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## From Farm to Nuisance: Animal Agriculture and the Rise of Planning Regulation

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### Abstract

Municipal ordinances to remove farm animals from city limits played a central part in defining city planning's role in urban ecosystems, economies, and public health. This article examines the regulation of animal agriculture since the eighteenth century in four cities: Baltimore, Boston, Philadelphia, and New York. Across the nineteenth century, municipal ordinances to remove farm animals from city limits set the tone for the planning profession, aligning it with the field of public health in creating a hygienic city. In the efforts to untangle animal agriculture from waste management, public space, and urban food supply, urban authorities employed some of the first land-use regulations in the United States, shaping new planning powers. Ordinances banning slaughterhouses, piggeries, and dairies culminated with zoning as planning became a profession. These regulations ultimately allowed planners to transform cities and their food environments by dismantling a system in which animals and their caretakers among the urban poor had played integral parts in food production, processing, and municipal waste management. Unpacking the objectives, debates, and impacts of these early regulations reveals enduring tensions and challenges as planners today seek to reweave animal agriculture into cities.

### Keywords

farm animals; food supply; land use regulation; sanitation; health

### Animal Agriculture and Regulation in Early American Cities

Early American cities relied on animal agriculture for waste management, transportation, and food supply.<sup>1</sup> Horses were the fastest means of transport.<sup>2</sup> Hogs cleaned up household slop. Chickens scratched at the waste that the pigs left behind. Sheep and goats grazed on the commons, keeping the grasses short. Many urban families kept or boarded dairy cows for a supply of fresh milk. Cattle were driven from ports, and later rail stations, to markets and slaughterhouses throughout the city. Animals were everywhere, as were the nuisances that they created as they bellowed, kicked up dust, dropped manure, and knocked over passersby (see Figure 1 where pigs roam freely on New York's Broadway Street).

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To combat nuisances, the services that animals provided for cities had to be untangled from city infrastructure. Reforms to remove animals from cities made up a large part of public authorities' interventions in urban environments and health during the eighteenth and nineteenth centuries.<sup>3</sup> This regulation provided work for a cadre of new professional specialties, including "form-site planners."<sup>4</sup> From the early nineteenth century, public health officials and veterinarians supervised the food supply by monitoring animal disease and inspecting stables and stalls. Cities started sanitation services at the turn of the twentieth century, outlawing piggeries and informal garbage collection. Soon thereafter, zoning codified animal agriculture's exclusion from cities.

Examining this history highlights just how central the regulation of animal agriculture was to the rise of planning regulation and of the planning profession. American planning historians generally point to the nineteenth-century health bureaus, parks, infrastructure, and early twentieth-century zoning and anti-congestion efforts as the chief means through which the profession defined its role and techniques of land-use regulation.<sup>5</sup> This is mostly told as a story about people, which of course it was. Yet it was also fundamentally about defining animals' place in the city and role in food supply and waste management.

Broadly speaking, cities enacted ordinances restricting animal agriculture in four waves. The first prevented cattle and swine from running at large through the streets. Philadelphia passed such a law in 1705, followed by the other cities a century later. Cities augmented these acts with restrictions on driving animals, which subsequently determined the locations of stockyards and slaughterhouses. In the mid-nineteenth century, laws followed pertaining to the keeping of swine in city limits. With the swill milk scandals of the 1860s, cities created laws targeting dairies. Finally, zoning ordinances in the 1920s banned most farm animals altogether.

Although enforcement of these regulations proceeded slowly and unevenly, these laws and the bureaucracies that grew up to implement them played a seminal role in growing the regulatory and administrative bases of urban planning and allied professions. In the late eighteenth or early nineteenth century, each city created a board of health tasked with monitoring and abating nuisances as well as proscribing land uses. Boards of health constituted early planning authorities and produced some of the first separation of uses ordinances, which helped set the pattern for later zoning.

As precursors to planning bureaucracies, it is important to note that boards of health were created first and foremost to regulate animal agriculture, and most of their work across the nineteenth century involved policing animals. In 1885, the Chicago Department of Health's budget was the second largest among city departments, 71 percent of it devoted to scavenger work and removing dead animals.<sup>6</sup> As late as 1914, the New York Sanitary Bureau spent one-third of its time investigating applications for permits to keep chickens.<sup>7</sup>

In this article, we examine the four major waves of animal agriculture's regulation in the four cities, the terms of debate surrounding each one, and their impact on urban food systems and planning. Our research is based first on a review of city ordinances, court cases, and municipal reports from the early seventeenth to early twentieth century. These records

helped us identify newspaper accounts that reveal more about public debates of the laws and their enforcement.<sup>8</sup>

The four cities we profile used different methods to create ordinances against animal agriculture, but they eventually produced the same general system of legislation, oversight, and land-use planning. All of the cities employed the power in their charter to declare, prevent, and abate nuisances within city limits.<sup>9</sup> Early court cases formed a patchwork of common law rulings on nuisances, which often spurred the creation of city ordinances to provide clearer land-use regulations. In Philadelphia, city ordinances cite common law nuisance court cases as their precedents, while New York used a board of aldermen to hear nuisance disputes and then craft ordinances. Boston relied chiefly on the mayor's executive power to create city ordinances, whereas Baltimore took its lead from executive bills crafted first at the state level.

Planning and regulation of animal agriculture illuminates the broad arc of food system planning in American cities, particularly the evolving place of agriculture among different urban spaces and classes.<sup>10</sup> Animal agriculture was part of the intentional design of the public and private environment in colonial New York, Philadelphia, Baltimore, and Boston.<sup>11</sup> Colonial authorities gave animal husbandry a prominent place in the city to intentionally create pastoral, urban settings closely connected to food-producing lands.<sup>12</sup> Across the nineteenth century, despite the growing body of local laws to remove animals, municipalities enforced regulations unevenly at best, and residents debated and resisted them.<sup>13</sup> Numerous private dairies, stables, and piggeries that persisted were eventually zoned out in the twentieth century. Formally planned pastures survived, too, such as Central Park's Sheep Meadow, where a flock grazed from 1864 until 1934, when Robert Moses moved the sheep to Prospect Park.<sup>14</sup> By the mid-twentieth century, though, farm animals in the city no longer served their traditional and necessary agricultural role as food, fiber, or waste management.

The ultimate effect of removing animal agriculture from cities was to dismantle urban food systems in which animals and their tenders among the urban poor previously played pivotal roles in cities' food production, processing, and waste management. The destruction of this system redefined the economic geography and opportunities of the city, especially for the poor; and debates over animal industries reveal tension between different business and class interests. Pushing animal husbandry and processing out of cities removed many livelihoods and some of the food supply from poor neighborhoods, contributing to the need for food aid programs. This is an important part of the history of planning's impacts on urban ecosystems and social equity.

Today, planners concerned with the food system are seeking to accommodate animal agriculture in American cities again. The contemporary movement for urban agriculture reflects older tensions of class and disputes over peoples' and animals' rights in and to the city. For planners working to reintegrate animal agriculture into urban environments, and for those in cities and communities that still rely on animal agriculture for food and infrastructure services, this story highlights the challenges and consequences of dismantling, preserving, or rebuilding urban food systems centered on animal agriculture.<sup>15</sup>

## Strays and Animals at Large

In early American cities, pigs roamed the streets, eating the offal thrown out by households. Despite the dangers of free-roaming semiferous hogs, many citizens preferred them to the alternative of noxious biodegrading slops. As one Philadelphian noted in 1817, “I cannot conceive how the swine running at large through our streets can be considered detrimental to comfort and cleanliness.” Though it had been more than a century since Philadelphia’s ban on at-large hogs, the citizen insisted that “[hogs] not only add greatly to the purity and salubrity of the air, but infinitely to the convenience and accommodation of the [city] inhabitants.”<sup>16</sup> Many people benefited directly from their association with animal agriculture, for work, food, rental income, transportation, and industrial production. In the absence of sanitation alternatives, urban authorities generally tolerated this sanitation system, understanding that animal agriculture provided clean streets, food supply, and employment for the poor.

However, as cities expanded rapidly in the nineteenth century, a growing chorus of residents complained about the safety and disease risks posed especially by hogs, their lack of supervision, and the practice of eating pork that was fed on urban waste. “People who keep out of sight and send out daily their droves of over grown hogs to infest our streets,” charged the *New York Evening Post* in 1819, “insult delicacy, and really endanger our limbs.”<sup>17</sup> Some letters to the editor made more dramatic pleas. “It is not uncommon to find in our shortest streets, twenty or thirty hogs,” wrote one New Yorker. “We had recently ... one mad dog ... and it is impossible to say how many hogs he may have bitten ... How long before our streets will be full of mad dogs and hogs?”<sup>18</sup> Such health and safety fears, plus pigs’ ubiquitous presence, help explain why city ordinances and court cases against farm animals at large targeted swine first and later other species. Across the nineteenth century, the four cities defended and expanded their at-large ordinances via court cases, state enabling legislation, and city ordinances.<sup>19</sup>

The nuisances of animal agriculture were especially associated with poorer neighborhoods, where raising, tending, shepherding, and processing animals were major sources of income and food. In the *New York Times*’ 1856 exposé “The Sanitary Condition of the City,” reporters noted that most tenement families raised their own pigs, poultry, and supplied the city with milk.<sup>20</sup> In an 1867 article, titled “Nuisances,” one reporter estimated that nearly one-half of the tenement inhabitants “relied solely” upon goats and chickens for nourishment.<sup>21</sup> Removing animals would be an important goal of the city’s landmark tenement laws in later decades, with significant consequences for economic and food insecurity among the urban poor.<sup>22</sup>

Philadelphia’s 1705 ordinance against stray animals signaled early unease about animal agriculture in the city, but it also acknowledged its importance for the poor (see Figure 2). “If any [swine] shall be found running at large,” it stated, they shall be “forfeit, one half to him or them that shall take up the same, and the other half to the use of the poor.”<sup>23</sup> A later act granted the poor of the city the sole right to take any stray swine, and either keep or slaughter them.<sup>24</sup> Other city councils also put compensation measures in their at-large ordinances, as in Baltimore’s 1830 requirement that stray swine be delivered to the city’s

Alms House for sale or butcher.<sup>25</sup> These methods of encouraging the poor to self-police stray animals generally failed.<sup>26</sup>

The poor actively resisted the threats to their food supply and livelihoods that at-large restrictions represented, often necessitating en masse policing efforts. “The police sometimes attempt to do their duty . . . , but, unless they go in such force as to make the whole thing ridiculous, they generally lose their game before going half a dozen blocks,” the *New York Times* reported in an 1865 article entitled “Squatter Sovereignty.” “The spectacle of ten or twelve policemen guarding a solitary cow on her way to the cattle-jail provokes too much merriment even for those who are interested in having the streets kept clear of four-footed nuisances.”<sup>27</sup> While newspapers often reprinted the ordinances in hopes of inciting change, they also exposed the futility of their enforcement, replete with images of wandering pigs and cows, even if they rarely explored the consequences for the poor.<sup>28</sup>

Another reason for the failure of early at-large ordinances is that cities still needed the animals, pigs (the foremost wanderers of city streets) in particular. Additionally, laws were not passed in tandem with laws about household waste disposal. And without a formal city sanitation department to clean the streets, laws that forbade swine from eating waste in the street only resulted in “an unhealthy miasma” as the slops decomposed in residential areas.<sup>29</sup> Municipal governments recognized this, which explains much of the contradiction between their ordinances and their often-lax approach to enforcement.

Still, the at-large regulations were among the most important local laws empowering new bureaucracies, particularly boards of health, not simply to take up stray animals, but to intervene in the use of public and private property, extending municipal power over land use and pioneering systems of what in the twentieth century would become planning regulation.<sup>30</sup> Philadelphia created the first board of health in 1793,<sup>31</sup> followed by Boston in 1799<sup>32</sup> and New York in 1805.<sup>33</sup> These bodies took charge of policing nuisances, monitoring disease, and issuing permits for animal keeping, some of the first land-use permitting in American cities.<sup>34</sup>

Even if the at-large ordinances did not rid urban environments of animal agriculture, they played a large part in defining and building the planning and regulatory systems of American cities. They also exposed the class conflicts and practical challenges involved taking animals from the poor, a problem that would persist in other efforts to regulate animal agriculture. Those subsequent measures would target other spaces, practices, and particular animals, expanding municipal regulation of agriculture and the food system.

### **Driving Animals: Traffic Hazards and Food Supply**

While at-large ordinances addressed unsupervised strays, in the mid- and late nineteenth-century Baltimore, Boston, New York, and Philadelphia enacted ordinances to limit the nuisances caused by animals that were accompanied (if not always closely supervised) through their streets, parks, and undeveloped areas. Most streets had cattle and swine traffic, as drovers moved animals between ports, rail yards, farms, slaughterhouses, and down streets and alleys to collect garbage. An 1881 petition to Philadelphia's city councils complained that sheep, cattle, and hogs were driven at all hours of the day and night, every

day. “The noise made by the drivers is very annoying,” charged its 250 signers, “the bad smells are disgusting and are prejudicial to health, and the filth distributed over the street and on the sidewalks is a disgrace to the city.”<sup>35</sup> Large animals had even trampled children to death (see Figure 3).<sup>36</sup> Unlike at-large ordinances, animal driving ordinances were largely obeyed, yet regulating the driving of cattle, pigs, and sheep meant reshaping the geography of meat production and distribution in the city, which took time and faced some resistance.

Cities' early attempts to dictate the location of facilities associated with animal agriculture sometimes produced unintended consequences. In New York, a mid-nineteenth-century ordinance banning slaughterhouses in the lower part of the city meant that 2,000 hogs were driven daily from the lower ports to the up-town packers along the city's widest streets such as Fifth Avenue. Beyond the nuisances, reporters cited financial reasons for further confining the driving of animals, noting two to three hogs were lost per shipment, as horses trampled them to death in the street or the hogs wandered off through the city.<sup>37</sup> In municipal acts, court cases, and in the press, an economic development logic—of more efficient markets for meat and of improved real estate values absent animal driving—bolstered the public health case for regulation.

In the 1860s, all four cities issued ordinances to prevent driving of animals in certain streets at certain times of day.<sup>38</sup> The Boards of Health in New York<sup>39</sup> and Baltimore<sup>40</sup> allowed driving at certain times of day and in certain districts only if the drovers were taking animals to market or slaughter. In 1864, Boston imposed rules that no swine could walk on the sidewalks,<sup>41</sup> and in 1890 finally banned all farm animal traffic without a permit from the Board of Health.<sup>42</sup> Philadelphia was the last of the four cities to impose cattle driving regulations, in 1887, and these were relatively lax, banning the practice only on Sundays.<sup>43</sup> Unlike the at-large ordinances, people mostly respected these driving restrictions.<sup>44</sup>

However, efforts to wholly remove animals from the streets were complicated by the dispersed central city locations of slaughterhouses, city residents' demand for meat, especially among the poor and working class, and inadequate food distribution systems. As one reporter noted in the 1870s, cities struggled with the “perishable nature of meats, difficulties of transportation, [and] the deprivations of the poor who purchase of the packing-houses.”<sup>45</sup> In addition to their demand for cheap meat, poor residents relied on employment at stockyards, slaughterhouses, and driving animals between them.<sup>46</sup> Wealthy slaughterhouse proprietors and butchers also held considerable sway with politicians.<sup>47</sup> Indeed, the eventual regulation of meat industries at the end of the nineteenth century may reflect the decline of butchers' economic and political power in this era.<sup>48</sup>

Late-nineteenth-century driving laws proved effective at remaking the land-use pattern of animal agriculture in the four cities. Boards of health dictated the location of slaughterhouses and stockyards, and by enforcing these laws largely accomplished what the earlier at-large and driving ordinances had not. In 1874, the New York Board of Health succeeded in limiting slaughterhouses to a single abattoir building.<sup>49</sup> Similar arrangements arose in the other cities, which enabled rail shipment of animals to replace driving to a great extent.<sup>51</sup> This dramatic change gave reformers and bureaucrats confidence they could limit animal agriculture much further. By the mid-1880s, some even proposed that railroads,



slaughterhouses, and markets should be removed entirely from the built-up parts of New York.<sup>51</sup>

While the at-large ordinances did relatively little to limit animal agriculture in the four cities, the dramatic geographic restructuring of driving, slaughter, and animal tending successfully undermined the smaller interests in cities' local meat economies. Although historians have cited economies of scale and large corporations for the death of the local butcher business,<sup>52</sup> the butchers of New York laid the blame entirely on city ordinances that moved animals and their processing further away from the customers they served.<sup>53</sup> From the butchers' perspective, these laws stifled a local profession and limited urban access to food. In this respect, city governments aligned with big business over neighborhood enterprise. Indeed, consolidating the slaughter of animals and removing driving from city streets was a great victory for big meat and railroad companies as well as their allies in city halls and health departments, and a loss for small operators.

The new animal ordinances displaced small firms and their employees from neighborhood-based animal slaughter, driving, and by extension from keeping farm animals in the city. Since slaughterhouse and stockyard workers earned too little to commute by trolley before the twentieth century, this removed livelihoods—and key functions in the food chain—from many poor and working-class neighborhoods. Much of the resistance to these changes played out in the defense of the piggeries.

### **Piggery: Waste Management and Disease**

Disentangling pigs from the urban environment proved challenging for several reasons. While the regulation of animal driving and slaughter realized the plans of big businesses ready to build abattoirs and move animals by rail, removing pigs from the city threatened other prominent business interests, in addition to the poor, and it required new feats of sanitary engineering and infrastructure planning and development. Pig farms in the city were a necessary unwanted land-use in the absence of other sanitary methods of removing and processing human and food waste. Yet arguably, swine and the people who kept them represented the greatest threats to public health as perceived by mid-nineteenth-century city residents. Pig farms inspired new health and land-use regulation, though the consequences of their removal also extended beyond the local food and neighborhood economy, as municipal governments' budgets grew to shoulder waste planning and management services.

In addition to the informal sanitation services piggeries provided, they were often attached to major slaughterhouse and distillery businesses. The proprietors of slaughterhouses, piggeries, and distilleries had created a system in which they collected and processed the city's waste. Distilleries fed pigs and cows spent grains, limiting disposal and feed costs at once while adding to their profits from selling pork and milk.<sup>54</sup> When grain prices were high or liquor prices low, the added business of marketing meat and milk from dairy cows provided additional income. City ordinances would oppose both the urban poor who depended on piggeries for their livelihood and food and the businesses that made sizable profits from running piggeries.



While poor neighborhoods and distillery proprietors supported urban piggeries, middle-class reformers charged the piggeries with causing disease, noxious smells, and devaluing nearby property.<sup>55</sup> Fears of cholera largely drove ordinances against piggeries within city limits. Irish immigrants first brought the human cholera pandemic to Philadelphia and New York in 1832, resulting in the deaths of 3,000 people that summer.<sup>56</sup> Classical Swine Fever, unfortunately dubbed “Hog Cholera,” swept through North America at the same time starting in the 1840s.<sup>57</sup> Though Hog Cholera could not be transmitted to humans, the extreme swine fatalities and coincidence with human cholera caused panic. Compounding this temporal association, Irish immigrants, the original source of human cholera, ran most of the piggeries, resulting in a place-based association.

Reformers and the press repeatedly linked the human cholera outbreaks to neighborhoods that ran piggeries.<sup>58</sup> “The districts near the pig-styes, and the bone-boilers, and the exposed offal of slaughterhouses, suffered most in the [recent] attacks,” wrote a reporter for the *New York Times* in 1865, adding ominously, “and they will again.”<sup>59</sup> New York's tenement neighborhoods lacked general sanitation and clean water, which was the real reason for the spread of human cholera. But across the nineteenth century, newspaper articles wrongly accused the piggeries of spreading yellow fever and other human diseases as well.<sup>60</sup>

Like later tenement reformers, the rhetoric of reformers and journalists described the people who ran the piggeries as squalid animals and nuisances themselves. “The huts in which the owners live are little superior to the stys [*sic*],” opined a *New York Times* 1865 exposé, “Squatter Sovereignty.” “Before each of them a cauldron is stationed, which receives the garbage obtained from gutters and swillpails, and this reeking mass is kept boiling for hours daily.”<sup>61</sup> Defenders of the piggeries, by contrast, claimed that the neighborhood with the pigsties was “one of the most healthful wards in the city” because pigs promptly removed and processed the garbage.<sup>62</sup> Still, complaints to city council alleged that piggeries had driven residents out of the city and depreciated real estate values.<sup>63</sup> Like the regulations against driving, the ordinances created against the piggeries were often aimed as much at removing the proprietors as the pigs.

Boston experienced the least upheaval in removing swine from the city limits, largely because its regulation was gradual and enacted in tandem with legislation governing sanitation. An ordinance in 1824 allowed swine inside city limits with a permit.<sup>64</sup> The law was issued with another proclaiming that all household offal be kept in a convenient place off-street for swine to access twice a week. The permitting system allowed a gradual curtailment of offal-feeding operations. Two years later, the mayor appointed official garbage men and made it illegal to remove waste for feeding swine without a city permit.<sup>65</sup> As the sanitation system became formalized, petitions poured in to local newspapers suggesting that the city keep swine on a city farm to process slops.<sup>66</sup> City farmers resented the loss of business, yet Boston enjoyed a relatively smooth transition to modern waste management.<sup>67</sup>

In the other three cities, ordinances to ban pig farms and their implementation evolved more haltingly across the mid- and late nineteenth century. Proposals to ban piggeries threatened the interests of politically organized immigrants as well as substantial businesses. Moreover,

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cities did not have a formal waste management system ready to replace the pigs. Although the mayor of Baltimore and many citizens had lobbied the city council in 1849 to ban pigsties and stables within city limits as a precautionary effort to prevent cholera, city council blocked the ordinance in favor of supporting the local distillery businesses and poor garbage men.<sup>68</sup> In 1852, the tables turned and Baltimore city council supported a ban, but this time the new mayor vetoed it. He refused to deprive poor constituents of their livelihoods and also cited the absence of a municipal sanitation department to replace the pigs as a rationale for his decision.<sup>69</sup>

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It was not until January 1853 that the Baltimore city council and mayor's wishes converged, resulting in a ban on swine in the city limits, though two months later a new city council attempted to overturn the law.<sup>70</sup> The city enacted exceptions to the law starting the next year, allowing railroad stockyards and later slaughterhouses to keep swine to process slops.<sup>71</sup> As the piggeries were the most economical way of processing residential and slaughterhouse waste, they were not closed entirely, but moved just outside the city limits, forming a peri-urban ring known as the "belt of nuisances," an area the Board of Health eventually prosecuted in 1881.<sup>72</sup>

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Philadelphia experienced an even more protracted political battle. Pigs had long been celebrated as the "physicians" of the city because they cleaned the streets whereas the city government did not.<sup>73</sup> But in 1845 the Pennsylvania Supreme Court ruled that piggeries could be removed from city limits, no matter how well established or profitable they were.<sup>74</sup> The decision sparked debates between farmer-businessmen and city officials that continued for fifty years. As a result, Philadelphia did not begin to enforce its ordinance banning piggeries until the 1890s.<sup>75</sup> Its raids on piggeries, "the war over swine" as one newspaper called it, left many families without a business, no compensation for loss of income or property, and a city full of garbage.<sup>76</sup>

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New York's regulation of piggeries intersected with its struggles over informal housing settlements, waste management, political corruption, and immigration.<sup>77</sup> In 1845, the municipal government banned the keeping of swine below 59th street.<sup>78</sup> Mayor Wood relaxed this ban in 1854.<sup>79</sup> Then in 1859, the new Mayor Teimann sent eighty-nine policemen armed with pistols, daggers, and pick-axes to dismantle the pigsties of "the enemy," Irish piggery owners.<sup>80</sup> The police confiscated thousands of pigs between 50th and 57th streets on 6th and 7th avenues. A month later, police raids in the Irish shantytown continued all the way to 80th street and the Hudson River. They gave residents two days notice to remove all animals, and then wrestled away hundreds of geese, cows, and pigs from residents who, in turn, cried about the "rights of the poor."<sup>81</sup> The police arrested proprietors, tore down sheds, and sprinkled lyme over the ground.<sup>82</sup> After Mayor Teimann's show of force, Wood won reelection and stopped enforcing the regulations about piggeries. His administration issued permits to protect thousands of swine.<sup>83</sup> The piggeries sprouted up again. The reemergence of the piggeries was testimony to their necessity for city infrastructure, economical profit, and important place in municipal elections.

In this instance, the piggeries also won a temporary victory against gentrification. While some housing in the piggery wards was informal, many piggery owners were legal residents

whose stys stood in the way of real estate developers' designs on the area. Supporters of the piggeries denounced the councilmen as "aristocrats." "When they moved into the 19th ward, they were so poor that they were glad to get a residence near a pig-sty. Now, after they had been Aldermen and Councilmen for a year or two, they had become wealthy and their refined noses couldn't stand the smell."<sup>84</sup>

As debates persisted into the 1870s, the pig farmers also found allies among some scientists and doctors, who argued to legitimize the piggeries to help process New York's garbage.<sup>85</sup> They pointed to the merits of supporting the poor, economically removing waste, environmental benefits of not throwing garbage in the sea, and noted that marketed pigs eat refuse anyway. Though offal collection in New York continued through private contracts with swine farmers outside the city well into the 1870s and in Philadelphia into the 1980s, it was never made part of these cities' formal garbage policy.<sup>86</sup>

Instead, the closing of city piggeries and their eventual replacement with largely mechanized systems of garbage collection and processing marked the end of traditional waste management. It also cleared the way for neighborhood redevelopment as the pigs, their manure and smells, were transferred to the periphery. Yet the departure of swine from the city removed another element of local food production from the urban poor, further diminishing their control over sources of food and economic power in the city. And these multiple layers of ecological, economic, and spatial displacement were compounded by roughly contemporaneous campaigns against other core activities of animal agriculture.

### Dairies: Pure Food and Milksheds

Like the motivations for removing piggeries, urban dairies were banned largely out of health concerns that stemmed from a common fallacy, namely that milk from urban cows caused more disease than milk from the country. Dairies, like piggeries, located in the poorer sections of cities, where lack of sanitation and crowded conditions amplified disease in humans and cows alike. Although the source of milk contamination was most likely adulteration due to a lack of adequate refining, reformers, including the board of health, and the press repeatedly made the case against urban dairies across the second half of the nineteenth century. While none of the four cities formally banned dairies, the result of municipal debates about dairies was federally sponsored studies in the early twentieth century, and subsequently agricultural policies that moved dairying out of cities during Prohibition.

The debate over milk was most heated in New York, and the initial attack on the dairies came not from efforts to reform urban health or environments but from the temperance movement. Most city dairies were tied to distilleries, which, in an arrangement similar to the pig farms, cut costs and gained revenue by feeding spent grains to the cows. In 1841, temperance crusader Robert Hartley published *An Historical, Scientific and Practical Essay on Milk as an Article of Human Sustenance; With a Consideration of the Effects Consequent upon the Present Unnatural Methods of Producing It for the Supply of Large Cities*. In it, he attributed contaminated milk to the distillery cows' alcoholic diet alone. He estimated 10,000 cows in New York were "most inhumanly condemned to subsist on the residuum or slush of this grain." He contended, moreover, that this was a primary cause of infant mortality.<sup>87</sup>

By the 1850s, temperance advocates gained allies among more “scientific” reformers.<sup>88</sup> An 1853 article in *Country Gentlemen* cited a physician who estimated “a large proportion of the eight or nine thousand children under five years of age, who die annually in New York, are actually poisoned by the milk which is given them for nourishment.” The New York Board of Health also affirmed the link between distillery dairies and high infant mortality.<sup>89</sup>

Reformers and allied newspapers fueled prejudice against city milk, dairy operators, and their neighborhoods—as well as concern over animal welfare, painting horrific scenes. The 13,000 cows in and around New York, the author in *Country Gentlemen* charged, “are kept at as little expense as possible ... no sunlight or fresh air. We are told that all cleanliness is abjured, that the cows are seldom washed, nor the hands of the milkers.” This resulted not simply in tainted milk, but “when the ulcers break out on them, their teeth have rotted out of their jaws and their hoofs have become so sore as to render them unable to stand, they are handed over to the butchers who put them through a course of fattening and retail the meat.”<sup>90</sup> If readers could feel for the cows, they were not invited to sympathize with their keepers or their surroundings.

Shocked by such publicity, many city dwellers preferred to buy “pure country milk,” though the diet, living standards, and health of country cows may not have been much better. Additionally, country milk had to be transported long distances without refrigeration, resulting in spoilage and amplification of bacteria, like tuberculosis bacilli. Adulteration of milk was common in both city and country.<sup>91</sup> Still, as one 1853 article titled “Death in the Jug” stressed, critics of city dairies preferred to pay the premium for country milk even if it was adulterated.<sup>92</sup>

In a familiar pattern, however, the newspapers' exposés of the distillery dairies and reformers' call for the city to close them did not sway Tammany Hall, which had close ties to the Irish immigrants who ran most of the distilleries and city dairies.<sup>93</sup> In 1858, Frank Leslie's *Illustrated Newspaper* printed two inflammatory articles condemning these “manufactories of hellbrothes” and the machine politicians who supported them.<sup>94</sup> The public outrage that ensued forced local politicians to investigate the distillery dairies, conveniently under the direction of Tammany Hall Alderman Michael “Butcher Mike” Toumey, who ran a stable and had close ties to the local meat markets, where he worked as a butcher before and after his political career.<sup>95</sup>

Toumey's links to animal agriculture business were evident in the mock hearings that ensued, which also reflected the limits of the of Board of Health's power under the political machine. Those who testified claimed to enjoy or not notice the smell of the dairies.<sup>96</sup> The majority report found that swill milk was actually as good or better for children than country milk.<sup>97</sup> However, residents persisted in complaining that the distillery dairies in New York's Wallabout Flats emitted so much liquid manure that the smell made people retch half a mile away.<sup>98</sup> The Board of Health cited environmental damage due to dairy manure decreasing the depth in the New York City harbor; yet it contradictorily found no reason to ban the dairies.<sup>99</sup>

The hearings also highlighted the city's continued dependence on urban dairies for employment as well as milk. City dairies were profitable, employed numerous workers, and supplied milk that was generally no worse than country milk. Municipal physicians claimed that two-thirds of the city's milk supply came from city cows and that the city dairies employed twice as many workers as dairies in the country.<sup>100</sup> Another report claimed the distilleries would have to scale back their workforce by 80 percent if the city dairies closed.<sup>101</sup> In the poorer wards where dairies and distilling concentrated, this was untenable.

The controversy over milk came to a head in the “Swill Milk Scandals” of the 1860s, which exposed a host of problems related to the urban milk supply and forced New York City government to act.<sup>102</sup> Multiple studies singled out city milk not only as *a* cause, but as the *chief* culprit, for infant mortality.<sup>103</sup> The distilleries again took much of the blame for the cows' poor health, as a diet of too much spent grains caused unthriftiness.<sup>104</sup> Perhaps more important to dairy cow health, deadly bovine tuberculosis was rampant at the time. Similarly, tuberculosis in humans was the leading cause of human death in the United States in the 1880s. While it is unknown how many of cases were due to the bovine form, in 1882 scientists discovered that bovine tuberculosis could be transmitted to humans via infected, unpasteurized milk.<sup>105</sup> Even with this discover, the federal government did not recommend pasteurization until the 1920s, and routine pasteurization did not become widespread until the 1950s.

Instead of closing the city dairies in response to this health scare, the city government opened public dairies separate from distilleries, largely at the prompting of women health reformers who advocated public milk provision as part of a broader effort to promote child welfare.<sup>106</sup> Prominent urban designers, Olmsted and Vaux, designed dairies in both Central Park and Prospect Park to supply poor mothers and children with fresh, safe milk.<sup>107</sup> Both the city-run dairies lasted in New York until Parks Commissioner Robert Moses closed them and removed the farm animals in the 1930s.<sup>108</sup> Sanctioning urban dairies reaffirmed their health benefits as well as the city's investment in food relief, particularly for the urban poor.

Though municipal government sanctioned urban dairying, state action began to remove it from the city. In 1860, two years after Leslie's exposè, New York State passed laws forbidding adulteration of milk.<sup>109</sup> Four years later, state law forbade “any milk that is obtained from animals fed on distillery waste,” which it “hereby declared to be impure and unwholesome.”<sup>110</sup> State dairy inspections in the late nineteenth century forced a few city dairies to close.<sup>111</sup>

While all four cities had thousands of cows within their limits,<sup>112</sup> the controversy over city dairies was not as heated in Baltimore, Philadelphia, or Boston as it was in New York, mainly because these cities enacted effective milk inspection regulations.<sup>113</sup> Philadelphia instituted a penalty for the sale of adulterated milk in 1869,<sup>114</sup> and banned the sale of milk from distilleries in 1890.<sup>115</sup> Baltimore created milk laws in 1894.<sup>116</sup> But Boston led the way with model regulations about milk adulteration as early as 1854, and appointed its first milk inspector in 1859.<sup>117</sup> The city required peddlers, dairies, and stores to carry permits to sell milk. Notices of impure milk were published with these permit numbers and the names of proprietors. By the turn of the twentieth century, the Boston Board of Health's annual budget

for its milk permitting system was five times larger than any of the other cities despite being a smaller city with fewer dairies.<sup>118</sup> Crucially, Boston dairies were also subject to land-use regulations stipulating that they be kept 300 yards from marshes and other farm animals, such as hogs and poultry. These limits proved effective at separating dairies from other land uses. The federal government promoted Boston milk regulations as a model system at the turn of the twentieth century.<sup>119</sup>

Concerns about the safety of milk persisted into the twentieth century. With little municipal action to pass food safety laws, private foundations and the federal government began to research what could be done to improve the nation's milksheds. In 1902, the newly formed Rockefeller Institute for Medical Research published its first study, which urged city oversight of dairies. It also found that contamination of unrefrigerated milk shipped from over 300 miles away contributed to the poor health of New York's milk supply.<sup>120</sup> Cities across the nation conducted similar milkshed studies, part of a general planning interest in foodshed studies. Findings confirmed the growing distance between cities and the farms that fed them.<sup>121</sup>

In the early decades of the twentieth century, the federal government actively promoted the closure of the thousands of urban dairies that existed across the country, largely through consolidation of the milk industry. Even though all four cities had enacted permitting systems and dairy inspections by 1903, and New York received 85 percent of its milk by rail, the US Department of Agriculture (USDA) counted over 23,000 dairy cows still in the city (nearly ten times the number remaining in Philadelphia, Baltimore, or Boston). That year, the USDA conducted research in 200 cities and towns, assessing the price, packaging, and quantities of milk sold.<sup>122</sup> This national milkshed study provided a valuable tool to expanding multinational milk corporations like Nestle-Swiss, which received federal research and financial support to scale up.

The demise of independent city dairies in the early twentieth century was prompted not just by tighter regulations but also by corporations' intent on taking over the industry. In 1919, Nestle-Swiss contended in its publication "The Milk Can" that the local New York Dairymen's League was charging high prices for milk, depriving infants of nourishment and causing the deaths of 227,000 babies in the state every year.<sup>123</sup> On the basis of these allegations, local dairymen were arrested for causing the deaths of infants. These tactics successfully poisoned the relationship between local dairy farmers and the cities they served. At the same time, a budding advertising industry worked to convince consumers to more readily trust name brands of the large corporations, which at the same time were gaining control of rural production and urban retailing. While smaller interests cited antitrust laws as grounds to stop big corporations from intimidating local dairy farmers, these laws were never used since the federal government exempted agriculture from antitrust efforts.<sup>124</sup>

As with the consolidation of animal slaughter in abattoirs in the 1870s, a mix of health and land-use regulations coupled with the consolidation of big business led to the closure of dairies in East Coast cities.<sup>125</sup> Although city ordinances did not ban dairies outright, they empowered boards of health and sanitation departments to close them based on a permitting process. Further regulation and pressure from state and federal authorities made city dairy



farming harder to sustain. Finally, when the distilleries closed during Prohibition, the feed needed for city cows was lost, causing many city dairies to shut.

Thus, local production and the allied provisioning networks for milk in addition to meat (and spirits) were largely removed from the city in the early decades of the twentieth century. With cities mostly rid of farm animals (chickens were regulated, too), the informal food economies of poor urban communities largely disappeared as well. Zoning would codify this new reality of urban land use and economy.

### **Zoning: Cities without Animal Agriculture**

For some observers, the removal of animal agriculture from cities through zoning was a logical outcome of urbanization. As one prescient journalist predicted on the eve of the Civil War, the city's expansion, and territorial expansion of its bylaws, would inevitably clear the surrounding suburbs of nuisances: "The unprecedented expansion of [New York], encouraged by its lace-work of railroads, has brought some of its most desirable suburbs into close and most annoying proximity to the nuisances, and an ordinance was passed with it was hoped, without doing unjust violence to any large interest, would gradually drive the stables out and abolish the business."<sup>126</sup> As cities and suburbs grew, incorporated, and consolidated, older farms became subject to new zoning laws. In 1920, the New York Supreme Court ruled that a preexisting piggery be removed because it was within 1,000 feet of a house and highway, violating the city-zoning ordinance.<sup>127</sup>

Where earlier city laws had been enforced through litigation, zoning regulation would prove a more powerful and uniform tool. By the 1920s, most big cities adopted zoning ordinances to regulate local land uses.<sup>128</sup> Consistently, planners treated commercial animal agriculture uses as incompatible with the prescriptive zones for residential, commercial, or industrial districts. Planners would not even conceive of zoning *for* animal agriculture until the introduction of agricultural zoning in the 1950s.<sup>129</sup>

Though New York's pioneering zoning ordinance of 1916 did not specifically mention banning animal agriculture, supporters understood that it did just that. One reporter hailed its ability to put the pigs in their rightful place, keeping them out of "the parlor."<sup>130</sup> Another noted, "without zoning a floater's shanty may be moved upon [lots near homes], or a pig-pen, a cow-stable or a chicken hatchery."<sup>131</sup> Animal agriculture was clearly still seen as a threat to urban property holders in the 1920s. Indeed, some of the earliest court contests over zoning laws involved animal agriculture.<sup>132</sup>

Whether implicit or explicit about animal agriculture, other cities' zoning codes produced similar results. Boston expressly forbade "auxiliary keeping of animals," including poultry and other livestock, in all residential zones.<sup>133</sup> Philadelphia issued its first zoning code late, in 1933. It included thirteen zoning classifications (seven residential, four commercial, and two industrial), none of which permitted animal agriculture. By 1955, however, one of its residential zones allowed for noncommercial keeping of farm animals, and one of the commercial zones authorized live animal markets. These exceptions notwithstanding, by the mid-twentieth century animal agriculture was simply absent from the zoning codes in the great majority of America's big cities. Planners did not imagine it as an urban land use.



### Coda: The Land of Honey and Egg Ordinances

The regulation of animal agriculture—at least as much as other industries—gave rise to early landuse regulations and the bureaucracies that enforced them. Cities full of manure and stray hogs, threatened by food safety scares, and lacking formal sanitation services, necessitated reform. Despite working-class resistance and politicians' hesitancy to alienate these voters, municipalities and their boards of health gradually disentangled animal agriculture from public and private space, waste management, and certain links in the food supply chain. In the process, they established key precedents for the planning profession, including not only its separation of land uses but also its regulation of the urban poor and the demise of the organic infrastructure that connected waste streams back to food supply. They also separated the urban poor to a great extent from their sources of food, livelihoods, and sometimes their neighborhoods. Removing animal agriculture thus dismantled key dimensions of community food security as well as older, more organic systems of urban land use, economies, and waste management.

The traditional ties between urban agriculture and working-class neighborhoods were central to the experience of the late nineteenth- and early twentieth-century city. Piggeries and dairies supplied vital livelihoods and food for the poor. Conversely, the common misconception that urban agriculture was a fringe enterprise is incorrect. Distilleries, slaughterhouses, markets, and associated businesses made up a vibrant part of the city economy prior to the twentieth century. Similarly, piggery waste management systems were economical, efficient, and supplied poor residents with gainful employment, as they still do in the global South today.<sup>134</sup>

There is some evidence to suggest a darker side to the animal ordinances, well beyond the Irish in New York.<sup>135</sup> In 1907, a real estate mogul cited that city's rooster ordinance to punish undesirable neighbors in a “class consciousness” crusade to clear the neighborhood of “freemen who have chickens and stables.”<sup>136</sup> In 1910, residents used the rooster ordinance to intimidate a white woman who planned to sell her house, in a white neighborhood, to blacks. To comply with the law, she slaughtered her chickens and ate them.<sup>137</sup> Even when such laws applied to all residents, they were often levied at minority groups first, as in the case where a rooster ordinance was filed against black residents with the plan to later file against white residents.<sup>138</sup>

City planners today may glean multiple lessons from history as they work to reintroduce animals through plans and codes. Planners continue to struggle with the tensions inherent in organic systems of food production and waste, with both real and imagined health concerns, and with improving poorer neighborhoods without disenfranchising their residents. Historically, cities that experienced the least conflict over animal agriculture enacted a gradual transition system of permitting in tandem with public shouldering of waste contracts, urban poor feeding programs, and food inspection. These same lessons may be applied in reverse if farm animals are to be reintegrated into cities.

Poultry were the last farm animals to be banned in the early twentieth century and they are often the first to be reintroduced. When the New York City Board of Health attempted to ban poultry in 1914, five hundred citizens swarmed its offices in protest and the effort was

stymied.<sup>139</sup> The city loosened its bans on poultry as citizens struggled with food price spikes during World War I.<sup>140</sup> A “Poultry for Freedom” movement cropped up during World War II as city dwellers turned to backyard poultry businesses when meat became expensive (see Figure 4, a federal flyer promoting animal agriculture).<sup>141</sup> These episodes reflect the broader cyclical trend that people turn to urban agriculture in times and places of scarcity. This is one inspiration for planners considering how cities can adapt to environmental and economic crises of the twenty-first century.

As urban agriculture gains popularity in the early twenty-first century, planners are seeking to reweave certain elements of animal agriculture into cities. Some cities have permitted beekeeping and hens, though the language of these “Honey and Eggs” ordinances signals continued fear of the animals themselves. New interest in urban agriculture largely reflects white, middle-class prerogatives, as less powerful groups, often immigrants, have kept chickens, goats, potbellied pigs, and other animals in the city, usually “under the radar.” Many new municipal sustainability plans promote urban farms and composting, and a few big cities, notably Seattle, allow households to keep goats and potbellied pigs. These trends notwithstanding, urban planners seem reticent to recreate anything resembling the animal agriculture and organic systems of early American cities.<sup>142</sup> But perhaps planners' increasing focus on biodiversity and integrated land uses will create greater space in cities for animal agriculture and its human practitioners (see Figure 5).

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## Biographies

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**Figure 1.** Carl Fredrik Akrell; After: Baron Axel Leonhard Klinckowström, “Broadway gatan och Rådhuset, New York.” 1824 etching of pigs on Broadway in New York City. Image provider: The Metropolitan Museum of Art, Bequest of Charles Allen Munn, 1924 via ARTstor.

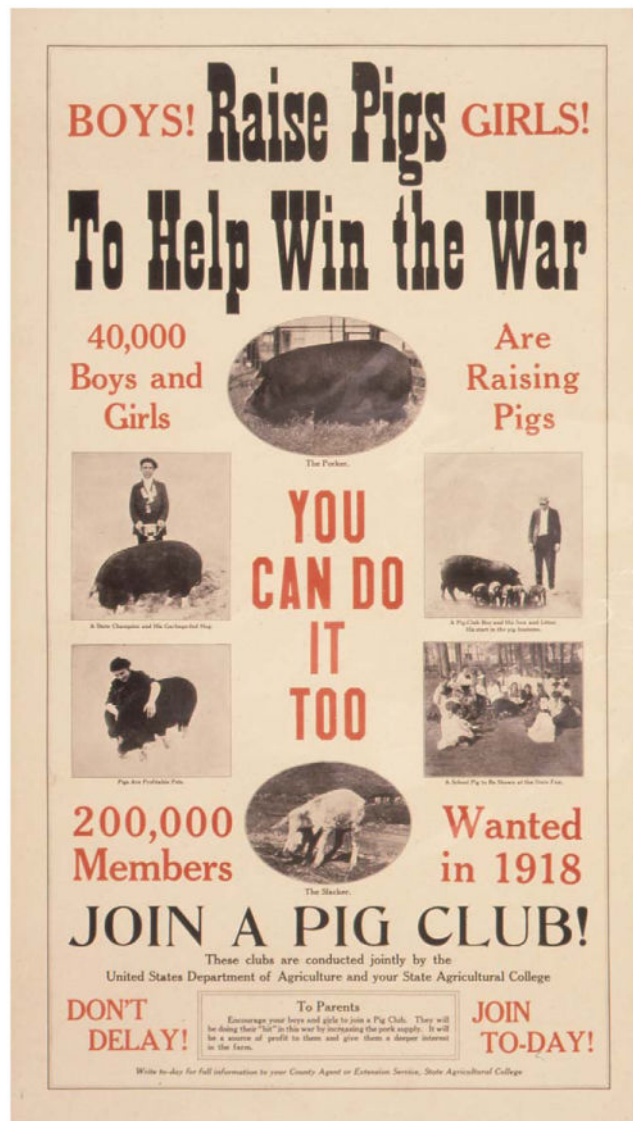


**Figure 2.**  
Birch and Sons engraving, 1800 *Hog being unloaded at the Alms House in Spruce Street, Philadelphia*. Image provider: University of Pennsylvania.



**Figure 3.** “Cattle driving in the streets,” Frank Leslie's Illustrated Newspaper, April 28, 1866. Library of Congress.





**Figure 4.** “Pig Club“ from USDA. ““Boys! Raise Pigs To Help Win The War. Girls! 40,000 Boys and Girls are Raising Pigs. You Can Do It Too. 200,000 Members Wanted in 1918. Join a Pig Club! Don't Delay! Join Today...””, ca. 1917 - ca. 1919” Image provider: Library of Congress. National Archives Identifier: 512546 Local Identifier: 4-P-107.



**Figure 5.** Oxen from the Howell Living History Farm outside Trenton, New Jersey, till the Chestnut Street Garden in the city with students from Grant Elementary School (photo courtesy of Isles Community Organization). While chickens and bees have been zoned back into many US cities, large animal agriculture has returned only in limited ways, often tied to educational programs for youth.