether the state already has sufficient revenue to achieve the goals of the new tax or fee within its existing resources.

There are also fairness concerns in subjecting purchasers of plastic items to a user fee. As noted above, there are other commonly-littered items (e.g., cigarette butts) that would not be subject to the same treatment. Furthermore, some purchasers of plastic items undoubtedly already recycle these items (through municipal recycling programs, for example), and yet they would be subjected to the fee, regardless of their current behavior. This affected population would be quite large; one study conducted in 2015-26 found that 53 percent of the United States population had “universal” or “automatic” curbside pickup of recyclables.<sup>29</sup> Another 20 percent of the population had access to curbside pickup, but only under certain conditions (e.g., they had to call local authorities to opt-in to the pickup).<sup>30</sup> However, several mid-sized Texas cities currently lack curbside recycling, including Lubbock, Amarillo, Midland, Abilene, Odessa, and San Angelo.<sup>31</sup> Nevertheless, given that Texas’s larger cities- Dallas, Fort Worth, Houston, Austin, San Antonio, and El Paso, among others- offer curbside recycling, it is clear that the proposed user fee will affect a substantial number of Texans who currently recycle. While it is true that these people could obtain rebates by returning plastic items to rebate centers rather than through such means as curbside pickup, this point raises an additional concern.

A rebate rate of 25 cents per pound of plastic is unlikely to offer enough of an economic incentive for most current non-recyclers to recycle. Recycling of plastic water bottles illustrates this problem. There are roughly 45 (empty) 500- milliliter (ml) plastic water bottles in a pound. Thus, to obtain one dollar in rebates, a person would have to return approximately 180 plastic water bottles of that size to a rebate center. Assuming the person purchased these water bottles, he or she would still end up paying approximately \$0.80 in user fees even after taking into account the rebate. In other words, this person would receive only a partial rebate of the user fees he or she paid. More importantly, a great many people will likely view a dollar as inadequate compensation for storing 180 bottles, loading the bottles into a car, and driving to a rebate center. The problem is even greater with plastic bags, which

are generally lighter than water bottles and thus generate less of a rebate on a per-item basis. While states offering rebates for recycling may have considerably higher recycling rates than states without such rebates, it is unclear if that is a causal relationship. Rather than rebates encouraging people to recycle at higher rates, it may be the case that higher relative environmental awareness in some states causes them both to implement rebate programs and to recycle at relatively high rates.

Of course, it is possible that some consumers would return many plastic items weighing more than a 500 ml plastic water bottle. It would even theoretically be possible for a consumer to receive rebates for returning plastic items which are greater than the user fees paid for those items. For example, ten empty 2-liter plastic bottles generally weigh roughly a pound. A person could obtain a 25 cent rebate for returning those bottles, while paying only 10 cents in user fees with respect to those bottles. However, absent evidence to the contrary, it is reasonable to assume that the average consumer who returns plastic items will return a high number of smaller plastic items. Indeed, given the revenue-raising purpose of the user fee, adjustments would presumably be made to the amount of the user fee and/or rebate if many consumers received more in rebates than they paid in user fees. A similar adjustment would likely be made if consumers returned a great deal of items which qualified for the rebate but were not subject to the user fee (e.g., paper towel packaging).

Given that many people in Texas can already take advantage of curbside pickup of recyclables, and that the proposed rebate offers only a weak economic incentive to recycle, it appears unlikely that the rebate would be enough to spur people to return plastic items to rebate centers when they are otherwise uninclined to recycle.

### Potential Economic Benefits

While the proposed user fee raises some concerns, it could also benefit the state economy, and these benefits should be weighed against the burden of the proposed user fee. In addition, the user fee could fund several possibly worthwhile initiatives, such as grants to counties to battle litter.

The recycling industry already contributes significantly to the state economy. House Bill 2763 (84R, 2015) directed the Texas Commission on Environmental Quality (TCEQ) to conduct a study on the current and potential economic impacts of recycling, including state and local tax revenue forgone when consumers fail to recycle. That study, prepared by consulting firm Burns & McDonnell for TCEQ and published in 2017, is the most comprehensive examination of the recycling industry in Texas.<sup>32</sup>

The study found that, approximately 9.2 million tons of waste (excluding industrial solid waste) were recycled in Texas in 2015. This recyclable material had a market value of approximately \$702 million. Table 2 illustrates the

effects that the collection, processing, and transportation of this had on the state economy in 2015.

Table 2: Economic Impact of Recycling in Texas in 2015

Total Economic Impact of Recycling Industry on the Texas Economy	~\$3.38 billion
# of Person-Years of Employment Created*	17,037
Salaries/wages paid to employees	\$857 million
Tax & Fee Revenue Generated for State and Local Governments	\$101 million

\*A “person-year” is the equivalent of one person working full-time for one year; as such, a person-year could be the total output of several part-time workers, or of several full-time workers who work only a portion of a year.

If recycling statewide increased by just 20 percent, the report stated that the economic impact of recycling would grow by an estimated \$676 million and 3,400 person-years of employment. If the increase were 40 percent, those estimated numbers would increase to \$1.35 billion and 6,800, respectively.

The report focused only on the economic impact that recycling in Texas had on the state economy (i.e., it excluded economic benefits generated in other states by recycling in Texas). However, it attempted to measure the statewide impact of

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recycling by looking beyond its direct effects and taking into account its indirect and induced economic impact as well. As used in the report, direct impacts refer to the production of the recycling industry, indirect impacts refer to that industry’s purchase of goods and services from other industries, and induced impacts refer to the effects of workers in the recycling industry spending their wages.

While the recycling industry as a whole clearly generates significant economic activity in Texas, the recycling of plastics of course accounts for only a portion of that activity. Plastics comprised 108,000 tons of material recycled in Texas in 2015, or less than 1.2 percent of the total tonnage of all materials recycled. Interestingly, plastics were one of the few recyclable items which were recycled less in 2015 than they were in 2013. A comparison between those two years shows a surprising decline of more than 36 percent in the tons of plastic recycled. The authors of the report speculate that this decline was attributable to a change in market demand for certain plastic items and/or the use of lighter plastic materials.

On the whole, however, data suggests that the plastic-recycling sub-industry in Texas is already significant and has substantial room to grow, especially as recycling-related technology improves. While the



economic impact of plastic recycling is not stated separately in the report, it appears to have been less than \$1 billion in 2015. This figure has the potential to grow very substantially; approximately 108,000 tons of plastic were recycled in 2015,<sup>2</sup> while almost 811,000 of readily recyclable plastics were discarded without recycling. In other words, Texans recycled only 11.75 percent of readily recyclable plastic material in 2015. In addition to the 811,000 tons of plastic not recycled, more than 2.2 million tons of plastic material that is not easily recycled (such as plastic/trash bags and plastic film) were discarded in 2015. Furthermore, while plastics account for only a modest percentage of the total material recycled in Texas in 2015, they account for a disproportionately large share of the economic impact of recycling; almost a third of the estimated 7,868 employees directly employed by the recycling industry in 2015 (approximately 2,580) were involved in plastic recycling-related activities.

Importantly, China stopped importing plastic waste for recycling in January 2018 in an attempt to minimize its environmental problems.<sup>33</sup> As a result, many cities have no way of disposing of their plastic waste, and hundreds of have scaled back on their recycling programs.<sup>34</sup> With China's withdrawal from the market, governments and organizations around the world need to identify additional capacity for plastic recycling. Texas has growing capacity for recycling and can help satisfy this demand. For example, the company Avangard Innovative recently opened a plant in Houston which has the capacity to process approximately 100 million pounds of plastic film a year.<sup>35</sup> Similarly, a subsidiary of the Spanish firm FCC opened a plant in Houston in 2019 which will have the capacity to recycle 145,000 tons of material a year, including plastics. Texas has the potential to position itself as a key player in the plastic recycling industry in the coming years. With increased global demand for plastic recycling and increased recycling of plastic in Texas pursuant to the proposed program, the plastics recycling industry in Texas could see impressive growth. Recognizing the potential for growth in the recycling industry, Senate Bill 649 (noted in Table 1 above) directs TCEQ to produce a market development plan to stimulate the use of recyclable materials as feedstock in manufacturing. It is not difficult to envision a scenario in the near future in which the plastics industry and/or the recycling industry have their development bolstered by organizations analogous to commodities producers boards for agricultural products.<sup>36</sup>

## Revenue Neutrality

If the state chooses to pursue a user fee on certain plastics, it should be conditioned on revenue neutrality. Thus, if the Legislature enacts the user fee, it should slash

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<sup>2</sup> Of the total 107,851 tons of plastic reported as being recycled, 47,368 tons were PET (plastic #1), 35,864 tons were High Density Polyethylene, (plastic #2), and 24,619 tons were plastics #3-7.

other fees and taxes (or expand current tax exemptions) by an aggregate amount necessary to offset the revenue generated by the fee.

Revenue neutrality in the context of the user fee described above could be pursued through sales tax exemptions on items which are both less likely to be littered and less harmful to the environment. The state sales tax rate of 6.25 percent could be adjusted for such items as energy or water-conserving appliances. The sales tax rate on these items would be reduced to the rate necessary- perhaps even zero percent.

Texas already structures its sales tax in ways which attempt to influence consumer behavior. For example, food purchased at a grocery store is generally exempt from sales tax, but this exemption does not extend to candy or soda.<sup>37</sup> Under the same rationale of promoting health, dietary supplements generally are also exempt from sales tax.<sup>38</sup> In a nod to the rich history of farming and ranching in Texas, the sale of agricultural machinery, horses and other work animals, and feed for farm and ranch animals is exempt from sales tax.<sup>39</sup> To encourage protection of the environment, the sale of tangible personal property that is used to reduce pollution in the process of manufacturing is exempt from sales tax.<sup>40</sup> Given these existing precedents, policymakers could consider sales tax exemptions for items that would reduce littering and the costs it imposes on society.

While projecting the value of a hypothetical exemption from the sales tax for environmentally-friendly items is not possible due to a lack of data, there is no doubt that the aggregate value of these exemptions is significant. In 2020, the Comptroller estimated that the revenue forgone from sales exemptions for energy-efficient appliances and water-conserving equipment during the state's 2021 Memorial Day weekend would be \$10.8 million in all.<sup>41</sup> Making these exemptions applicable year-round would (as opposed to only three days) would save Texas taxpayers considerably more than \$10.8 million.

Numerous other items could qualify for sales tax exemptions, including biodegradable or reusable shopping bags, reusable packaging, reusable drink containers, biodegradable plasticware and beverage containers, and any item comprised of a to-be-determined percentage of recycled materials (such as plastic, cigarette butts, or tires). There is an ever-growing number of everyday products which can now be made with recycled material— clothing, shoes, playground equipment, and cat litter, to name just a few.

Alternatively, or in conjunction with sales tax exemptions, the Legislature could consider granting transferrable franchise tax exemptions to businesses in the recycling industry, and/or to any environmentally-friendly industry, such as manufacturers of electric motor vehicles or manufacturers that produce goods from recycled material.

## Conclusion

The imposition of any new fee – in this case on the use of certain plastic products – should always raise concerns. Taxes and fees place an additional burden on individuals, families, and businesses, and they distort economic activity. To be clear, a fee imposed on certain plastic products together with rebates for collecting and recycling those products would be *intentionally* attempting to influence behavior (i.e., distorting economic activity) in furtherance of the public policy goal of reducing plastic litter.

The Legislature may wish to adopt such an approach, but should it do so, it would be prudent to acknowledge that the state already has an extremely robust system of revenue generation and that placing an additional financial burden on Texans should not be taken lightly. Indeed, adopting tax relief measures of the kind discussed in this paper in order to make such a program revenue neutral would be vastly superior to simply enacting such a program in isolation.

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<sup>1</sup> Section 365.012(a), Health and Safety Code.

<sup>2</sup> Sections 365.012(b), (c), Health and Safety Code.

<sup>3</sup> Section 365.011(6), Health and Safety Code.

<sup>4</sup> Sections 365.011(9), 361.003(34), (35), Health and Safety Code.

<sup>5</sup> Environmental Resources Planning, LLC, *2013 Texas Litter Survey* (August 23, 2013), available at [http://www.dontmesswithtexas.org/wp-content/themes/dmwt/docs/DMWT\\_2013\\_Litter\\_Survey.pdf](http://www.dontmesswithtexas.org/wp-content/themes/dmwt/docs/DMWT_2013_Litter_Survey.pdf)

<sup>6</sup> Environmental Protection Agency, “Environmental Factoids,” available at <https://archive.epa.gov/epawaste/conserve/smm/wastewise/web/html/factoid.html>

<sup>7</sup> Environmental Protection Agency, “Impacts of Mismanaged Trash,” available at <https://www.epa.gov/trash-free-waters/impacts-mismanaged-trash>

<sup>8</sup> “What Is a Watershed?” available at [https://cfpub.epa.gov/npstbx/files/KSMO\\_StormdrainStewardship.pdf](https://cfpub.epa.gov/npstbx/files/KSMO_StormdrainStewardship.pdf)

<sup>9</sup> Nadeesha Chandrasena, et al., “Blocked Drains Syndrome: Physical Degradation of the Storm Drainage System in a Compact City,” *Advance Science Letters* February 2017), available at [https://www.researchgate.net/publication/315741507\\_Blocked\\_Drains\\_Syndrome\\_Physical\\_Degradation\\_of\\_the\\_Storm\\_Drainage\\_System\\_in\\_a\\_Compact\\_City](https://www.researchgate.net/publication/315741507_Blocked_Drains_Syndrome_Physical_Degradation_of_the_Storm_Drainage_System_in_a_Compact_City)

<sup>10</sup> Federal Emergency Management Agency, “Storm Drain Improvements Increase Flood Protection in La Mesa, CA” (September 5, 2019), available at <https://www.fema.gov/news-release/2019/09/05/storm-drain-improvements-increase-flood-protection-la-mesa-ca>

<sup>11</sup> Federal Emergency Management Agency, “Protect Your Home from Future Flooding” (June 25 2018), available at <https://www.fema.gov/news-release/2018/06/25/4363/protect-your-home-future-flooding>

<sup>12</sup> City of Oakland, “Adopt a Storm Drain,” available at <https://www.oaklandca.gov/topics/adopt-a-storm-drain>

<sup>13</sup> “Bangladesh to ban plastic bags in capital city,” *Edie* (December 13, 2001), available at <https://www.edie.net/news/0/Bangladesh-to-ban-plastic-bags-in-capital-city/5029/>

<sup>14</sup> Sarwar Ahmed, “Impact of Banning Polythene Bags on Floods of Dhaka City by Applying CVM and Remote Sensing” (January 2005), available at [https://www.researchgate.net/publication/251813921\\_Impact\\_of\\_banning\\_polythene\\_bags\\_on\\_floods\\_of\\_Dhaka\\_City\\_by\\_applying\\_CVM\\_and\\_remote\\_sensing](https://www.researchgate.net/publication/251813921_Impact_of_banning_polythene_bags_on_floods_of_Dhaka_City_by_applying_CVM_and_remote_sensing)

<sup>15</sup> Ibid.

<sup>16</sup> See, e.g., Charly Edsitty, "'It's Time to Stop': 700 Bags of Trash Pulled from Buffalo Bayou Each Week," *ABC 13* (June 20, 2019), available at <https://abc13.com/5342497/>; Alexis Grant, "Storm Drain Trash Mars Buffalo Bayou's Beauty," *Houston Chronicle* (January 2, 2007), available at <https://www.chron.com/news/houston-texas/article/Storm-drain-trash-mars-Buffalo-Bayou-s-beauty-1793830.php>.

<sup>17</sup> Chris Paschenko, "Silt from Storm Drains Used to Elevate Buildings," *The Daily News* (February 25, 2020), available at [https://www.galvnews.com/article\\_d82170d6-e2c8-537d-b962-104566954419.html](https://www.galvnews.com/article_d82170d6-e2c8-537d-b962-104566954419.html)

<sup>18</sup> Sections 365.012(a), (d), Health & Safety Code.

<sup>19</sup> Sections 365.012(a), (e), Health & Safety Code.

<sup>20</sup> Sections 365.012(a), (f), Health & Safety Code.

<sup>21</sup> Sections 365.012(a), (g), Health & Safety Code.

<sup>22</sup> Section 365.012(h), Health & Safety Code.

<sup>23</sup> Section 365.012(s), Health & Safety Code; Article 42A.304(e), Code of Criminal Procedure.

<sup>24</sup> Jared Wilson, "TxDOT Revamps Anti-Litter Campaign," *Odessa American* (March 21, 2014), available at

[https://www.oaoa.com/news/article\\_d47d45f8-b156-11e3-9ca5-001a4bcf6878.html](https://www.oaoa.com/news/article_d47d45f8-b156-11e3-9ca5-001a4bcf6878.html)

<sup>25</sup> Texas Department of Transportation, "TxDOT Illustrates How Small Trash Adds Up to Big, Expensive Mess on Texas Highways" (April 29, 2015), available at <https://www.txdot.gov/inside-txdot/media-center/statewide-news/2015-archive/021-2015.html>

<sup>26</sup> See National Conference of State Legislatures, "State Beverage Container Deposit Laws," (March 13, 2020), available at <https://www.ncsl.org/research/environment-and-natural-resources/state-beverage-container-laws.aspx>

<sup>27</sup> See National Conference of State Legislatures, "State Plastic Bag Legislation," (February 28, 2021), available at <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>

<sup>28</sup> "Borden County 2018 Budget" at p. 5, available at

<http://www.co.borden.tx.us/upload/page/1366/docs/2018%20Budget.pdf>

<sup>29</sup> Sustainable Packaging Coalition, *2015-16 Centralized Study on Availability of Recycling*, p. 17 (2016) (study was conducted by Resource Recycling Systems and Moore Recycling Associates Inc.).

<sup>30</sup> *Ibid.*

<sup>31</sup> The Recycling Partnership, *State of Curbside Recycling Report*, p. 51 (2020), available at [http://recyclingpartnership.org/wp-content/uploads/dlm\\_uploads/2020/02/2020-State-of-Curbside-Recycling.pdf](http://recyclingpartnership.org/wp-content/uploads/dlm_uploads/2020/02/2020-State-of-Curbside-Recycling.pdf)

<sup>32</sup> Burns & McDonnell, "Study on the Economic Impacts of Recycling" (July 2017), available at <https://www.tceq.texas.gov/assets/public/assistance/P2Recycle/study/TheStudyontheEconomicImpactsofRecycling.pdf>

<sup>33</sup> Ivan Watson, "China's Recycling Ban Has Sent America's Plastic to Malaysia. Now They Don't Want It -- So What Next?" *cnn.com* (April 27, 2019), available at <https://www.cnn.com/2019/04/26/asia/malaysia-plastic-recycle-intl/index.html>

<sup>34</sup> Chavie Lieber, "Hundreds of US Cities Are Killing or Scaling Back Their Recycling Programs," *Vox.com* (March 18, 2019), available at <https://www.vox.com/the-goods/2019/3/18/18271470/us-cities-stop-recycling-china-ban-on-recycles>

<sup>35</sup> See Colin Staub, "Reclaimer to Build Three \$30 Million Film Facilities Next Year," (September 17, 2019), available at <https://resource-recycling.com/recycling/2019/09/17/reclaimer-to-build-three-30-million-film-facilities-next-year/>

<sup>36</sup> See Chapter 41 of the Texas Agricultural Code.

<sup>37</sup> Section 151.314, Tax Code.

<sup>38</sup> Section 151.312, Tax Code.

<sup>39</sup> Section 151.316, Tax Code.

<sup>40</sup> Section 151.318(a)(5), Tax Code.

<sup>41</sup> Texas Comptroller, 2018 Tax Exemptions & Tax Incidence report (December 2020).