

From Profit to Polity: A U.S. Water Utility's Transition to a Government-Shareholder Model

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Abstract

The Pennichuck Corporation, located in New Hampshire, U.S., offers a unique opportunity to explore the rare structural transition from investor-ownership to a government-shareholder model for a long-standing regional water utility. In early 2012, concluding a ten-year dispute, the City of Nashua leveraged its power of eminent domain to become Pennichuck's sole shareholder not by a taking but by a stock purchase agreement transferring the entirety of the company's regulated and unregulated assets. The study draws on primary documentation and data to review the terms of the transaction and contrast the *ex-ante* and *ex-post* models. Utility operations and state economic regulation remained constant over the transition, thus controlling for their potential effects. A trend analysis of financial and other data provides evidence of outcomes, including the lower cost of capital and operations. This information-rich case illustrates the arduous process of public taking, which questions the institutionalized policy asymmetry favoring private over public acquisitions that undermines structural competition.

Highlights

- A stock purchase agreement is an alternative to eminent domain for transferring utility assets from private-sector to public-sector investors and managerial reorientation.
- The public-shareholder model offers a unique governance model with ultimate accountability to the local polity and voters.
- Economic regulation can provide a neutral forum for resolving ownership disputes as well as ongoing oversight.
- In Pennichuck's case, expected outcomes were largely realized, including a lower cost of capital, implying relatively lower rates, and performance was comparable or better than that of peer utilities.
- Public policy and regulatory reforms could address power asymmetries and level the playing field for franchise transfers to facilitate structural competition.

Introduction

A running debate in the literature concerns the impact of utility ownership on performance. Based on the historical dominance of municipalities in the U.S. water sector, or state-owned enterprises elsewhere, the typical framing is whether private ownership will achieve efficiency and effectiveness through profit drive and whether public ownership will achieve equity and accountability through local control.

The study explores the acquisition of the Pennichuck Corporation by Nashua, New Hampshire, the state's second-largest city, with a population of about 90,000 in 2020. Framing Pennichuck's

remaking as just a case of “municipalization” underappreciates its complexity, nuance, and potential relevance to the sector. Nashua’s pursuit of the private investor-owned utility spanned a decade, and one reporter likened the saga to a Tolstoy novel (Nashua Telegraph, 2011).¹ With eminent domain as legal leverage, the parties ultimately settled their dispute by executing a stock purchase “merger” agreement at the corporate parent level, and Pennichuck became a “closely held” entity with the city as its sole government shareholder (Figure 1).

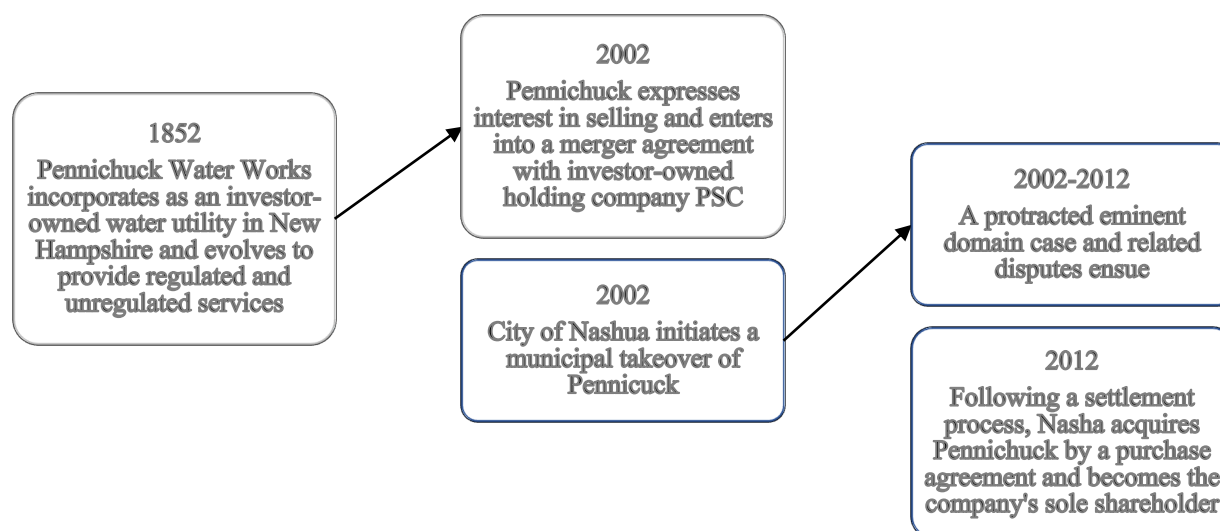


Figure 1. Summary of the Pennichuck corporate transition timeline.

The research contributes to the literature by documenting one water’s utility’s rare transformation and unique structure. The case study includes a descriptive analysis of trends and outcomes, primarily utilizing *ex-post* and *ex-ante* data. Pennichuck’s corporate culture, governance structure, and regulatory accountability afford a high degree of transparency in financial reporting.² Although in formal and informal respects, Pennichuck’s corporate identity and character were maintained, its fiduciary orientation turned from profit to polity.

A key insight is that the public taking of an investor-owned water utility is a test of political will and endurance that few can pass. The process stands in stark contrast to expeditious corporate acquisitions that policies and policymakers seem to favor, despite implications. The following sections briefly consider the literature on utility ownership, review the timeline of the case and terms of the agreement, describe the post-transition governance model, and present the descriptive analysis. The paper concludes with a discussion of policy implications.

¹ One reviewer recalled an apt quote: “All happy families are alike, but every unhappy family is unhappy in its own way” (Leo Tolstoy’s *Anna Karenina*, 1878)

² The few exceptions in the case involved personnel and proprietary forward-looking information (NHPUC, 2011b).

Literature review

Issues of water utility structures and governance are well-explored in the literature, typically focusing on the public-private dichotomy and rivalry, public-private partnerships, or structural competition based on contestable market theory (Beecher, 2013) but without a clear consensus about performance outcomes. Structural or franchise competition is a long-standing possibility in the public utility sectors, and the regulatory compact does not insulate jurisdictional utilities from this risk (Reiter, 1998). Much of the research turns to market theory and the potential to achieve cost control and economic efficiency through corporatization, private ownership, and profit incentives (Renzetti and DuPont, 2004, Clifton, 2006; Prasad, 2006). Corporatization (“businesslike”) and privatization (“business”) appear to align with select economic goals, such as full-cost pricing, technocratic management, and depoliticization of decision-making and ratemaking that some advocates stress. Some point out that other structures might also achieve efficiency and other goals (Warner, 2011; Beecher, 2013), including partnerships (Marques, 2018) and regional coordination (Silvestre et al., 2018). Moreover, an overly technocratic model can raise concerns about potential “mission creep” toward rent-seeking, to the detriment of public values (Clifton et al., 2016).

However, meta-analyses of global studies find little empirical evidence for a private-sector efficiency advantage (Bel and Warner 2008; Bel et al., 2010; Warner, 2011). Any efficiency gains from privatization do not necessarily translate into lower rates for consumers due to the offsetting effects of a higher cost of capital, income taxes, and corporate overhead (Beecher, 2013; 2021). Investor-owned utilities sometimes cite property tax payments as a benefit of their community presence, and an argument against municipalization, because of the need to recoup revenues elsewhere. However, taxes that weigh heavily on revenue requirements translate to nontransparent and regressive burdens on ratepayers, suggesting that other instruments may be preferable (Beecher, 2021). All else equal, the cost of service to ratepayers is higher under private than public ownership, which may raise concerns about social equity and affordability.

The potential for public ownership to advance local objectives other than economic efficiency, particularly public health protection, has also been examined (Homsy and Warner, 2020). Numerous studies have modeled ownership as a determinant of compliance with U.S. drinking water standards, also with mixed results (Beecher et al., 2020). Many of the models used may be misspecified based on the complexity and heterogeneity of the sector in terms of ownership and other endogenous and exogenous factors affecting performance, including scale and resource conditions.

Researchers have also considered the roles of institutions and governance, which are associated with ownership forms. Economic regulation of utilities, by which revenue requirements and rates are authorized, is generally associated with private ownership. However, some have considered its extension to the state-owned and other non-private utilities (Berg, 2013; Marques, 2018; Beecher, 2018). In the United States, public ownership dominates (Beecher et al., 2020); state economic regulation of municipal utilities is generally limited but still relevant, particularly for cities serving outside their corporate boundaries.

An anticipated global trend in water-sector privatization never materialized (Davis, 2005; Kikeri and Kolo, 2005), but neither has its reversal (Clifton et al., 2019). In the United States, the sector's few dominant holding companies are pursuing aggressive acquisition and growth strategies, including in the economic downturn context (Doerr, 2020), while some municipalities have brought services back in-house (Warner and Aldag, 2020). Both Paris and Berlin have re-municipalized their water service (Hall et al., 2013), and interest is apparent among bureaucrats in Spain (Albalade and Bel, 2020). Interest in reclaiming control over water services is associated with unpopularity and backlash over costs and service quality, as well as mistrust of corporate ideology and corruption (Davis, 2005; Clifton et al., 2019; Bel, 2020; Albalade and Bel, 2020; Campos-Alba et al., 2020; Gradus and Budding, 2020; Warner and Aldag, 2020).

Following municipalization, an efficiency-oriented enterprise model is often retained (Siami-Namini 2017; Voorn et al., 2020). In any case, larger municipal utilities in the United States are often managed as enterprises, sometimes with independent governance structures. However, most are not regarded as “corporatized,” and financial transfers from utility enterprises are infrequently characterized as dividends to municipal parents. For public entities, the work ethic and culture necessitate balancing business and community orientations. The term “public shareholder” and the structure it implies is uncommon and may manifest tensions between profit and public values and priorities, particularly when venturing abroad (Clifton et al., 2016).³ Louisville Water (Kentucky) has long operated according to this model but is not state-regulated.⁴ Municipally owned EPCOR (City of Edmonton, Alberta, Canada) also owns and operates U.S. water utilities (epcor.com).

Eminent domain is a legal process in the United States by which privately held assets can be acquired (also known as property taking, seizure, or condemnation) by a unit of government. A government's reach cannot extend to assets operating beyond its borders, based on concerns about stakeholder impact and representation. Institutionalized policy frameworks are highly protective of private property. The fifth amendment to the U.S. Constitution prohibits the taking of private property for public use without “just compensation” to owners (or shareholders), which requires an asset valuation process but without entitlement to a “fair market” price. The target company's shareholders have little control over the process except for disputing and appealing the value used in setting the price in a “forced sale.”

Although eminent domain appears to bestow formidable power, it is not easily or frequently exercised and mostly irreplicable. The protracted process can be administratively complicated, legally contentious, politically charged, and even dramatic. Acquisition of privately owned utilities by public entities enjoys more speculation than success, as many proposals and attempts are abandoned. Academic attention to this area is limited. The closest analog to the Pennichuck case is the 2017 seizure of the Mountain Water Company by the city of Missoula, Montana, following decades of disagreement and culminating in an expensive three-year legal battle that

³ The term is also confusing because many private companies, and shares therein, are “publicly traded” on the stock exchanges.

⁴ Louisville-Jefferson County Metro Government is the sole shareholder of Louisville Water, a legally separate entity that serves the Louisville metropolitan area with water service. The Mayor appoints the Board of Directors for the company, and the city receives periodic dividends (\$19 mil. in 2019) and select services in lieu of taxes (Louisville Water, 2019).

made its way to the state Supreme Court (Power, 2014). A detailed analysis of the Missoula case reveals a power asymmetry that advantages sizeable private equity firms over modest-sized communities and the relevance of the public's attention cycle in sustaining a takeover attempt (Mann and Warner, 2019). American Water Works Company, the country's largest investor-owned holding company, has recently faced substantial eminent domain challenges to service territories in its California, Illinois, and New York subsidiaries (SEC).

From the practice literature, one industry-sponsored study of four contested government takeovers, including Missoula and Pennichuck, asserted that the change of ownership burdened customers and taxpayers with "no compensating benefit" and that publicly available information was insufficient to support "claims" that revenues from operations would be cover costs (Sosa, 2017). Publicly available information is found more than sufficient to evaluate the case in terms of finances, costs, and benefits, particularly given procedural due process, discovery methods, and the rich evidentiary record established under the watchful eye of the state regulator and consumer advocate, and the company's own eventual assessment (Pennichuck, 2011b).

Transition Timeline

According to state articles of incorporation, the Nashville Aqueduct was founded in 1852 and operated as a publicly traded and state-regulated investor-owned company for 160 years, evolving into the Pennichuck Corporation ("Pennichuck").⁵ It was the largest regulated investor-owned utility in New Hampshire until its eventual transfer to Nashua in 2012. The company articulates a mission "to be a premier supplier of water in New Hampshire by providing reliable, high quality, and affordable water in sufficient quantities, and to be New England's premier supplier of water-related contract services by providing high-quality solutions to meet our customers' needs" (pennichuck.com).

Pennichuck is structured as an intrastate holding company not confined to municipal boundaries. The company's five wholly owned operating subsidiaries include three state-regulated utilities managed under cost allocation and service agreements, including money pooling. The core system, Pennichuck Water Works (PWW), serves Nashua and ten surrounding communities. The Pennichuck East Utility serves 19 communities, and Pittsfield Aqueduct serves a small area. The corporation also holds an unregulated water service company and a "shell" company (Southwood) with land holdings in Nashua and Merrimack, New Hampshire. Each entity has legally segregated books and records.

Nashua's pursuit of Pennichuck sheds light on the arduous process of acquiring an investor-owned utility by a public entity. Drawing on extensive public documentation, a detailed timeline of the case study is summarized here and detailed in the Appendix. The principal parties and stakeholders in the process were:

- Pennichuck corporate equity shareholders. The investor-owned water utility with three regulated utility operations and two non-utility subsidiaries in New Hampshire.

⁵ Pennichuck refers to the corporation. However, the analysis of outcomes is confined to the Pennichuck utilities.

- Pennichuck personnel. The executives, managers, and operational employees of the water utility before, during, and after the transition.
- Philadelphia Suburban Corporation (PSC/Aqua/Essential Utilities). The Pennsylvania holding company that sought to purchase Pennichuck in 2002.
- Veolia Water North America. The division of the multinational corporation identified by Nashua to operate the water system under contract following municipalization.
- Investment advisers, bankers, and consultants. Private firms that conduct valuation and cost studies and facilitate asset transfers and financing.
- City of Nashua. The core community served by Pennichuck, whose leaders sought to acquire the utility in 2002.
- Outside communities. The communities outside of Nashua served by the three Pennichuck utilities concerned about fair consideration.
- New Hampshire Public Utilities Commission (NHPUC). The state economic regulator with jurisdiction for Pennichuck before and after the acquisition.
- Office of Consumer Advocate (OCA). The state office that represents ratepayers before the NHPUC, particularly as to issues of costs, cost allocation, and rate design.
- Environmental councils and groups. Local organizations concerned about undeveloped watershed land owned by Pennichuck and its subsidiaries.
- Ratepayers. The industrial, commercial, and residential customers of Pennichuck who support the cost of water service.

In the winter of 2000-2001, amidst a corporate consolidation trend in the upper tiers of the U.S. private water sector and awareness of its potential value as a takeover target, Pennichuck sought offers for a potential buyout, initiating meetings with bidders in March 2001 and due diligence for shareholders in April (Reed Smith, 2002). A 10-year cycle of litigation, negotiation, and legislation ensued.

In April 2002 (SEC), growth-oriented Philadelphia Suburban Corporation (PSC),⁶ the nation's second-largest water holding company, announced in a press release that it had reached "a definitive agreement to merge" with Pennichuck. The stock transaction was valued at approximately \$106 mil. (approximately 2.6 times book value), reflecting a 20-percent premium to Pennichuck shareholders). Acquisition premia reflect investor expectations about growth and earnings. At the time, Pennichuck's three utilities managed nine drinking water systems serving approximately 30,000 customer connections across 23 communities in the state. PSC aimed to expand its footprint in New England (following a 1999 acquisition in Maine) by adding New Hampshire as the seventh state to its overall portfolio (Reed Smith, 2002).⁷

The PSC deal was subject to regulatory approval of the NHPUC, sought by Pennichuck in June 2002, and was expected to close by the end of the year and bring about "continued growth and increased earnings." As a parent-level transaction, federal and state securities regulators were informed; no approvals were required from Pennsylvania regulators. Pennichuck's Chief

⁶ Soon after, Aqua America and subsequently Essential Utilities, Inc.

⁷ The Maine utility was sold to another investor-owned multi-state holding company in 2012, which merged with another in 2019.

Executive Officer (CEO) and former Nashua mayor signaled his intention to retire and join PSC's board of directors following the deal's completion.

The deal turned out to be less than definitive and was abandoned prior to shareholder consideration (SEC) in light of local reaction. Facing a "groundswell" of concern about the PSC deal, Nashua intervened and then set its sights on acquiring PWW, the company's core utility accounting for about three-quarters of Pennichuck's assets and revenues (Pennichuck, 2011b).⁸ By pursuing the utility, Nashua sought dominion over vital water and fire protection services (including costs) and preservation of undeveloped watershed land (not all of which is within city boundaries). Another motivating factor was the prospect of a partial or controlling interest by out-of-state and possibly foreign owners.⁹

New Hampshire statutes (Ch. 38, 1997) authorize municipalities to "establish, expand, take, purchase, lease, or otherwise acquire and maintain and operate... plants for the manufacture and distribution of electricity, gas, or water." The law further provides that a favorable two-thirds popular vote creates "a *rebuttable presumption* that such action is *in the public interest*" (Ch. 38:3-5, emphasis added). In November 2002, Nashua's consultants presented a comprehensive review of PNNW, including financial models and forecasts, highlighting potential "public savings" of public ownership (Rizzo, 2002 and 2003). City aldermen moved to explore options, including the formation of a regional utility, and scheduled a vote. In January 2003, a decisive majority of Nashua voters authorized (but did not compel) the city to acquire some or all of Pennichuck's assets by exercising its rights of eminent domain or other means.

In February 2003, citing the referendum, a disappointed PSC terminated its merger plan.¹⁰ Pennichuck's costs related to the PSC merger, recorded between 2002 and 2004, totaled \$2.99 mil. (SEC reports). The following day, Nashua gave notice to Pennichuck's three utilities that the city was interested in acquiring their assets; the company responded in the negative. Subsequent financial reports to investors cited the eminent domain risk and its vigorous opposition to a forced sale. Incentive compensation for a newly hired CEO tied a bonus to changing control by a sale rather than municipalization, in a tell of their non-neutral posture.

In June 2003, state lawmakers enabled the option to form a regional water districts with bonding authority. Nashua tendered its first stock purchase offer for the company in November 2003, matching PSC's price of \$106 mil. plus \$15 mil. to cover corporate tax liabilities; a month later, Pennichuck's board rejected the offer as hostile and incomparable based on valuation and tax effects. Early the following year, the company withdrew from negotiations. Turning to judicial remedies, Pennichuck filed suit asking the state Superior Court to "end the limbo" and set a deadline for the city to file for eminent domain. The company also filed suit with the U.S. District Court, asserting laches and claiming civil damages of \$5 mil. The claims were eventually denied, and NHPUC's jurisdiction was affirmed.

⁸ With a population of about 89,000, Nashua is the state's second largest city (after Manchester). Median household income in the city is about \$75,000 annually, slightly less than the state average but higher than the U.S. average (census.gov/quickfacts).

⁹ According to the mayor, Nashua was "prepared to fight the fight" and "it will be a cold day in hell before Nashua streets will be owned by a foreign entity," (Nashua Telegraph, 2002-04-27).

¹⁰ PSC's financial reporting notes that the company's related costs were expensed in 2002, with "virtually no impact" on earnings, but the amount is not apparent in available reporting.

In March 2004, a tenacious Nashua petitioned the NHPUC (04-048) to value and acquire Pennichuck's three utilities; numerous stakeholders would intervene in what would be a procedure and document-intensive case.¹¹ Nashua argued that beyond the rebuttable assumption under the law, the acquisition would serve the public good. In October 2004, the NHPUC found sufficient evidence to consider Nashua's filing. In November 2005, the state's Supreme Court confirmed the constitutionality of the eminent domain statute and the NHPUC's jurisdiction for setting compensation or damages. Soon after, Nashua entered into a contingent contract with Veolia to run the system under a municipal ownership model with oversight by another firm.

In April 2006, NHPUC staff objected to removing PWW only from Pennichuck, as it would harm the customers of the other subsidiaries and undermine beneficial regionalization (in terms of scale economies, operational efficiencies, service quality, investment, and absorption of small troubled systems), contrary to legislative policy goals. Pennichuck was encouraged, but Nashua remained undeterred. Valuation and price estimates for PWW were still orders of magnitude apart (about \$100 mil.). Settlement negotiations would start up and break down over the next few years, but Pennichuck's interest in selling the entire company came into focus.

In July 2008, the NHPUC ruled in favor of Nashua's taking of PWW, placing the value at \$203 mil., plus \$40 mil. to mitigate the impact of separation on subsidiaries, fixing the taking price at \$243.0 (before additional transaction costs).¹² However, the transaction would saddle investors with a \$50 mil. tax liability and \$65 mil. in repayable debt (at the time), forcing challenging asset liquidation. Pennichuck sought a rehearing, claiming 18 mistakes by the NHPUC. Nashua also sought a rehearing, objecting that the price was too high; both appeals were denied. In March 2010, Pennichuck's appeal to the state Supreme Court over jurisdiction and constitutional rights was also denied. In the meantime, Pennichuck's shareholders indicated an openness to a private stock sale of the entire company, and negotiations were extended. The combination of regulatory and judicial orders appears to have been the beginning of the end.

In November 2010, Nashua and Pennichuck settled the eminent domain dispute over PWW by signing a definitive merger agreement and plan for a stock purchase price of \$138.4 mil. plus \$60 mil. in debt assumption (\$198 mil. before additional transaction costs) to transfer Pennichuck in its entirety (PNNW) and end the ongoing disputes, contingent on approvals and financing. At \$29 per share, shareholders were compensated at 2.4 times the company's book value, reflecting a 46% premium over the implied trading price, which compared favorably to prospects for organic growth in value (Pennichuck, 2011b). Nashua's board approved the agreement in January 2011, and in February, the parties petitioned the NHPUC for regulatory review of their agreement, which also ended the taking case. In June, special state legislation allowed bond financing for the acquisition. With the unanimous support of the board, Pennichuck's shareholders approved the sale.

¹¹ The intervenors were Merrimack Valley Regional Water District, Merrimack River Watershed Council, Inc., Nashua Regional Planning Commission, customers Fred S. Teeboom, Barbara Pressly and Anheuser-Busch, Inc.; Representative Claire B. McHugh and the Towns of Amherst, Milford, Hudson, Litchfield, Pittsfield, Bedford, Raymond, Hollis, Londonderry, and Merrimack (NHPUC, DW 04-048).

¹² A detailed dissenting opinion questioning the market assumptions placed the value at \$151 mil., for a price of \$191 mil.

As noted by the NHPUC, a settlement among parties is not “dispositive.” In November 2011, regulators authorized the transaction as “in the public interest” and without adverse effects on service terms or utility operations for the provision of safe and adequate water to customers, consistent with the special legislation and a just and reasonable result (NHPUC, 2011b).¹³ The OCA did not sign off on the agreement but submitted recommendations to the commission and looked forward to seeing the lower debt costs passed on to customers. Staff support was based on continuity of operations, preservation of economies, lower rates, and broad benefits, despite the price premium. Regulators considered all stakeholder interests, and the settlement faced little opposition. In January 2012, bonds were issued to finance the purchase, articles of incorporation were filed, the company’s public stock was delisted, all outstanding shares were transferred, and Nashua took ownership of the Pennichuck enterprise in its entirety.

Remarkably, what began in 2002 as a public taking “was ultimately resolved on a consensual basis following successful negotiations” (Pennichuck, 2018). The NHPUC structured the context and assured due process while allowing the settlement process to unfold. Pennichuck’s leadership recommended the transaction as “advisable, fair to and in the best interests of the Company and our shareholders” (SEC filing). The costs incurred along the way were not insignificant. Nashua spent about \$5 mil. on the pursuit (NHPUC, 2011b), and Pennichuck spent about \$8.31 mil. on its defense from 2003 to 2010 (SEC 10-k filings).

Once agreement was reached, the attitude adjustment was palpable. Based on the terms of the settlement agreement and plan, the transaction was characterized by Pennichuck as going from a “bad” to a “good” deal and a “win-win” for parties (Pennichuck, 2011b). Corporate managers who navigated the transition came to embrace the model (Pennichuck, 2011b and 2018). Pennichuck *ex-post* regards the agreement as “a creative and unique transaction intended to provide lower water service costs over time than that provided by the publicly-traded corporation... and to provide careful and stable public control over important watershed land and environmental interests” (Pennichuck, 2018).

According to the principals (Nashua, 2011; Pennichuck, 2011, 2018), the settlement agreement satisfied existing equity investors, and the terms assured future debt investors. The operating plan met the interests and needs of key stakeholders, including Nashua, other affected communities, company employees, and water customers. Unlike eminent domain, the stock purchase agreement reconciled substantial legal and financial differences, effected the transfer of Pennichuck in its entirety, considered to be in the public interest as well as that of parties. By all appearances and records of accountability, despite the rhetoric and rancor, the model appears to be well-functioning.

¹³ The NHPUC found “credible evidence that: 1) the projected range of rates will support each of the utilities’ operating and debt service costs as well as the City’s obligations under the acquisition bonds; 2) customer rates, over time, will be lower than currently projected, in part because the overall combined cost of equity will be materially lower; and, 3) the ratemaking structure will reasonably provide for the collection of revenues sufficient for the City and the utilities to satisfy operating and debt service costs” (NHPUC, 2011b).

Terms of the Agreement

The financial and other terms and conditions of the eminent domain taking and the stock purchase agreement are compared in Tables 1 and 2. Parties settled on the agreement to purchase Pennichuck in its entirety, covering both security ownership and financing. The agreement resolved all issues and transferred all property at a total price that was \$33.8 mil. less than the eminent domain price. (Table 1).

Nashua financed the \$150.6 mil. by issuing 30-year taxable general obligation bonds (rated AAA by Fitch and Aa2 by Moody's) at a 4.09% interest rate.¹⁴ With the stated intention to fully service the debt (principal and interest) from Pennichuck's operating revenues, the bonds would not impair Nashua's general obligation debt capacity (Nashua, 2011). Nashua mirrored the debt by issuing Pennichuck a 30-year promissory note for \$120 mil. at an interest rate of 5.75% (with payments of about \$8.8 mil. annually); the remaining \$30.6 was recorded as contributed capital (Nashua, 2019).¹⁵ By design, the city's equity is not recorded as shares of common stock (NHPUC, 2011b).¹⁶ The acquisition premium is embedded in the bonds, and the principal and interest comprise an amortizable regulatory asset, with recovery comporting with accepted accounting and intergenerational equity principles (NHPUC, 2017; Pennichuck, 2020).

The deal transferred all of Pennichuck's utility and non-utility assets, including watershed land, which maintained existing scale and scope economies in operations. The agreement resolved lingering and future debt, acquisition market, and eminent domain uncertainties and risks. By characterizing the transfer as a corporate reorganization (with a temporary "Acquisition Subsidiary" as the vehicle), Pennichuck's status was retained, and the private investors avoided a \$50 mil. corporate income tax liability they had regarded as a deal-breaker (Pennichuck, 2011b; 2020).¹⁷

Benefits to Nashua include a lower price for more assets than under the eminent domain deal. Nashua pursued the acquisition "to secure and protect water supplies and watershed lands for future generations; to continue to provide highest quality water and water services; and to stabilize water rates at reasonable levels" (Nashua, 2011). These benefits also accrue to outside communities. Rate trends were modeled according to assumptions about inflation, interest rates, and capital investment and were estimated to track about ten percent lower under the new model. Once the tides turned toward the settlement, Pennichuck assimilated the arguments in favor of the transfer, including "proof of lower revenue requirement" and thus lower rates (Pennichuck, 2011, 2018).

¹⁴ The acquisition bonds were taxable because federal tax policy does not allow for issuing tax-exempt bonds to refinance taxable instruments.

¹⁵ Rate models originally estimated a note interest rate 6.5% (Nashua, 2011).

¹⁶ Per the corporate articles, the company was only authorized to issue 1,000 common stock shares at \$.01 (Pennichuck, 2012).

¹⁷ The corporation continues to pay income taxes related to the amortization of the non-deductible regulatory asset created by the acquisition and prior contributions in aid of construction (Pennichuck, 2020). Taxes on operations are not expected until income exceeds interest payments according to the amortization schedule for the note to repay the acquisition bonds.

The prospect of lowering the cost of service was attributed to two factors (Pennichuck, 2018). First, the city's bond debt represents a lower cost of capital than the profit required by equity investors, with substantial savings once the acquisition bonds are repaid in 2042. Lower costs going forward are associated with consolidated scale, credit capacity, and taxing authority. Second, savings were expected from eliminating corporate compliance and other overhead costs of publicly traded companies (such as legal, audit, professional, and filing fees, and director and officer insurance) and senior officer positions (salaries, benefits, bonuses, and perquisites). These annual costs were estimated at \$586,203 and \$1,156,203, respectively, for a total exceeding \$1.7 mil. or about 5% of revenues at the time of the transition (Pennichuck Ex. JLP-2, Docket 11-026).

The anticipated cost savings were factored into financial models considered by the city to ensure cash flow sufficient to cover capital and operating costs and bond repayment (Pennichuck, 2011b and 2018). Cash flow is supplied by the depreciation expense plus nominal quarterly dividends (Pennichuck, 2011b and 2018). Nashua's board created a restricted special fund, segregated from its general fund, to service the bond debt (R-11-169). The approved ratemaking model comprises a subsidiary-prorated "City Bond Fixed Revenue Requirement" component (replacing the cost of equity capital) and an operating component derived by traditional ratemaking methods based on the cost of service.¹⁸

Per the settlement, Pennichuck will lower revenue risk by maintaining a replenishable rate stabilization (debt-service reserve) fund over the life of the bonds not to exceed \$5 mil., treated as a contingent regulatory asset.¹⁹ The fund is designed to mitigate fluctuations in cash flow, provide repayment assurance to city acquisition bondholders, and maintain the city's credit quality and debt capacity, all of which benefit customers by lowering the cost of capital (NHPUC, 2011b). The fund is maintained through approved rates and mitigates lag between rate cases; amounts above (below) the cap treated as deferred credits (debits).

Regulators also capped the amount of Nashua's recoverable eminent domain costs at \$5 mil. (\$500,000 annually), which was dropped to \$4.5 mil. post-audit (NHPUC, 2014). For this purpose, Pennichuck's board can authorize a "special dividend" to the city up to \$500,000 annually, conditioned on profitability and satisfaction of financial obligations. Use of the dividend funds by the city is subject to aldermanic approval.

Critically, "Nashua agrees to limit its receipt of dividend payments following the acquisition other than for payments under the CBFRR, to reimbursement of its costs to prosecute the eminent domain case" (NHPUC, 2011b). The city also receives no other franchise fees, "payments in lieu of taxes" or equivalents (including "goodwill") that publicly owned utilities sometimes pay. That is, no funds unassociated with debt, local property taxes, or restricted dividends are transferred from the utilities to the city.

¹⁸ The operating component of revenue requirements is now subdivided into revenue "buckets" dedicated to material and non-material expenses and debt service apart from the acquisition bonds (NHPUC, 2017 and 2020).

¹⁹ In 2014, the stabilization fund was recharacterized from debt to equity (NHPUC, 2014). The fund initially applied to PWW only but was later prorated across the three utilities and subdivided to support the acquisition bond repayment, debt service, and material operating expenses (NHPUC, 2017).

Corporate Governance and Economic Regulation

Pennichuck emphasizes that its intrastate corporate structure and character as an “investor-owned” holding company were largely maintained, and that its three utilities are *not* municipal departments or water districts but subsidiaries of a corporation that itself is a subsidiary of its city parent. However, Pennichuck is segregated as a C-corporation under U.S. tax law. In this atypical case, the object of municipal corporatization was already an enfranchised investor-owned entity.

In effect, the transaction supplanted private investor-supplied capital with public investor-supplied capital and thus fiduciary obligations. In a sense, “public equity” is comparable to “private equity” in that neither subject to U.S. securities regulation as applies to publicly traded companies. Whereas the company once filed financial reports to private investors and the Securities and Exchange Commission (SEC), it now submits public annual, quarterly, and monthly reports to Nashua as its sole shareholder, along with required filings to the NHPUC. Nashua is also subject to credit rating reviews, comprehensive annual financial reporting requirements, and federal and state financial regulations related to debt.

The basic corporate structure was maintained to avoid “radical” disruption to operations, finances, and regulation and provide continuity to investors and other stakeholders (Pennichuck, 2017 and 2020). A distinctly technocratic governance structure was adopted at the time of the acquisition, specified in articles of incorporation and corporate bylaws. Pennichuck’s board is structured to be independent, non-parochial, and apolitical.²⁰ According to Article VIII, “The Sole Shareholder determines pursuant to the Special Legislative Authority that... the construction, management, control and direction of the Corporation shall be vested in the Board of Directors” (Pennichuck, 2012). The directors bear fiduciary responsibility to the corporation and are expected to “possess the highest personal and professional ethics, integrity and values and be committed to representing the long-term interests of customers, employees and the Sole Shareholder” (Pennichuck, 2017).

Since its formation, Pennichuck has appointed directors with relevant experience and qualifications. In the two years following the transition, Nashua’s mayor initially sat on the board for continuity. Subsequently, no members can be currently or recently elected officials of the served communities or the city’s department of public works director or committee members (or family members thereof). The board must include seven to thirteen members, including at least five Nashua residents, at least one customer who does not reside in Nashua, and at least one nominee to represent the Merrimack district. The board nominates its members, who are approved by the city-shareholder at its annual meeting and serve three-year staggered terms. The board holds monthly open meetings, and the directors are compensated at \$12,000 annually.

The board retains and determines the CEO’s compensation and sets the budget. Directors have access to company officers. Pennichuck interacts with the city-shareholder through the Board Chair and CEO and is mainly in the form of financial reports and quarterly briefings to a water committee (available at pennichuck.com). The city’s decision-making role is confined to major

²⁰ The corporate governance model is structured to assure “that decisions are based on sound business and financial analysis, and in a manner that minimizes political considerations” (Pennichuck, 2020).

asset sales (including land) and financing, subject to regulatory review but not a popular vote; it has no other say over capital projects (NHPUC, 11-026).

From a citizen-ratepayer perspective, a key benefit of the Pennichuck model is that NHPUC remains an independent arbiter and regulator (Pennichuck, 2011b), with protective intervention by the state consumer advocate and stakeholders.²¹ Commission decisions carry the force of law; while appealable, the courts generally defer to regulators' subject-area authority and expertise. Before, during, and after the transition, economic regulation has imposed an additional layer of transparency and accountability, including detailed financial reporting and rate reviews. The OCA actively intervenes in Pennichuck cases before the commission to advocate for all of the company's ratepayers (oca.nh.gov). Protection of outside-city customers is among the primary rationales for extending state regulation to municipal utilities. For the most part, rate cases at two to three-year intervals are not highly contested and routinely settled by parties.

Pennichuck's three utilities are separately regulated by the NHPUC. Each must file detailed publicly available annual financial and operating reports in accordance with a state system of accounts that applies to all regulated water utilities. Regulators review and approve revenue requirements (comprised of capital and operating expenditures) and major financial decisions and authorize changes to rates and rate structures. They also provide a forum for addressing unresolved complaints or disputes with the utilities. Based on financial reporting to the NHPUC in 2020, the cost of economic regulation (rate expenses and fees) averages about \$4 annually per customer.

Regulating Pennichuck requires a customized hybrid approach to accounting and ratemaking. The NHPUC continues to follow generally accepted accounting and regulatory principles applicable to investor-owned utilities, referred to as the "utility basis" for accounting and ratemaking. However, corporate finances have mostly transitioned to a cash-flow ("cash-needs") model more common to non-private enterprises to accommodate the terms of the agreement (NHPUC, 2017). Post-transition, the Pennichuck utilities also have access to tax-exempt and state-managed financing options, subject to caps on availability.

Similar to a debt-service coverage model, rates are set with a ten percent "overcover" on the debt (principal and interest) obligation, which mitigates expected deviations in revenues from test year sales due to weather and other factors affecting demand. Following the same logic, Pennichuck recently introduced a ten percent overage on operation and maintenance (O&M) expenses. The funds provide reserves for shorter-term capital needs, such as vehicles, computers, and other equipment. Like other regulated utilities in the state, Pennichuck also utilizes an authorized capital project surcharge mechanism to make gradual rate changes that ensure coverage of debt service and property taxes between rate cases (NHPUC, 2019a).²²

The transition marked a shift in orientation, incentives, and accountability. The model eliminates the drive toward profits achieved by capital investment under rate-base with rate-of-return

²¹ The NHPUC currently regulates 11 water utilities, down from 39 in 2000; 18 were small utilities absorbed by larger ones (NHPUC, 2019a). Publicly owned utilities are regulated if they differentiate rates for outside-city customers (puc.nh.gov).

²² Use of the Qualified Capital Project Annual Adjustment Charge (QCPAC) requires that projects are in service, financed with approved debt, and consistent with an approved capital budget; rates remain subject to review and reconciliation.

regulation applicable to the private sector. In particular, the utility has no incentive to favor capital over operating expenditures, overinvest (“gold-plate”), or pursue uneconomic activities, including growth for the sake of growth. Investment is driven by customer and community needs. As the capital structure does not include shareholder equity, regulators cannot withhold investment returns to impose performance discipline. However, layered oversight by the state regulator and the city-shareholder maintains ample accountability and synergistic incentives for prudent operations (Figure 2).

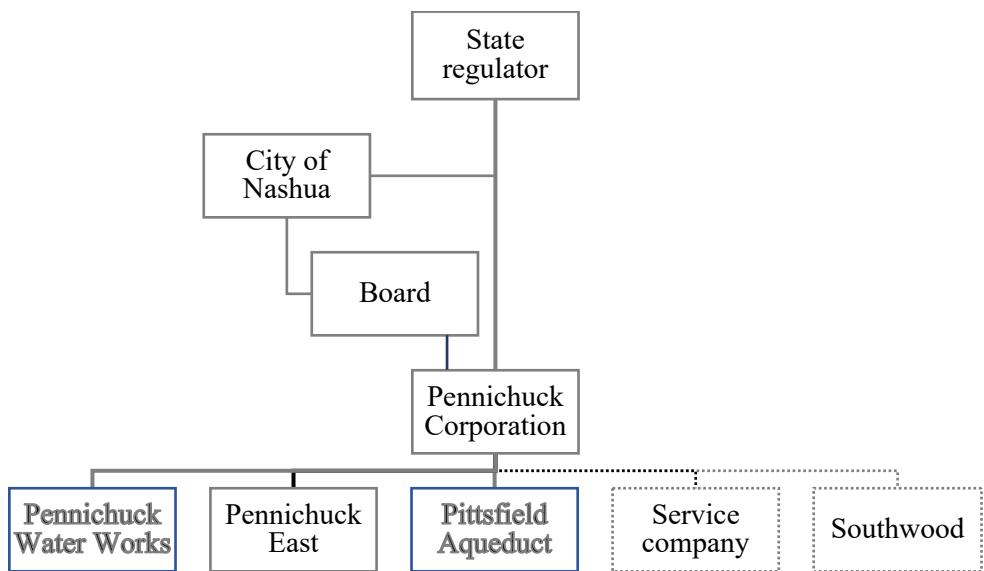


Figure 2. Pennichuck’s governance and regulatory model.

Analysis and Findings

The descriptive case study analysis hypothesizes that Pennichuck’s structural transition, conditioned by the stock purchase terms, would manifest in key financial outcomes and that the impact on operations would be negligible. Publicly available data is used to quantify and analyze trends for the 2008-2020 period, interrupted in early 2012; that is, four years *ex-ante* (2008-2011) and seven years *ex-post* the transition (2012-2020) are considered.

The data are from annual financial reports from Nashua, the NHPUC, and the SEC. Economic regulation and associated reporting conventions and requirements, rate cases, and audits were a constant before and after the entire transition, which implies that revenue requirements and rates

reflect the full cost of service for the Pennichuck utilities. Pennichuck's operating team also saw the transition through and remained with the company. The utilities themselves did not experience significant structural changes over the period. The analysis thus controls for the potential effects of these factors on the company's financial performance.

For an informal counterfactual perspective on a few indicators, which helps control for state economic and policy effects, Pennichuck is compared to Aquarion Water,²³ a multi-state corporate holding company subsidiary and the second-largest regulated investor-owned utility in New Hampshire (NHPUC data) and the city of Manchester's unregulated municipal utility (city budget data). An overview of these peer utilities is provided in Tables 4a and 4b. Pennichuck is comparable in some respects to Manchester but may have scale advantages over Aquarion. However, evaluating and comparing operational efficiency is beyond the scope of this study.

The analysis focuses on the following metrics: cost of capital, operating expenses, management fees, income and other taxes, bond repayment, utility rates, and non-financial performance indicators. The research goal was to detect relative changes in performance.

Cost of capital

The financial summary for Pennichuck in 2008 and 2020 provided in Table 5 demonstrates the shift away from net income and dividends toward debt and cash reserves. Pennichuck's lower cost of capital following the transition is indisputable, consistent with expectations. Based on the last case for PWV before the transition, the utility's weighted cost of capital was 7.98% based on a cost of equity at 9.75% (50.45%) and a cost of debt at 6.19% (49.55%) (NHPUC, 2011a). This finding compares directly to the acquisition bond debt rate of 4.09% and note rate of 5.75%. In other words, Pennichuck's cost of capital was cut nearly a third by eliminating higher-cost equity and lowering the cost of debt (NHPUC, 2011b). The company also now avoids the tedious and often costly litigation of the cost of equity in rate cases.

With the transition, Pennichuck received an infusion of "equity" from Nashua that will diminish over time as subsequent capital investment is 100% debt-financed; the company's transforming capital structure is shown in Figure 3.²⁴ In 2012, the first year of the transition, Pennichuck had four debt issues through the state's revolving fund at a weighted interest rate of 2.89%. Aquarion issued bonds in 2012 at 4.45% (NHPUC Annual Reports). In recent years, Pennichuck has actively refinanced its outstanding debt to lower interest rates. By issuing debt through the state's business finance authority, the utility can also lower its transaction costs. The company's most recent rate filing reported total interest costs of 4.01% (NHPUC, 2020b). Pennichuck's lower cost of debt is closer to that of Manchester than Aquarion (Figure 4).

Operating expenses and overhead

Following the transition, also as expected, Pennichuck realized anticipated shifts in expenditures. Operating expenditures as a share of revenues appear to trend higher for Pennichuck than Aquarion soon after the transition (Figure 5), a finding consistent with the capital investment (nonoperating) orientation of privately owned utilities.

²³ Aquarion has undergone three corporate ownership transfers since 2002.

²⁴ Nashua's formal equity stake in Pennichuck in 2019 was about \$2.7 mil., with total debt valued at \$212 mil. (Pennichuck, 2020).

As a broad proxy for overhead, Figure 6 illustrates a 7% reduction in “administrative and general” (A&G) expenses relative to total O&M expenses. For Pennichuck, the A&G percentage is lower than that for Aquarion but higher than Manchester, which may be due to corporate structures and wages. Figure 7 confirms a sustained reduction in officer salaries relative to O&M; salaries overall initially dropped as a percentage but returned to the pre-transition level. Figure 8 indicates that Pennichuck’s amortized regulatory expenses are relatively constant and lower than Aquarion’s expenses, which appear unamortized. Figure 9 shows that customer expense as a percentage of operation and maintenance expense appears to trend slightly lower for Pennichuck, and Aquarion saw a significant spike in 2019 and remains higher.

Management fees

Across the study period, as seen in Figure 10, Aquarion incurred management fees that ranged between \$600,000 and \$800,000. Prior to the transition, Pennichuck also incurred these expenses. The negative values afterward, reflecting income compared to expense, appear to account for the post-transition business model and the salary-related expenses incurred by PWW to manage the other two utilities.

Income and other taxes

Pennichuck’s operations remain subject to income tax, although limited in the study period due to transition finances and tax-reform effects. Pennichuck’s substantial local taxes on “real property, plant, and equipment” relative to operating revenues increased steadily over the study period (Figure 11), suggestive of goodwill. The impact on revenue requirements and rates is material. In 2020, Pennichuck’s “taxes other than income” amounted to about \$6.36 mil. (13% of operating revenues). Pennichuck also charges its municipal customers for the cost of fire protection services, generating revenues of \$6.31 mil. in 2020 (13% of operating revenues). This cost allocation practice offsets ratepayer funding for this function. For comparison, Aquarion’s taxes other than income amounted to about 12% of revenues, and fire protection revenues were about 17%.

Net income

Pennichuck’s transition marked a managerial reorientation away from shareholder returns. Net income is an indicator of profit available to equity shareholders and measured by operating revenues less operating, depreciation, tax, and interest expenses. Figure 12 illustrates net income for Pennichuck and Aquarion relative to operating revenues, net plant, and equity capital. The findings contrast the for-profit and not-for-profit business models along these key indicators, familiar to economic regulators.

Bond repayment

Ratemaking mechanisms to ensure repayment of Nashua’s acquisition debt were central to the settlement and its approval. Figure 13 summarizes Pennichuck’s depreciation and amortization expenses and dividends along with payments to Nashua to cover the principal and interest on the note that mirrors the city’s debt service on the acquisition bond, validating the model as proposed. A special dividend of \$500,000 was paid in 2013 as partial recovery of Nashua’s eminent domain costs, as authorized under the settlement.

Utility rates

Post-transition cost savings by Pennichuck should translate into relatively lower water bills, which is of clean importance to ratepayers. Utility rates and bills cannot be considered in isolation. When regulated, they will generally reflect the cost of service, but costs are influenced by various factors, many of which are uncontrollable. Non-regulated utilities may utilize financing, costing, and ratemaking methods that have the effect of lowering rates.²⁵ Figure 14 compares metered revenues to metered gallons sold for Pennichuck and Aquarion, observing a steeper increase for Aquarion over time.

Figure 15 compares bills across New Hampshire regulatory water utilities in 2008 and 2019 (as reported by the NHPUC), considering only utilities for which the 2019 rates were available and excluding those with fewer than 1,000 connections. Many of these systems were likely affected by structural changes, including the consolidation of smaller systems. Customer bills for Pennichuck's core system and Aquarion were comparable in 2008 but escalated at a higher rate for Aquarion.

Non-financial indicators

Based on federal and state data on drinking water regulatory compliance for the 2015-2020 post-transition period (epa.gov), performance issues in this area are not detected for the Pennichuck utilities. That is, the water quality of the Pennichuck systems appears comparable to that of Aquarion and Manchester.

In 2020, and comparable across the study period, PWW produced 96% of its water for distribution compared to 27% for Pennichuck East and 100% for Pittsfield and Aquarion. Water sold relative to production is a general indicator of "nonrevenue" water, including but not limited to water used for maintenance and losses. Figure 16 reports water sold relative to total water produced and purchased. Pennichuck's water sales are generally higher than those of Aquarion, with a period of mixed results following the transition and improvement in recent years.

Consumer concerns and disputes that are not resolved by a regulated utility can lead customers to contact the state commission for informal or formal resolution. The contacts are related to various aspects of the terms and quality of service, including general inquiries and specific complaints, but typically involve rates and billing issues. Following the acquisition, contacts with the NHPUC regarding the Pennichuck utilities trended downward (Figure 17). More contacts were recorded for Aquarion until recent years. An uptick in 2020 for Pennichuck East, and thus the utility as a whole, was driven by contacts related to rates.

²⁵ An example is the use of "system development charges" by publicly owned utilities, which can lower revenue requirements from rates; Pennichuck does not utilize these charges but Manchester's tariff specifies fees of \$1,157 (manchessternh.gov). Manchester also differentiates rates for inside and outside-city customers.

Discussion and Conclusions

Several lessons can be drawn from the storied Pennichuck case and Nashua's unrelenting and tenacious pursuit of its interest over a decade. The transition from private to public ownership is always controversial, highly litigious, and starkly incomparable to privatization. Taking private property, and the profit opportunity it confers, is regarded as a threat. Financial, procedural, and political transaction costs likely serve as a substantial deterrent to initiating the process, even given potential benefits.

Although eminent domain may have provided legal and regulatory leverage, Pennichuck and Nashua settled on a stock purchase agreement, which may be a better process with better results. The governmental shareholder model offers a viable structural alternative with several advantages. Assuming reasonable economic and financial conditions, not the least of these are the lower costs of capital and operations that translate to lower rates to customers. A detailed trend analysis confirms that expected outcomes were largely realized. Although Pennichuck regards itself as corporatized, technocratic, and apolitical, its orientation turned away from shareholder returns. Responsibility and responsiveness now rest with the city-shareholder as a public trustee, with ultimate accountability to elected officials and thus voters.

If structural competition among monopoly ownership forms serves the public interest, as some of the privatization literature implies, public and regulatory policies could be more facilitative. Reforms could aim to level the playing field by providing a neutral forum for bidirectional contestability and franchise transfers within reasonable timeframes and financial parameters. In other words, public acquisitions could be as feasible as private acquisitions. However, as municipalization has become more arduous, privatization has become more expedient. Asymmetrical policies, processes, and practices heavily favor the valuation and preservation of private property, and thus private-sector interests in acquisitions and takings, despite implications for costs and affordability. Seemingly innocuous policies in the name of consolidation may mask a privatization agenda.

Total stock buyouts are mostly moot for the water sector, as only eight water utility companies are publicly traded, and all but two are multi-state holding companies.²⁶ Attention could focus instead on replicating a process for partial divestiture. Shareholders could be justly compensated from any buyer at an indifference price based on the documented book value of monopoly assets, overseen by independent and ownership-agnostic regulators. Adjustments to the purchase price could be granted when regulators can affirm commensurate and demonstrable benefits to ratepayers. Private-sector managerial bias against governmental buyers and associated incentives could be prohibited. The private sector will remain advantaged as long as it can secure and exercise political and economic power. The corporate edge manifests in the authorized ability to pay substantial and speculative acquisition premia for publicly or privately owned assets (inflating valuations across the water sector), particularly when it can pass these costs onto ratepayers. It is antithetical for the public sector to pay a premium for assets that serve the polity rather than generate profits.

²⁶ American (AWK), Essential Utilities (WTRG), San Jose Water (SJW), American States (AWR), Middlesex (MSEX), and Artesian (ARTNA) are multi-state holding companies; York (YORW) and Torrington (TORW) are intra-state companies, as was Pennichuck (PNNW).

Another lesson from Pennichuck is that unbiased economic regulation can provide a framework for evaluation and dispute resolution, including negotiated settlements, that can be more effectual than judicial proceedings. Transferring assets to a government buyer could also be enhanced if cities were allowed to issue tax-exempt debt for the purchase to lower the total cost substantially. Debt instruments could include low-cost government-backed loans or dedicated infrastructure or “private-activity” bonds sometimes promoted by investor-owned utilities for their purposes. Pennichuck’s structure could also be replicated as a means of transitioning to another form of public ownership, including the formation of water districts to broaden governance and capture scale economies in water production and treatment. Incentive-based debt rates could promote beneficial regionalization.

One case study is not sufficient proof of concept and, as in other eminent domain cases, the process is less than ideal. Nonetheless, the parties were able not only to resolve their protracted dispute but to celebrate the terms on which they settled. The key is to structure the transition to satisfy the interests of both *ex-ante* and *ex-post* shareholders. Pennichuck’s synthesis of intrastate corporate enterprise, state economic regulation, and accountability to the polity is potentially relevant to all public infrastructure providers and could be formally or informally emulated. Despite outcomes consistent with objectives, the case leaves open the possibility of alternative governance modes that promote political engagement for the democratic expression of community values in water service provision.

Table 1. Financial summary of Nashua's Pennichuck acquisition costs.

Cost of eminent domain in 2008 (1)	
Compensation to shareholders for PWW assets only	\$203,000,000
Mitigation fund for non-PWW subsidiaries	\$40,000,000
Nashua's recoverable eminent domain costs (2) (3)	\$4,458,232
Contractor (Veolia) transition fee (3)	\$1,400,000
Total cost of eminent domain for PWW only	\$248,858,232
Direct cost of stock-purchase in 2011 (4)	
Compensation at \$29/shares for all PNNW assets	\$138,413,923
Establishment of rate stabilization fund	\$5,000,000
Transaction costs and fees (5)	\$3,859,505
Severance costs for senior corporate officers	\$2,300,113
Bond issuance costs and fees	\$996,460
Total direct costs funded by taxable bonds	\$150,570,000
Nashua's bond-funded loan to Pennichuck	(\$120,000,000)
Nashua equity investment in Pennichuck	(\$30,570,000)
Indirect cost of stock purchase in 2011	
Assumption of debt by Nashua (est. for 2012)	\$60,000,000
Nashua's recoverable eminent domain costs (2)	\$4,458,232
Total indirect cost of acquisition	\$64,458,232
Total cost of stock purchase for all PNNW assets	\$215,028,232
Cost advantage of stock purchase agreement (est.)	\$33,830,000

Source: Nashua (2011), Pennichuck (2011b, 2018), NHPUC (2013). Cost estimates are time-sensitive, and values are affected by rounding.

PNNW = Pennichuck Corporation (parent company); PWW = Pennichuck Water Works.

(1) Estimated by parties in 2011, not adjusted for post-2008 capital expenditures.

(2) Based on a staff audit and recommended disallowances, recoverable eminent domain costs were reduced from \$5 mil. (NHPUC, 2014).

(3) Not included in 2011 estimates.

(4) Direct costs were originally estimated at \$152,099,885 (NHPUC, 2013).

(5) Include legal and accounting fees, investment banking fees, and the City's due diligence costs.

Table 2. Comparing the terms of the takeover models

	Eminent domain taking (2008)	Stock purchase agreement (2011)
Total cost	\$249 mil. with \$203 mil. to shareholders (Table 1).	\$215 mil. with \$138 mil. to shareholders (Table 1).
Taxes and debt effects	Corporate investors would cover a \$50 mil. corporate income tax liability and \$65 mil. in debt triggered by the sale of PWW.	Structured as tax-neutral, and city assumes \$60 mil. in debt.
Contributed capital	Not applicable.	\$30.6 mil. in contributed capital, including \$5 mil. to establish the rate stabilization fund.
Assets transferred	PWW only (core utility) with possible devaluation of other assets.	All assets of the three utilities and the two other subsidiaries with value maintained.
Watershed land	Some undeveloped watershed land included.	All available undeveloped watershed land included.
Ownership and control	City with potential for politicization.	City with regional structure and independent governance.
Economic regulation	State regulation of the municipal and other two utilities.	Continued state regulation of the three utilities implemented.
Operations	Private contract operations with uncertainty for employees and customers.	Current operating personnel and arrangements maintained, resolving uncertainties.
Efficiency	Lowers efficiency of operating three utilities.	Maintains efficiency of operating three utilities.
Financing the acquisition	Tax-exempt bonds.	Taxable bonds.
Special accounting and ratemaking treatment	Not applicable.	Municipal acquisition regulatory asset (MARA), rate stabilization fund, city bond fixed revenue requirement, and conditional recovery of city's eminent domain costs from profit.

Source: Nashua (2011), Pennichuck (2011b, 2018). Cost estimates are time-sensitive.

Table 3. Comparison of Pennichuck corporation *ex-ante* and *ex-post* transition.

	Pennichuck <i>ex-ante</i>	Pennichuck <i>ex-post</i>
Corporate holdings	Three regulated utilities and two unregulated subsidiaries.	No change.
Ownership and governance	Investor-owned by equity shareholders and national corporate board of directors, and ongoing ownership uncertainty.	Investor-owned by a sole municipal shareholder with an independent board, ownership stability, and commitment to transparency.
Corporate equity	Publicly traded stock.	Delisted with transfer to the sole shareholder.
Financial regulation	Federal and state securities regulation.	Sole shareholder oversight.
Economic regulation	NHPUC with case intervention by the OCA.	No change.
Environmental regulation	New Hampshire Department of Environmental Services.	No change.
Overhead	Corporate compliance costs and senior officer compensation.	Reduction of overhead and senior officer positions valued at \$1.7 mil.
Operations	Ongoing contractual and fee-based supply and management obligations, and operational efficiencies.	No disruption of contracts, operations, or personnel (“plug-n-play” at competitive wages).
Transparency	Regular public reporting to the SEC and NHPUC.	Regular public reporting to the city-shareholder and NHPUC.
Financing and cost of capital	Debt and equity capital at higher market-based rates, with risk and return premia under regulation.	Debt financing of future capital expenditures at cost, utilizing taxable and tax-exempt bonds, state financing programs, and a fixed line of credit.
Depreciation expense	Cash flow for repaying equity investors (return of investment).	Cash flow for promissory note payments to the city for retiring the acquisition bond debt.
Corporate orientation	Shareholder equity interests and returns.	Community water service needs and operational efficiency.
Investment incentives	Driven by potential for shareholder returns.	Driven by system needs rather than returns to the shareholder.
Dividend distributions	Paid to shareholders.	By design, none to the city-shareholder in excess of debt service or recovery of eminent domain costs.
Federal and state income taxes	Corporate income taxes.	Corporate income taxes, including payments based on amortization of the non-deductible acquisition-created regulatory asset and prior contributed capital.
Local property taxes	Taxes on real property, including plant and equipment.	No change and no other franchise fees or payments in lieu of taxes.
Accounting and ratemaking	Utility basis for accounting and ratemaking.	Cash-flow basis with unique bond repayment, rate stabilization, and coverage mechanisms.
Cost of service and rates	Higher revenue requirements and customer rates.	Lower revenue requirements and customer rates.

Source: Authors’ construct based on case study documents. On tax issues, see Pennichuck (2020).

Table 4a. Utilities compared in the analysis: overview (2020).

	Founded	Communities served	Net utility plant (000)	Operating revenues (000)
Pennichuck Water Works	1852	11	\$176,129	\$36,539
Pennichuck East Utility	1998	19	\$60,764	\$9,805
Pittsfield Aqueduct	1998	1	\$3,020	\$808
Pennichuck utilities (consol.)	-	31	\$239,914	\$41,152
Aquarion Water	1857	57	\$44,694	\$7,622
City of Manchester	1871	7	\$129,660	\$18,926

Source: 2020 Annual reports and utility websites. n/a = not available.

Table 4b. Utilities compared in the analysis: customers (2020).

	Residential	Commercial	Industrial	Municipal	Total
Pennichuck Water Works	26,601 (92%)	1,985 (7%)	229 (1%)	163 (1%)	28,978
Pennichuck East Utility	7,925 (95%)	384 (5%)	-	43 (1%)	8,325
Pittsfield Aqueduct	554 (85%)	78 (12%)	7 (1%)	10 (2%)	649
Pennichuck utilities (consol.)	35,080 (92%)	2,447 (6%)	236 (1%)	216 (1%)	37,979
Aquarion Water	8,464 (92%)	693 (8%)	2 (0%)	63 (1%)	9,222
City of Manchester*	n/a	n/a	n/a	n/a	32,000

Source: 2020 Annual reports and utility websites. n/a = not available. *Total reported “domestic services” reported at manchesternh.gov/

Table 5. Pennichuck parent company financials pre-transition and post-transition.

Income statement summary	2008 (000)	2020 (000)
Operating revenues	\$30,979	\$49,700
Total operating expenses	(\$23,569)	(\$39,400)
Net operating income	\$7,410	\$10,300
Interest expense	(\$3,649)	(\$11,900)
Other income or expense (net)	\$3,703	\$100
Income before provision for income taxes	\$7,464	(\$1,500)
Provision for income taxes	(\$2,743)	(\$500)
Net income	\$4,721	-\$2,000
Earnings per common share (diluted)	\$1.11	n/a
Dividends declared per share	\$0.66	n/a
Dividends declared total	\$2,816	\$300
Balance sheet summary		
Property, plant, and equipment (net)	\$151,319	\$242,469
Total assets	\$174,954	\$347,291
Long-term debt	\$65,110	\$226,912
Shareholders' equity	\$47,780	\$412
Total capitalization including line of credit	\$114,030	\$347,297
Cash-flow statement		
End of year cash	\$91	\$9,432

Source: 2020 Annual shareholder reports.

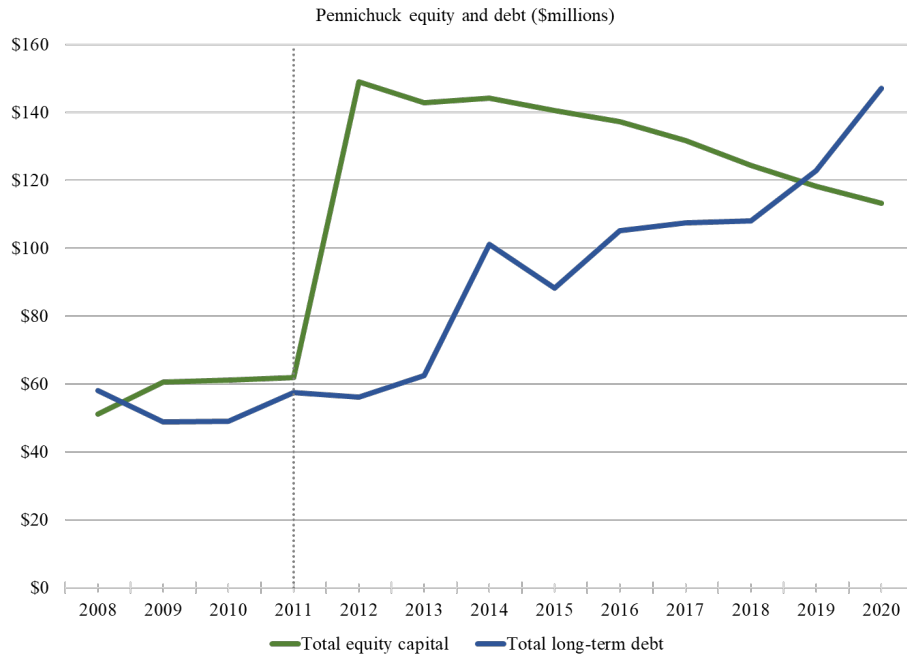


Figure 3. Pennichuck’s capital structure (equity and debt) as booked.

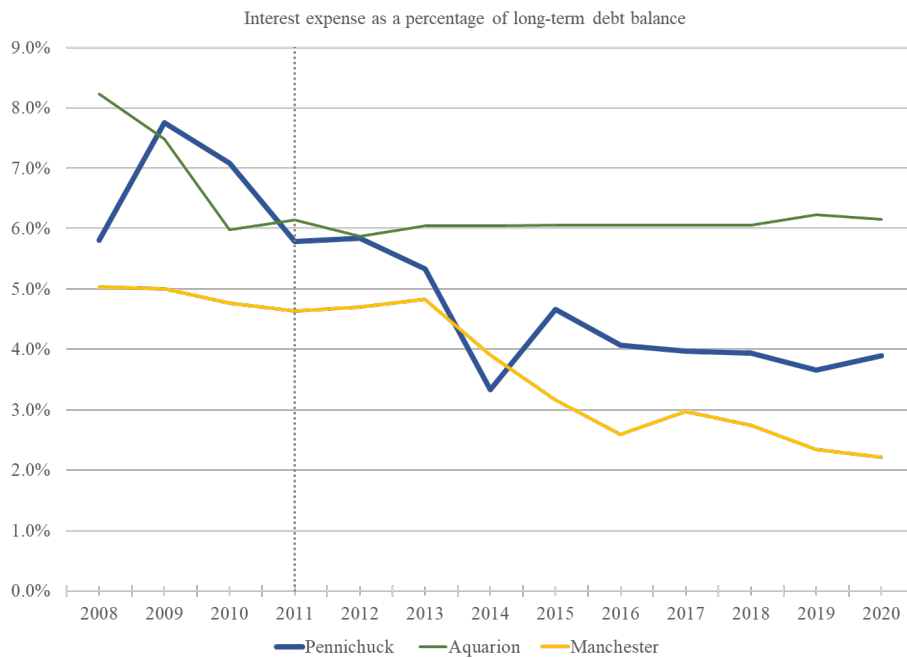


Figure 4. Interest expense as a percentage of the long-term debt balance.

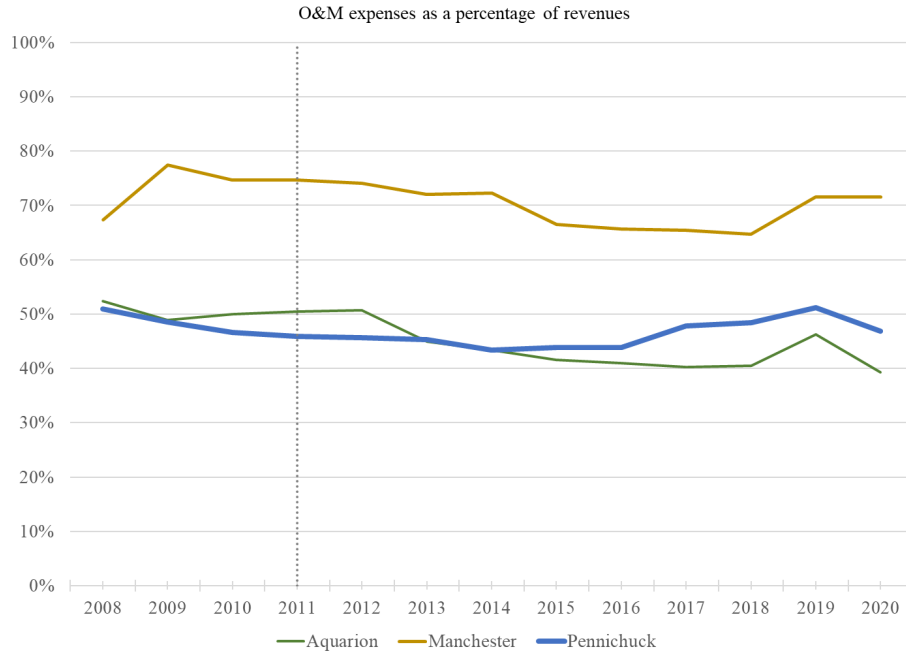


Figure 5. Operation and maintenance expenses as a percentage of revenues.

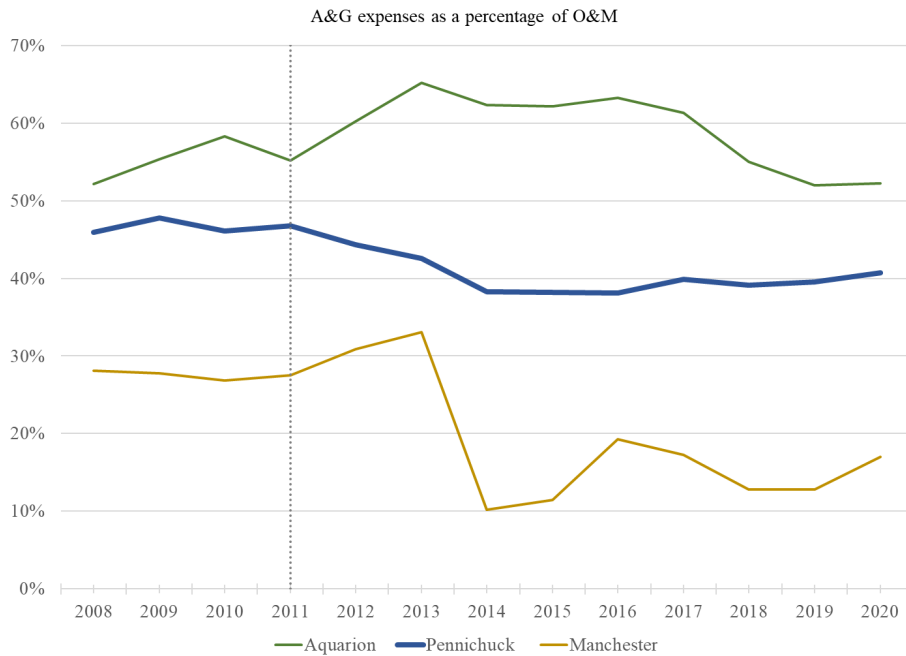


Figure 6. Administrative and general expenses as a percentage of operation and maintenance expenses. Note: information technology expenses are included.

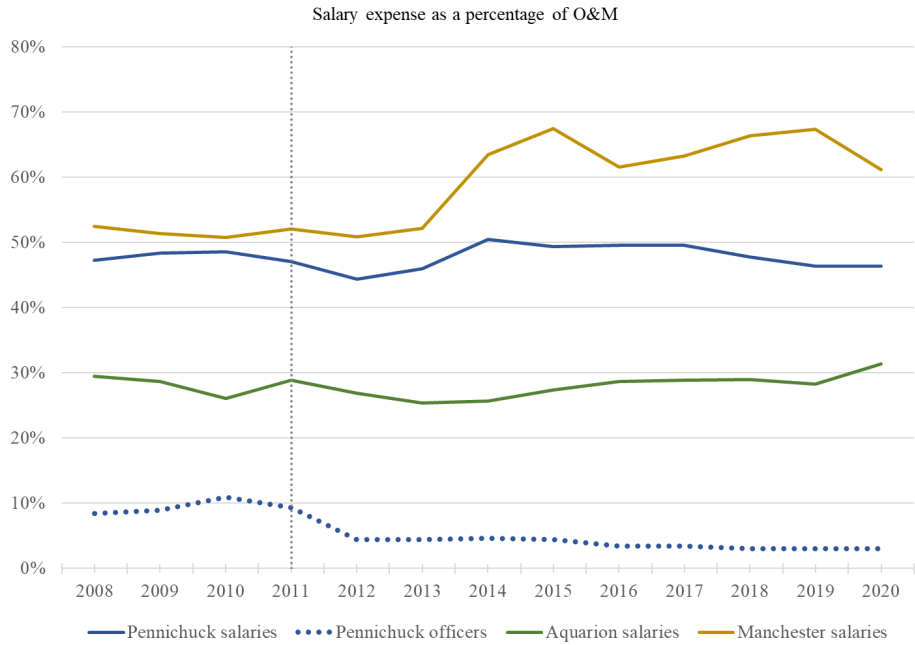


Figure 7. Salary expense as a percentage of operation and maintenance expense.
 Note: officers are included in Pennichuck’s total.

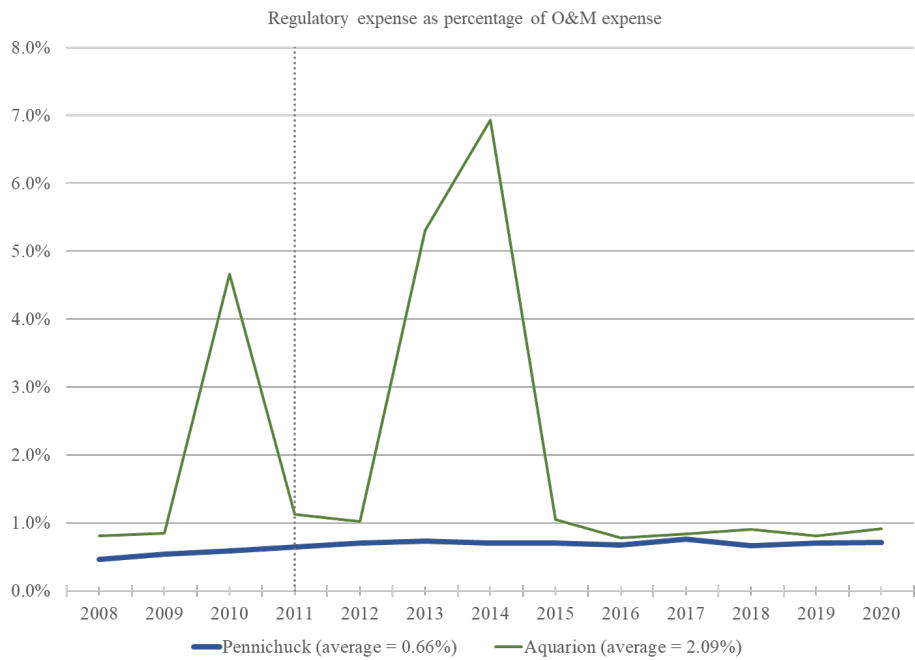


Figure 8. Regulatory expense and a percentage of operation and maintenance expense.

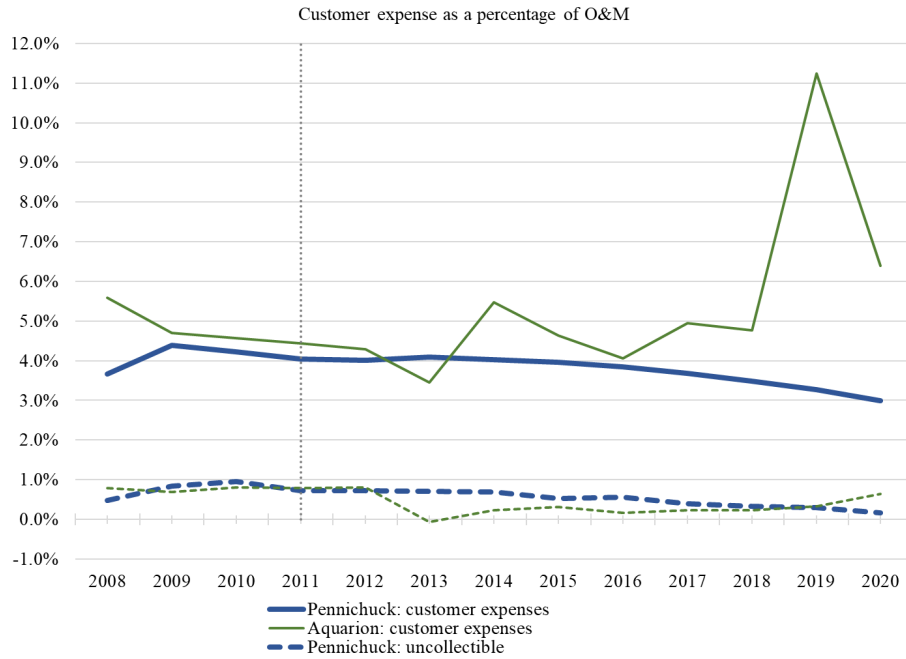


Figure 9. Customer expense as a percentage of operation and maintenance expense.



Figure 10. Management fees and expenses.

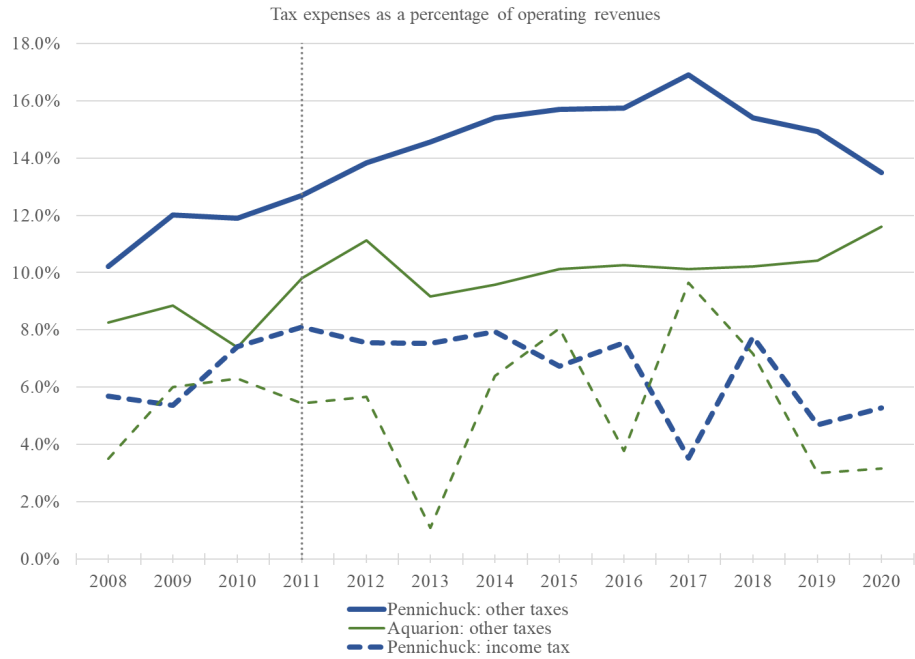


Figure 11. Tax expense as a percentage of operating revenues.



Figure 12. Net income relative to operating revenues, net plant, and shareholder equity.

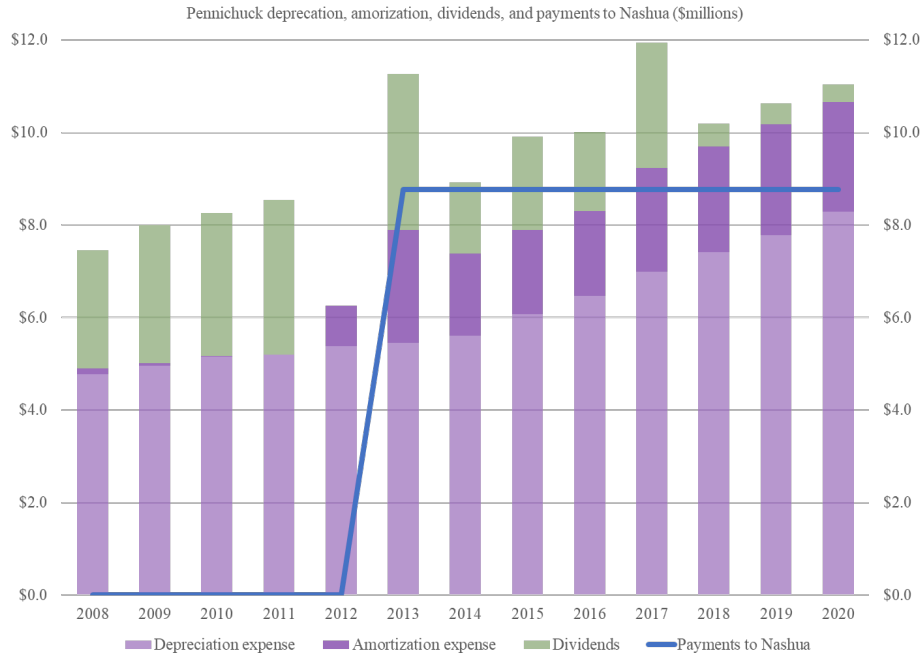


Figure 13. Depreciation, amortization, and dividends for Pennichuck’s utilities and corporate payments to Nashua. Note: depreciation for 2011 is net of negative amortization.



Figure 14. Aggregate metered revenue per metered gallons sold.

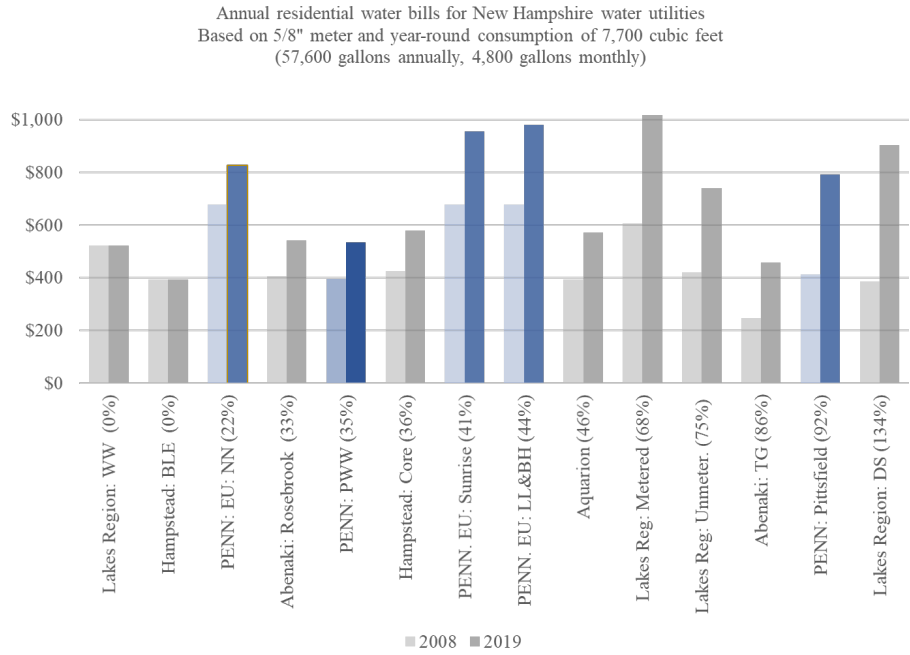


Figure 15. Water bills of New Hampshire Regulated Companies, 2008 and 2019
Source: New Hampshire Public Utilities Commission (2009 and 2020b).

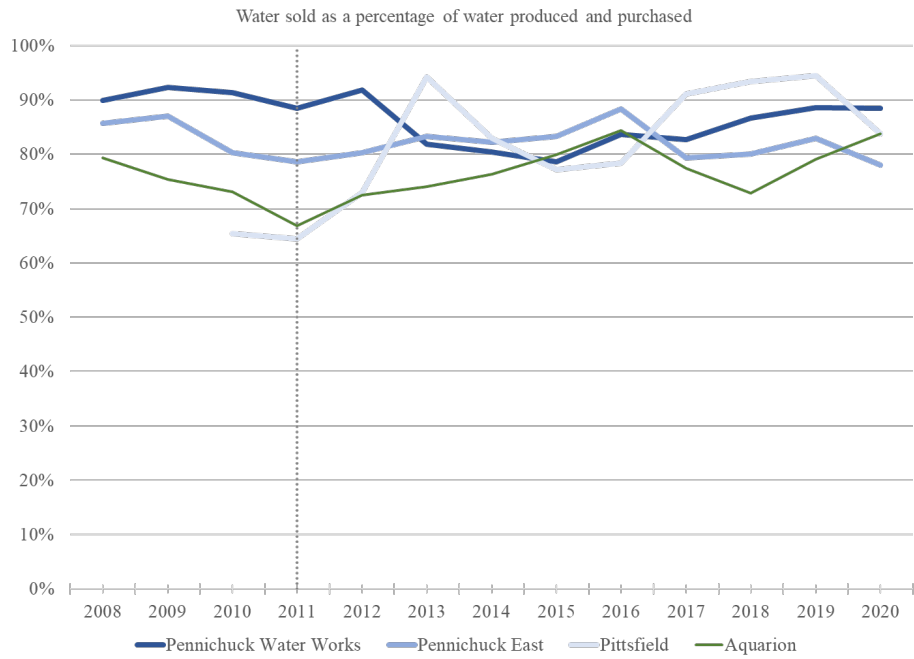


Figure 16. Water sold as a percentage of total water produced and purchased.

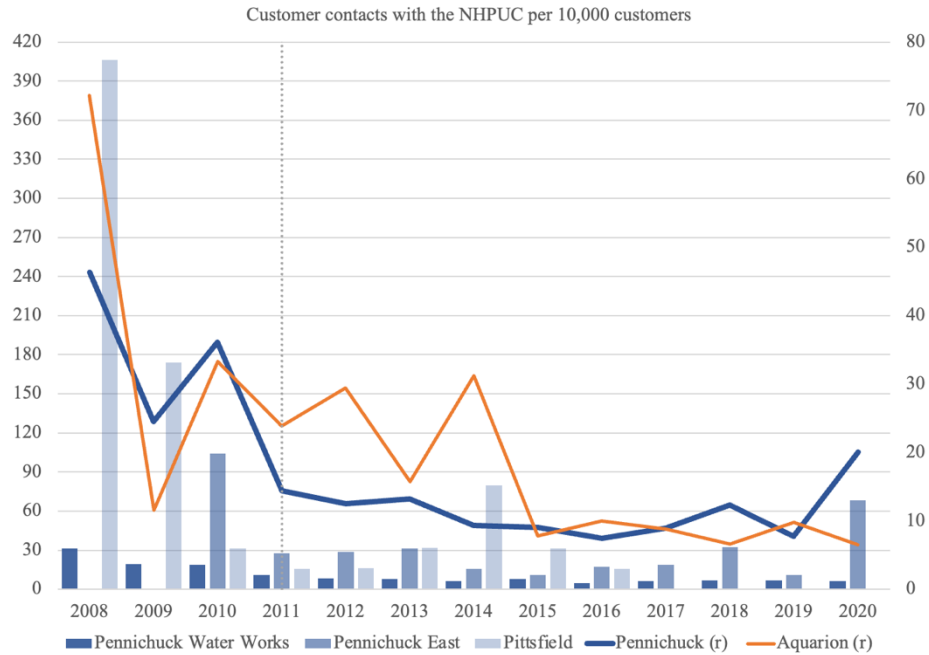


Figure 17. Consumer contacts with the New Hampshire Public Utilities Commission.
 Source: Data provided by the NHPUC, weighted by the number of contacts for each Pennichuck utility; referral contacts were excluded as non-substantive.

Appendix: Timeline of the Pennichuck Corporation Ownership Transition

1997-07-01	New Hampshire statutes (Ch. 38) allow for municipal acquisitions of utilities with or without agreement of the parties (NHPUC).
1999	Growth-oriented PSC purchases Consumers Water Co., including its Maine operations (SEC).
2002	Aquarion Water is purchased by Kelda Group (UK), which also acquires certain American Water properties in 2002 (SEC).
2001-06-08	Pennichuck files for a 20.09% revenue increase; gets 14.43% (NHPUC, 01-081).
2001-10	Pennichuck's board forms a planning committee to evaluate strategic alternatives in the context of industry consolidation and other factors (SEC).
2001-12-14	By a 5-4 vote, Pennichuck's board votes to determine its potential value and soon after solicits bids from seven of ten potential acquirers (SEC).
2002-02-22	Pennichuck receives indications of interest from PSC and three other potential acquirers; formal bids were submitted 2002-04-15 (SEC).
2002-04-25	By a 5-4 vote, Pennichuck's board votes to merge with PSC (SEC).
2002-04-29	PSC announces "definitive agreement to merge" with Pennichuck in a stock purchase valued at \$106 mil. (including \$27 mil. in debt assumption) or \$33 per share (a 22% premium), specifying a \$2.5 termination fee (SEC).
2002-05	French-owned Vivendi North America Co. divests its stake in PSC (SEC).
2002-05-03	Pennichuck reviews the merger agreement with PSC at its board meeting but does not schedule a special shareholder meeting and vote (SEC).
2002-05-13	State legislation (SB 437) establishes a committee to study the formation of regional water systems and their eligibility for grant funding (NH).
2002-06-17	Pennichuck petitions the NHPUC to approve the PSC merger, asserting no adverse effects; Nashua and others intervene (NHPUC, 02-126).
2002-06-26	Nashua's board authorizes a \$100,000 consulting agreement to assess implications of the sale, released by the city engineer on 2002-07-25 (Nashua).
2002-07-02	Nashua intervenes in the Pennichuck-PSC merger case before regulators as it also considers forming a regional water district (NHPUC, 04-048)
2002-07-19	PSC experiences a significant dip in the share price of its stock (ticker WTRG).
2002-08-02	Nashua activist alderman convenes an ad hoc committee to explore forming a water district; 16 communities participate (Londonderry, Tel, NHPUC).
2002-11-01	Nashua's consultants release a comprehensive review of PNNW, highlighting options and potential "public savings" from public ownership (Rizzo, 2002).
2002-11	Nashua's mayor supports the concept of a regional water district (Tel).
2002-11-26	Board votes 14-1 to proceed with an eminent domain taking, schedules a January special election, commits funds for study and appraisal, and authorizes the Mayor to negotiate terms for participation in a regional utility (Nashua, NHPUC).
2002-12	Prior to the election, activists form Citizens for Local Water Control (NHBR).
2003-01-13	PSC registers a proxy statement and prospectus (No. 333-101556) detailing the acquisition (SEC).

2003-01-13	Voluntary Pennichuck Watershed Council, which supports public ownership, files a list of conditions for the PSC merger (NHPUC, 02-126).
2003-01-14	Pursuant to state law (RSA 38:3), by a referendum vote of 6,525-1,867, Nashua voters authorize the city to pursue the acquisition of Pennichuck (Tel).
2003-01-30	Nashua's consultants present a supplemental evaluation of Pennichuck's outside-city assets (Rizzo, 2003).
2003-02-04	Citing the referendum, a disappointed PSC terminates the merger with Pennichuck by mutual agreement (SEC).
2003-02-05	Nashua gives notice to Pennichuck's utilities indicating the city's interest in acquiring their assets (NHSC).
2003-03-25	Pennichuck indicates that it will not sell its assets to Nashua (NHPUC, NHSC).
2003-03-26	Nashua indicates by letter its intent to pursue an eminent domain taking (SEC).
2003-03-30	Pennichuck's 2002 10-k filing identifies Nashua's potential use of eminent domain as a "risk related to the company's business"; subsequent filings express its "vigorous opposition" to a "forced sale" (SEC).
2003-06-18	State legislation (HB 361, Laws 2003, Ch. 281) enables formation of regional water districts with bonding authority (NH).
2003-08-04	Pennichuck installs a new CEO under a three-year contract implying he will forego a substantial termination bonus if a "change of control" occurs through municipalization rather than sale (NHBR).
2003-11-20	Nashua claims to match PSC's stock purchase of the company by offering \$106 mil. plus \$15 mil. to cover corporate tax liabilities (SEC, Tel).
2003-12-15	Pennichuck's board unanimously rejects Nashua's buyout offer as lacking in due diligence, and not equivalent to the PSC offer or in the interest of shareholders based on valuation and tax liabilities (NHBR, Tel).
2003-12-16	Pennichuck implies that Nashua's public pronouncements may have violated federal and state securities law (NHBR).
2003-12-21	Pennichuck refutes rumors that it is seeking other buyers (NHBR, USDC).
2004-01-16	PSC changes its name to Aqua America and later to Essential Utilities when it expands into the natural gas sector (SEC).
2004-01-24	Water district organizers realize they may not be able to adopt Pennichuck's registered trade name (NHBR).
2004-01-27	Pennichuck terminates negotiations with Nashua over the three utilities (NHPUC).
2004-02-04	Pennichuck files suit in the state Superior Court to "end the limbo" by terminating or limiting the taking attempt based on constitutionality and set a deadline to file for eminent domain (NHSC, Tel).
2004-03-03	Pennichuck is fined by the Occupational Safety and Health Admin. (NHBR).
2004-03-25	Nashua petitions the NHPUC for valuation and acquisition of Pennichuck's three utilities; numerous stakeholders give notice to intervene (04-048).
2004-04	Charter to establish a regional water district is finalized (Tel).
2004-04-05	Pennichuck files a motion to dismiss or stay the proceeding (NHPUC).
2004-04-27	Nashua retains a consultant for representation in the eminent domain case before the NHPUC and indicates that the city will seek bids to operate the system (Tel).
2004-04-29	Reporting highlights higher water rates charged by privately owned utilities, citing Pennichuck as the highest among those serving more than 25,000 people (NHBR).
2004-05-28	Pennichuck files for a 16.39% revenue increase; gets 11.80% (NHPUC, 04-056).

2004-06-10	Pennichuck files a suit in U.S. District Court claiming violations of its civil rights, asserting laches, and seeking damages of \$5 mil. (SEC).
2004-09-01	State Superior Court dismisses Pennichuck's challenge to the eminent domain law and affirms NHPUC jurisdiction for the case (NHSC, Tel).
2004-09-13	U.S. District Court dismisses Pennichuck's claims as not ripe for review, declines supplemental jurisdiction, and remands the case to the superior court (USDC).
2004-10-01	NHPUC issues its pre-hearing conference order, finding "sufficient basis for Nashua to pursue, at a minimum, the taking of portions of the PWW system by eminent domain" (NHPUC, 04-048).
2004-11-23	Testimony by Nashua's consultant before the NHPUC projects that by 2015, rates would rise half as much under city ownership (NHBR).
2004-11-26	Pennichuck reports that legal costs are affecting its quarterly earnings (NHBR).
2004-11-27	Town of Milford contemplates creating its own water district (NHBR).
2004-12-16	In a settlement, federal and state regulators impose sanctions on Pennichuck's former CEO in connection with real estate transactions (SEC, No. 50869).
2004-12	State Superior Court rules against Pennichuck's claim of damages (Tel).
2005-01-21	NHPUC rules that Nashua cannot acquire Pennichuck corporate subsidiaries operating outside city boundaries (NHPUC, 04-048).
2005-03	Towns of Bedford and Pittsfield decide to pursue eminent domain takings against Pennichuck for assets within their boundaries (SEC).
2005-04-08	Parties agree to a procedural schedule for NHPUC eminent domain case starting September 2006, with a decision expected in 2007 (NHBR).
2005-09-06	Nashua's Water Special Committee interviews French firm Veolia to operate Pennichuck as a municipal utility under a private contract model with oversight by R.W. Beck; Veolia would be paid \$1.4 mil. for transition services and an estimated \$5 mil. annually (Nashua, NHBR, NHPUC).
2005-09	Parties argue before the state Supreme Court on the constitutionality of the state's eminent domain law (Tel).
2005-11-15	Pennichuck reports that legal costs are affecting its quarterly earnings (NHBR).
2005-11-08	Three of four candidates opposing the takeover, "aggressively" backed by Pennichuck, are elected to the Nashua Board of Aldermen (Tel).
2005-11-16	State Supreme Court upholds the constitutionality of the state's eminent domain law, the timeliness of Nashua's filing, and the commission's role in setting just compensation or damages (NHSC).
2005-12-08	A European mutual fund purchases a five percent interest in Pennichuck (NHBR).
2005-12-27	Nashua's board approves contingent operational contracts with Veolia and R.W. Beck (Nashua, R-05-355).
2006-01-12	NHPUC testimony by city consultants puts the value of PWW at \$85 mil. as of 2004-12-31 (NHPUC, SEC).
2006-01-12	Testimony by Pennichuck's CEO questions Nashua's choice to contract with Veolia, creating a private water sector rift (NHPUC, 04-048).
2006-03-20	Pennichuck announces that the CEO is leaving to head American Water (largest U.S. water holding company) and names an acting CEO (SEC, Tel).
2006-03-28	Alderman describes Pennichuck's proposal and Nashua's counterproposal as "worlds apart" (Tel).

2006-03-31	Pennichuck's 2005 10-k filing affirms its ongoing opposition to the taking while acknowledging that "we have publicly stated our desire to work with the City toward a fair and equitable solution" (SEC).
2006-04-13	NHPUC staff object to removing PWW from Pennichuck because it would harm other customers and undermine beneficial regionalization (NHPUC, 04-048).
2006-04-26	Recently departing Pennichuck CEO calls the NHPUC staff report a "going-away present," but city officials remain undeterred (NHBR).
2006-06-16	Pennichuck files for a 36.49% revenue increase; gets 11.07% (NHPUC, 06-073).
2006-08	Pennichuck's new CEO expresses confidence; compensation package incentives are conditioned on "disposition" or "resolution" of the dispute (Tel, NHBR).
2006-08-21	Nashua's Alderman sign a new confidentiality agreement to gain access to "inside information," revealing a \$100 mil. difference in positions (Tel).
2006-11	Parties engage in settlement negotiations at the NHPUC, to which the city brings a new offer to Pennichuck; company officials remain skeptical (Tel).
2006-11	Pennichuck advises the city that negotiations should be structured around a stock purchase at the parent company (PNNW) level and not a PWW asset sale, characterized as an "ultimatum" (Penn, Tel).
2006-11-08	Nashua's board considers the cost and legality of a stock purchase (Tel).
2006-11-17	By a 10-4 vote, Nashua's board authorizes three settlement proposals, including \$225 mil. for the entire company (Tel).
2007	Aquarion Water is sold from Kelda Group to Australia's Macquarie Bank (SEC).
2007-01-16	At the request of both parties, NHPUC suspends hearings for 120 days to allow them to negotiate a sales-purchase agreement (Tel).
2007-03-20	Reporting suggests that Pennichuck may be facing a looming debt crisis (NHBR).
2007-07-20	Special legislation (SB 206) specifies conditions by which Nashua can acquire Pennichuck by a stock purchase agreement (NHPUC, DW 11-026).
2007-07-16	Unable to reach a settlement, Nashua terminates talks and refers the case back to the NHPUC (Tel).
2008-06-23	Pennichuck files for a 14.72% revenue increase; gets 11.48% (NHPUC, 08-073).
2008-07-25	NHPUC (04-048) rules in favor of Nashua, finding that the PWW taking is in the public interest and places the value at \$203 mil., plus a \$40 mil. to mitigate the impact on subsidiaries, fixing the purchase price at \$243 mil. (NHPUC, Penn).
2008-07-25	Detailed dissenting opinion questions market assumptions, places PWW's value at about \$151 mil., and fixes the price at \$191 (NHPUC 04-048).
2008-08-22	Pennichuck seeks a rehearing, claiming 18 mistakes by the NHPUC (04-048), indicating plans to appeal to the state Supreme Court if denied (NHBR).
2008-08-27	Nashua seeks a rehearing, objecting to the price set by the NHPUC (04-048).
2008-09-14	Reporting raises questions about Veolia's water management record; local officials indicate they are unconcerned about its foreign ownership (NHBR).
2008-09-28	A survey finds that most Nashua residents support acquiring Pennichuck by means other than a taking, although views about ownership are divided (NHBR).
2008-10-13	Following prodding by certain shareholders, Pennichuck signals openness to a private stock sale settlement while noting its complexity (NHBR, Tel).
2008-11-17	Nashua officials meet in closed session and soon after retain business-law and investment banking services (NHBR).

2009-03	Both NHPUC appeals for rehearing are denied, and the parties announce plans to appeal the decision to the state Supreme Court (Tel).
2009-05-06	Pennichuck investors make the case for maximizing shareholder value by selling the entire company to the city (NHBR).
2009-05	Pennichuck's largest stockholder accuses the city of delaying a settlement and floats a deal at \$31 per share, but Nashua balks at the price (Tel).
2009-12-08	Nashua's investment bankers put Pennichuck's fair market value at \$25 per share; the city indicates it would reinstate eminent domain via pending litigation (Tel).
2009-09-29	Pennichuck appeals the NHPUC decision with the state Supreme Court (NHSC).
2010-01-21	Parties argue their cases before the state Supreme Court (Tel).
2010-03-25	State Supreme Court denies Pennichuck's appeal and unanimously upholds the NHPUC's 2008 ruling, meaning the city can pursue the taking at the \$243 mil. price; parties resume settlement negotiations (NHPUC, NHSC, Penn).
2010-05-07	Pennichuck files for a 16.23% revenue increase; gets 11.95% (NHPUC, 10-091).
2010-06	Nashua seeks an extension, Pennichuck consents, and negotiations continue; the extension expires on 2010-09-30 (Tel).
2010-06-10	Special legislation (Laws 1) amends N.H. Laws 347 to allow bond financing for Nashua's acquisition of Pennichuck (NHPUC, 11-026).
2010-11-11	Nashua and Pennichuck sign a definitive merger agreement and plan for a stock purchase price of \$138 mil. plus debt assumption (\$198 mil. total) to transfer PNNW in its entirety and resolve the ongoing disputes (Nashua, Penn).
2010-11-14	Nashua officials and residents express relief and optimism about the deal (Tel).
2010-12-19	Nashua unseals minutes of closed meetings to demonstrate its serious desire to negotiate a settlement throughout the process (Tel).
2011-01-06	Agreement is presented at a special meeting of Nashua's board (Nashua).
2011-01-11	By 14-1 vote, Nashua's board approves the merger agreement and the bond issuance (SEC).
2011-02-04	Parties petition the NHPUC (11-026) to approve their merger agreement and settle the eminent domain proceeding (04-048) in a consolidated case (NHPUC).
2011-04-22	Pennichuck's board files a definitive proxy statement calling for shareholder approval of the merger agreement (SEC).
2011-05-01	Reporting puts Pennichuck CEO's total compensation at \$451,000 (Tel.)
2011-06-15	With unanimous support of the board, Pennichuck corporate shareholders vote to approve the merger agreement, lauded as in the company's best interest (SEC).
2011-04-29	Agreement is presented by Pennichuck favorably and in detail at a regional water industry conference (SEC).
2011-10-09	Pennichuck faces controversy as it prepares to sell its last developable land in Nashua; Nashua had considered buying the land in 2003 (Tel).
2011-10-18	Nashua files a settlement agreement excluding the OCA (NHPUC, 11-026).
2011-11-23	NHPUC authorizes the transaction as "in the public interest" and without adverse effects on service terms or utility operations (NHPUC, DW 11-026).
2011-12-08	Nashua's board votes to create a segregated and restricted Pennichuck Corporation Acquisition Special Revenue Fund to service the bond debt (R-11-169).
2012-01-03	Aqua (PSC) sells its Maine Water subsidiary to Connecticut Water (SEC).

2012-01-05	Nashua aldermen create a special revenue fund to pay for the Pennichuck acquisition bonds (Nashua, R-11-169).
2012-01-11	Nashua finances the purchase by issuing 30-year taxable general obligation bonds totaling \$150.6 mil. at an interest rate of 4.09% (Penn, Nashua).
2012-01-25	Pennichuck files articles of incorporation with the state of New Hampshire (Penn).
2012-01-25	Pennichuck's stock (PNNW) is delisted from the NASDAQ exchange, with all outstanding shares transferred at \$29 each, and Nashua becomes the sole shareholder (Penn, SEC).
2012-01-27	After months of applications and mayoral interviews, Pennichuck's 10-member board meets for the first time (Tel.)
2012-04-28	Pennichuck's board decides to continue running meetings under a formal corporate structure and discusses plans for public monthly status reports (Tel).
2012-05-06	Pennichuck indicates it will not sell its developable land holdings to preserve watersheds and protect water quantity and quality (Tel).
2013-01-29	Pennichuck notes that its costs are lower due to the lower cost of capital following the ownership change, translating into lower rate increases (Tel).
2013-04-01	Reporting finds that stakeholders are satisfied one year after the transition (Tel).
2013-05-31	Pennichuck files for a 0.12% revenue increase; gets 0.0% (NHPUC, 13-130).
2013-08-23	Pennichuck's board votes to send a special dividend of \$500,000 from unanticipated revenue to Nashua, per the purchase agreement (Tel).
2013-11-13	NHPUC issues a final audit report on the Municipal Acquisition Regulatory Asset (MARA) of \$150.6 mil. (NHPUC, 13-130).
2014-05-09	Reporting puts Pennichuck CEO's salary at \$197,500 (Tel.)
2014-07-15	In a settled case, based on a staff audit, regulators disallow \$490,090 in Nashua's recoverable eminent domain costs (NHPUC, 13-130).
2015-05-11	Nashua's board approves \$25.5 mil. to refinance Pennichuck's debt and replace an operations facility, subject to NHPUC approval (Tel).
2016-10-10	Pennichuck receives a public involvement award from a regional water group (Tel).
2016-09-26	Pennichuck files for a 17.21% revenue increase; gets 10.8% (NHPUC, 16-806).
2017-06-02	Aquarion Water is sold from Macquarie Bank to Eversource Energy (SEC).
2017-09-17	In a settled case, regulators approve modification of the rate stabilization fund (NHPUC, 16-806).
2019-07-01	Pennichuck files for a 11.85% revenue increase; gets 11.85% (NHPUC, 19-084).
2019-10-05	Pennichuck announces it will move its headquarters and 70 employees to downtown Nashua (Tel).
2019-10-09	Connecticut Water (owner of Maine Water) merges with San Jose Water (SEC).
2019-12	Southwood Corporation transfers remaining land parcels to Pennichuck (Penn).
2021-01-27	Pennichuck proceeds with developing a solar field expected to reduce its electrical expenses by about \$55,000 annually for 20 years (Penn).

Sources: Londonderry (2004); Nashua archives (nashua.gov/archive); NHBR, New Hampshire Business Review archives (nhbr.com); Penn, Pennichuck Corporation (2011a, 2011b) and archives (pennichuck.com); NH, New Hampshire Statutes (gencourt.state.nh.us); NHPUC, New Hampshire Public Utilities Commission archives (NHPUC.nh.gov). NHSC, New Hampshire Supreme Court (2005); SEC: U.S. Securities and Exchange Commission archives (sec.report); Tel, Nashua Telegraph timelines and archives (nashuatelegraph.com); USDC: U.S. District Court (Civil No. 04-187-JD).

Note: dates may be affected by filing, recording, and reporting differences.

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