Environmental historians have tended, until recently, to overlook how inequality is generated and reinforced in the metropolitan landscape. One way to historicize urban environmental justice is to analyze the transformation of property through space and time. This article explores how engineers and reformers in early twentieth-century Seattle launched several earthmoving projects, called regrades, to renovate the downtown core. The regrades removed millions of tons of earth, flattened hills, and erased tidelands, but they also unleashed landslides and ripped apart neighborhoods populated by poor and minority residents. Environmental volatility and social inequality thus reinforced one another to shape Seattle’s political and physical geography. By telling spatial stories about property, urban environmental historians can better map social power against shifting landscapes.

**Keywords:** Seattle; environment; property; redevelopment; inequality

Sandy Moss remembered the day the earth swallowed her home. In the early 1900s, her family migrated from Topeka, Kansas, to Seattle, Washington, and settled among other African American families in the Beacon Hill neighborhood. Moss had every reason to believe that her house would be as permanent as the snow-capped mountains that held up the cloudy skies, but city engineers had other plans. They had initiated a series of earthmoving projects, called regrades, to promote urban growth, and the Moss residence stood squarely in the way of the Dearborn Street regrade. Her father refused to leave, but when the hydraulic cannons tearing into the hillside became unbearable, the family relocated across the street while keeping an eye on their home. One morning, it vanished. “So we walked over to the brink of the hill and looked,” Moss recalled, “and the house was three blocks down below . . . about two hundred feet lower.” “It was just a bunch of matchwood down there . . . it was all broke up, like you would step on an apple box and crush it.”

As tragic as it was, Moss’s plight did not move the city engineer who aimed the hoses at Beacon Hill. Reginald Heber (R. H.) Thomson launched the

**AUTHOR’S NOTE:** Thanks to Robert Self, Kathy Brosnan, Connie Chiang, Sean Patrick Farrell, Coll-Peter Thrush, and the Journal of Urban History reviewers for their suggestions and criticism. Special thanks as well to Amir Sheikh, Eileen Johnson, and Benjamin Martens for the original maps that accompany this article.
regrades in 1898 because he argued that “Seattle was in a pit” and that “to get anywhere we would be compelled to climb out if we could.” Thomson was not exaggerating by much. Blessed with a deep-water port and access to abundant timber, Seattle had boomed during the 1890s, but land speculators had ignored the town’s steep hills, building impassable streets and unworkable sewers as a result. The city seemed doomed to fall behind rivals Tacoma, Portland, and San Francisco unless it overcame its tortuous terrain. For an engineer, the solution was simple: remove Seattle’s hills to clear its ascent. If homes stood in the way, they would be eliminated along with the heights.  

At first glance, this vignette follows a conventional narrative. City elites, bent on cleaning up what they see as a troublesome neighborhood, find an excuse for urban renewal. Citizens fight back, but government or businesses hold the upper hand. Historians are left with fragments, holding only the pieces left behind by the powerful or fortunate. Yet there is another angle to this story, one that gives voice to the natural world. What seems like an urban social history is really an urban environmental history.

For more than a decade, historians have increasingly traveled to the intersection where urban and environmental histories cross paths. Their efforts have yielded several influential, prizewinning books, many of which have helped define a vigorous new field. Yet for all their achievements, these scholars have tended to fall into two camps: one that abridges the social dimensions of urban environments, and another that slights the animate role of nature instead. For example, William Cronon’s masterful book *Nature’s Metropolis* staked new ground by showing how cities and nature are conjoined through commodity exchange and energy flows, but his study often neglects the older topics of politics and power brokering so central to urban history. The city of broad-shouldered immigrants, cigar-chomping political bosses, and cantankerous reformers is practically invisible. While it is unfair to say that Cronon disregards social power, his conception of it focuses more on the networks connecting city to countryside.

In contrast, those scholars who have looked at environmental history within the city limits have emphasized the role of politics and equity while tending to overlook the animate role of nature itself. Their environments are often obstacles to progressive reform or the force against which reformers’ hopes prevail. To be sure, nature plays a role as historical detectives track effluents or chase fumes through their stories. But politics figures most prominently as people fight over who will benefit from reforms and better infrastructure, and the compensatory effect is to push the snarling, biting world into the background.

Telling spatial stories can build on these important contributions by reassembling nature, politics, and social difference into an analytical framework that may command attention from urban and environmental historians alike. Space itself has a history that emerges from how humans wield power over one another with nature as their instrument. It is this insight, best developed by social and historical geographers, that holds great promise in reconciling
various explanations of urban environmental change. Spatial histories can reveal how social relations, cultural ideas, and material change intertwine through time and space. Indeed, targeting a “natural” problem often involves targeting a specific group and a particular place. By looking at what nuisances or problems were deemed worthy of attention, historians can map social power against shifting landscapes through time.

Yet the physical environment that urbanites seek to control also has an important function. Nature is acted on, often forcefully, but it is more than a passive recipient. It is dynamic, it sets boundaries, and it exacts penalties. Nature is not a semisentient actor, nor does it exercise agency in the way that historians have typically used the term, but it is more than just a stage on which humans act out their desires. Nature, as many environmental historians have argued, is a hybrid creation—a combination of the material and the cultural. Seeing nature this way can allow historians to bring questions of power into their analysis without downplaying the tangible and discursive restrictions of producing urban space. If space, in the words of sociologist Mark Gottdiener, “is both the geographical site of action and the social possibility for engaging in action,” then it is important to understand how the production of space determines who holds power, who does not, and how the natural world plays its own contingent role.

The story of the mulish homeowner and uncaring engineer affords an opportunity to reconsider urban environments in all four dimensions within what may be a unifying theme for the field: environmental justice. And the story of how environmental injustice manifested itself in the urban landscape begins with property relations. As Ted Steinberg reminds us, environmental historians are uniquely suited to unveil the “dilemmas of living in a culture in which the natural world had been everywhere, relentlessly, transformed into property.” Seattle’s engineers and reformers, in thought and in practice, fused nature, property, and social welfare together; and regrading was the result of their synthesis. Between 1898 and 1931, they championed nearly sixty separate projects that changed the elevation of more than twenty major streets and removed several large hills entirely. With pickaxes and steam shovels, hydraulic cannons and conveyor belts, city workers erased Seattle’s mounts to make new real estate, remove unwanted residents, and cleanse neighborhoods.

The reasons to regrade in this booming western city emerged from the desire to control property relations in the broadest sense. Reformers wanted to reorganize property to enforce propriety, land speculators and businesses wanted to generate profits, and city engineers wanted to plan an ordered metropolis. These desires intersected spatially because transforming property always involved transforming geography. As a result, what Seattle’s boosters and builders hoped to achieve did not always come to pass. Changing spaces in Seattle exposed property for what it really was: a socially constructed and politically contested product that emerged when people poured capital and labor into attempts at improving the natural world.
DIVINING NATURE’S DESIGN:
SEATTLE BEFORE THE REGRADES

The story of the regrades begins not on land but at the water’s edge. Sea and lakes surround the city, built on a narrow hourglass-shaped isthmus criss-crossed by hills and ridges. To the west lies Elliott Bay, a deep arm of Puget Sound; to the east is Lake Washington, the state’s second largest freshwater lake; to the south, the Duwamish River spills into Elliott Bay; and in the middle of the city sits Lake Union. Along the eastern and western horizons respectively stand the Cascade and Olympic Mountains, sources of this liquid abundance. In all directions, today’s city bestrides this peaceful mixture of water and land; and at the turn of the twentieth century, Seattle’s boosters and engineers wanted to create stable boundaries in a region that knew none.

In the early Pleistocene, volcanoes, tectonics, and glaciers created an interlocking maze of deep valleys, steep ridges, snowy mountains, and violent rivers that became Puget Sound and its surrounding lowlands. Tidelands and estuaries formed an environment where the boundary between water and land was never precise. Prior to permanent Euro-American settlement, the native Coast Salish saw land and water as parts of the same environment, linking the social worth of these spaces to their physically indeterminate status. Natives accepted these fluctuating landscapes as agents in human affairs. The best places for food (such as shellfish and waterfowl) and worship were where water and land switched places, where supernatural beings inhabited the forested riverbanks or walked among the marshes, dispensing blessings or curses on those who curried favor or behaved badly.

In turn, Indian peoples occupied those locations and imbued them with meaning, creating what ethnographer T. T. Waterman later called a “geographical psychology” of space.

The Euro-American colonists who arrived in the 1850s had no such connection. They only saw the environment, together with the Indian peoples populating it, as a formidable array of obstacles to individual ownership. Arthur Denny recounted that most of his initial plot, at the foot of the steep hill that would later bear his name, “was so rough and broken as to render it almost uninhabitable.” Settlers like Denny were lured west by the enticement of the 1850 Donation Land Claims Act, which required settlers to improve their claims in exchange for clear title. As Emily Inez Denny recounted, men such as her father, David Denny, younger brother to Arthur, spent the day “clearing, slashing and burning log heaps, cutting timber, hunting for game to supply the larder,” while women stayed close to home “with only primitive and rude appliances” to complete their chores. Instead of yielding wealth and opportunity, homesteading in Seattle only spelled backbreaking labor as settlers struggled to maintain a “foothold of civilization upon the remote frontier.”

Frustrated on land, some turned back to the shoreline, realizing that the combination of freshwater passages and seawater inlets held great potential for promoting commerce and industry. From the 1850s through the early
1890s, local industrialists, such as lumberman Henry Yesler, filled the tide flats near their warehouses and sawmills with ship ballast and sawdust, often with the help of Indian laborers, to create room for wharves and warehouses, but improvements such as these were piecemeal. Two missing elements stifled their dream: inadequate transportation and insufficient finances. The arrival of the railroad catalyzed even greater transformations.
Railway engineers and surveyors for the Northern Pacific, the first transcontinental line to reach Puget Sound in 1883, had already plotted how to rationalize Seattle’s waterfront. Two surveys—one in 1863 and another in 1881—outlined the far-reaching changes necessary to make landscapes suitable for locomotives, from draining estuaries and lakes to redirecting rivers and filling tide flats. Their expertise gave them power, but that power had to first overcome the statutes governing Washington’s tidelands. Since the creation of Washington Territory in 1853, the legal status of tidelands seemed reasonably clear. Submerged lands beneath the ordinary high tide line were held in trust by the federal government until the territory matured into statehood. In theory, tidelands were public commons because making them private would choke off navigation, fishing, and other maritime activities. In practice, the tidelands’ social status was far more complicated. Steep waterfront slopes often compelled upland owners to build decks and wharves over submerged lands, giving some the pretext to expand illegally into the sea. Adverse possession and bureaucratic mistakes by land officers worsened the muddle. During the 1870s and 1880s, city and territorial officials faced countless petitioners trying to patent fraudulent lots and turn the tidelands into something less than a commons.

Politicians and local businessmen welcomed the tideland business even as they worried about what rampant speculation might bring. Although the Northern Pacific had snubbed Seattle in favor of Tacoma as its western terminus in 1883, other roads continued to vie for access. Railroads needed standard grades for smooth construction and operation, and building along Seattle’s waterfront was the best way to obtain them. Each railroad engineered its right-of-way with the easiest access in mind. Through a series of mergers and acquisitions, the choicest point of entry along the shoreline fell into the hands of the Columbia and Puget Sound Railway (CPSR) and its parent company, the powerful Oregon Improvement Company (OIC). The company fought to keep other roads at bay, but it did nothing when Henry Yesler began to drive piles for a new sawmill on its tidelands in 1887. Emboldened by the OIC’s inaction, speculators immediately poured onto the tide flats. Some sent pile drivers to stake their claims; others built prefabricated shacks and floated them to the best properties. Those who could not afford piling or lumber claimed to be oyster cultivators, who under territorial and common law had access to submerged lands for shellfish farming. (These claims were especially specious; by the 1880s, Elliott Bay’s polluted waters, fouled by the city’s sewage and lumber mills, made for horrible oyster beds.) The announcement that the Great Northern Railway selected Seattle as its Pacific terminus only intensified speculators’ adrenaline.

Now even those who had an interest in tideland properties looked at the unfolding free-for-all with alarm. Thomas Burke, a local magistrate and an agent for the Great Northern who owned property at the south end of Elliott Bay, described these new land-grabbers as “a swarm of salt water lunatics of
Figure 2: Railroad Routes and Waterways in and around Seattle, 1902
high and low degree.” Burke thought that the fundamental question was how best to regulate tidelands so that only reputable investors, such as the railroads, would reap the profits, but in lieu of a legal solution, he hoped that “the ever-charitable sea” might drown the squatters and “thus rid both sea and land of them.” Despite Burke’s vengeful desires, political events and natural forces would make the tideland question even more insoluble.  

In building so quickly to accommodate the railroads, residents created a roughneck Venice, a town of docks and wharves and shanties that spawned “conditions ripe” for two disasters. The first was fire. On June 6, 1889, a small blaze in a downtown wood shop exploded into an inferno that raced down wooden sidewalks, up timbered building frames, and around creosote-soaked pilings. By the next morning, nearly fifty blocks were destroyed. The second was disease. Most residents used vault toilets that emptied directly into nearby water sources, and the city’s few sewers routinely backed up because they were not designed to accommodate the rapid change in grade from hillside to tidewater. As the fire’s embers cooled, typhoid killed 166 residents. Although fatalities declined thereafter, residents continued to consume nearly ten million gallons from Lake Washington annually until the late 1890s, when the city seized the distant Cedar River for its permanent unpolluted supply.

The 1889 fire quickened further expansion into Elliott Bay while sparking another tideland boom. That autumn, constitutional convention legislators gathered in Olympia guaranteed the prior right of shore owners to purchase adjacent tidelands, even if those properties were previously claimed but left unimproved. The new law also allowed citizens to sell, lease, and purchase tidelands if they promised to fill them. In 1890, state legislators further enshrined that mud and water were fungible things by establishing the Harbor Line Commission and asking coastal counties to appoint local tideland appraisal boards. The former body would survey and fix established harbor lines and improvable submerged tidelands, while the latter disposed of them. Before the agencies could go to work, however, residents threw injunctions and petitions in their path.

Tideland cases in Puget Sound revolved around striking the balance between private development and public access. One group of cases challenged the authority of the Harbor Line Commission to divide the tidelands into public and private property. The second category involved the ability of claimants to sell or lease their holdings. Although the new state constitution dictated that prior claimants and upland owners adjacent to submerged lands retained their right to develop tidelands, the new statutes produced further legal complexities. In some cases, judges concluded that upland owners embarked on tideland improvement only to invade state property or usurp other claimants. In other cases, the courts found that although the 1890 law promoted tideland development to protect property owners, driving piles and building structures over submerged lands impinged on other landholders or obstructed navigation.
Surveyors working for the King County Board of Tideland Appraisers also found that mapping property was nearly impossible. Geological forces eroded surveyors’ efforts. Tides in Elliott Bay obscured even the most obvious features, while silt from the Duwamish River buried surveying stakes. Social pressures also shaped how tidelands were platted and appraised. Squatters confounded appraisers by moving stakes and piles. Larger investors and railroad interests wanted “fewer streets and larger blocks” to bring rail and water traffic “into as close proximity as possible.” Plating larger blocks limited the number of properties available, thereby driving up prices and confusing county appraisers, who relied on realtors and speculators for advice. Only a few dissidents, such as Arthur Denny, questioned if anyone really knew what these lands were “really worth.”

The railroads were especially cunning at this game, depressing appraisals on their own properties to keep taxes low while inflating values for surrounding parcels to drive out competitors. The Northern Pacific argued that since it was a common carrier and public servant, it should have its Seattle lands assessed as low as possible. The Northern Pacific’s real aim, however, was to exclude its new rival, the Great Northern Railroad, from reaching Puget Sound. When Great Northern agents moved to purchase tidelands south of downtown, next to the Northern Pacific’s branch line from Tacoma, the Northern Pacific allied itself with the OIC to block the upstart. The OIC had the superior legal claim thanks to its long-standing tenancy, and the Northern Pacific already owned numerous tideland properties at the south of the city, but the Great Northern wielded greater public power by portraying itself as Seattle’s true transcontinental line. The Great Northern also knew that the OIC was running in the red (it went into receivership in November 1890) and offered to bail out the ailing company by proposing a joint-terminal system. The OIC refused, precipitating a court battle that ended four years later when the Great Northern was forced to pay $22,000 for the right-of-way through the OIC franchise and tunnel beneath downtown Seattle to Elliott Bay. The Great Northern paid dearly for its aggressiveness, but not as dearly as the city, which was now effectively cut off from the sea.

Seattle’s original builders tried to separate water from land to attract the railroads, but now that the locomotives had arrived, the city’s waterfront was a cat’s cradle of iron and wood. The original landscape of muddy tide flats and estuaries had been replaced by an equally convoluted landscape of trestles, bridges, and pilings. City Engineer R. H. Thomson, worried that pell-mell construction could doom future waterfront development, compelled the city council to seek advice from Virgil G. Bogue, a noted civil and railway engineer. Bogue’s 1895 report concluded what residents considered obvious: “Seattle has, in her tide flats, the opportunity which Nature has prepared for an ideal harbor.” Building that ideal harbor rested on the city acquiring more tidelands, establishing consistent property values, platting wide streets, and chartering a municipally owned terminal company. Thomson and county
appraisers recommended that Seattle follow Bogue’s proposal, but the city, strapped for cash and eager to please the railroads, balked at the price and delayed establishing a municipal port until 1911.\textsuperscript{38}

The legal battles and financial maneuverings of the 1890s had also left the railways bruised, with agents waiting to pick up “any straggling pieces that may be had cheaply.”\textsuperscript{39} And there were plenty of empty lots spread across the now-vanished marshes and mud flats as the boom went bust. C. B. Bussell’s \textit{Tide Lands: Their Story}, published in 1903, encouraged readers to “acquire the TIDE LAND HABIT” while encapsulating an idealized history of Seattle’s waterfront with two Indians, in atypical Plains dress, standing on the margin of factory-filled, rent-producing properties. “Bargain hunters can now get bargains in tide lands,” Bussell proclaimed, “and I will make it my business to supply them.”\textsuperscript{40}

Contrary to such blandishments, Indians had not disappeared from the tidelands, nor had the geophysical processes that made the tidelands in the first place. Tidelands remained commons because they were now hybrid landscapes of physical and social instability. Materially, filled tidelands did not behave as dry earth. Storm surges racing across Elliott Bay washed away fill, while the coarse glacial till used to make new land settled unevenly, undermining foundations and warping railroad tracks.\textsuperscript{41} Wharves and warehouses built over the soggy muck provided a new habitat for rats, muskrats, and other vermin.\textsuperscript{42}

Material changes also played out socially. Laws that favored private development did not vanquish the commons because demographics trumped legislation. Despite a short, violent war in 1855-1856 that supposedly removed local Native Americans to nearby reservations, Indians continued to live and work in Seattle and its environs as mill and farm laborers, construction hands, or fishermen. Indeed, the urban Puget Sound region became a magnet for Indian migrant laborers from as far away as Alaska and British Columbia who
substituted wage labor for their now-disrupted seasonal subsistence rounds. The Klondike Gold Rush in 1896-1897 added more people to this polyglot mix, attracting thousands of miners to Seattle, many of whom stayed when their dreams panned out up north. Residential hotels sprouted from still-unimproved mudflats to house them as well as the itinerant workers who powered the extractive industries endemic to the Northwest. Immigrants from Japan, the Philippines, southern Europe, and Scandinavia soon joined busted miners and Indian migrants as Seattle’s population swelled from 3,553 in 1890 to 237,194 in 1910. These arrivals joined Indians in what the Overland Monthly described as “scores of shanties, lean-tos, and sheds, holding a heterogeneous mass of humanity” huddled amid “sewers pouring down contagion and filth, moral and physical ill-being.”

Indian and immigrant squatters were not supposed to be part of this remade waterfront, but by the turn of the twentieth century, it was hard to deny that boosters’ imaginings had fallen short. For one thing, improved tidelands had not acted as solid real estate. These physical troubles created a second set of social problems. It was very hard to inscribe the borders between public and private, or water and land, on the original tidelands, and it was even more difficult to enforce them on these new spaces. Exasperated city officials and reformers trained their sights on Seattle’s hilly interior instead. The unfinished task of meshing city and nature would fall to a new class, the city’s engineers, and their ability to move Seattle’s mountains into the sea.

THE DIALECTICS OF MOVING MOUNTAINS: SEATTLE AND THE FIRST ROUND OF REGRADING

Like most cities, Seattle has a creation story with a visionary builder at its center. R. H. Thomson, appointed the city’s first engineer in 1892, assiduously cultivated his image as master architect. A staunch Presbyterian of Scotch-Irish stock, he saw engineering as a public obligation tinged with religious overtones. As he confided to a close friend,

[H]aving put my hand to the plow, I can’t look back. There is so much crying to be done for the relief of the common people, and they are so blind themselves, and there are so few who care, that it seems impossible for me to quit.

Later historians valorized his achievements, burnishing Thomson’s reputation as the man who put Seattle on the path to greatness.

More than a dewy-eyed idealist, Thomson saw engineering problems as environmental and social problems. He understood Seattle as a system where interconnected arrangements of energy, commerce, and culture intertwined. It was an engineer’s way of seeing. Educated at Hanover College in Indiana, Thomson honed his expertise on the job, first as a mining surveyor and then as
a civil engineer. His professional experience emboldened him to envision how earlier changes in the land had threatened an ideal congruence between city and environment. Thomson’s ability to see Seattle systematically also grew from conversations with Progressives on both sides of the Atlantic who sought to redefine the industrial age metropolis. By the beginning of the twentieth century, engineers such as Thomson, in the words of historian Stanley Schultz, stood “at the very core of city planning.” A reform-minded Republican, Thomson joined this loose-knit, transoceanic association by visiting cities and corresponding with colleagues in Great Britain, Belgium, Germany, and eastern North America, thereby tapping into this “vast network of mutually dependent relations.” Indeed, Thomson may have had antebellum Boston’s experience of earthmoving and land making in mind when he decided that Seattle should imitate other cities to resolve its topographical troubles.

Adequate sanitation was Seattle’s most urgent need, so Thomson focused first on acquiring clean water, “the life blood of a city,” at a price that “every citizen . . . could afford.” He led an intensive lobbying effort to acquire control of the upper Cedar River, located in the nearby Cascade Mountains, in 1895 and completed the city’s first gravity-fed pipeline six years later. At the same time, Thomson built new sewers and routed water to local reservoirs and homes. Improving sanitation went hand in hand with improving the city streets along which sewer lines would run. Following the great 1889 fire, streets were still laid on the land in a north-south lattice, regardless of the terrain. The results were ruinous. Stripped of its forest cover, the “rough and broken nature of the country” made for many “offensive” and “impassable grades,” some exceeding ten percent, strewn with stumps, gravel, and mud. Residents joked that climbing Denny Hill required hobnail boots because horse-drawn carriages could barely make the ascent. Thomson concluded that it would be easier to remove the hills than surmount them.

Acquiring reliable and potable water was thus only one of Thomson’s two goals; the other was to use the kinetic energy of the Cedar River for regrading. The original regrade along First Avenue in 1898 was modest, completed with pickaxes and horse-drawn carts, but as regrading gathered momentum, such methods proved inefficient. Hydraulic mining technologies could complete the job faster, and contractors started siphoning water from nearby lakes or Elliott Bay to scour the hills, but pumps failed and saltwater corroded pipes, leaving operations in worse shape than before. Just as pumping was proving too expensive and unreliable, the first Cedar River pipeline gave engineers a more economical method by using gravity to build the necessary pressure and force. With a steady supply of energy on hand, contractors began brandishing hydraulic cannons, called “giants,” against the hills while burrowing tunnels beneath city streets or running sluices above them to carry tailings or “slickens” to the waterfront.

Surmounting Seattle’s topography was as much an exercise in social improvement as it was an exercise in infrastructure because new migrants had
changed the city for the worse. "The streets are so full that you can hardly walk through them," Thomson noted in 1898, "but the countenances you gaze upon are not those which are going to impress a solid householder with the belief that these are the people [whom] he wishes to make his neighbors." Others shared his worries and fled to outlying streetcar suburbs and away from the waterfront and downtown hillsides synonymous with disorder and disease.

Despite the growing acceptance of germ theory in late nineteenth-century city planning, many urbanites continued to associate poor health with poor landscapes and poor people, crystallizing fears over civic decay. John C. Olmsted, commissioned to design Seattle's park system in 1903, complained that Seattle's residential hotels and boardinghouses "seem more numerous than in any other city I know...it spells race suicide!" Even for someone trained to think historically, Olmsted could not look beyond what he saw as a mishmash of enervating alien landscapes that threatened civic purity.

The solution was to change Seattle's topography entirely. Thomson's call for the "creative destruction" of Seattle grew from a long tradition in North American history whereby rapid growth drove the need for sweeping urban renewal. In meeting after meeting with neighborhood leaders, businessmen, and city council members, Thomson and his subordinates argued how regrading would deliver significant "financial, hygienic [and] aesthetic benefits" for the whole city. He reached into citizens' pocketbooks, arguing how regrading would eliminate unwanted hills that added costs to shipping and time to travel, open space for building, increase property values, and contain or eliminate unhealthy slums. He appealed to segmented sections of Seattle residents because he realized, as Robin Einhorn found in her study of antebellum
Chicago, “that there was no such thing as a public interest that city government could pursue citywide.” To this end, Thomson used a new mechanism in Washington State, local improvement districts, which put the onus of paying for developments like streets or regrades on the backs of individual property owners and taxpayers, thereby linking benefits for local neighborhoods to costs incurred by the entire city.

Given the volatility of the real estate market before regrading, determining effects its on property values is difficult. Evidence suggests that some projects yielded healthy returns. V. V. Tarbill noted that after the Second Avenue Regrade in 1906, street-front lots sold for $2,000 per front foot at the corner of Pike Street. One block to the north, where Second Avenue ran into Denny Hill, similar frontages were worth less than $300 per front foot. Two years later, Thomson estimated that regrading boosted business real estate values 400 percent and residential real estate 1000 percent. Real estate sales became an index for regrading success. As Seattle Post-Intelligencer reported, more sales meant more capital for more improvements. This was not just “boom order” speculation but “active trading in properties capable of being immediately converted into revenue producers.”

Regrading seemed to reconcile the hunger for real estate with the desire to build a rationally designed city. Even Thomson, who generally distrusted real estate agents, gladly made them allies in “his struggles to build up this city.”

It was the sheer power required to synchronize Seattle with an improved natural world, however, that captured the most attention at first. On the first Denny Hill regrade, which lasted from 1903 to 1911, engineers and contractors shoveled or sluiced nearly 5.5 million cubic yards of dirt and rock into Elliott Bay, removing more than half of the 250-foot mount. On the Jackson Street regrade, which ran from 1907 to 1912, workers carted off or washed away approximately 3.4 million cubic yards of soil. And these were only the largest. Figures on the total amount of earth moved in all of the regrades varied, but estimates went as high as fifty million cubic yards. Others calculated that more than one-eighth as much earth was moved as was excavated in the construction of the Panama Canal, the yardstick for big engineering at the time.

Regrading could also make new land as well as destroy it. Along the tide flats fronting the Jackson Street regrade, settling basins made with earthen levees and wooden walls were filled with irregular rows of boards, angled backwards like porcupine quills, which captured the dissolved hillsides to produce “an ideal fill” at an appropriate slope. (On the Denny Hill project, the process was far less complex—contractors merely dumped the “slickens” along the shoreline.) Engineers considered these basins another “unique application” of the city’s regrades. They used such fills to eliminate tide flats at the foot of Jackson Street, once “awash with the usual debris and garbage,” to create twenty-seven new city blocks, adding to the manmade land already created by private developers at the southern end of Elliott Bay since the 1890s. As engineers leveled mountains, they brought forth land from the sea.
City engineers and their contractors also had to think systematically to coordinate the energy and labor vital for effective operations. In the words of one engineering report, hydraulic sluicing was the “application of a natural world-making force applied... to municipal improvement.” The application of that force required constant human intervention, and workers on the regrades were hired for their specialized skills. Giant operators were usually
“Alaskan veterans . . . experienced and expert in hydraulic mining operations.” Aiming the high-pressure nozzles was no easy task, and as one observer noted, it took a certain masculine “skill to ‘squirt’ water” to “‘herd’ earth and mix water with different kinds of soils, keep the hill caving by undermining, and pipe lines open but always carrying to capacity.” Not surprisingly, the hydraulic cannons consumed tremendous volumes of water; on the Jackson Street regrade alone, giants spewed between nine and twelve million gallons each day, nearly one-third of the city’s daily water capacity at the time. Contractors worked with the Water Department to insure sufficient supplies without disrupting residential or industrial use. Water reshaped topography in other ways, too. Electricity from a private plant at Snoqualmie Falls and the city hydroelectric dam on the Cedar River powered pumps and floodlights so workers could labor night and day.

Many were impressed with the modern, industrial aesthetics of regrading. Engineers saw technology as an instrument of beauty because beauty arose from pure function and a careful assessment of nature’s needs. Engineers, to paraphrase James Scott, were the eyes and hands of the state, working to create, albeit temporarily, an urban version of the technological sublime. As
an engineer from New York concluded, regrading gave “full play . . . to the imagination and creative energy of the engineer.” George Emerson, a lumber magnate, embellished this fable by telling the stockholders of the Metropolitan Building Company in 1907 that regrading was one step “along the only path leading to Seattle’s commercial heights” with “the hundreds of thousands of workmen and millions of invested capital” directed to “order the parts of our Modern City.”

Not all observers agreed that regrading was beautiful, however. A 1903 editorial in *Seattle Mail and Herald* compared its effects to “grasshoppers in a Kansas cornfield.” “Nature has been worked over from a thing of beauty to an angular checkered surface,” the writer bemoaned, “with scarce one feature left to know it by.” Others went further, attacking regrading as profane and destructive to property. A 1910 editorial in *Engineering News* decried the regrades, calling them a mistake. “It is a pity that a city, which has such a magnificent natural site, with such commanding views as Seattle,” the editors intoned, “would have lost such a great opportunity to lay out its streets to conform with the natural features.” Such criticisms did not question the premise behind the regrades—rather, they asked if regrading was the best way to embroider on nature’s design.

Moreover, the regrades also created their own type of urban nature with its attendant material and social problems. Boulders required dynamiting. Hydraulic “slickens,” the coarse mix of water and dirt washed from the slopes, chewed through steel pipes. And the regrades also had to cut through people as well. In one celebrated incident, Thomson clashed with James A. Moore, proprietor of the Denny (later renamed Washington) Hotel, who tried and failed to keep his famed luxurious resort, built atop Denny Hill, from tumbling down. Moore’s story was only one among hundreds, and thanks to his deep pockets (he was a prominent downtown land developer), he quickly recouped his losses afterwards by building a fancy theater at the foot of the removed hill. Other residents were not so lucky. Residents complained that regrading blocked streets, destroyed water and sewage mains, collapsed foundations, set off landslides, and spawned noise and dust. Reverend James Love of the Reformed Presbyterian Church complained that “now that the rains have come patience, even the Presbyterian kind, ceases to be a virtue,” because worshippers could not reach the chapel. As one embittered citizen told *Seattle Post-Intelligencer*, “[W]e people who live in your regrade districts . . . are martyrs.”

They were not martyrs who went resignedly to their fate. Afflicted residents drew on a legal tradition that recognized the importance of having an efficient property regime. Regrading seemed to threaten the efficiency of that regime by diminishing the value of real estate, at least temporarily. Thomson believed that regrading would ultimately benefit everyone by rationalizing property, but individual owners often felt differently, and they found the courts sympathetic to their cause. Every regrade had to be reviewed by the city Board of
Eminent Domain Commissioners. Condemnation trials in superior court clogged the dockets, and scores of complainants pushed their cases up the appellate chain. More than forty “regrade suits” reached the state supreme court, and they split into three general categories: injury to life and property, unfair assessments or condemnation awards, and breached contracts between private parties resulting from changes to property. H. F. Povine, for example, charged the city and its contractors, Hawley and Lane, with negligence when regrade fill along Stewart Street settled beneath his house, “rendering it unfit for use.” J. W. Coffer, a timber cruiser living along Fourth Avenue, sought compensation after cinders thrown from elevated trains run by contractor C. J. Erickson permanently blinded him in one eye. Scores of other petitioners made similar arguments as courts sought to balance the city’s ability to pursue improvements against the individual rights of citizens. In these two cases, the high court found for the afflicted residents, but in other cases the justices defended the city against regrading claims that would “render that means of improving streets impracticable.” In similar cases, the court ruled against unfair assessments but did not overturn the city’s ability to create local improvement districts.

The result was a legacy of spatial confusion for Seattle residents. Since regrading operations often proceeded ahead of judicial decisions, city engineers and contractors removed earth and destroyed buildings before court proceedings concluded. Under local improvement district guidelines, owners arranged for the regrading of their own property, but even without an owner’s consent, workers could remove earth to the edge of the lot. Those who refused to cooperate found their plots or homes perched atop towers of dirt. Popularly known as “spite mounds,” these pinnacles, some of which stood nearly sixty feet high, revealed the paradoxical pattern of spatial politics in the regrades. Courts validated the sanctity of private property while also upholding the ability to continue municipal improvements. As for conflicts between private parties over real estate torn apart by regrading, the courts tried to apply the usual rules of covenants and contracts. The results must have seemed unfair to the unfortunate petitioners. Former owners who sold their property during regrading escaped assessments, but new owners were responsible for previous debts. Renters whose homes were destroyed were still liable for paying landlords who were, in turn, still liable for assessments.

Legal battles over private property and municipal improvement had reproduced the very spatial inefficiencies that city engineers hoped to eliminate. Projects heaped on projects, leaving many undermanned or unfinished. The city sued recalcitrant contractors and delayed projects still further. In an effort to finish the regrades on time, hill removal and utility construction were often conducted simultaneously. On the Denny Hill project, this strategy resulted in a “cooperative disregard for street lines” that left several spite mounds standing until the early 1920s, long after the hydraulic cannons fell silent.
were at their worst in the former Jackson and Dearborn Street regrade districts, where water percolated into the exposed slopes, triggering wave after wave of destructive landslides. Eight claims made their way to the high court; in all but one, the justices ruled against the city. As the court unanimously concluded in Wong Kee Jun v. Seattle (1927), the last of the so-called Jackson Street regrade cases, city engineers were to blame by “causing slides” through their “permanent invasion of private property.” As the New Republic noted in 1928, “mastering the natural environment” at the expense of the “defenseless taxpayer” left Seattle “nearly insolvent.” The proof was in the landscape. Entire city blocks in the newly minted Denny “Regrade District” remained unoccupied as property taxes went uncollected and court awards went unpaid.

Along the waterfront, regrading had been more successful at turning the tidelands into useable real estate and pushing out the city’s most tenacious squatters, but these changes also came at a cost. In May 1910, Billy and his wife Ellen, descendants of the city’s Indian namesake, the late Duwamish leader Sealth, were driven from their shack along Elliott Bay by the unrelenting development. Concerned residents started a relief fund, yet their charity only added more pathos. “In the old days Billy was a good provider,” Seattle Post-Intelligencer reported, but the terrain changed while Billy had not. “The camping places along the shores of the Sound are now privately owned and no trespassers are allowed; the game has been killed; even the fish are hard to get.” Such stories comforted Seattle’s white community, who used disappearing Indians as a measure of progress, but they masked a far more complicated history.

Thomson and other city elites had expected that regrading would uplift society and achieve social consensus by creating an efficient landscape common to all. Such projects only served to further confuse the city’s topography while
channeling the poor and dispossessed to ever more marginal places. Still, city
engineers did not surrender their dreams of using machines to cultivate a new
city despite the contradictions that regrading unleashed. With so many hills
left standing and so much of the waterfront left unimproved, there would be
ample opportunities to try again.

“JUNK-YARD FOR HUMAN JUNK”:
ANNIHILATING NEW SLOPES AND OLD SLUMS

George F. Cotterill, who once served as Thomson’s assistant, encapsulated
the role that engineers had played in Seattle’s history in a 1928 address. “The
Engineer was on the watch tower,” he explained to his audience, “sighting and
striving to prepare for the greater Seattle that he saw upon the horizon.” “As we
think of the place and part of the Engineer in municipal development,”
Cotterill concluded, “let it never be forgotten that Seattle is not the child of
chance or circumstance.” Such pronouncements glossed over the growing
opposition to reshaping the city’s landscapes during the interwar decades. The
reasons were twofold. First, city engineers and planners had unwittingly
strengthened the connection between landscapes and equity in the minds of
city residents. Instead of removing inequality from the face of the city, chang-
ing Seattle’s terrain reinforced it, concentrated it, and made it more visible.
Reworking landscapes also elevated concerns over aesthetics, because those
who lived on the city’s heights or in its more affluent neighborhoods worried
that engineers were defacing Seattle. These contests during the interwar years
escalated as engineers tried to finish the projects they had started.

Regrading returned as a favored tool to promote development, but this was
not the Seattle of 1900. The city had grown around and over its remaining hills,
and some now attached sentimental values to Seattle’s heights, but city engi-
neers pointed to the broken remains of Denny Hill as a symbol of the city’s per-
sistent problems. Fearful of more assessments, residents had reached a
compromise with city engineers in 1906 to regrade only the portion of the hill
nearest Elliott Bay. The remnants impeded automobile traffic, while the vesti-
gial neighborhood, balanced atop a rocky, crumbling escarpment towering
nearly 100 feet above the streets below, had become “a very cheap and undesir-
able residence section.” What observers ignored was that residents, mostly
renters, put little into upkeep “because of the hope (or fear) that another
regrade would soon take place.”

This second Denny Hill “mess” thus reawakened interest in using regrades
for redevelopment. As one article noted, “[T]he business pulse of the city was
expanding . . .beating against the walls that enclosed it: More room! was the
cry.” Local merchants and property owners in the Denny Regrade neigh-
borhood organized a local improvement district to remove the hill and the slum on
top. And this was not even the most radical project. In 1925, the city’s new
Planning Commission suggested regrading Profanity Hill in the center of Seattle’s Skid Row, the city’s oldest and worst slum where the earlier Jackson and Dearborn regrades had yielded a slide-prone area filled with “dilapidated” abodes. It was the first time that city officials acknowledged that regrading could exacerbate physical and social problems, but acknowledging those problems only justified still more regrading. By 1929, plans were afoot to remove as much as 2.7 million cubic yards of earth from Profanity Hill in the heart of downtown Seattle.87

In this new round of regrades, city officials hoped to avoid previous mistakes by extending their vision beyond simple questions of moving dirt. Businesses and property owners in the proposed Profanity Hill regrade district urged the city, in the interest of “a considerable saving of time,” to forego condemnation proceedings for area residents, most of whom were African American or Japanese American workers living in rental homes or residential hotels.88 On the second Denny Hill regrade, city attorneys prepared assessment rolls and bonds well beforehand in an effort to squelch potential litigation. And this time, the contractor on Denny Hill #2, as the project came to be known, would be responsible for not only excavation but also paving, sewerage, lighting, and other infrastructure. Through such measures, the city planned to dodge unfinished improvements and spite mounds, prompting Seattle Times to call the proposed regrade “one of the city’s greatest.” Condemnation proceedings concluded quickly, and work began in the fall of 1928.89

In spite of their advance planning, engineers again collided with the inflexible properties of the city’s built and physical environments. Because of the proximity of so many buildings, hydraulic excavation was impossible, so engineers created new solutions to fit the new landscape. Steam shovels moved earth onto a web of portable conveyors, which emptied into special self-dumping scows. With the majority of the city’s tidelands already filled, the scows then dumped the spoils into Elliott Bay.90 Although one article commented on the “absence of noise and nuisance,” things quickly became more complicated than engineers had anticipated.91 Rocks, sand, and constant exposure to sun and rain rapidly degraded conveyor belts. Shovels crashed through water and sewer lines. Stubborn boulders and hardpan soils forced crews to use more explosives than planned. The special self-dumping scows often dumped their loads within the harbor line, endangering maritime traffic, while back onshore heavy rains liquefied hillsides, creating a mud-filled lagoon that covered nine city blocks.92

In the midst of these reprised battles, worries over aesthetics opened another front against regrading. The initial object of concern was Denny Park, the city’s oldest, located on the leftovers of Denny Hill. Originally part of David Denny’s first land claim, the park, founded in 1884, was a popular “breathing spot” of tall trees and shady glades.93 Cotterill, the former engineer, paradoxically offered the most eloquent plea to save the park, calling the regrade “an expensive and disastrous blunder.” He pleaded for a “remedy” that would
completely adjust and protect the park area, with all its beauties of Nature and cultivation." City engineers had little patience with nostalgia, because utility prevailed over sentiment. In the spring of 1930, steam shovels tore up the park and left the leftovers for park officials to rebuild.

The flap over Denny Park pointed to how city engineers could no longer attack hills with impunity. The *Seattle Times* reversed its earlier pro-regrade stance and now argued against the proposed Profanity Hill regrade, stating that "Seattle is firmly opposed to useless sacrifice of contours that now help, and can be made to help more, to its reputation for sightliness [sic] and beauty." If the Profanity Hill regrade had been completed, much of the ridgeline above downtown Seattle—and thousands of residents—would have been displaced. Yet, as before, opponents did not dispute regrading’s social aims, only its aesthetic violations.

The Great Depression ultimately saved Seattle residents from debating the virtues of regrading further, but there were still unsolved topographical and social troubles along the city’s waterfront. The same economic downturn that stopped the first round of regrading after World War I had emptied the shipyards and factories on the filled tidelands. By the mid-1920s, shacks and houseboats housing the city’s poor sprouted on the abandoned parcels. At the same time, middle- and upper-class Seattleites mobbed the city’s waters to fish, sail, swim, and sightsee, taking advantage of what parks architect John C. Olmsted called Seattle’s “extraordinary landscape advantages in having a
great abundance and variety of water views and views of . . . distant mountains.” These Seattleites had city engineers to thank for their “natural” playground—regrading and other public works projects had created new spaces for urban leisure—but as they gazed down on the ramshackle collection of shacks, houseboats, and hovels below their hillside homes, it seemed as if Seattle still required further enhancement.

Class distinctions that boosters and engineers had hoped to erase from the city’s topography were now inscribed in it. When the Depression hit, these tensions only grew more pronounced as thousands more mobbed the low-lying places. The scene paralleled the tideland rush of the 1890s, but with one critical difference: economic desperation, not property speculation, drove this hustle. The “shack towns” that had long been part of the city’s waterfront now seemed to be everywhere, and the most famous was the eponymous “Hooverville,” named in mocking contempt of the nation’s most famous engineer and former president, Herbert Hoover, built on filled but now abandoned tidelands. Donald Francis Roy, a University of Washington sociology student, wrote in his thesis that Hooverville was a tangible expression of “the critical state of a bed-ridden economic system.” He concluded that Hooverville
was a “scrap-heap of cast-off men, junk-yard for human junk, an interesting variation of the grimace of laissez-faire.”

City officials had tried to remove Hooverville without success. In December 1930, shortly after this new “hobo city” appeared, the chief of police railed against “drifting criminals who flock to Seattle and commit crime in order to live.” Soon thereafter, the Board of Health took matters into its own hands and razed the shacks. Some residents moved away, but others returned to build again. In the fall of 1932, the city once more burned the shacks; again, the squatters came back, this time burrowing into the ground and constructing roofs of tin or steel. By the winter of 1932-1933, the city relented and allowed squatters to stay, provided they followed sanitary and fire regulations as best they could.

To outside observers, Hooverville seemed anarchic, but the self-named “Hooverites” shared power among themselves in ways that crossed racial and ethnic lines. Moreover, these were men who knew how to rough it. Most were unemployed lumberjacks, fishermen, miners, and seamen. As Hooverville’s unofficial mayor, Jesse Jackson, argued in 1935, if ex-President Hoover walked through the enclave, “he would find that it is not inhabited by a bunch of ‘ne’er do wells’ but by one thousand men who are bending every effort to beat back and regain their place in our social system that once was theirs.”

Hooverville was not a hobo democracy—as in the city that surrounded it, native-born whites predominated—but its ad hoc governance committee seated “two Whites, two Negroes, and two Filipinos” at every meeting who represented a diverse community that included Native Americans as well as Japanese and Chinese immigrants.

Yet the tidelands, like the Hooverites, showed its past. If Hooverites would have preferred being in the woods or out at sea, the tidelands seemed to yearn to be underwater as rain turned pathways into muddy swamps, while storms pushed tides inland and flooded shacks. Saltwater intrusion made gardening unfeasible; collecting shellfish on the hardened, polluted banks was impossible. Hooverville’s proximity to Elliott Bay made sanitation its biggest headache. The tides brought human waste and garbage back into the camp. Clean water was hard to obtain, and there was no electricity, either. Norway rats and bedbugs scurried beneath floorboards, while feral cats and dogs skulked among the shacks.

Hooverville was an ironic product of remaking Seattle’s landscapes. In search of efficiency, Seattle’s engineers had unwittingly helped to create a place without clean water, without sanitation, without steady work, without utilities—in short, without any of the urban infrastructure that the whole progressive project was supposed to secure. It mocked the former president, but it also mocked the engineering hubris that Hoover stood for and that had created this new terrain. To be sure, Seattle’s Hooverville was hardly unique. Similar shantytowns with the same sobriquet popped up across the country at the start of the Depression and in places untouched by regrading. The city’s
dispossessed would have settled somewhere, but in Seattle they landed on the tide flats because regrading and land making had reallocated the discrepancy of property values to that particular site. Engineers never intended to inscribe inequality on the landscape in quite this way; they created neither the capitalist land nor labor markets that made some places more valuable than others. By the 1930s, however, the combined effects of urban planning and political economy had coalesced in Hooverville, making it hard to ignore what the engineers had wrought.

Unmoved by the plight of the city’s poor, many upland homeowners and businesses continued to wage war against shanties and houseboats, fearful of the effects on their own property. The Second World War ultimately provided the lasting solution. A “Shack Elimination Committee,” led by the new Seattle Housing Authority, recommended complete destruction in early 1941. Although the committee recognized that many residents were itinerant workers with meager incomes, the U.S. Navy, Coast Guard, and Port of Seattle wanted the space. After Pearl Harbor, recommendations turned into action. In early 1942, city officials torched Hooverville and other tideland squatters’ camps. The war rescued the city’s technocrats from the consequences of their previous actions by transforming Seattle yet again, but torching shacks...
did not solve problems with environmental degradation, poverty, or property valuation. When the hostilities ended, it had become almost impossible to sort out where the older landscapes had been or who had been displaced to make way for postwar prosperity.

CONCLUSION: SPATIAL STORIES OF PROPERTY, NATURE, AND CITIES

Wartime solidified the lines in the land that Thomson and his successors had drawn. In December 1942, a Seattle Times article, written for “the benefit of newcomers who find it difficult to believe that the plants where they are employed now” were once “out in the bay,” detailed how Seattle had “pushed back the sea” through its fine-tuning of nature. Next to a series of maps, the editors wrote, “When the Siwash Indians roamed Seattle, waves lapped at the foot of Beacon Hill,” while to the south were swampy mudflats. The Times article charted Seattle’s struggles with nature, but it also masked how those struggles were also between people.108

Other observers, such as University of Washington sociologist Calvin Schmid, further simplified this history. In his 1944 study, Social Trends in Seattle, Schmid argued that the city’s downtown and waterfront neighborhoods were “the result of the natural sifting and sorting processes of competition, conflict, mobility, and differentiation . . . the pressure of public opinion, internal cohesion, and relatively low economic status.” It was a Seattle version of the Chicago School of urban surveys. Schmid’s map not only fixed Seattle’s social ecology but also connected it to real estate values, economic activities, and neighborhood demographics. Absent from his analysis was how producing new urban space had amplified social difference by remaking the city’s physical environment in the name of promoting property.109 By the postwar era, the city’s most valuable commercial real estate now lay along the city’s southern waterfront, on the former tidelands, or in the downtown core—and not in the space where Denny Hill once stood. Sluggish real estate and construction markets spawned warehouses, automobile lots, and seedy taverns along the flattened blocks. The promised apartments and industries were slow to materialize. The Regrade remained an eyesore well into the late 1970s, even after attempts to revive the district by hosting the 1962 World’s Fair fell short.110

It is fitting that the Space Needle, an icon of the United States’s technological prowess, stands in place of the now-absent Denny Hill. For an earlier generation of Seattleites, removing Denny Hill was their symbol of progress. Nearly a century ago, Seattle’s city engineers correctly saw nature, property, and social welfare as intimately interconnected, but they did not grasp the full implications of their vision. They were improving nature, not destroying it, and in many cases they delivered on their promises, offering citizens cleaner
Figure 11: Downtown Seattle’s Social Ecology
water, healthier neighborhoods, and safer streets. Their faith grew out of a belief that nature was not degraded by human modification but finished or enhanced instead.  

While Seattle’s engineers may have felt that their work would lead to a totally ordered and planned city, repeated modification of the urban setting to promote property and propriety demanded continual upkeep. Changing one set of relationships—between water and land, hillsides and tide flats, poor and propertied—always affected another set of relationships, setting off a causal reaction of social and environmental events that became emblazoned in the city’s landscape. This spatial history attested to how Seattle’s new property regime had become “an object of consumption, a political instrument, and an element in class struggle.”

An environmental history of urban property can illustrate how injustice and resistance to it play out across time and space. The contradictory pressures of capitalism to create city spaces, only to develop and redevelop them in favor of new arrangements, is a fixture of urban life that has long attracted historians’ attention. What an environmental perspective can contribute is how the physical elements of property intersect with the social values attached to it. Property is more than money or location; it is also another avenue through which the contingent forces of nature can minimize or magnify discrimination. The story of the mulish homeowner and resolute engineer thus encapsulates an important lesson: transforming nature and generating inequality are linked, often inextricably so. And, as Sandy Moss discovered, that history is always moving underneath our feet.

NOTES


(Baltimore: Johns Hopkins University Press, 2000); and Mike Davis, *Dead Cities, and Other Tales* (New York: W. W. Norton, 2002).


226 JOURNAL OF URBAN HISTORY / January 2006


23. *Seattle Post-Intelligencer*, January 3, January 14, February 8, February 19, December 30, 1888; and January 10 and July 5, 1889.

24. Thomas Burke to Carrie L. Allen, May 1, 1888, Letterpress Copy Books, box 20, Thomas Burke Papers, UW-L-SC.


29. For invasion of navigable waters, see *Yesler v. Harbor Line Commissioners*, 446 U.S. 646; and for rights of upland owners or other tideland developers, see *Denny v. Northern Pacific*, 19 Wash. 298, and *Dearborn v. Moran*, 2 Wash. 405.

30. “*Harbor Line Commission Minutes*,” vol. 25, September 10, 1890; vol. 65, July 31, 1890; and September 10, 1890; and “Record of the Proceedings of the Board of Tideland Appraisers for King County,” no. 42, July 13, 1894, WDNR, WSA.

31. “Record of the Proceedings of the Board of Tideland Appraisers for King County,” no. 42, December 26-29, 1894; January 11, 1895; January 15, 1895, and January 18, 1895 (letter from Denny), WDNR, WSA.

32. “Record of the Proceedings of the Board of Tideland Appraisers for King County,” no. 42, July 1, 1894; August 9, 1894; August 20, 1894; September 1, 1894; September 6, 1894 (quotation); and January 12, 1895; and T. J. Milner, Great Northern Railway, to Harbor Line Commissioners, September 28, 1891, box 2, Harbor Line Commission, Survey Notes, Correspondence and Reports, WDNR, WSA.

33. J. C. Haines to C. J. Smith, May 16, 1891; and C. J. Smith to C. B. Tedcastle, April 7, 1892, box 50/8, 51/12, OIC Records, UW-L-SC; *Seattle Post-Intelligencer*, November 12, 1890; and J. J. Hill to P. P. Shelby, June 21, 1892, box 2/446, Great Northern Railway, President’s Subject Files (hereafter, GN-PSF), Minnesota Historical Society (hereafter, MHS).

34. W. P. Clough to J. J. Hill, February 14 and February 26, 1890, GN-PSF; R. S. Jones to J. J. Hill, November 3, 1892, President’s Assistant File, James J. Hill Papers, James J. Hill Reference Library, St. Paul, Minnesota; H. W. McNeill to E. J. Smith, April 7 (two letters) and April 27, 1890, box 48/8, 13, OIC Records; Burke to Clough, March 20, April 1, and April 25, 1890; Burke to W. W. Cotton, April 19, 1890, Letterpress Copy Books, box 20, TB Papers, UW-L-SC; and Nesbit, “*He Built Seattle*,” 213-26.


37. Virgil G. Bogue, “*Report to Board of Tide Land Appraisers for King County, Washington,*” January 10, 1895, 22, box 41, Subject Files, Seattle Engineering Department (hereafter, SED), Seattle Municipal Archives at the Puget Sound Regional Branch, Washington State Archives (hereafter, SMA-PSRA).
38. “Seattle Tide Lands, Report of the Board of Tide Land Appraisers for King County,” March 16, 1895, 732-48, box 41, Subject Files, SED, SMA-PSRA; and “Record of the Proceedings of the Board of Tidelands Appraisers for King County,” no. 42, March 19, 1895 (quotation), WDNR, WSA.

39. L. C. Gilman to L. W. Hill, May 10, 1907, box 52/3938-6, GN-PSF, MHS.

40. C. B. Bussell, Tide Lands: Their Story (Seattle: C. B. Bussell, c. 1903), UWL-SC.

41. Thomas Cooper to W. L. Darling, October 14, 1901; R. H. Thomson to Darling, November 5, 1901; Cooper to Thomson, December 7, 1901; and Thomson to F. M. Muldoon, City Council, Committee on Streets, December 28, 1901, box 23/1030, Northern Pacific-Chief Engineer Subject Files, MHS.


51. Thomson, That Man Thomson, 60.

52. Ibid., 63-70; and Mary Mc-Williams, Seattle Water Department History, 1854-1954 (Seattle: Water Department, 1954), 53-63.


70. George H. Emerson, *The Building of a Modern City* (Seattle: Metropolitan Building Company, 1907).


74. James G. Love to Board of Public Works, October 21, 1909, LID 1707, Letters, folder 2, SED, SMA; and *Seattle Post-Intelligencer*, April 8, 1909.


81. *Wong Kee Jan v. Seattle*, 143 Wash. 505 (1927). The other “Jackson Street Regrade cases” (as defined by the Court in *Davis v. Seattle*) were *Jorguson v. Seattle*, 80 Wash. 126 (1914); *Farnands v. Seattle*, 95 Wash. 587 (1917); *Lochore v. Seattle*, 98 Wash. 265 (1917); *Blomskog v. Erickson*, and *Cotton v. Seattle*, 107 Wash. 471 (1919); *Davis v. Seattle*, 134 Wash. 1 (1925); *Bingaman v. Seattle*, 139 Wash. 68 (1926); and *Hamm v. Seattle*, 140 Wash 427 (1926). Only in *Jorguson* did the Court find for the city.


83. *Seattle Post-Intelligencer*, January 6, January 7, and May 11, 1910; and Thrush, “‘The Crossing-Over Place,’” 76-188.
84. George F. Cotterill, “What Part Has an Engineer in the Development of a Municipality Such as Seattle?” c. 1928, box 14/6, George F. Cotterill Papers, UWL-SC.


86. (Seattle) Town Crier, January 4, 1930.


89. Seattle Times, August 5, 1926.


93. Joseph I. Granger to Board of Park Commissioners, April 26, 1929, box 24/8, DSPHC-SPRD, SMA.

94. Cotterill to Board of Park Commissioners and City Council, May 17, 1928, box 24/8, DSPHC-SPRD, SMA.

95. Seattle Times, August 2, 1927; and Don H. Palmer to Simon Burnett, President, Park Board, February 25, 1930, box 24/8, DSPHC-SPRD, SMA.

96. Seattle Times, September 17, 1929.


98. Seattle Board of Park Commissioners, “Report of Olmsted Brothers,” in First Annual Report, 1884-1904 (Seattle: City of Seattle, 1904), 44.


100. Droker, Seattle’s Unsinkable Houseboats, 77-81; and Berner, Seattle, 1921-1940: From Boom to Bust (Seattle: Charles Press, 1992), 289-456.


107. Seattle Housing Authority, Real Property Survey, 1939-1940 WPA Project 3372, 2 vols. (Seattle: Works Project Administration, 1942), 1-1, 1:5, 2:4; First Annual Report of the Housing Authority of the City of Seattle (1941), box 1/1, Annual Reports Collection, SMA; C. W. Coplen, Housing Authority of the City of Seattle, to City Council and “Real Property Survey,” March 5, 1941; Shack Elimination Committee to City Council, April 14, 1941, file no. 168237, SCCF, SMA; and Seattle Times, April 10, 1941.

108. Seattle Times, December 27, 1942.


110. For an outsider’s report on the stagnant Seattle real estate market, see L. C. Gilman to W. P. Kenney, president, August 31, 1933, box 294, file no. 7525, GN-PSF, MHS. For a survey of development in the


Matthew Klingel is an assistant professor of history and environmental studies at Bowdoin College, where he is completing his book on the environmental history of Seattle. He has also published essays in History and Theory, Journal of the West, and The Nature of Cities, a forthcoming anthology edited by Andrew Isenberg, published by the University of Rochester Press, and sponsored by the Shelby Cullom Davis Center for Historical Studies at Princeton University.