

“As Great a Nuisance as the Garbage Itself”

Race, Power, and the Question of Waste Management in Portland, Oregon, 1871–1905

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DURING THE FINAL TWO DECADES of the nineteenth century, the population of Portland, Oregon, grew by over 50,000. Fears about the spread of disease and the livability of the rapidly expanding city led Portlanders to hope for an immediate solution to its resulting waste management problem. On October 22, 1888, the *Oregonian* reported on the status of the new garbage crematory that was going to be built in the city. The contractor for the project, M. Burelbach (whose first name is unknown), was scheduled to sign a contract with the city that day, which would allow him to begin construction. Burelbach, the article explained, planned to build on a plot of land “on the west shore of Guild’s lake [in North Portland], a short distance from the place where the scavengers now dump the [city’s] garbage.” Portland scavengers — the term used in the nineteenth and early twentieth centuries to describe people who collected, hauled away, and resold discarded materials — reported that they typically took about “thirty loads per day of garbage” to a dump site near Guild’s Lake. In response, Burelbach had promised a crematory that could incinerate an impressive forty cart loads of garbage every day. This was an ambitious promise that was likely welcome news to Portlanders, since the fast-growing city had yet to implement a waste management system that met the needs of its residents and industries. While a “cart load” was an inexact measurement, the mental image of forty horse-drawn carts leaving the city loaded to the brim with Portland’s trash must have been significant — a veritable cavalry in the fight against filth and disease. The tone of the article was optimistic and concluded that “the opening of the crematory will be another step in the progress of the city.”¹ The future of waste management in Portland looked bright.

Just a year later, however, optimism about the garbage crematory had dwindled. On December 11, 1889, the *Oregonian* published an article



A PERSON PICKS THROUGH GARBAGE at the edge of Guild’s Lake in Portland, Oregon, in about 1905. In the background is the Bridge of Nations and U.S. Government Building at the Lewis and Clark Exposition.

lamenting that little, if any, progress had been made in Portland’s waste management system in the months since Burelbach signed his contract with the city. “The crematory of Burleback [*sic*] is said to be a failure,” the newspaper reported, “and no one appears to know what to do with the garbage, any more than they did a year ago or two years ago.” The unnamed author predicted that the “momentous and oft-recurring question, ‘What shall we do with our garbage?’” was “likely to become as great a nuisance as the garbage itself.”² Although the crematory (referred to interchangeably as the city incinerator, garbage furnace, or cremator) had only begun operations the previous August, according to the article, it was destined for failure.

This predication was, ultimately, accurate. In January 1893, the *Oregonian* reported that the contractor was convicted of “maintaining a nuisance” for keeping “large quantities of decaying garbage and flesh in an exposed manner,” an offense that carried a fine of between \$50 and \$250.³ Clearly the “garbage question” — how to effectively manage Portland’s waste — still plagued city leaders, and there was no immediate or obvious solution in sight. The *Oregonian*’s claim that the city was no closer to answering the garbage

question carried a sense of panicked impatience, and when the crematory did not live up to Burelbach's promises, there was a hasty, frustrated public response. The contractor's conviction poses a question: why was it seemingly so difficult for Portland to find a method of waste management that met the city's needs?

The search for a satisfactory way to collect and dispose of Portland's refuse did not begin or end with Burelbach's crematory; it was a problem that the city and its residents returned to again and again. Multiple waste incinerators were constructed in or near Portland during the late nineteenth century, all of which were riddled with mechanical issues that ultimately led city leaders to shut them down. Even after successive failures, officials did not abandon this technology and continued to search for new contractors to build incinerators on new sites. Historian Martin V. Melosi writes that garbage crematories were "hailed as a technological panacea," which, despite their functional limits, many Progressive Era reformers viewed as an innovative tool for progress that would enable cities to continue urbanizing and industrializing while eliminating waste on a large scale.⁴ Moreover, cities were limited in their garbage disposal capabilities, so the crematory, even if imperfect, was far from the worst option.

Examining waste management in Portland between 1871 and 1905 places the city within a larger, national history of urban sanitation, as many cities during this time period also shared Portland's trash problems. Moreover, the city was an early adopter of crematories, so it serves as a valuable case study to understand how sanitation technology developed in the United States. Across the nation, municipal governments tried, and usually failed, to implement effective waste management systems, and at the turn of the twentieth century in Portland, the city government struggled to exert and maintain control over a quickly changing urban environment. Portland, like other U.S. cities, faced a great amount pressure from vocal residents to solve the garbage problem. Historian Alexandra W. Lough attributes this to "decades of unprecedented growth and expansion, fueled in large measure by industrialization, [which] created a perfect storm of problems municipal governments were ill-equipped to address."⁵ Local leaders tried to negotiate a greater role in waste management by overseeing the construction and operation of municipal crematories and by establishing ordinances to control the collection and disposal of waste. Despite these efforts, Portland's city government failed to meet the needs of its residents.

In early 1871, the *Oregonian* published the text of the city of Portland's Ordinance 928, which was intended "to provide for preventing and removing nuisances."⁶ The ordinance prohibited the accumulation "in or upon any yard, lot, place or premises . . . [of] any stagnant or impure water,

refuse vegetables, decayed or decaying substances, garbage or filth of any kind" in any way that would "cause or create a noisome or offensive smell or atmosphere, or thereby to be . . . a public nuisance."⁷ The city tried for decades to find waste management systems that did not constitute a nuisance; as historian Jewel Lansing writes, "proposals for improvements to streets, sidewalks, and sewers, along with remonstrances against them, consumed a great deal of council time."⁸ In addition to mechanical difficulties to which early garbage crematories were prone, the structure of Portland's government at the turn of the twentieth century may not have been especially conducive to the sort of long-term planning needed for successful sanitation projects.

Beginning in the 1850s, the issue of whether to pay city council members was contentious. When Portland's first mayor was elected in 1851, neither he nor the council members were paid. The first Portland City Council was composed of seven men, whose jurisdiction extended over about two square miles. (In contrast, by 1893, there were eleven seats on the council and the city had grown to thirty-nine square miles.) In 1858, an ordinance was passed to compensate members based on the number of council meetings they attended, at a rate of \$3 per meeting. This changed in 1882, when it was decided that the mayor would receive a \$1,500 yearly salary, while council members were paid \$300 per year. In 1897, city council members were once again unpaid.⁹ As Lansing describes, mayors and council members cycled through the ranks of local government frequently. This may have made it difficult for the city of Portland to maintain the momentum needed for publicly funded projects and likely exacerbated the garbage problem.

The city's waste management plans and policies were also guided by anti-Chinese sentiments. As Portland's leaders introduced and enforced new ordinances to regulate refuse collection and disposal, chose sites for garbage crematories and dumps, and debated about whom the city would hire to do this work, they also determined the groups that would benefit from municipal waste management and those that would not — namely non-White and rural populations. As historian Joanna Dyl observes, "class, race, and power . . . remain inseparable from debates about the urban environment."¹⁰ Historians have documented how the anti-Chinese movement rapidly expanded both locally and nationally during the second half of the nineteenth century, a time when city leaders were increasingly trying to control the collection and disposal of refuse.¹¹ The early history of waste management in Portland shows how race and power shaped local policies relating to the urban environment. When viewed in relation to each other, the anti-Chinese and urban sanitation movements in turn-of-the-century Portland serve as an early example of environmental racism.

Timeline

Events relating to Portland's Waste Management System (1851–1900)

- 1851** Portland's first mayor is elected. This position as well as city council positions are unpaid. These positions continue to be inconsistently paid throughout the nineteenth century, resulting in frequent turnover.
- 1865** An ordinance to ban Chinese residents from living in specific areas of Portland is proposed, and any Chinese person found doing so would be charged with "committing a nuisance."
- 1871** City of Portland's Ordinance No. 928 makes illegal any buildup of waste or refuse on any property in a way that causes an "offensive smell" and creates "a public nuisance."
- 1872** Oregon passes "An Act to Prohibit the Employment of Chinese Laborers on the Improvement of Streets and Public Works," which included waste management projects.
- 1875** The Page Act is passed, effectively banning all Asian women from entering the United States.
- 1879** District Attorney J.F. Caples submits a petition requesting Portland's city council to enforce the statewide ban of Chinese laborers on "the improvement of streets."

J.H. Fisk sells a parcel of land next to Guild's Lake in North Portland as a site for a garbage crematory.
- 1882** The Chinese Exclusion Act is passed, prohibiting the entry of any Chinese laborer into the United States for ten years as well as making all immigrants from China ineligible for naturalization.

- 1884** Scavengers (garbage haulers) cease work due to the distance of the city's dump site outside city limits and the inability to dump the refuse elsewhere.
- 1888** M. Burelbach signs a contract with City of Portland to build a garbage crematory near Guild's Lake, promising to incinerate forty cart loads per day. The city selected this site despite its close proximity to Chinese people living and farming nearby.
- 1889** In August, Burelbach's crematory is completed and begins operation.
- 1890** In December, Ordinance No. 6440 is passed by city officials, which forbids the mixing of certain types of refuse.

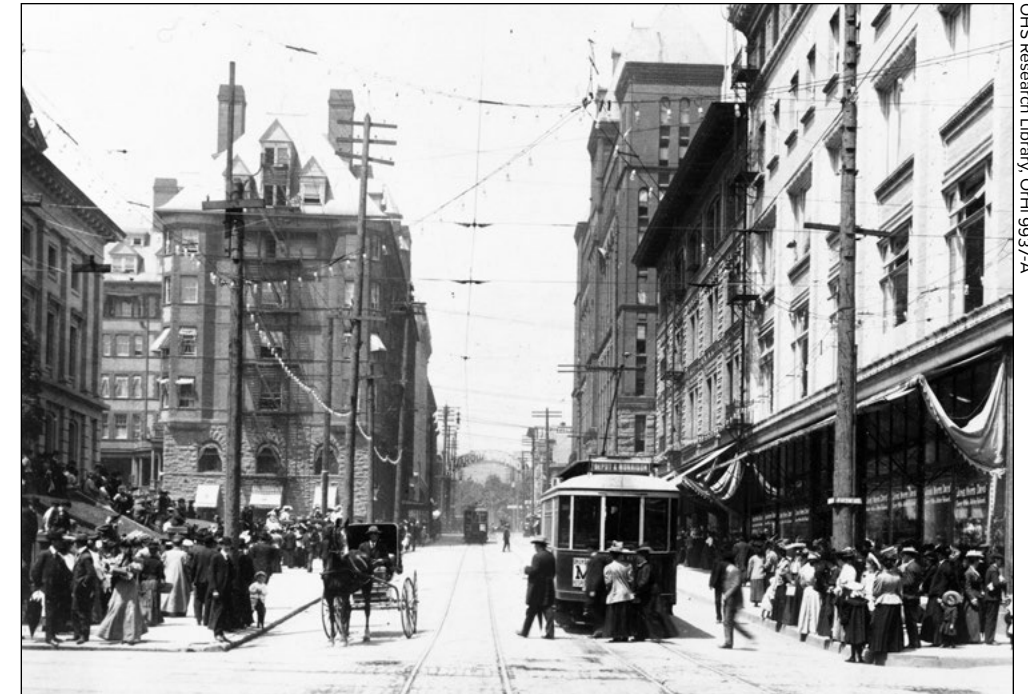
Only 29.1 percent of Portland's streets are paved at this time; St. Helens Road and other roads nearby Guild's lake remain unpaved.
- 1893** Burelbach's garbage incinerator is ineffective, and he is convicted of "maintaining a nuisance" for the failure of his crematory to effectively manage Portland's waste.

City scavengers go on strike in opposition to Ordinance No. 6440.
- 1894** Rocky Point crematory, located north of Portland, opens and proves to be a nuisance to residents of the rural community. In September, the Rocky Point crematory is shut down due to mechanical malfunctions.
- 1897** Portland opens a new garbage incinerator in Guild's Lake area to replace Rocky Point crematory.
- 1900** Ordinance No. 11715 is passed, enabling Portland's Committee on Health and Police to sell the Rocky Point crematory site.

DESPITE THE CITY'S BEING only several decades old at the turn of the twentieth century, the expansion of rail lines connecting Portland to a vast interstate transportation network helped “create a city of national importance.”¹² In the span of only twenty years, the city’s population grew almost fivefold, increasing from 17,500 in 1880 to 80,871 in 1900.¹³ Tens of thousands of new residents — and their garbage — put new strains on the city’s existing infrastructure. Portland’s growth mirrored the trend toward urbanization that was occurring on a national scale. As Melosi writes in *The Sanitary City*: “The number of urban centers [in the United States] increased from 939 to 2,262 between 1880 and 1910, and the number of cities with populations over 100,000 increased from nineteen to fifty in the same time period.”¹⁴ As a result, urban residents quickly recognized the olfactory implications of living in densely populated areas without reliable systems of waste collection and disposal.

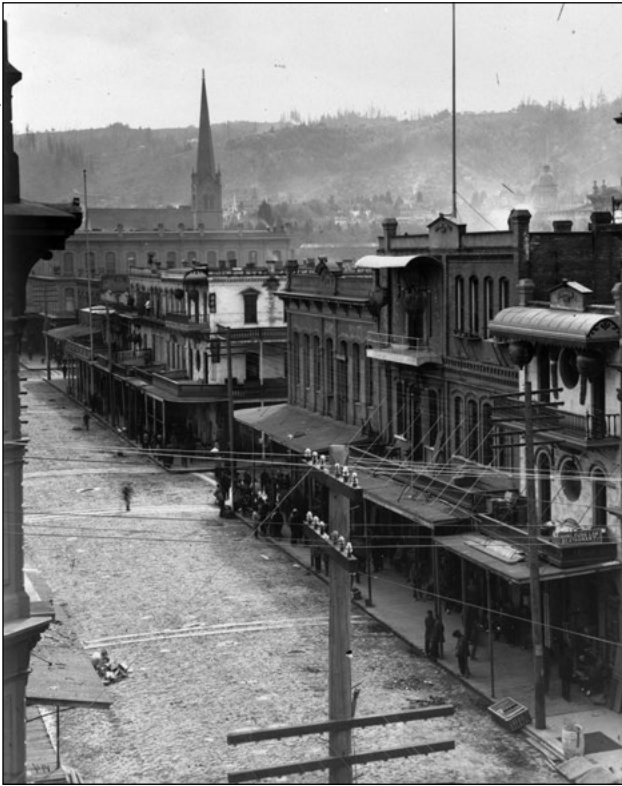
Before the widespread establishment of garbage crematories, U.S. cities had several methods for disposing of waste.¹⁵ Refuse was most often dumped, buried, or used as fill for construction. Alternatively, organic matter could be sold to farmers for use as fertilizer or animal feed. Dumping waste into bodies of water, especially rivers, was also common.¹⁶ Urbanization and industrialization, however, forced a rethinking of refuse management for many U.S. cities, including Portland. For many Americans at the turn of the twentieth century, clean cities, characterized by effective waste management, became evidence of modernity and progress, and a sign that leaders could successfully “produce order from their rapidly changing lives and communities.”¹⁷ For this reason, large-scale waste incineration was a particularly attractive disposal method to city leaders nationwide. William P. McGowan describes garbage incineration as “the darling of the modernization movement” because of its purported ability to “make waste disposal faster, cheaper, and more sanitary than pre-industrial methods.”¹⁸ The theoretical expectations, however, often exceeded technological limits that made early garbage crematories expensive and inefficient. Portland officials and residents, for example, regularly complained about low incinerator capacities, incomplete incineration, foul odors, and mechanical problems.

Municipal governments across the United States approached their garbage problems in numerous ways, and there were rarely “clear lines of responsibility for collection and disposal of refuse.”¹⁹ Waste management systems ranged from entirely private to municipally controlled. In cities without government intervention in waste management, individual households paid private scavengers or scavenging businesses to collect



PORTLAND'S POPULATION grew from 17,500 people in 1880 to nearly 81,000 by 1900, which mirrored urbanization trends nationwide. The intersection of Southwest Fifth Avenue and Morrison Street is pictured here in about 1900.

and dispose of their garbage, although “city officials also realized that the complexities of urban life” made it “impractical” to leave waste collection and disposal decisions up to households and businesses.²⁰ At the other end of this private-public spectrum were systems controlled and operated by city governments. New York City, for example, implemented a municipal system of waste management for several decades at the end of the nineteenth century. Fears about corruption, however, led the city to move to a contract system in 1890, wherein it took “bids from private scavenging companies,” a solution that was considered a middle-ground response to the issue of privatization versus complete municipal control.²¹ When these systems of waste management operated smoothly, garbage was less of a nuisance, and the garbage question could be temporarily forgotten. Beginning in the 1880s, the city of Portland required scavengers to pay a licensing fee to use the city-owned garbage dump. During the subsequent



CHINATOWN IN PORTLAND, along Southwest Second Street looking toward Washington Street, is pictured here in about 1890.

Which Agitates the Community.”²³ The garbage question elicited strong emotional responses from the public, making the need to find effective methods of waste management an urgent and agitating problem. While Americans’ understanding of disease changed during the late nineteenth and early twentieth centuries, moving from miasma theory to germ theory, the belief that diseases were caused by bad air continued to play a large role in discussions of waste management. Within this context, a person’s sense of smell helped them navigate the perceived health dangers that existed in urban areas. As historian Melanie Kiechle explains in *Smell Detectives*, “common sense directed all Americans to assess their environment through their noses and to actively protect themselves from the constant olfactory onslaught that they thought made cities unhealthy.”²⁴

decades, local leaders would attempt to exert greater control over the city’s waste management system. Portland residents and officials recognized that their method of collecting and disposing of waste did not ultimately meet the needs of the growing city.

When the smells of rotting food scraps and other organic matter lingered within Portland’s city limits, “the howl that [came] up from a long-suffering public [was] as loud as the odor of the garbage.”²² As an article in the *Oregonian* further described, “the oft-recurring question, ‘What shall we do with our garbage?’” was “the Leading Conundrum

Portlanders were anxious to prevent disease outbreaks, and they believed that crematories could help or hinder this goal, depending on how well they were operated. In 1893, the *Oregonian* reported that “health authorities hope to baffle the cholera or any other filth-born disease that may be contemplating a raid upon Portland this year,” and the “safest and surest means” of curbing the spread was through well-managed and odorless garbage incineration.²⁵ And when the city charged Burelbach with maintaining a nuisance that same year, it was not only because the unincinerated waste smelled bad; the nuisance charge had serious legal and public-health implications that went beyond the collection and disposal of waste.²⁶

As Portland leaders began laying a foundation for the municipalization of waste management in the second half of the nineteenth century, the prevailing anti-Chinese movement across the country influenced that work. Numerous attempts were made to restrict where Chinese residents could live during this period, and when city officials targeted Chinatown in their waste management decisions, they labeled Chinese residents as exceptionally dirty — coinciding with other racist sanitation policies being proposed and enacted across the country. In 1865, for example, an ordinance was proposed that would ban Chinese people from residing in certain parts of Portland unless they received permission from the city council, also known at that time as the common council. If a Chinese person was found guilty of violating this ordinance, they would be charged \$100 or imprisoned for up to fifty days for the crime “of committing a nuisance.”²⁷ This ordinance employed the same legal language that would later be used to convict Burelbach for leaving piles of rotting waste near his incinerator. City officials in other states also proposed ordinances that used similar characterizations of Chinese residents. Historian Natalia Molina describes how at the turn of the twentieth century, public officials in Los Angeles and San Francisco, California, “had sufficient credibility to construct what being ‘Chinese’ meant — namely, dirty, depraved, and disease ridden. These stereotypes in turn justified segregating Chinese people.”²⁸

Throughout the following several decades, numerous petitions and ordinances were presented to Portland’s city council with the aim of prohibiting Chinese Portlanders from being employed on street improvement projects; state officials passed similar restrictions. In 1872, for example, the state passed “An Act to Prohibit the Employment of Chinese Laborers on the Improvement of Streets and Public Works.”²⁹ Waste management, specifically street cleaning and sewer construction, was a significant aspect of these projects. In 1879, District Attorney J.F. Caples submitted a petition

asking the city council to enforce the recent statewide ban on “the employment of Chinese laborers on the improvement of streets.”³⁰ Through these ordinances, state and local governments codified anti-Chinese sentiments in their increasing control over waste management.³¹

At a national level, the U.S. government effectively banned women from “any Oriental country” from entering the United States with the passage of the 1875 Page Act, and the 1882 Chinese Exclusion Act prohibited entry for Chinese laborers and made all immigrants from China “ineligible for naturalization.”³² This legislation marked the beginning of Oregon’s Exclusion Era, which lasted until 1943.³³ State exclusions existed as well. Historian Jennifer Fang writes that the “sections [of Oregon’s constitution] addressing the presence of Chinese people stood out from other state constitutions in the lengths they went to prohibit the land ownership and voting privileges of this free immigrant population.”³⁴ Despite legal restrictions, violence, and hostility, Oregon’s Chinese population grew during the late nineteenth century, indicating the agency and resiliency of Chinese communities amid sustained xenophobia and racism.³⁵ In Portland, the Chinese population increased from 496 in 1870 to 1,961 in 1880.³⁶ In the final decade of the century, there were more than 4,500 Chinese residents in the city.³⁷

In 1879, amid attempts by Portland city officials to enforce the statewide ban on Chinese laborers from public works and street improvement projects, the city accepted a number of bids and proposals for land where a garbage crematory might be located. Officials settled on a site being offered by J.H. Fisk for \$8,000 that, according to a diagram included in a proposal letter to Portland’s city council, was located in North Portland just off St. Helens County Road, next to Guild’s Lake.³⁸ The letter ended with a stipulation: “that said land shall be used for what is termed an odorless crematory, or other inoffensive purpose.”³⁹ This requirement would end up complicating many of the city’s earliest waste management attempts.

Geographically, Guild’s Lake marked Portland’s northern boundary. It was comfortably removed from the city center on the west side, and for residents on the east side of the city, the Willamette River offered a complete physical barrier between their communities and the health and olfactory nuisances of the incinerator. While the shore of Guild’s Lake was perhaps a desirable site for a garbage crematory because it was peripheral to the city, the land was not uninhabited. As Karin Dibling, Julie Kay Martin, Meghan Stone Olson, and Gayle Webb document in their photo essay on the lake, “the area was the home of Portland’s ‘undesirables’ — Chinese immigrant farmers, the city incinerator, and sawmills.”⁴⁰

Chinese residents of Guild’s Lake were socially, politically, and economically marginal. They lacked access to citizenship and had few options

To the Honorable, the Common Council of the City of Portland in Oregon.
Respectfully calling your attention to an act of the Legislature of this State, entitled an act to prohibit the employment of Chinese laborers on the improvement of streets and public works in this state. Approved October 16th 1878, and by its terms taking effect from and after its approval by the Governor. I beg leave to suggest, that since the taking effect of said act Chinese laborers have been employed, and still are employed in several instances under contracts made with the City for the improvement of streets and other public works therein in violation of the terms of said act of the Legislature. I instance as examples, a contract for the improvement of Salmon Street made with the City on or about the 7th of November 1878. Also a contract for the improvement of Yamhill Street about the same date, besides other contracts not herein particularized. This employment of Chinese labor being not only derogatory to the interests and rights of citizen labor, but in violation of the statute above referred to, I as District Attorney of the 4th Judicial District of Oregon, do hereby enter my protest against the payment of any money upon, and against the legal recognition of any contract by your Honorable body upon which Chinese labor has thus been performed.
Portland Oregon Jan 15 1879
J.F. Caples
Dist. Atty

J.F. CAPLES, Oregon District Attorney, wrote this letter to the Portland Common Council (city council) in 1879 asking its members to enforce the statewide ban on employing Chinese labors on street improvement projects, including street cleaning and waste management.



GUILD'S LAKE is shown here in about 1900. St. Helens Road, made of planks, is in the lower left foreground, and the Willamette River can be seen in front of the low earthen embankment in the distance, with Swan Island just beyond.

for recourse against White hostility, violence, and expulsion, making them less able to protest against the harm caused by their proximity to polluting industries. In 1886, an estimated forty or fifty Chinese people worked small farming areas near Guild's Lake and were targets of violence. The *Oregonian* reported on March 13, 1886, that "a band of about thirty 'white men'" had broken into several Chinese farmers' homes the previous night, robbed and threatened the inhabitants, and forced them out.⁴¹ An update ten days later explained that the Chinese returned to their homes armed, and backed by deputy sheriffs, for protection.⁴² This was not an isolated incident; about a week before the March 13 attack, a Portland man was arrested for his involvement in a "kuklux mob which drove the Chinese out."⁴³ The historian Marie Rose Wong identifies other instances of White violence against Portland's Chinese residents, including "rioting in Albina, East Portland, and Mount

Tabor, where Chinese woodcutters were beaten and their camps torn apart" as well as "the dynamiting of Gee Sing's laundry" in Chinatown.⁴⁴

Historian Ellen Stroud writes in her study of environmental racism in Portland, "the connection between toxic pollution and poor and non-white communities has been widely accepted" even though, she explains, "there is not a single racist culprit, nor any one policy or type of policy which can be blamed."⁴⁵ While there was no law requiring that a city incinerator be built near the farming areas of Chinese immigrants, the Exclusion-era atmosphere of White xenophobia and racism contributed to the city government's considering Portland's Chinese community a "nuisance" that, like waste, it preferred to keep out of sight and out of mind. This attitude continued to affect waste management decisions as the local government increased its control over refuse collection and disposal.

When confronting the problem of finding a good location to deposit garbage, Portland leaders were faced with the flaws in the city's existing waste management system. The *Oregonian* summarized those flaws and issued a warning in an October 1884 article: "citizens are fined if they do not have garbage removal, and scavengers are fined if they deposit it anywhere. It is a very unpleasant state of affairs for all concerned. . . . if the garbage, filth and refuse matter of all kinds is allowed to accumulate for a few years Portland will be buried deeper than Pompeii or Herculaneum."⁴⁶ This piece of the garbage problem, however, was a complex issue with a solution that required the dump to be far enough away from the city's population not to cause a nuisance but close enough for scavengers to reasonably access it.⁴⁷ Several petitions were submitted to the city asking Portland officials to designate a suitable place where garbage could be dumped. One, submitted on April 14, 1884, was signed by sixteen of the city's scavengers. The petition explained that scavengers had "been compelled to suspend [their] business" after they were "forbidden from dumping the rubbish and refuse matter . . . at any place where it [was] practicable" for them to do so.⁴⁸

Scavengers were not the only Portlanders pushing for municipal intervention in the city's waste management system. In 1884, F.E. Vaughn, Portland's Superintendent of Streets, filed a petition calling on the city to establish a dump site. Vaughn estimated that Portland scavengers collectively "haul[ed] about 200 loads [of garbage] daily," and the problem, Vaughn pointed out, was that there was "no place provided by the city for depositing this vast amount of matter," a situation that "work[ed] hardship on the scavengers who are compelled under the existing ordinance to cart it outside the limits of the city."⁴⁹ Because scavengers were prohibited

from disposing of waste within the city, the petition explained, Portland residents were sometimes unable to find scavengers willing to collect their garbage, since hauling it away took considerable time and effort. Vaughn proposed that the city should require scavengers to be licensed, and thus pay a monthly licensing fee, which would “cover the cost of maintaining a barge to be launched at the public levee [and] . . . used for a deposit for garbage.”⁵⁰ In addition to locating a dump site, the city was also taking steps to construct a garbage crematory; both efforts served to increase municipal control over waste management.

In May 1888, the *Oregonian* published a notice that, starting on June 1, scavengers would be charged \$2 per month to use a city dump site.⁵¹ Later that year, the question of licensing scavenger vehicles “awoke quite a lively discussion” at a meeting of city leaders. The cost of the proposed licenses — “\$10 per quarter for one horse carts and \$12 per quarter for two horse vehicles” — was opposed by at least one committee member, Richard Gerdes, who “thought \$5 per quarter was enough.” A debate about the location of a garbage crematory also emerged during the meeting. Committee member Fliedner explained that “scavengers were willing to pay a license if the crematory was built within a reasonable distance,” but he expected that the proposed location would be too far to make it financially feasible for scavengers to make the trip, and he thought that the contract should not be signed until the location was known with certainty. Gerdes held the opposite opinion, “insist[ing] that the committee must sign the contract and had no right to say where the crematory should be located.” The debate got so lively, in fact, that “the mayor finally declared the discussion out of order, and the matter was dropped.”⁵²

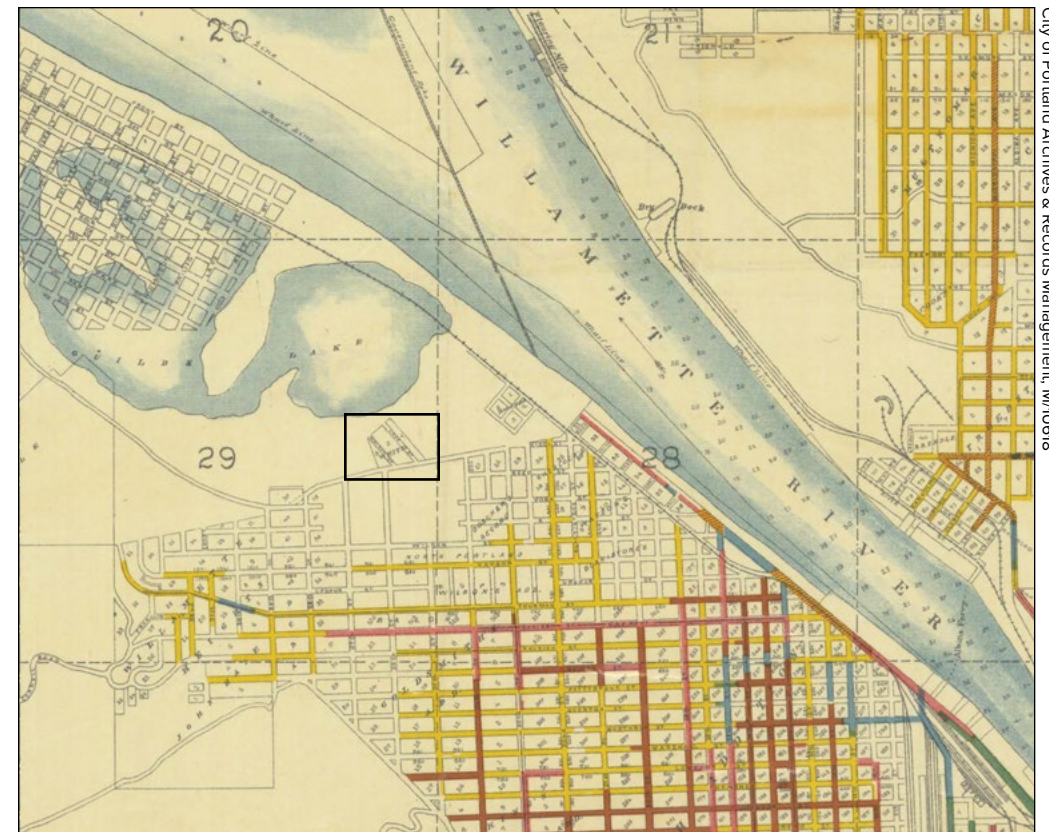
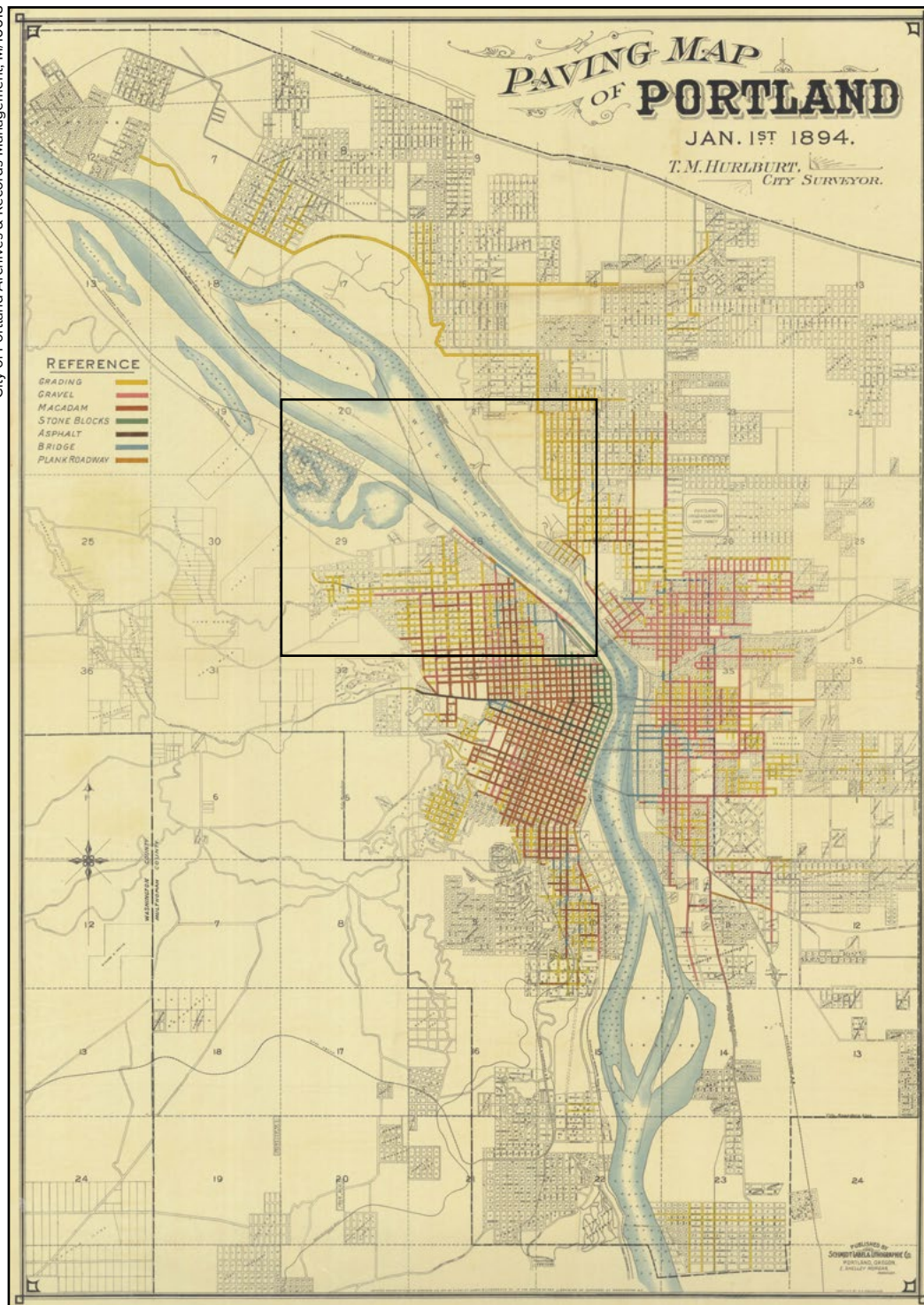
Because plans were in motion for the construction of a municipal garbage crematory, in 1888 the *Oregonian* published an article describing the process of waste incineration. The cremator would be three stories tall, and the top two levels would each incinerate a different type of waste: garbage (inorganic matter) would be handled on floor three, while “bodies of dead animals and the like” (organic matter) would be taken to the second floor. Burelbach’s contract authorized him to collect and process animals that died in Portland, the most profitable of which were horses.⁵³ Historians Clay McShane and Joel Tarr explain that horse “carcasses carried considerable economic value” and could be processed in numerous ways.⁵⁴ As detailed in the *Oregonian*, “the hide is good for leather, the manes and tails are used for wigs, fiddle-bows and for manes and tails for rocking horses, etc; the bones are worth \$20 a ton, and are used for knife handles and many

other things . . . and oil for machinery . . . are extracted from the carcasses which can then be made into a fertilizer.”⁵⁵ In addition to the monthly amount Burelbach received from the city to operate the crematory, he could expect to benefit from the monopoly on horse carcasses that his contract granted him. The first floor of the crematory housed the furnace, which would be about forty feet long and would “consume some 100 cubic yards of garbage a day.” Importantly, the crematory was designed not to be a nuisance. Its structure supposedly ensured that there would be “no possible chance of any gas or bad odor escaping.”⁵⁶ The appeal of the garbage crematory hinged on the promise that it would be odorless; however, this requirement also proved to be the hardest to fulfill.

In the United States, the first municipally operated garbage crematories were built on the East Coast. The earliest municipal cremators began operation in West Virginia, Pennsylvania, and Iowa in the late 1880s and were based on a model invented in England by Alfred Fryer.⁵⁷ Portland, with Burelbach’s 1889 crematory, was also an early adopter of this technology. These English-style garbage incinerators, however, did not last. There were reports that the furnaces did not completely incinerate waste, generated “noxious smoke,” and were too expensive to run. Another problem, some maintained, was that American waste “contained a higher water content than English refuse, and thus required higher temperatures to burn,” temperatures that the English model was not designed to withstand.⁵⁸

Portland’s city council passed Ordinance 5611, “Authorizing a Contract for the Consumption of refuse matter by Heat” on October 17, 1888, and it was approved by the mayor two days later. The proposed contract required Burelbach to construct and operate a garbage crematory “in such a manner as not to be or become a public or private nuisance or be or become offensive to the smell or other senses of any one residing near or passing by the premises.”⁵⁹ The contract was signed in April 1889, and on August 3, 1889, the City of Portland received a letter from Burelbach notifying them that the garbage crematory was ready for operation.⁶⁰ According to coverage in the *Oregonian*, problems with the incinerator began mere months after it was completed.

At the same time, the more immediate problem of locating a suitable place for scavengers to dump garbage remained unsolved. In December 1889, a group of Portland scavengers submitted yet another petition to city councilmen. Once again, they asked city leaders “to take immediate action to provide . . . or assist [them] in obtaining a dumping ground.” The petition explained that “the present place where [waste] is being hauled,



THIS DETAIL of the 1894 street paving map, shown in full on the facing page, documents the area in the immediate vicinity of Guild's Lake in Portland, Oregon. The left edge of this detail runs along the western boundary of the City of Portland. The small, black box in this detail indicates the location of the city's first waste incinerator, which is situated along St. Helen's Road. The color-coded streets indicate street improvements in the area: no color indicates unimproved; yellow indicates graded roads; pink indicates gravel roads; and dark red indicates macadam roads. At the time the garbage incinerator was built, there were no improved roads leading to the site, making it difficult for garbage haulers to access, especially during Portland's rainy season.

since the recent rains, has become almost impassable, and hundreds of loads” of waste were being left along the road leading to the dump, since the site itself was not accessible.⁶¹ Portland’s months of rain added another layer of complexity to the problem. An *Oregonian* article corroborated the petition’s claim about the inaccessibility of the dump site during periods of rainy weather, stating that in “the summer, when the roads are good, the scavengers manage to get the garbage out of sight, somehow, somewhere, but when the weather is unpleasant and the roads bad, they appear to dump their carts anywhere.”⁶² It was not sufficient just to find a suitable site for dumping or incinerating waste; the roads leading to the site had to be passable year-round as well. According to U.S. census data, by 1890 only 29.1 percent of streets and alleys in Portland were paved.⁶³ An 1894 paving map by T.M. Hurlburt, Portland’s City Surveyor, documents how St. Helens County Road and other roads near Guild’s Lake were not paved (see map on page 374). This meant that roads leading to the city dumping ground and garbage crematory were difficult for horse-drawn carts to travel on during certain times of the year.

Portland’s municipal government continued to assume control over the city’s waste management system at the end of the nineteenth century. In addition to introducing vehicle licenses for scavengers, in 1890, city officials established Ordinance 6440 “to regulate the delivery of garbage and waste matter to Scavengers,” making it illegal to mix certain types of waste.⁶⁴ Separating refuse was an important step in the waste management process, since organic matter was “offensive and disease-breeding, and must be burned or buried,” while inorganic matter was “innocuous and need[ed] only to be gotten out of the way.”⁶⁵ Section One required the separation of “tin cans, glass, crockery, or any other metal or ashes [from] any swill[,] vegetable or animal matter.” Section Two prohibited “the proprietor of every household” from mixing the two categories of waste together, if that waste was going to be collected by scavengers. In turn, Section Three made it illegal for scavengers to collect, transport, or dump mixed waste. Anyone who violated this ordinance was subject to a fine between five and fifty dollars and up to twenty-five days in prison.⁶⁶ The eight-member city council passed the ordinance unanimously on December 3, 1890, and the mayor approved it two days later.⁶⁷

Portland’s Committee on Health and Police submitted a report to the mayor and city council on Ordinance 6440 in the summer of 1891, about nine months after the ordinance was first enacted. According to the report, the committee had visited Burelbach’s garbage crematory after receiving complaints that the rules established in the ordinance “were totally dis-

regarded.” Specifically, the report noted that the regulations outlined in Section Three, which prohibited scavengers from collecting or delivering mixed waste to the garbage crematory, were not being observed. The committee recommended “that printed copies of said Ordinance be furnished [to] the health officer for distribution to the Scavengers . . . and that printed signs be put up at the Crematory calling attention to the manner of hauling garbage.”⁶⁸ Although the committee singled out scavengers for violating the ordinance, they were almost certainly not the only party at fault.

Waste moved from its starting point in Portland residences and businesses to its end point in the dump or crematory, and since the ordinance was only concerned with regulating the end point of this process, it made scavengers more likely to be in violation of the rules than people at residences and businesses who were discarding their waste. While Section Two specified that “every hotel keeper[,] boarding house keeper[,] and the proprietor of every household” was required to separate their waste appropriately, those who collected and delivered the waste to the dump or crematory, most often scavengers, were penalized when Portlanders did not appropriately separate their waste according to the requirements of the ordinance. Scavengers then had to choose whether to refuse to pick up household garbage and lose customers, or dump mixed waste and risk fines and possible jail time. Scavengers opposed Ordinance 6440, and in early January 1893, the *Oregonian* reported that they went on strike following “the arrest of several of their number for carting away swill and ashes mixed.” Their refusal to collect the city’s waste was, according to the article, a unanimous decision. Scavengers explained that they “were willing to comply with the ordinance, but it was impossible to do so as long as housekeepers persisted in mixing up their refuse matter.” Since the city depended completely on privately contracted scavengers to collect and dispose of its waste, the scavengers were in a strong position. The article acknowledged this: “It will only be a few days before [a solution] is brought about, for the 40 to 60 tons [of waste] accumulating daily will require some attention from the health authorities.”⁶⁹ An article published two days later reported that the “deadlock in the business of scavenging the city” still remained, and the author suggested that the “chief of police can put an end to it in a day by arresting and fining householders who will not separate their garbage properly.”⁷⁰

As predicted by the *Oregonian*, the scavengers’ concerns were addressed quickly, not even a week after they first refused to collect or haul away the city’s garbage. The solution appeared to some optimistic Portlanders to be proof that the garbage problem was very close to being

solved. That same month, Chief of Police Charles H. Hunt and the Council Committee on Health made a plan to separate “non-combustible [mixed] material collected by the scavengers . . . upon a now vacant lot at Eighth and Northrup streets,” while the remaining combustible material would be incinerated by Burelbach.⁷¹ And unlike in previous years, when poor enforcement led to continued mixed-waste dumping, the police would “arrest any person who mixes swill with non-combustible matter, and an officer [was] employed at the new dumping ground to see that no organic matter [was] deposited there.”⁷² According to this new plan, anyone — scavenger or householder — could be fined or arrested for violating the ordinance. The *Oregonian* reported that, according to Hunt, “the most trouble [with residents not obeying the ordinance] was experienced in Chinatown.” Continuing, Hunt reportedly said that “the Mongolians have no regard for the law, and dump all their refuse matter together.”⁷³ Certainly Chinatown residents in Portland could not have been the only people disregarding the ordinance — if the problem was contained within one neighborhood, there would have been no need for a new, city-wide enforcement campaign. Rather, the fact that the “Mongolians” in Chinatown were the only group named specifically in this controversy is more suggestive of anti-Chinese prejudice than fair reporting on the part of the *Oregonian*.

Chinatowns across the United States were routinely described by White residents as particularly dirty and alien urban spaces. Reports on San Francisco’s Chinatown after the 1906 earthquake “emphasized narrow streets, dark alleys, and subterranean passageways, painting a picture of a distinctive urban environment characterized by filth, nuisances, and living conditions often compared to those of animals.”⁷⁴ Sanitarians’ response to plague scares during the first decade of the twentieth century targeted Chinese residents in similar ways. Historian Kimberly Jensen describes how, on Hawai’i in 1900, “many whites called for an all-out burning of Honolulu’s Chinatown, and the board’s controlled burn turned to tragedy when wind sent the flames across the Chinese district and destroyed it.”⁷⁵ In Portland, city officials characterized Chinatown and its residents as especially unclean, which in turn justified greater government control over waste management, revealing the pervasiveness and, for many city officials, the attractiveness of the idea that non-White or immigrant people and communities were associated with disease or uncleanness.⁷⁶

Xenophobia and racism influenced other waste management decisions made by Portland leaders as their control over refuse collection and disposal increased. At a city council meeting on November 15, 1893, Councilman L.M. Davis complained in regard to a street cleaning contract

that “if the contract were let to a rich corporation, they would employ Scandinavians, negroes and chinese [sic]. It would be better to leave the matter as it is till spring and let white men have the benefit of the work.” In response, a group of “citizens and tax-payers of the city of Portland of Scandinavian birth” called for an investigation into Davis’s comments and requested that the councilman be officially censured. The city council assembled a special committee to consider Davis’s remarks and make a recommendation about censuring him. In its report, the committee concluded “that the members of this Council are not in sympathy with the sentiments expressed by councilman Davis and think the same deserving of censure and condemnation.” The committee members, however, only objected to a portion of Davis’s opinion. According to the committee’s report, the problem with Davis’s remarks was that he equated Scandinavians, “a people known for its uniform good conduct, thrift, energy and enterprise with a heathen, debased and degraded race.”⁷⁷

In a letter to the editor of the *Oregonian*, Davis claimed that he did not “remember having used the word[s] ‘Scandinavian’ or ‘negro’” when discussing street-cleaning contracts at the November 15 city council meeting. He also did not deny his opposition to hiring Chinese for those projects. Assuring readers that he “certainly [had] nothing against either race,” who were “better than the Chinese,” Davis refused to apologize. His reasoning for opposing the employment of Chinese residents in street-cleaning projects hinged on the idea that they were not really U.S. citizens or Portland residents — that, in his words, it was “better for the City of Portland to . . . keep our home people employed.”⁷⁸ As city leaders attempted to gain greater control over the city’s waste management system, their decisions to characterize Chinese people as a “degraded race” served as justification for using them as scapegoats for the city’s garbage problem and for prohibiting them from employment in street cleaning or other public works projects. City leaders’ prejudices also informed policies and practices that placed polluting industries such as Burelbach’s ineffective garbage cremator near Chinese communities — an early example of environmental racism.

By 1893, the year that Burelbach stood trial for maintaining a nuisance by failing to incinerate waste on the terms established in his contract, problems with his crematory had existed for several years. In March of 1890, for example, members of the city council had debated the garbage crematory at a meeting, and one member proposed a resolution to pay Burelbach a fee for maintaining the crematory. It was rejected due to the fact that Burelbach was under investigation, with one member stating

that “the state of affairs along the road beyond the city limits [leading to the garbage crematory] was simply scandalous, the road being lined with garbage.”⁷⁹ Conditions had apparently not improved by October 1890, when the newspaper reported that Burelbach received a fifty-dollar fine “for not destroying in his crematory in the northern part of the city all the garbage brought there by scavengers.”⁸⁰

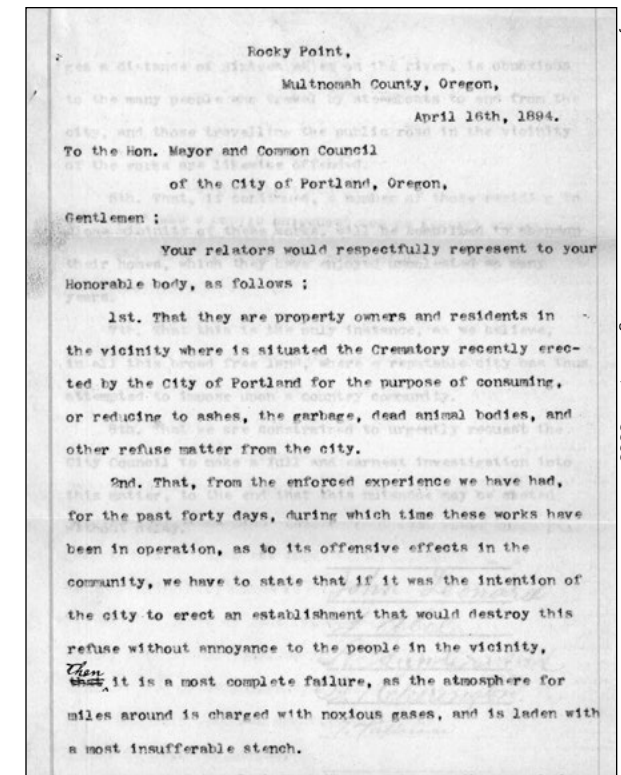
The *Oregonian* reported on the details of Burelbach’s 1893 criminal trial, which revealed the severity of the garbage accumulation when prosecutors “alleged that between the dates of October 31 and November 14, 1892, the defendant kept large quantities of decaying garbage and flesh in an exposed manner, impregnating the atmosphere with disease germs, and thereby endangering the general health of the city and causing much sickness.” The prosecution called witnesses who described the mass of unincinerated waste as a “pestilential heap” and reported that “its area was 150 x 75 feet, and in depth it ranged from 20 to 25 feet. . . . The foul odors from the heap constantly assailed the olfactories of people residing a mile and a half distant from it.” The author did not include much detail about the defense’s case, which may indicate the sympathies of the *Oregonian* journalist who wrote this piece.⁸¹ Several months after his trial, on May 2, 1893, Burelbach wrote a letter to the mayor and city council in which he admitted that his garbage crematory was “wholly inadequate for the consumption or disposition of the City’s Garbage” and requested that the City of Portland cancel his contract out of concern for incurring further nuisance charges.⁸² By this point, city officials seemed ready to move on from Burelbach’s failed garbage crematory, but they were not willing to give up on the idea of building a garbage incinerator that worked. The idea of turning trash to ashes through incineration appealed to many urban residents, which likely helps account for their persistent belief in the usefulness of this technology.⁸³

Soon after Burelbach’s conviction, the City of Portland established another contract for the construction of a crematory at Rocky Point, a site about fourteen miles northwest of Portland along St. Helens County Road.⁸⁴ By selecting a site so far away, city leaders were ensuring that the crematory would not become a nuisance to Portland residents, as Burelbach’s had. While the new location solved this aspect of the garbage problem for Portland residents, it simultaneously created new logistical problems for city leaders and became, in turn, a nuisance for residents of Rocky Point. Influential Portlanders pressured city officials to push waste disposal farther away from the city limits with little regard for the rural communities in the vicinity of the new crematory, a push that mirrored earlier efforts to contain the

city’s garbage near Chinese communities at Guild’s Lake.

In February 1894, city leaders met to discuss a report that outlined the plan for operating the new Rocky Point garbage crematory. According to this plan, which left several important details undecided, scavengers would collect the city’s garbage and deliver it to an unspecified dock, where it would be loaded onto a scow and taken fourteen miles down the Willamette River to the crematory. Although the report suggested that incineration was the only solution to Portland’s garbage problem, several men in attendance objected.⁸⁵ Perhaps the biggest logistical problem was the crematory’s location fourteen miles outside Portland. Additionally, the city did not own wharves where the proposed garbage scow would need to dock. Concerns about the scow itself, including its smell, carrying capacity, and ability to deliver garbage year-round also made the idea seem increasingly unfeasible. At least one committee member, Henry Winslow Corbett, suggested that the contract to build at Rocky Point be recalled and another site selected, but this suggestion “was not considered advisable, as the crematory was nearly completed.”⁸⁶

After the crematory had been in operation for only forty days, a group of residents living nearby sent a letter to Portland’s mayor and city council. The residents reported that the “atmosphere for miles around is charged with noxious gases, and is laden with a most insufferable stench.” They called the

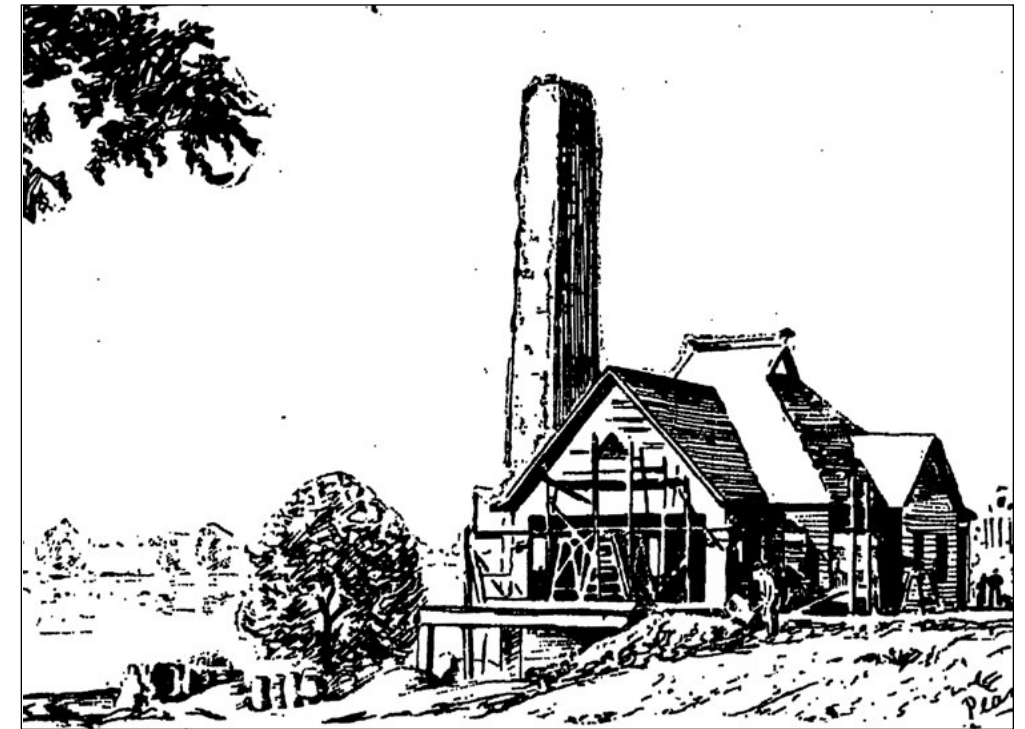


ON APRIL 16, 1894, residents of Rocky Point submitted a complaint letter to the mayor and city council (also known at that time as the common council) of Portland about the smell and noxious gases emitted from the garbage incinerator that had opened there just forty days prior.

effort to “destroy the refuse without annoyance . . . a most complete failure” and claimed that they could “readily” prove that the crematory constituted a public nuisance.⁸⁷ The Committee on Health and Police considered the letter, and on May 16, 1894, committee member Gilbert submitted a report on his findings, in which he claimed to have talked to several farmers “who did not think it was very offensive.”⁸⁸ The council’s official line was that the Rocky Point crematory was not a nuisance, and that they found it “was a wise thing to have located it so far away from town.”⁸⁹ For the residents near Rocky Point, however, the city’s decision to construct a garbage crematory in their community was far from a success. In a letter to the editor of the *Oregonian*, one T. Patterson scolded city officials, writing that “other large cities take care of their refuse within their own limits, and do not attempt to impose on old-settled country districts.”⁹⁰

On September 3, 1894, the *Oregonian* announced the “Revival of an Old and Annoying Question,” reporting that the Rocky Point garbage crematory had been disabled about a month earlier due to a mechanical problem with the “bell,” the mechanism “which closes the top of the furnace after the garbage has been dropped in.”⁹¹ (Interestingly, Gilbert noted in his report that the bell was a source of foul odor. He still concluded, however, that the smell was “not offensive enough to amount to anything.”)⁹² In addition to the problem with the bell, which would have to be replaced at considerable cost before the crematory could resume operations, the wharf that the city rented to dock garbage scows was blocked by sand that had washed up during a flood. As a result, scavengers could not load their waste onto the boats and garbage could not be delivered to the crematory.⁹³ “It is an open secret,” the *Oregonian* reported, “that the garbage crematory at Rocky point, which, it was fondly hoped, would forever dispose of the garbage and the garbage problem is a failure.”⁹⁴

The Rocky Point crematory continued to be a headache for Portland’s leaders. In an annual message in 1896, Mayor Sylvester Pennoyer complained about the municipal incinerator, writing that “the city had erected an imperfect crematory on a most inconvenient site.”⁹⁵ For the City of Portland, the cost of operating the crematory was also simply unsustainable. In 1896, the city had spent \$11,432.50 on the crematory and ancillary services. The majority of these expenses, \$8,687.53, were for transporting garbage and operating the crematory. The city also paid \$899.92 to the officer who supervised the city dump, and rented a garbage dock for \$875, among other smaller expenses.⁹⁶ Pennoyer noted that the city had secured another site where a new crematory with significantly lower operating costs would be built.⁹⁷ The incinerator would once again be within city limits, “bordering on



IN 1897, the City of Portland opened a new garbage incinerator at Guild’s Lake. This sketch of the building under construction was published in the *Oregonian* on May 13, 1897.

Guild’s lake.”⁹⁸ Despite the failure of previous crematories, Portland officials still believed that municipal garbage incineration, if done right, was the best method of waste management.

Three years later, in 1899, the auditor’s report indicated that the city was spending significantly less on the cremation of garbage than it had been in 1896. Crematory-related expenses for that year amounted to only \$3,976.26. The operating cost for the new crematory was \$2,214.80, much lower than the almost \$9,000 spent three years earlier.⁹⁹ Health Commissioner J.P. Menefee was optimistic about the new crematory, writing that “The question of the disposal of the city garbage was definitely settled in July, 1897, when the new . . . crematory was completed.”¹⁰⁰ The next year, in 1900, the city council passed Ordinance 11715, which enabled the Committee on Health and Police to sell the approximately three acres of land where the Rocky Point crematory had been located.¹⁰¹

Five years after Ordinance 11715 was passed, Portland hosted the Lewis and Clark Exposition at Guild's Lake, near the site of Portland's earliest municipal garbage crematory and dump. A photograph taken around 1905 shows a dumping ground extending to the lake's edge, with the silhouette of a person picking through the piles of waste. The image does not capture the entire boundaries of the dump, but for viewers, a city's-worth of waste expands out indefinitely, with no clear beginning or end. The exposition's U.S. Government Building sits grandly in the background, across the water. Visually, the lake separates this display of stately American power from the garbage dump, the less-attractive reality of industrialization and urbanization. Even while touting the exceptionalism, modernity, and progress of the U.S. West, as the Lewis and Clark Exposition was intended to do, event organizers were unable to completely remove the material consequences from Portland's landscape.¹⁰² As Catherine C. Chapman, chairman of the Portland Women's Club's Garbage Committee, asked in a letter to the editor of the *Oregonian*, "What will our guests think of Portland this summer when boating on Guild's Lake they are within sight and smell of our wretched crematory and malodorous dump? . . . What will they think of the beauty of our gulches when confronted by tons of refuse rotting there?"¹⁰³

In Portland, as in other U.S. cities at the turn of the twentieth century, malodorous dumps with rotting refuse were at the confluence of urbanization and industrialization. While many Portlanders expressed optimism that the municipal garbage crematory presented a promising solution, city officials' waste management systems were plagued with logistical and operational problems. During early to mid-twentieth century, Portland did not find a waste management system that met its needs. Some Portlanders blamed the city for creating the garbage problem through decades of ineffective waste management. One *Oregonian* article, for example, depicted Burelbach as a scapegoat and argued that the city council was truly at fault: "The council ought by all means to be indicted [for maintaining a nuisance], if the thing were practicable. Since it is not, the only thing the grand jury can do is to indict Mr. Burelbach."¹⁰⁴ In the 1940s, after the city had spent almost one hundred years trying to solve the garbage problem, yet another incinerator would open in North Portland.¹⁰⁵ The garbage question remains frustrating, complex, and unsolvable even into the twenty-first century, as consumerism and disposability continue to burden our waste management systems.¹⁰⁶ Perhaps the garbage question is still "as great a nuisance as the garbage itself."¹⁰⁷



THIS DETAIL of a bird's-eye view of Guild's Lake area, taken in about 1900, documents the site of Portland's garbage incinerator that began operation in 1897. The gable end of the crematory and single smoke stack can be seen in the center of the photograph with what appears to be a dump site to the north (left).

NOTES

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- 1 "The Garbage Crematory," *Oregonian*, October 22, 1888, p. 3.
2. "What Will Be Done With Garbage?" *Oregonian*, December 11, 1889, p. 4.
3. "Notice of Completion of Crematory by Mr. Burelbach," August 3, 1889, Record Number AD/13357, City of Portland Archives and Records Management Efiles [hereafter City of Portland Archives], <https://efiles.portlandoregon.gov/record/13164562> (accessed October 19, 2022); "Guilty as Charged," *Oregonian*, January 6, 1893. The United States Bureau of Labor Statistics' CPI Inflation Calculator does not contain price data for 1893, the year of Burelbach's trial. The closest year for which there is data is 1913, and it indicates that in August 2022 dollars, the fine for maintaining a nuisance would be between approximately \$1,511.08 and \$7,555.38. United States Bureau of Labor Statistics' CPI Inflation Calculator, https://www.bls.gov/data/inflation_calculator.htm (accessed October 19, 2022).
4. Martin V. Melosi, *Garbage in the Cities: Refuse, Reform and the Environment* (Pittsburgh: University of Pittsburgh Press, 2004), 40.
5. Alexandra W. Lough, "Editor's Introduction: The Politics of Urban Reform in the Gilded Age and Progressive Era, 1870–1920," *American Journal of Economics and Sociology* 75:1 (2016): 8.
6. "City Advertisements. Ordinance No. 928," *Oregonian*, February 21, 1871, p. 4.
7. Ibid.
8. Jewel Lansing, *Portland: People, Politics, and Power, 1851–2001* (Corvallis: Oregon State University Press, 2005), 143–44.

9. Ibid., 26, 41, 89, 174, 209, 228.
10. Joanna Dyl, *Seismic City: An Environmental History of San Francisco's 1906 Earthquake* (Seattle: University of Washington Press, 2017), 14.
11. See, for example, Nyan Shah, *Contagious Divides: Epidemics and Race in San Francisco's Chinatown* (Berkeley: University of California Press, 2001).
12. Marie Rose Wong, *Sweet Cakes, Long Journey: The Chinatowns of Portland, Oregon* (Seattle: University of Washington Press, 2004), 14.
13. William G. Robbins, "Railroads, Race, and the Transformation of Oregon," Oregon History Project, <https://www.oregonhistoryproject.org/articles/railroads-race-and-the-transformation-of-oregon/#.Y2QP5uzMI-Q> (accessed November 3, 2022).
14. Martin V. Melosi, *The Sanitary City: The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present* (Pittsburgh: University of Pittsburgh Press, 2008), 72.
15. Melosi, *Garbage in the Cities*, 31–35.
16. For data on the prevalence of these methods in 1880, see Melosi, *Garbage in the Cities*, 30.
17. Carl A. Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: New York University Press, 2015), 67.
18. William P. McGowan, "American Wasteland: A History of America's Garbage Industry, 1880–1989," *Business and Economic History* 24:1 (1995): 157.
19. Melosi, *Garbage in the Cities*, 11.
20. Ibid., 23.
21. Ibid., 23–24.
22. "What will be done with Garbage?" *Oregonian*, December 11, 1889.
23. Ibid.
24. Melanie A. Kiechle, *Smell Detectives: An Olfactory History of Nineteenth-Century*

Urban America (Seattle: University of Washington Press, 2019), 54.

25. "Health of the City," *Oregonian*, January 18, 1893.
26. Kiechle, *Smell Detectives*, 61. For a history of nuisance law in the second half of the nineteenth century, see Christine Meisner Rosen, "'Knowing' Industrial Pollution: Nuisance Law and the Power of Tradition in a Time of Rapid Economic Change," *Environmental History* 8:4 (2003): 565–97.
27. "An ordinance to prevent Chinese using any building or dwelling house for a habitation within certain limits," 1865, Record Number AD/3550, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/8601759/> (accessed October 19, 2022).
28. Natalia Molina, *Fit to Be Citizens?: Public Health and Race in Los Angeles, 1879–1939* (Berkeley: University of California Press, 2006), 33.
29. Wong, *Sweet Cakes, Long Journey*, 41.
30. J.F. Caples, "Remonstrances of Employment of Chinese Labor," 1879, Record Number AD/10059, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/13472618/> (accessed October 19, 2022).
31. Historian Carl Zimring writes that these "constructions of environmental racism had material consequences in the emerging occupational structures to manage wastes between 1870 and 1930." Zimring, *Clean and White*, 5.
32. "Significant Events in Oregon's Chinese Diaspora: A Timeline Relating to the Winter 2021 Special Issue of the *Oregon Historical Quarterly*," *Oregon Historical Quarterly* 122:4 (2021): 574–75.
33. Douglas Lee, "Chinese Americans in Oregon," *Oregon Encyclopedia*, https://www.oregonencyclopedia.org/articles/chinese_americans_in_oregon/#.YzyhAHbMiuW (accessed October 19, 2022).
34. Jennifer Fang, "Erasure and Reclamation: Centering Diasporic Chinese Populations in Oregon History," *Oregon Historical Quarterly* 122:4 (2021): 332.

35. Charles A. Tracy writes about how city ordinances were used to control Chinese people in Portland in the 1870s and 1880s. See Charles A. Tracy, "Race, Crime and Social Policy: The Chinese in Oregon, 1871–1885," *Crime and Social Justice* 14 (1980): 11–25.
36. P. Scott Corbett and Nancy Parker Corbett, "The Chinese in Oregon, c. 1870–1880," *Oregon Historical Quarterly* 78:1 (1977): 75.
37. Myron Louie Lee, "Portland's Louie Chung, 1876–1926," *Oregon Historical Quarterly* 122:4 (Winter 2021).
38. The area that was once Guild's Lake is now an industrial district in Northwest Portland. St. Helens County Road is now NW St. Helens Road, and NW Nicolai Street runs past where the garbage crematory was. J.H. Fisk, "Proposition of J. H. Fisk to City of Portland for Crematory Site," in "Bids and proposals — Fire hose, boarding prisoners, fencing, cistern, crematory site, levee property leasing," AD/13362, City of Portland Archives, <https://efiles.portlandoregon.gov/record/14759862> (accessed October 19, 2022).
39. Ibid., 28.
40. Karin Dibling, Julie Kay Martin, Meghan Stone Olson, and Gayle Webb, "Guild's Lake Industrial District: The Process of Change over Time," *Oregon Historical Quarterly* 107:1 (Spring 2006): 88.
41. "Another Kuklux Raid," *Oregonian*, March 13, 1886, 3.
42. "Defending Themselves," *Oregonian*, March 23, 1886, 3.
43. "Kukluxer Arrested," *Oregonian*, March 7, 1886, 5.
44. Wong, *Sweet Cakes, Long Journey*, 45; Lansing, *Portland*, 186–87.
45. Ellen Stroud, "Troubled Waters in Ecotopia: Environmental Racism in Portland, Oregon," *Radical History Review* 74 (1999): 68.
46. "Must Be Got Rid Of," *Oregonian*, October 13, 1884, p. 3.
47. "One Way to Get Rid of Garbage," *Oregonian*, December 12, 1884, p. 3.
48. Portland scavengers, petition (untitled), April 14, 1884, in "Petitions to Establish a Place to Dump Garbage," AD/13062, City of

Portland Archives, <https://efiles.portlandoregon.gov/Record/14722731/> (accessed October 19, 2022).

49. F.E. Vaughn, petition (untitled), 1884, in "Petitions to Establish a Place to Dump Garbage," Record Number AD/13062, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14722731/> (October 19, 2022).

50. Ibid.

51. "Notice," *Oregonian*, May 23, 1888, p. 4.

52. "Ordinances," *Oregonian*, November 8, 1888, p. 8.

53. "The Garbage Crematory: A Complete Description of One of Those Useful Consumers," *Oregonian*, September 22, 1888, p. 3.

54. Clay McShane and Joel Tarr, *The Horse in the City: Living Machines in the Nineteenth Century* (Baltimore, Md.: Johns Hopkins University Press, 2007), 18.

55. "The Garbage Crematory," *Oregonian*, October 22, 1888, p. 3. Disposing of dead horses was a significant task in late-nineteenth-century U.S. cities. Martin V. Melosi writes that in 1880, scavengers in New York City collected 15,000 dead horses. Melosi, *The Sanitary City*, 115.

56. "The Garbage Crematory: A Complete Description of One of Those Useful Consumers," *Oregonian*, September 22, 1888, p. 3.

57. Melosi, *Garbage in the Cities*, 39–40.

58. Ibid., 40. Melosi writes that by 1909, only 72 of the original 180 were in operation.

59. City of Portland, *Ordinance No. 5611 Authorizing a Contract with M. Burelbach for burning garbage and refuse matter*, October 18, 1888, AD/13358, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14759823/> (accessed October 19, 2022).

60. "Notice of Completion of Crematory by Mr. Burelbach," August 3, 1889, City of Portland Archives and Records.

61. "Communication from Scavengers Concerning Dumping grds," December 4, 1889, AD/13058, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14722718/> (accessed October 27, 2022).

62. "What will be done with Garbage?," *Oregonian*, December 11, 1889, p. 4.

63. Melosi, *Garbage in the Cities*, 37.

64. City of Portland, *Ordinance No. 6440. Regulating the delivery of Garbage and waste matter to Scavengers*, December 5, 1890, AD/13059, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14722723/> (accessed October 27, 2022).

65. "A Promising Start," *Oregonian*, 1893, p. 4.

66. According to the U.S. Bureau of Labor Statistics' CPI Inflation Calculator, the \$5 to \$50 fine in 1913 (the closest available year) would equal about \$151 to \$1,511 in August 2022. https://www.bls.gov/data/inflation_calculator.htm (accessed October 19, 2022).

67. City of Portland, *Ordinance No. 6440*. Ordinance 6440 was also considered by the Committee on Health and Police on December 3, and committee members recommended that the mayor approve it. "Report of the Committee on Health and Police on Ordinance to regulate the delivery of garbage and waste matter to scavengers," December 3, 1890, Record Number AD/13060, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14722724/> (accessed October 19, 2022).

68. "Report of the Committee on Health and Police In regard to Scavengers delivering Garbage contrary to the provisions of Ordinance No. 6440," August 19, 1891, Record Number AD/13061, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14722725/> (accessed October 19, 2022).

69. "The Garbage Question," *Oregonian*, January 13, 1893, p. 6.

70. *Oregonian*, January 15, 1893, p. 4.

71. "Health of the City," *Oregonian*, January 18, 1893, p. 8.

72. Ibid.

73. "Garbage Question Settled," *Oregonian*, January 16, 1893, p. 4.

74. Dyl, *Seismic City*, 148.

75. Kimberly Jensen, *Oregon's Doctor to the World: Esther Pohl Lovejoy and a Life in Activism* (Seattle: University of Washington Press, 2012), 86.

76. For more on race, citizenship, and public health in the U.S. West in the early twentieth century, see Molina, *Fit to Be Citizens?*.

77. "Scandinavians Objection to Refusal to Allow Certain Groups to Perform Street Cleaning," December 1893, Record Number AD/6916, Collected Reports and Studies Container, City of Portland, Archives, <https://efiles.portlandoregon.gov/Record/12099813/>.

78. L.M. Davis, "Letter to the Editor," *Oregonian*, November 19, 1893, 4.

79. "The Garbage Crematory," *Oregonian*, March 20, 1890, p. 7.

80. "M. Burelbach Was Let Off With a Light Fine Yesterday," *Oregonian*, October 5, 1890, p. 8.

81. "Guilty as Charged," *Oregonian*, January 6, 1893.

82. M. Burelbach to Portland Common Council, May 2, 1893, folder AF/201062, Record Number AD/13356, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14759806/> (accessed October 19, 2022).

83. Melosi, *Garbage in the Cities*, 40.

84. "Garbage Question Taken up by the One Hundred," *Oregonian*, February 4, 1894, p. 12.

85. Ibid.

86. Ibid.

87. Property owners and residents of Rocky Point to Portland Mayor and Common Council, April 16, 1894, Record Number AD/13353, City of Portland Archives, <https://efiles.portlandoregon.gov/record/13413030> (accessed October 19, 2022).

88. Gilbert, "Report of L. Gilbert on Crematory, May 2, 1894, Record Number AD/13353, City of Portland Archives, <https://efiles.portlandoregon.gov/record/13413030> (October 19, 2022).

89. "The City Creamery [sic]," *Oregonian*, March 17, 1894.

90. "Milk from Garbage," *Oregonian*, November 4, 1893, 4.

91. "Relating to Garbage," *Oregonian*, September 3, 1894, p. 5.

92. Gilbert, "Report of L. Gilbert on Crematory, May 2, 1894, Record Number AD/13353, City of Portland Archives, <https://efiles.portlandoregon.gov/record/13413030> (accessed October 19, 2022).

93. "Relating to Garbage," p. 5.

94. "Crematory Failure," *Oregonian*, December 12, 1894, 10.

95. Office of the Mayor, "Mayor's Message and Municipal Reports for the Fiscal Year Ending December 31, 1896" (Portland, Oregon: Multnomah Printing Company, 1897), 18, <https://hdl.handle.net/2027/uiug.30112042835253> (accessed October 19, 2022).

96. Ibid., 42.

97. Ibid., 18.

98. Office of the Mayor, "Mayor's Message and Municipal Reports of the City of Portland, Oregon 1899," (Portland, Ore.: Schwab Brothers Printing and Litho. Company), Portland City Archives, p. 171, <http://archives.pdx.edu/ds/psu/14739> (accessed October 19, 2022).

99. Office of the Mayor, "Mayor's Message and Municipal Reports for the Fiscal Year Ending December 31, 1899" (Portland, Ore.: Schwab Brothers Printing and Litho. Company), p. 35, City of Portland Archives, <http://archives.pdx.edu/ds/psu/14739> (accessed October 19, 2022).

100. Ibid., 170.

101. City of Portland, *Ordinance No. 11715 Authorizing sale of old Crematory at Rocky Point*, August 13, 1900, AD/13359, City of Portland Archives, <https://efiles.portlandoregon.gov/Record/14759831/> (accessed October 19, 2022).

102. Carl Abbott, "Lewis and Clark Exposition," *Oregon Encyclopedia*, https://www.oregonencyclopedia.org/articles/lewis_clark_exposition/#.YzUJlezMI-Q (accessed October 19, 2022).

103. "Objects to the Garbage Evil," *Oregonian*, February 25, 1905, p. 16.

104. "The Council Derelict," *Oregonian*, December 9, 1892, p. 4.

105. Dibling, Martin, Olson, and Webb, "Photo Essay: Guild's Lake Industrial District," 93.

106. Melosi argues that "by the onset of the twenty-first century, Americans were still trying to learn how to *manage* the solid waste problem, not *solve* it." Melosi, *Garbage in the Cities*, 16.

107. "What Will Be Done With Garbage?," *Oregonian*, December 11, 1889.