

Ward of the State: New Haven’s Use of Federal and State Grants in the Financing of Public Bridges

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I. Introduction

In 1858, residents living along New Haven's Quinnipiac River petitioned the city government to replace the river's main bridge. The Grand Avenue Bridge, they claimed, was blocking commercial ships from traveling up river and discouraging industry from locating in the area. A new drawbridge that could open for ships "was absolutely indispensable...to promote future growth".¹ The city government was unconvinced of the merits of the proposal and rejected the petitioners' request. For the next thirty-six years, the petitioners periodically lobbied the city without success. In 1894, they turned their attention to the federal War Department. The Department considered their case and declared the Grand Avenue Bridge an "obstruction to navigation". The Department ordered the city to construct a \$150,000 drawbridge—at the city's own expense.² The city vehemently protested—it would be unjust "to impose a extra taxation upon many who can ill afford it"³—but the War Department held firm. The city issued bonds to raise the necessary funds⁴ and completed the bridge in 1898.⁵

One hundred years later, the residents of New Haven sought to construct another bridge in pursuit of economic growth. The Church Street Extension Bridge would cross the

¹ Petition to Selectmen Requesting New New Haven-Fair Haven Bridge (Sept. 24, 1858) (on file with the New Haven Museum and Historical Society) ("By obstructing the navigation of the Quinnipiac, [the bridge] has seriously impeded our growth and prosperity as a village...It is evident that a New Bridge is absolutely indispensable...[w]ith a view to promote our future growth and in order to induce manufacturing to locate on the banks of the Quinnipiac North of the Bridge, thereby providing means of employment for a portion of our rapidly growing population.").

² Letter from Henry M. Robert, Lieut. Col. Corps of Engineers, to the City of New Haven Connecticut (Feb. 8, 1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 136.

³ Letter from A.C. Hendrick to the U.S. War Department (1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 136, 137.

⁴ Letter from A.C. Hendrick, Mayor of New Haven, to the New Haven Board of Aldermen (Apr. 23, 1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 140.

⁵ 1898 NEW HAVEN CITY YEAR BOOK [hereinafter CITY YEAR BOOK].

New Haven railyards, connecting the city's downtown with its harbor.⁶ This time the city government was onboard. With the cooperation of the local congresswoman, the Mayor testified before Congress in pursuit of federal funding.⁷ A \$19 million earmark was inserted into the transportation appropriations bill.⁸ The \$32 million bridge opened in 2003, funded almost entirely by federal and state grants.⁹

The Grand Avenue and Church Street Bridges illustrate a dramatic change in the financing of New Haven's bridges. One hundred years ago, all bridges within the city, even those ordered by the federal government or located on state highways, were constructed using city funds raised through bond issues. Today, almost all locally owned bridges within the city, even those that mainly benefit New Haven residents, are primarily funded through federal and state grants. Of the \$12.55 million the city will spend on bridge construction and rehabilitation¹⁰ in 2009-2010, only \$490,000 will come from municipally raised revenues.¹¹

The growth in federal and state grants, for all types of goods and services, has occurred across the country. Between 1902 and 2004, federal government grants to state and local governments increased from less than 1% of state and local revenue to more than 20%.¹² Since 1946, state grants to local governments have more than tripled, from 1% of

⁶ Mary E. O'Leary, *\$31.3 Million Span Reconnects Downtown, City Harbor*, NEW HAVEN. REG., Dec. 4, 2003; see also, Kara Ouellet, *Church Street Bridge Ahead of Schedule*, NEW HAVEN. REG., Oct. 13, 2003.

⁷ *A 21st Century Transportation System: Reducing Gridlock, Tackling Climate Change, and Growing Connecticut's Economy: Hearing Before the S. Comm. on Banking, Housing and Urban Affairs*, 111 Cong. 5 (2009)

⁸ Transportation Equity Act for the 21st Century, P.L. 105-178, 112 Stat. 284 (1998).

⁹ *Supra* note 6.

¹⁰ Throughout this paper, I will use "rehabilitation" to refer to the substantial reconstruction or renovation of bridges.

¹¹ CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2009-2010 BUDGET, at ch. 3-4 (2009).

¹² JONATHAN GRUBER, PUBLIC FINANCE AND PUBLIC POLICY 248, 249 (2005).

GNP to 3.3%.¹³ Federal and state grants now comprise approximately 38% of total local government general revenues.¹⁴ In this paper, I will examine this trend by considering the financing of bridge construction, rehabilitation, and maintenance in New Haven between 1790 and 2010. I will ask two questions. First, what factors explain the change in funding sources? Second, does the resulting system of federal and state grants promote public welfare?

In Part II of this paper, I will review three theories that may explain the change in funding sources. In Parts III-VI, I will survey the history of bridge finance in New Haven, moving through eras of private sector finance, municipal finance, and state and federal finance. In Parts VII and VIII, I will consider the causes of these changes and their effects on public welfare.

II. Three Theories of Intergovernmental Transfers

There are two widely supported justifications of intergovernmental grants to municipalities: efficiency and equity. Grants can aid efficiency by ensuring that municipalities do not underinvest in public goods that benefit surrounding jurisdictions.¹⁵ Grants can aid equity by ensuring that poorer municipalities can afford to provide necessary public goods.¹⁶ Both of these justifications operate as normative and positive theories. They are normative in that they identify the conditions under which federal and

¹³ GEORGE F. BREAK, *FINANCING GOVERNMENT IN A FEDERAL SYSTEM* 4 (1980).

¹⁴ Harvey S. Rosen, *Public Finance* 496 (5th ed.) (1999).

¹⁵ See e.g., GRUBER, *supra* note 12, at 255; Wallace E. Oates, *An Essay on Fiscal Federalism*, 37 J. OF ECON. LIT. 1120, 1126-27 (1999); BREAK, *supra* note 13 at 77.

¹⁶ See, e.g. Oates, *supra*; BREAK, *supra* at 80-87.

state governments should make grants to lower levels of government. They are positive in that they may explain why federal and state governments make such grants.

A third theory, also widely advanced in the literature, is purely positive: federal and state legislators make grants to lower levels of government for political reasons, in particular the desire to secure re-election.¹⁷ In this Part, I will survey each of these theories of intergovernmental transfers.

A. Efficiency

Federal and state grants to municipalities can help address the problem of spillover benefits in local public good provision. An economically rational municipality will fund a public good only to the point where the benefit to its residents equals the cost. In cases where the benefits of a locally provided public good are shared by non-residents, the municipality will determine its spending level by measuring the benefits to its own residents, not the outsiders.¹⁸ The result, from a societal perspective, is the underprovision of the good.

For example, if a bridge running through New Haven is substantially used by residents of East Haven, New Haven is unlikely to adequately fund the bridge. If upgrades to a bridge produce \$10 million in total benefits, but New Haven residents receive only 50%, the city, if rational and self-interested, will spend no more than \$5 million on the bridge. If the total upgrade cost exceeds \$5 million, at least a portion of the work will not

¹⁷ See, e.g., Robert P. Inman, *Federal Assistance and Local Services in the United States: The Evolution of a New Federalist Fiscal Order*, in HARVEY S. ROSEN, *FISCAL FEDERALISM* (1988); Phillip J. Grossman, *A Political Theory of Intergovernmental Grants*, 78 *Pub. Choice* 295 (1994); Robert C. Lowry and Matthew Potoski, *Organized Interests and the Politics of Federal Discretionary Grants*, 66 *J. of Pol.* 313 (2004).

¹⁸ BREAK, *supra* note 13 at 77-79.

be performed. The bridge may end up with fewer lanes than traffic warrants; or close frequently due to a lack of preventative structural maintenance; or be in need of repaving. Similar underprovision occurred in Connecticut in the 19th century when individual towns were responsible for maintaining the portions of the state highways that ran through their territory.¹⁹ While the benefits of maintaining the highways were great to the state as a whole, they were small to each municipality. As a result, the highways were poorly maintained.

The underprovision of public goods can be corrected through grants from a higher level of government. If New Haven is only willing to spend \$5 million on upgrades to its bridge, but the optimal upgrades cost more, a grant from the state can ensure that the optimal upgrades take place. The state may choose to subsidize the bridge in one of two ways. Block grants award a fixed amount of funding for a particular project. Matching grants provide municipalities with X dollars for every dollar they spend: the more a municipality spends, the more it receives.²⁰

A properly designed system of grants ensures allocative efficiency—the socially optimal level of spending on bridges. There are four alternative ways, however, of achieving allocative efficiency in the provision of public goods. First, municipal boundaries may be changed so that the municipality encompasses all the beneficiaries of its public goods.²¹ For example, if the residents of East Haven greatly benefit from New Haven’s bridge, incorporating East Haven into New Haven ensures the New Haven takes into

¹⁹ CONNECTICUT DEPARTMENT OF TRANSPORTATION [hereinafter CONNDOT], *MANAGING TRAVEL IN CONNECTICUT: 100 YEARS OF PROGRESS* at ch. 1 (1995).

²⁰ GRUBER, *supra* note 12 at 260-65.

²¹ Oates, *supra* note 15 at 1130.

account all the benefits of investing in the bridge. Second, municipalities may negotiate with one another to share the cost of public goods with spillover benefits. New Haven and East Haven, for example, may jointly finance the bridge so that the socially optimally level of spending is obtained.²² Third, a higher level of government that encompasses all the beneficiaries of the public good may take responsibility for the good. In the case of New Haven's hypothetical bridge, the state government would directly fund, construct, and operate the bridge. Fourth, beneficiaries of the good may be charged for their use. Bridges, for example, are not true public goods since users can be excluded through tolls. Establishing tolls on New Haven's bridges would ensure that all users of the bridge, including East Haven residents, contribute to its funding.

As we will see in Parts III-VI, all five of these methods of achieving allocative efficiency—intergovernmental grants, boundary changes, partnerships between neighboring jurisdictions, direct provision by a higher level of government, and the use of tolls—have been used to finance bridges in New Haven. A potential explanation for the rise in intergovernmental bridge grants to New Haven is that the spillover benefits resulting from the city's bridges have increased over time, and the different levels of government have chosen to respond to this change, at least in part, through the use of grants.

B. Equity

Intergovernmental grants may also be used to promote two types of equity: horizontal and vertical. Horizontal equity refers to equality between municipalities.²³ Municipalities vary greatly in their capacity to raise revenue. Poor municipalities, such as

²² *Id.* at 1131.

²³ BREAK, *supra* note 13, at 80-86.

New Haven, often can only provide necessary public goods, such as bridges, by raising fees and property taxes to very high levels. Wealthier Connecticut municipalities, like Greenwich and New Canaan, can provide similar levels of services with much lower fee and tax rates. Intergovernmental transfers allow poorer cities to provide public services while maintaining reasonable tax rates or borrowing levels. In extreme cases, grants may be necessary to ensure that municipalities can afford to fund certain public services at any tax rate or borrowing level. For example, high-income taxpayers may choose to leave low-income municipalities that have higher than average tax rates. As these taxpayers leave for low-tax surrounding areas, the municipality is forced to raise tax rates even higher, reinforcing the cycle.²⁴ The end result may be that no tax rate raises sufficient revenue for the municipality. In New Haven's case, the large number of bridges in the city—53²⁵—may require a higher tax rate than is charged in neighboring municipalities. This tax rate could drive high-income residents to the suburbs, making it very difficult to raise the necessary revenues. Similarly, some municipalities may force high borrowing costs in the bond market that make it almost impossible for them to raise the revenue needed to fund public infrastructure.

In either case—whether grants are needed merely to help municipalities restrain tax rates and borrowing costs or whether they are necessary to make the provision of public services possible at any tax rate or borrowing level—there is an appealing public safety argument for intergovernmental bridge grants to poor cities. Grants help ensure that municipal bridges are well maintained and safe for the public to use. Alternatively,

²⁴ ROSEN, *supra* note 14, at 481.

²⁵ Press Release, City of New Haven, In the Wake of Minnesota Bridge Tragedy, New Haven Assess Progress on Bridge Repair Program (Aug. 17, 2007).

grants spare municipalities the economic harm of having to close unsafe bridges. Many bridges, especially in New Haven, serve as important traffic arteries. Each time New Haven has to close an unsafe bridge on an important road, residents and businesses are greatly inconvenienced.

Intergovernmental grants may also promote vertical equity. Vertical equity is achieved when the financial responsibilities of various levels of governments match their taxing power.²⁶ Some scholars have argued that increases in demand for certain municipally provided services—such as public housing and education—have outpaced the ability of municipalities to raise revenue through property taxes.²⁷ Conversely, the taxing power of state and federal governments—largely because of the introduction of the progressive income tax—may have increased faster than their financial responsibilities. If there is a mismatch between the financial responsibilities and revenue-raising capacities of the different levels of government, then intergovernmental grants can ensure that the underfunded levels of government are able to meet their financial obligations.

Horizontal and vertical equity can be distinguished from one another based on the number of municipalities struggling to fund a public good, such as bridges. If most municipalities struggle to fund bridge construction, rehabilitation and repairs, then there is a lack of vertical equity. If only a minority of municipalities struggle to fund their bridge obligations, the problem is likely with horizontal equity.

²⁶ BREAK, *supra* note 13, at 80-86.

²⁷ Inman, *supra* note 17, at 54.

A potential explanation for the rise in intergovernmental bridge transfers to New Haven, therefore, is that either horizontal or vertical inequities have increased, and the state and federal governments have chosen to respond to this inequity through transfers.

C. Politics

A third theory of intergovernmental grants is positive or descriptive. Several scholars have argued that intergovernmental grants have increased during the twentieth century as a result of changes in the political process.²⁸ In the late 1960s, Congress decentralized its budgeting process. Instead of party hierarchies controlling the budgeting process, each congressman, or at least congressman in the majority party, gained the opportunity to insert earmarks directing money to their home district into the budget. “Since each district pays only a small fraction of its own project’s costs”, it is in the interest of each congressmen to add as many earmarks benefitting his district as possible.²⁹ Earmarks, also known as “pork barrel spending” or “bringing home the bacon”, can help congressmen attract votes.³⁰ They can also help gain the endorsements and support of local and state politicians.³¹ Such support may be important in re-election campaigns.

Even without the decentralization of the federal budgeting process, it is in the political interests of Congressmen collectively to establish permanent federal funding programs that direct money to state and local governments. These programs help protect incumbents by allowing them to claim credit for projects in their home district. Since the costs to taxpayers of these projects—higher taxes and fees—are often not directly

²⁸ *Supra* note 17.

²⁹ Inman, *supra* note 17, at 58.

³⁰ Grossman, *supra* note 17, at 296.

³¹ *Id.*

attributable to the local congressman, the exchange of higher taxes in return for greater transfers to the district may be politically advantageous to the congressman. The same political forces apply to Connecticut's state legislature.

A potential explanation for the rise in bridge transfers to New Haven, therefore, is that state and federal governments have directed money to municipalities—through earmarks and permanent funding programs—in order to improve their chances of reelection. In the rest of this paper, I will examine whether these three theories—efficiency, equity, and politics—explain the increase in intergovernmental bridge grants to New Haven.

III. Private Sector Provision of Bridges: Lotteries and Tolls

In the second half of the 18th century, the city and town governments of New Haven looked to private corporations to finance and construct major bridges. Typically, the city would offer private entities the right to conduct lotteries or collect tolls in return for constructing and, usually for a limited period of time, maintaining bridges. The two most important bridges of the period—the Dragon Bridge and the New Haven-East Haven Bridge—were both financed and constructed by private corporations. In response to the difficulties these corporations encountered, the city and town governments gradually assumed a larger role in the construction of New Haven's bridges.

In 1762, a group of private individuals were granted the right to build a bridge crossing the Quinnipiac River³² at a place called Dragon Point.³³ After five years, the

³² The Quinnipiac River was then known as the East River.

proprietors transferred responsibility for maintaining the bridge to the Town of New Haven. When the Dragon Bridge was destroyed by a flood several years later, the Town attempted in 1780 to finance, on its own, the construction of a new bridge using a lottery.³⁴ At the time, lotteries were a common means of raising funds for public infrastructure. Cities, towns and private corporations would petition the Connecticut General Assembly for permission to conduct a lottery. If persuaded, the Assembly would grant the party the right to raise a set amount of funds through a lottery, of which a certain amount would go to the winner. The party could keep the remaining proceeds to fund their planned infrastructure project.³⁵

The Town of New Haven's use of a lottery to fund the new Dragon Bridge fared poorly and the Town only grossed £465, well short of the amount needed to fund the bridge and substantially below the £1000 worth of lottery tickets the legislature had authorized it to sell.³⁶ To aid the Town, the Assembly granted it a transferable right to collect tolls on the new bridge for ten years. The Town searched for private individuals willing to fund the bridge in return for the right to collect the tolls, but found no takers until the Assembly extended the toll period to twenty years.

In 1791, three private individuals funded the new Dragon Bridge in return for the right to collect tolls.³⁷ The tolls only lasted for a year, although the reasons why are

³³ Anisha S. Dasgupta, *Public Finance and the Fortunes of the Early American Lottery*, QUINNIPIAC L. REV. 227, 245 (2006). The Dragon Bridge is now in its fifth incarnation and is known as the Grand Avenue Bridge. The bridge has also been known as the Fair Haven Bridge. See CITY OF NEW HAVEN, 1869 CITY YEAR BOOK [hereinafter 1869 CITY YEAR BOOK]; Petition to Selectmen Requesting New New Haven-Fair Haven Bridge (Sept 24, 1858) (on file with the New Haven Museum and Historical Society).

³⁴ Dasgupta, *supra* note 33, at 246.

³⁵ *Id.* at 235-39.

³⁶ *Id.* at 246.

³⁷ *Id.* at 247.

disputed. The City of New Haven, in a 1932 history of the Dragon Bridge, writes that the “the people objected to the tolls and tore down the gates, which action resulted in making it free”.³⁸ Anisha Dasgupta, however, attributes the end of the tolls to the construction of another bridge over the Quinnipiac River, which made the Dragon Bridge unprofitable.³⁹ In either case, the Assembly authorized the proprietors to raise £1400 by lottery in lieu of charging tolls. The proprietors evidently found this unattractive and eventually transferred ownership of the bridge to the Town on unknown terms. Both lotteries and tolls had failed to make private ownership a profitable enterprise.

The second major bridge constructed during the period was the New Haven–East Haven Bridge, which connected New Haven and East Haven across the Quinnipiac River.⁴⁰ In 1796, the General Assembly granted the Town of East Haven a transferrable right to construct a toll drawbridge over the Quinnipiac River.⁴¹ The bridge was to replace Leavenworth’s ferry⁴² and “bring economic opportunity into the eastern part of Connecticut via East Haven”.⁴³ The Town was authorized to collect tolls for seventy years in return for building a bridge at least twenty-seven feet wide and having a “draw in some convenient place in the channel, of at least twenty-six feet wide, to admit the passage of

³⁸ 1932 CITY YEAR BOOK.

³⁹ Dasgupta, *supra* note 33, at 247.

⁴⁰ The bridge is now in its sixth incarnation and is known as the Tomlinson Bridge. It has also been known as the Harbor Bridge. 1932 CITY YEAR BOOK.

⁴¹ 1881 CITY YEAR BOOK.

⁴² *Bridge Maintenance: What Connecticut Has Done in That Line Since Colonial Times*, (circa 1908) (newspaper article on file with the New Haven Museum and Historical Society).

⁴³ CONNDOT, TOMLINSON BRIDGE: 200 YEARS OF CROSSINGS: 1798-1998, (1998) (promotional release on file with the New Haven Museum and Historical Society).

vessels...". The Town was also required to "keep said bridge in good repair, subject to the inspection of the General Assembly as often as they shall think proper...".⁴⁴

In 1797, East Haven transferred the right to a group of local investors,⁴⁵ who received a corporate charter from the state as the New Haven and East Haven Bridge Company. The company's sixty shares were split largely between New Haven and East Haven investors, and included prominent local residents such as Isaac Tomlinson and James Hillhouse. East Haven did not receive any compensation for transferring the right, other than a promise that the company would construct a drawbridge. Given the difficulties in attracting private investors in the Dragon Bridge, the Town may have had a weak bargaining position. Alternatively, the company may have benefitted from self-dealing. Five of East Haven's seven representatives in the negotiations with the company were also shareholders in the company.⁴⁶

The company constructed a 2640 foot wooden-covered-truss toll bridge in 1797.⁴⁷ Construction costs went over budget, which immediately placed the company's financial viability in doubt.⁴⁸ In 1799, the General Assembly approved a toll increase to help the

⁴⁴ Petition of Ruel Rowe and Others Requesting the Widening of the New Haven-East Haven Bridge (circa 1842)(on file with the New Haven Museum and Historical Society).

⁴⁵ Contract Between the Town of East Haven and New Haven and East Haven Bridge Company (Jan. 12, 1797) (on file with the New Haven Museum and Historical Society).

⁴⁶ *Id.* The representatives were E. Hemmingway, John Woodward, Stephen Woodward, Joshua Austin, and Mr. Bradley (first name illegible).

⁴⁷ CONNDOT, *supra* note 43.

⁴⁸ 1881 CITY YEAR BOOK. An additional problem may have been that tolls were collected on the honor system. BRUCE CLOUETTE, CONNDOT, WHERE WATER MEETS LAND: HISTORIC MOVEABLE BRIDGES OF CONNECTICUT 42 (2004).

company pay its debts.⁴⁹ In 1805, the Assembly approved another toll increase and extended the company's right to collect tolls to 150 years.⁵⁰

Financial problems continued over the next decade. In 1807, a deluge carried away part of the bridge, which cost \$6,000 to repair.⁵¹ In 1811, the company leased the bridge to Isaac Tomlinson for five years.⁵² Under the contract, Tomlinson paid \$100 per year to the company and assumed responsibility for maintaining the bridge and implementing certain improvements, presumably in return for the right to collect the tolls. In transferring its revenue stream and operating liabilities to Tomlinson, the company's actions indicate that it did not view the bridge as a profitable enterprise. Tomlinson, an original shareholder in the bridge company, would eventually assume control of the company.⁵³ The bridge at that location today is known as the Tomlinson Bridge in his honor.⁵⁴

In addition to the difficulties with the business model, the bridge struggled with maintenance problems throughout the 19th century. Area residents were initially delighted with the bridge, but quickly became dissatisfied with its state of repair. Identical 1805 petitions from residents of New Haven and Branford called the bridge "a great Public

⁴⁹ 1881 CITY YEAR BOOK.

⁵⁰ *Id.*

⁵¹ 1932 CITY YEAR BOOK.

⁵² Lease Agreement Between Henry Austin and Isaac Tomlinson Regarding the New Haven-East Haven Bridge (Oct. 29, 1822) (on file with the New Haven Museum and Historical Society).

⁵³ It is unclear when Tomlinson obtained control. While he is frequently credited as the initial controlling shareholder, CLOUETTE, *supra* note 48, at 42, he only owned one of the original sixty shares. Contract, *supra* note 29.

⁵⁴ Tomlinson also constructed and maintained the road leading to the New Haven side of the bridge in exchange of for a land grant on East Water Street. 1807 Agreement between Isaac Tomlinson and the Town of New Haven (July 13, 1807) in 1932 CITY YEAR BOOK, *supra* note 2. The City attempted to enforce the promise to maintain the road against Tomlinson's heirs in 1863. *Id.*

Benefit and convenience”, but criticized the company’s maintenance.⁵⁵ “[I]t [is] quite necessary and Important to have said Bridge supported and kept up and it is our wish that the Proprietors of the Bridge may find such encouragement as will Enable them to Rebuild and Repair the decayed parts of said Bridge...”.⁵⁶

The toll system provided little incentive for the company to maintain the bridge beyond the minimum level necessary to keep it open. First, the toll rates, which were set by the legislature, were not high enough to encourage investment in major repairs and upgrades. Second, as a monopolist—the bridge was the only bridge on the Quinnipiac River in that area of New Haven—the bridge company needed only to keep the bridge in working order to maximize revenues. Third, the company was prohibited from collecting tolls from ships that passed underneath. As a result, the company had no incentive to expand the drawbridge so that larger ships could travel up the river. Consequently, repairs and improvements to the bridge generally occurred only when ordered by the Assembly.

In 1842, the Assembly, in response to a petition by resident Ruel Rowe and other local residents,⁵⁷ found that the draw⁵⁸ in the bridge “wholly fails to accommodate the public in the navigation of the ... river” because it was “not in a convenient place” and was not “of sufficient width to admit the free and easy passage of vessels”.⁵⁹ The Assembly appeared exasperated with the company and accused it of “wholly neglect[ing] and refus[ing], though often requested,” to meet its legal obligations. The company was

⁵⁵ Petition to Selectmen Requesting that Toll Bridge Proprietors Repair Bridge (May 11, 1805)(on file with the New Haven Museum and Historical Society).

⁵⁶ *Id.*

⁵⁷ Petition, *supra* note 28.

⁵⁸ The draw is the portion of the bridge that is raised and opened.

⁵⁹ Resolution in Relation to the New Haven And East Haven Toll Bridge, Ct. Gen. Assem. (1842).

ordered to move the bridge further east and to construct a wider draw. In order to ensure quick compliance, the Assembly established penalties for the company. If the company failed to rebuild the bridge within a reasonable period of time, any ship unable to pass through the old draw, or delayed or damaged by it, was entitled to collect three times its damages in court. Moreover, after a successful suit, the company would be prohibited from collecting any tolls on the bridge until the new draw was built. Three Connecticut residents were appointed as Bridge Commissioners and given responsibility for determining the specifications of the new bridge, working out a time frame for construction, and supervising the company's compliance.

The company estimated that these changes would cost \$15,000 and claimed the "Legislature ha[d] no power" to order improvements because the bridge complied with the terms of the 1796 grant, which only required a twenty-seven foot draw.⁶⁰ It is unclear to what extent the company pursued these protests, but it did end up complying with the legislation and a largely new bridge was built.⁶¹

Complaints over the bridge resurfaced by in the 1880s. The City Engineer for New Haven issued a scathing critique in his 1881 Annual Report.

The Tomlinson Bridge, near the steamboat wharf, is a very dilapidated wooden structure and a toll bridge. Either of those conditions should be sufficient to condemn it on an important approach to a city of the size and intelligence of New Haven; but the combination of the two is a positive disgrace, unless regarded from the antiquarian point of view, as an interesting relic of ancient forms and customs.⁶²

⁶⁰ Petition, *supra* note 55.

⁶¹ 1842 CITY YEAR BOOK.

⁶² 1881 CITY YEAR BOOK.

In March of 1885, the Assembly ordered the bridge company, which was now owned by the New York, New Haven and Hartford Railroad (N.Y., N.H. & H. R.R.),⁶³ to perform a series of repairs and to widen the draw to eighty feet.⁶⁴ The company was given until December to implement the changes. As in 1842, it was threatened with suspension of its toll privileges and triple damages if it did not comply.

The bridge company complied, but in the cheapest way possible. It constructed the new bridge out of materials from the old "Housatonic Bridge",⁶⁵ which crossed the Housatonic River in Stratford, and other materials from a scrap yard.⁶⁶ This marked the last time the construction of a major bridge in New Haven was privately financed. In 1887, the City and Town of New Haven jointly purchased the bridge from the company for \$25,000, and converted it into a free bridge.⁶⁷

IV. 1870-1932: The Bond Era

In the 1870s, New Haven began to rapidly expand and improve its public infrastructure, including its bridges. Between 1872 and 1913, the number of bridges under city control increased from ten⁶⁸ to forty-six.⁶⁹ Dozens more railroad bridges⁷⁰ were built

⁶³ CLOUETTE, *supra* note 48, at 42.

⁶⁴ 1885 Conn. Spec. Acts 79-80.

⁶⁵ 1932 CITY YEAR BOOK.

⁶⁶ CONNDOT, *supra* note 43.

⁶⁷ 1932 CITY YEAR BOOK.

⁶⁸ 1872 CITY YEAR BOOK.

⁶⁹ 1913 CITY YEAR BOOK.

⁷⁰ Railroad bridges are bridges crossing over railroad tracks. Railroad bridges are not used by trains.

in part with city grants, although though they were excluded from the city's official counts because their maintenance was the responsibility of the railroad companies.⁷¹

During this period, most of the major bridges in New Haven were either replaced, often more than once, or constructed for the first time. The Ferry Street or Quinnipiac Drawbridge over the Quinnipiac River was first constructed in 1876,⁷² and the Chapel Street Drawbridge over the Mill River (1869⁷³ and 1899),⁷⁴ the Middletown Avenue or Lewis Bridge over the Quinnipiac River (1879⁷⁵ and 1921),⁷⁶ the Grand Avenue or Dragon Drawbridge over the Quinnipiac River (1898),⁷⁷ the Kimberly Avenue Swing Bridge over the West River (1906),⁷⁸ and the Tomlinson Lift Bridge over the Quinnipiac River (1922)⁷⁹ were replaced. The wave of construction was in response to New Haven's growing population and booming manufacturing sector. The bridges created the major arteries that connected the city's neighborhoods and greatly influenced the location of industry. Major bridges survive at each of these locations today and in most cases continue to serve as the principal routes into different parts of the city.⁸⁰

⁷¹ See 1887 CITY YEAR BOOK, at 99. New Haven had twenty-nine bridges crossing railroads in 1887. The railroad companies were responsible for maintenance until 1923 when the state General Assembly made municipalities responsible for the maintenance of the roadway and sidewalks on the N.Y., N.H. & H. R.R.'s bridges. 1923 CITY YEAR BOOK.

⁷² 1876 CITY YEAR BOOK; *see also* 1879 CITY YEAR BOOK.

⁷³ 1869 CITY YEAR BOOK.

⁷⁴ 1899 CITY YEAR BOOK.

⁷⁵ 1879 CITY YEAR BOOK.

⁷⁶ 1921 CITY YEAR BOOK.

⁷⁷ 1898 CITY YEAR BOOK.

⁷⁸ 1906 CITY YEAR BOOK.

⁷⁹ 1922 CITY YEAR BOOK.

⁸⁰ Many city businesses are dependent on the traffic brought by the bridges. *See, e.g.*, Janet Koch, *Quinnipiac River Span Reopens—and It's Grand!*, NEW HAVEN J. COURIER, Aug, 2, 1984; Melissa Bailey, *Ferry St. Bridge To Reopen, At Last*, NEW HAVEN INDEP., July 9, 2008, http://newhavenindependent.org/archives/2008/07/ferry_street_br_1.php.

The period also saw a dramatic improvement in the sophistication and design of the city's bridges. Prior to the construction of the Chapel Street Bridge in 1869, the only moveable bridge in the city was the privately owned Tomlinson Drawbridge. By 1906, there were five: one swing bridge,⁸¹ one lift bridge and three drawbridges.⁸² These bridges quickly came to play an important role in the movement of ships carrying goods and people up the Quinnipiac, Mill, and West Rivers. By 1913, they were opened over 19,000 times a year.⁸³ While the first moveable bridges relied on relatively simple technologies—the Ferry Street Bridge constructed in 1876 was opened by hand power and then horse power⁸⁴—those built later in the period were thoroughly modern. The 1922 Tomlinson Bridge, for example, was powered by electricity and featured a cutting-edge undergrade counterweight.⁸⁵

The bridges of the period also reflected an attention to aesthetic considerations. The 1898 Grand Avenue Bridge featured granite masonry⁸⁶ and was eventually added to the State Registry of Historic Places.⁸⁷ The Tomlinson Bridge was designed in the Beaux Arts style and “given more than the usual amount of architectural detail”.⁸⁸

The rapid increase in the number and quality of New Haven's bridges was funded by municipal bonds issued by the city and town governments. The City of New Haven

⁸¹ A swing bridge has a moving center span that swings open horizontally to allow ships to pass. A lift bridge has a center span that rises, while maintaining a horizontal orientation, so that ships can pass underneath.

⁸² They were the Ferry Street Bridge, Grand Avenue Bridge, Tomlinson Bridge, Chapel Street Bridge, and Kimberly Avenue Bridge.

⁸³ 1913 CITY YEAR BOOK.

⁸⁴ 1932 CITY YEAR BOOK.

⁸⁵ CLOUETTE, *supra* note 48, at 42.

⁸⁶ 1932 CITY YEAR BOOK.

⁸⁷ Donna Kopf, *Grand Avenue Bridge Draws Fair Haven Ire*, NEW HAVEN J. COURIER, February 24, 1978, at D28.

⁸⁸ CLOUETTE, *supra* note 48, at 42.

began to issue bonds for traditional public works projects in the 1870s.⁸⁹ In 1871, the city issued \$500,000 in bonds to fund the construction of the city sewer system.⁹⁰ The city issued its first bridge bonds, totaling \$150,000, in 1877 to pay debts incurred during the construction of the Ferry Street Bridge.⁹¹ The Town of New Haven, which split the cost of the bridge with the city, issued bonds in 1882 to cover its debts from the project.⁹² From that date on, municipal bonds were issued for every major bridge project during the period.

Until 1913, municipal bonds could not be issued without state approval. Typically, the city would authorize its Corporation Counsel to submit a petition to the state General Assembly requesting the authority to borrow a certain amount of funds for a particular project.⁹³ If the General Assembly approved the request, it would specify the total amount that could be borrowed, the maximum interest rate, the maturity date of the bonds, and the project on which the monies raised could be spent.⁹⁴

In 1913, the Assembly granted New Haven general authority to issue bonds.⁹⁵ The city was permitted to incur a total bonded indebtedness of up to five percent of its grand list. No longer did it have to petition the state for permission to issue bonds for particular projects. Several conditions were imposed on the city's bonding power: the terms of the bonds could not exceed thirty years or the life of the public improvement funded; the

⁸⁹ Prior to 1871, the city had issued bonds on two occasions. \$60,000 of bonds were issued in 1862 to fund a new city hall. 1862 CITY YEAR BOOK. \$100,000 in bonds were issued at some date prior to 1860 for an unknown purpose. 1860 CITY YEAR BOOK.

⁹⁰ 1871 CITY YEAR BOOK.

⁹¹ 1877 CITY YEAR BOOK.

⁹² 1882 CITY YEAR BOOK.

⁹³ See, e.g., CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1895, at 141.

⁹⁴ See, e.g., 1895 Conn. Spec. Acts 567; 1897 Conn. Spec. Acts 798.

⁹⁵ 1913 Conn. Spec. Acts 837.

interest rate could not exceed five percent; and the bonds had to be issued for specific public improvements that were declared at the time of their authorization.

Following the 1913 legislation, the City began to issue bridge bonds for greater amounts. Prior to 1913, the City issued bridge bonds on six occasions, with none of the issues exceeding \$185,000. In the ten years after 1913, the city issued bridge bonds on four occasions, worth \$250,000, \$500,000, \$900,000, and \$140,000.

Date of Bond Issue⁹⁶	Amount (\$)	Purpose
1877	150,000	Ferry Street Bridge
1896	65,000	Grand Avenue Bridge
1900	185,000	Chapel Street Bridge, Derby Avenue Bridge, Willow Street Bridge
1903	10,000	Outstanding bridge debts
1905	95,000	Kimberly Avenue Bridge
1908	35,000	Humphrey Street Bridge
1911	75,000	Edgewood Avenue Bridge
1917	250,000	Tomlinson Bridge
1919	500,000	Seven bridges, including Middletown Avenue Bridge
1922	900,000	Tomlinson Bridge
1923	140,000	Bridge Street Railroad Crossing

⁹⁶ 1887 CITY YEAR BOOK; 1896 CITY YEAR BOOK; 1900 CITY YEAR BOOK; 1903 CITY YEAR BOOK; 1905 CITY YEAR BOOK; 1908 CITY YEAR BOOK; 1911 CITY YEAR BOOK; 1917 CITY YEAR BOOK; 1919 CITY YEAR BOOK; 1922 CITY YEAR BOOK; 1923 CITY YEAR BOOK.

The city's greater use of bridge bonds, beginning in 1896 and accelerating after 1913, had a substantial effect on the condition of its bridges. In the late 19th century, the city tended to push its bridges long past their safe lifespan. For example, the city only began efforts to replace the Middletown Avenue Bridge two years after the City Engineer had deemed it to be "in a very poor condition" and called for "immediate measures ... to secure the safety" of the bridge.⁹⁷ Similarly, the Grand Avenue Bridge was only replaced in 1898 after the Federal War Department ordered the construction of a drawbridge to facilitate traffic on the Quinnipiac River. The City Engineer had called for the replacement or rehabilitation of the bridge since 1891 and deemed a new bridge "a necessity" in 1893.⁹⁸

The delays in replacing bridges led to avoidable maintenance costs. The Grand Avenue Bridge required "frequent examination and close watching" because of its poor condition.⁹⁹ In 1895, the city was forced to retimber the entire bridge because it "had become so badly decayed that it was not safe to allow it to go longer without repairs", even though "the bridge was to be replaced with a new one in another year".¹⁰⁰

Maintenance costs were also unnecessarily high because most of the city's bridges were made of wood rather than iron. An 1881 report by the City Engineer found that wood bridges were far more expensive to maintain than iron bridges because they frequently

⁹⁷ 1874 CITY YEAR BOOK.

⁹⁸ 1893 CITY YEAR BOOK.

⁹⁹ *Id.*

¹⁰⁰ 1895 CITY YEAR BOOK.

needed to be replanked.¹⁰¹ The introduction of automobiles and trolley cars made the inadequacy of wooden bridges even clearer.¹⁰²

The frequent issuance of bonds, beginning in 1896, allowed the city to replace wooden bridges and bridges near the end of their lifespans with safer structures. In 1931, the City Engineer, perhaps for the only time in New Haven history, declared that “all the bridges in the city are now in satisfactory condition”.¹⁰³

The construction and maintenance work that brought the city’s bridges into “satisfactory condition” was the result of coordination between New Haven and other actors. Most bridges constructed or replaced between 1870 and 1930 were shared with bordering municipalities or industries, or ordered by the federal War Department. In this Part, I will examine each of the major categories of bridges: bridges shared with bordering municipalities; bridges shared with industry; and bridges ordered by the federal government.

A. Bridges Shared with Bordering Municipalities

Two of the three major rivers in New Haven, the West and the Quinnipiac, marked New Haven’s boundaries during the 19th century. As a result, most of its bridges crossed town lines and were shared with bordering towns. In 1876, for example, only four of the fourteen non-railroad bridges in the city were solely owned by the city.¹⁰⁴ Seven, crossing

¹⁰¹ 1881 CITY YEAR BOOK.

¹⁰² 1918 CITY YEAR BOOK (“Bridges with a wood surface for flooring require much care and are a great expense because the heavily loaded automobile trucks and the fast-going machines draw the spikes out of the planks by the suction of the rubber tires. Next year we hope to find a way to eliminate this trouble.”).

¹⁰³ 1931 CITY YEAR BOOK.

¹⁰⁴ 1876 CITY YEAR BOOK.

the West River, were shared with the town of Orange. Three, crossing the Quinnipiac River, were shared with the town of East Haven.

Building bridges across town lines required coordinated action. A town willing to fund and construct a bridge itself would find its bridge of little use if the bordering town did not construct a connecting road and approach. New Haven and its neighbors faced five questions when they attempted to build cross-border bridges: 1. When should the new bridge be built? 2. What type of bridge should it be and how much should it cost? 3. What percentage of the total cost should each town fund? 4. What percentage of maintenance and operations costs should each town fund? 5. How should maintenance and operations be managed?

The answers to these questions varied from bridge to bridge, and were usually determined by state General Assembly resolution, by negotiation, or by court order. Three bridges constructed during the period illustrate the different approaches.

The construction of the Ferry Street Bridge in 1876 was ordered by the state General Assembly in 1872.¹⁰⁵ Typically, the state settled outstanding questions relating to a bridge's construction on request from one of the towns involved.¹⁰⁶ The 1872 Act required New Haven and East Haven to equally share the cost of constructing and maintaining a drawbridge of at least seventy feet in width. It also laid out procedures for managing the construction and design of the bridge. A committee of seven bridge commissioners was to be created, with three commissioners to be appointed by each town,

¹⁰⁵ 1872 Conn. Spec. Acts 209.

¹⁰⁶ See, e.g., CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1893, at 111 (directive from the mayor of New Haven instructing corporation counsel to submit draft legislation regarding the Oak Street Bridge to the state General Assembly).

and a seventh commissioner, a civil engineer, to be appointed by the other six. In the event that either East Haven or New Haven “neglect to begin the construction of said bridge on or before the first Monday of August...1873, or to reasonably prosecute the same to its completion”, any taxpayer in either municipality was empowered by the Act to file an application with the New Haven Superior Court.¹⁰⁷ The court would appoint three “disinterested” commissioners to construct the bridge and connecting roads.¹⁰⁸ The court would then require the municipalities to pay their share.

Following the legislation, New Haven and East Haven established the seven-person bridge commission. Litigation followed, however, over whether the commissioners had jurisdiction over the approaches leading to the bridge.¹⁰⁹ New Haven, which claimed jurisdiction over the approach on its side, was ordered to halt work on its approach in 1876.¹¹⁰ It is unclear how the litigation was resolved, but it led to a delay in the bridge’s opening. After the bridge was completed, the bridge commission transferred joint ownership of the bridge to the New Haven and East Haven councils.¹¹¹ The councils then negotiated the bridge’s operating policies, such as a policy to only open the bridge’s draw for particularly large ships or groups of six or more ships.¹¹²

The Lewis Bridge, now known as the Middletown Avenue Bridge, was constructed by New Haven and East Haven without state legislation. New Haven had wanted to replace the bridge in 1876, but East Haven was “adverse to any project for rebuilding or improving

¹⁰⁷ 1872 Conn. Spec. Acts at 211.

¹⁰⁸ *Id.*

¹⁰⁹ 1876 CITY YEAR BOOK.

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² 1879 CITY YEAR BOOK.

this bridge that would call for a large expenditure of money”.¹¹³ Seemingly to make its point clear, East Haven began to “discontinue[] so much of the highway leading to this bridge” after New Haven’s Board of Alderman ordered construction on the assumption that East Haven would pay half the cost.¹¹⁴

New Haven reacted angrily to “backward” East Haven’s refusal.¹¹⁵ It established a committee to negotiate with the town and threatened to appeal to the state if a settlement was not reached.¹¹⁶ The two municipalities eventually reached an agreement. New Haven paid 7/12 of the total cost, on the grounds that 7/12 of the span was located in New Haven’s territory.¹¹⁷

The third means of coordinating construction across town boundaries, court order, was used in the construction of the Kimberly Avenue Lift Bridge between 1904 and 1906. The federal War Department had ordered New Haven and Orange in 1899 and 1903 to build either a drawbridge or raised fixed bridge over the West River so that larger ships could pass.¹¹⁸ New Haven preferred a raised fixed bridge and believed it had reached a tentative agreement with Orange. When New Haven’s Director of Public Works, however, attended an Orange town meeting to work out the details, the town rescinded its approval

¹¹³ 1876 CITY YEAR BOOK.

¹¹⁴ *Id.*

¹¹⁵ 1878 CITY YEAR BOOK.

¹¹⁶ 1876 CITY YEAR BOOK.

¹¹⁷ 1878 CITY YEAR BOOK.

¹¹⁸ Letter from Elihu Root, Secretary of War, to the City of New Haven and the Town of Orange (April 27, 1903) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1903, at 561; Letter from Elihu Root, Secretary of War, to the City of New Haven and the Town of Orange (Oct. 4, 1899) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1901, at 15.

and declared itself in favor of a lift bridge.¹¹⁹ The two municipalities resolved the dispute in New Haven Superior Court. Orange prevailed, and a lift bridge was built.¹²⁰

These three means of coordination—state legislation, negotiation, and court order—led to considerable uncertainty. The terms of coordination tended to vary wildly from bridge to bridge. For example, in 1892 New Haven proposed to jointly replace the “very dilapidated” Oak Street Bridge over the West River on 50/50 cost sharing basis with Orange.¹²¹ When Orange rejected the offer, New Haven submitted draft legislation to the state Assembly directing Orange to cover half the bridge’s costs.¹²² The state passed the draft legislation almost word for word, but changed New Haven’s share of the costs to 2/3.¹²³

New Haven fared even worse with the Derby Avenue Bridge in 1899.¹²⁴ Each municipality’s share of the costs was determined by the size of its grand list. New Haven ended up paying 95%, with Orange paying the remainder. Perhaps the oddest arrangement of the period was the maintenance agreement between New Haven and East Haven regarding the Grand Avenue Bridge. Each municipality was responsible for maintenance on its half of the bridge. So when New Haven replanked the bridge in 1892¹²⁵ and 1894,¹²⁶ it stopped at the halfway point.

¹¹⁹ Letter from James B. Coe, Director of Public Works, New Haven, to the New Haven Board of Alderman (May 22, 1903) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1903, at 606.

¹²⁰ 1904 CITY YEAR BOOK.

¹²¹ 1892 CITY YEAR BOOK.

¹²² CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMEN, 1893, at 111.

¹²³ 1893 Conn. Spec. Acts 796.

¹²⁴ 1899 CITY YEAR BOOK.

¹²⁵ 1892 CITY YEAR BOOK.

¹²⁶ 1894 CITY YEAR BOOK.

Coordination problems between municipalities became less common as New Haven annexed many of its neighbors. The City of New Haven annexed Fair Haven in 1870. Fair Haven occupies the land between the Mill and Quinnipiac Rivers in the East of the city. New Haven then began to push for annexation of parts of the Town of New Haven in 1873 because the city was funding, in a variety of ways, much of the Town's infrastructure without the opportunity to collect taxes from its residents.¹²⁷ In 1881, the Town of New Haven purchased the Western shore of East Haven in exchange for forgiving \$200,000 in civil war and bridge debts.¹²⁸ The Town of New Haven was merged into the City in 1897, which gave the City sole ownership over the four Quinnipiac bridges.

B. Bridges Shared with Industry

New Haven frequently split the cost of bridges with private corporations. Cost sharing was common for two types of bridges: bridges crossing railroad tracks and bridges heavily used or damaged by industry.

Bridges Over Railroad Tracks

New Haven had dozens of bridges crossing railroad tracks during the period.¹²⁹ So-called railroad bridges were built at high traffic railroad crossings to allow carriages, cars, trolleys, and pedestrians to cross safely and conveniently. The bridges were typically constructed on order of the State Railroad Commission,¹³⁰ which would instruct the

¹²⁷ 1873 CITY YEAR BOOK; 1875 CITY YEAR BOOK.

¹²⁸ CONNDOT, TOMLINSON BRIDGE: 200 YEARS OF CROSSINGS: 1798-1998, (1998) (promotional release on file with the New Haven Museum and Historical Society).

¹²⁹ See *supra* note 71.

¹³⁰ See, e.g., Order of the Railroad Commissioners (July 1, 1886) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1896 at 572. The Railroad Commissioners were the "bulwark upon whom the public must lean

railroad company owning the underlying tracks and the city to equally share the costs of construction.¹³¹ In the event of a dispute during construction, the Superior Court was empowered to impose a resolution.¹³²

In rare cases, the city and railroad company would negotiate an alternative agreement. For example, in 1923, the city and the N.Y., N.H. & H. R.R. resolved two disputes by means of an agreement to build a railroad bridge over the Bridge Street tracks.¹³³ New Haven agreed to fund and construct the approaches to the bridge and a retaining wall, while the company agreed to construct the bridge and to relinquish its claims to damages resulting from the construction of the new Tomlinson Bridge in 1922.

In all cases, the railroad company managed the construction of the bridge and took ownership after completion. The railroad company was also responsible for maintaining the bridge.¹³⁴ This ownership structure led to tensions between the city and the railroad companies over construction and maintenance. The city, which paid only half the construction cost and none of the maintenance cost, had an incentive to push for elaborate and well-maintained bridges. The railroad companies, which received no direct benefit from the bridges, had an incentive to minimize costs. In 1871, for example, the City Engineer expressed his opinion on the city's railroad bridges by calling a new bridge over the Ferry St. tracks, "the only decent and respectable bridge they have ever built in our

when a strife between conflicting interests comes". Arthur L. Shipman, "Street Railway Land and Railroad Commissioners in Connecticut", 17 Yale L.J. 526, 527 (1908).

¹³¹ See, e.g., 1884 CITY YEAR BOOK (James Street crossing); 1892 CITY YEAR BOOK (Dewitt Street crossing); 1907 CITY YEAR BOOK (pedestrian foot bridge for students crossing the Grant Street tracks near the Kimberly Avenue school.)

¹³² See, e.g. Order of the Superior Court (Nov. 6, 1896) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1896 at 572.

¹³³ 1923 CITY YEAR BOOK.

¹³⁴ 1887 CITY YEAR BOOK 99.

city”.¹³⁵ Similarly, in 1874, the Engineer complained that the New Haven & Northampton Railroad had refused to widen the crossing at Prospect and Trumbull street, despite being “requested repeatedly”.¹³⁶ The company continued to ignore the complaints over the crossing until at least 1881.¹³⁷

In 1923, the state General Assembly upended the rules governing railroad bridges by requiring that cities and towns fund and perform the maintenance of all bridges over N.Y., N.H. & H. R.R. tracks.¹³⁸ The legislation angered New Haven, which had negotiated an agreement in 1905 under which the railroad took responsibility for performing maintenance on all bridges over the city’s East Cut in return for rights granted with respect to “grades and relocations”.¹³⁹ On request from the city, the railroad agreed to continue to perform maintenance until the issue was settled.

Bridges Used By Private Corporations

Beyond its agreements with the railroads, the city also frequently shared the cost of bridges with the private companies that used or damaged them. These agreements were reached through negotiation, and tended to follow lobbying by the city.

The earliest example of cost sharing was in 1869 when a horse railroad partially funded bridges in the Town and City of New Haven.¹⁴⁰ The City had frequently called on the horse railroads to contribute for their use of city roads and bridges. In 1863, the city

¹³⁵ 1871 CITY YEAR BOOK.

¹³⁶ 1874 CITY YEAR BOOK.

¹³⁷ 1881 CITY YEAR BOOK.

¹³⁸ 1923 CITY YEAR BOOK.

¹³⁹ *Id.*

¹⁴⁰ 1869 CITY YEAR BOOK.

asked for a percentage of the horse railroads' revenues.¹⁴¹ In 1864, it asked for compensation so that it could "protect our interests".¹⁴² In 1867, it said that the companies had a "duty" to provide payment to the city.¹⁴³ Finally, in 1869, a horse railroad relented when it paid \$115 to the Town for the replanking of the Barnesville Bridge, and \$450, out of a total cost of \$2200, to the City for the replanking of the Grand Avenue Bridge.¹⁴⁴

Cost sharing became more common with the introduction of the electric streetcars in the 1890s. Streetcar companies reimbursed the city for the cost of laying, and paving between, tracks on city bridges.¹⁴⁵ They also occasionally contributed to the cost of strengthening bridges to support the weight of electric streetcars, even though the contributions were not required by law.¹⁴⁶ Finally, some companies made payments for the damage they caused to bridges. In 1929, for example, a railroad paid for repairs on the Belle Dock Branch Bridge on Chapel Street because "the gases from locomotives had caused the members to become unsafe for the increasing travel over the structure".¹⁴⁷

Despite these cost-sharing agreements, many of the burdens imposed by industry went uncompensated. In many cases, private railroads do not appear to have contributed to the cost of bridge strengthening.¹⁴⁸ When they did, they usually paid less than the full

¹⁴¹ 1863 CITY YEAR BOOK.

¹⁴² 1864 CITY YEAR BOOK.

¹⁴³ 1867 CITY YEAR BOOK.

¹⁴⁴ 1869 CITY YEAR BOOK.

¹⁴⁵ *See, e.g.*, 1892 CITY YEAR BOOK (Morris Cove Electric Railroad pays to have its tracks laid on the Tomlinson Bridge); 1907 CITY YEAR BOOK (Consolidated Railroad pays half the cost of paving between its tracks on the Kimberly Avenue Lift Bridge).

¹⁴⁶ 1894 CITY YEAR BOOK (Fair Haven and Westville Railroad Company pays a share of the cost of strengthening the Whalley Avenue Bridge); 1908 CITY YEAR BOOK (trolley company pays 25% of the cost of strengthening Whalley Avenue Bridge "even though not required by law").

¹⁴⁷ 1929 CITY YEAR BOOK.

¹⁴⁸ In 1901, the city strengthened the Ferry Street Bridge on request of the Manufacturers' Railroad Company. The city does not appear to have received any compensation, but it did impose limits on the railroad's use of

cost. Bridges also had shorter lifespans because of the weight of the manufacturing goods transported across them by rail.

C. Bridges Ordered by the Federal Government

During the period, the United States War Department, pursuant to the federal navigation servitude, ordered New Haven to replace two bridges to improve navigation on the Quinnipiac River and the West River. It also ordered a series of costly repairs. The federal government's orders surprised New Haven and disrupted its infrastructure planning. They also provided citizens upset with that planning a way to bypass the local political process.

In 1894, New Haven residents living along the Quinnipiac River petitioned the War Department to designate the Grand Avenue Bridge, which was then a fixed structure, an "unreasonable obstruction to [the river's] free navigation". They asked the Department to order the city and town governments to construct a new drawbridge in its place. Residents along the Quinnipiac River had long sought a drawbridge in the hope that commercial ships would travel further up the river and bring manufacturing jobs to the area. As far back as 1858, river residents had petitioned the New Haven Board of Aldermen for a drawbridge, which they deemed "absolutely indispensable...to promote future growth."¹⁴⁹ New Haven denied the request.

the bridge. It was prohibited from using cars weighing more than 50 tons, and only one car was allowed on the bridge at a time. 1901 CITY YEAR BOOK. The Tomlinson Bridge was strengthened on request of the Manufacturers' Railroad in 1904. 1904 CITY YEAR BOOK.

¹⁴⁹ Petition to Selectmen Requesting New New Haven-Fair Haven Bridge (Sept. 24, 1858) (on file with the New Haven Museum and Historical Society) ("By obstructing the navigation of the Quinnipiac, [the bridge] has seriously impeded our growth and prosperity as a village...It is evident that a New Bridge is absolutely indispensable...[w]ith a view to promote our future growth and in order to induce manufacturing to locate on

The War Department held a hearing with the residents and New Haven's Corporation Counsel. After the hearing, it issued a preliminary order finding the bridge an "unreasonable obstruction" and requiring the city and town governments to construct, at their own expense, a new bridge with a draw-span of at least eighty feet by December 31, 1895.¹⁵⁰

The city, as required by federal statute, was given a second hearing in February 1895.¹⁵¹ It raised four arguments in its submissions. First, a new bridge "would not prove satisfactory to the majority of our residents" because of the expense. A new bridge, with an estimated fifty to one hundred thousand dollar price tag, would make it necessary "to impose an extra taxation upon many who can ill afford it".¹⁵² Second, the city argued that it was impossible for it to raise the necessary funds in the time frame demanded by the War Department.¹⁵³ The city had already appropriated its funds for the year and was banned by its charter from raising additional funds. Third, the city questioned the value of a drawbridge. "Is it to accommodate commerce that has not as yet developed, for none exists, and there has never been any above the bridge to [our] recollection?"¹⁵⁴ Fourth, the city claimed decisions about bridge construction were best made at the local level. "Whenever the citizens particularly interested in this work shall petition the local authorities, and can show good reasons for the construction of such a bridge, they will

the banks of the Quinnipiac North of the Bridge, thereby providing means of employment for a portion of our rapidly growing population.").

¹⁵⁰ Letter from Henry M. Robert, Lieut. Col. Corps of Engineers, to the City of New Haven Connecticut (Feb. 8, 1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 136.

¹⁵¹ *Id.*

¹⁵² Letter from A.C. Hendrick to the U.S. War Department (1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 136, 137.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

receive careful attention from those in authority.”¹⁵⁵ The city concluded by asking for an extension of at least a year in the event the War Department ruled in favor of the petitioners.¹⁵⁶

The War Department rejected the city’s requests, but granted a one-year extension and reduced the drawspan’s width requirement to seventy feet.¹⁵⁷ The city expressed disappointment with the “direct and ... very unusual” order, but complied.¹⁵⁸ The Corporation Counsel was instructed to secure approval from the General Assembly for a bond issue because “any increase in taxation would not be received with favor.”¹⁵⁹ Construction of the new bridge began in 1896 and was completed in 1898.¹⁶⁰

The War Department ordered the replacement of a second fixed bridge—the Kimberly Avenue Bridge over the West River—in 1899.¹⁶¹ The Department required the city to build a drawbridge with a forty-five feet wide opening. The city was given one year to complete construction and threatened with a penalty of \$5000 for every month the bridge was delayed beyond the deadline.¹⁶² The mayor of New Haven, Cornelius T. Driscoll, expressed his displeasure to the Board of Aldermen. “There has been some talk of getting Congressional legislation to change the order or to get the order modified in some other

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ Letter from Daniel S. Lamont, Secretary of War, to the City of New Haven (Apr. 8, 1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 139.

¹⁵⁸ Letter from A.C. Hendrick, Mayor of New Haven, to the New Haven Board of Aldermen (Apr. 23, 1895) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1895 at 140.

¹⁵⁹ *Id.*

¹⁶⁰ 1898 CITY YEAR BOOK.

¹⁶¹ Letter from Elihu Root, Secretary of War, to the City of New Haven (Oct. 4, 1899) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1900-1901 at 15.

¹⁶² Letter of Cornelius T. Driscoll, Mayor of New Haven, to the New Haven Board of Aldermen (June 11, 1900) *in* CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1900-1901 at 14.

way, but I am informed that Congress has adjourned without passing any such legislation and that the order as originally passed has not been changed".¹⁶³

New Haven eventually received an extension on the deadline. In 1903, the War Department informed the city that it was considering modifying the order to permit the construction of a fixed bridge.¹⁶⁴ New Haven sent its corporation counsel to Washington to "use his best endeavors to secure a modification of the order...so that the height of said bridge above high water shall not exceed fifteen feet":¹⁶⁵ lower bridges were much cheaper to build. The corporation counsel was successful and the War Department issued a new order requiring a bridge with an opening at least forty-five feet wide and fifteen feet high.¹⁶⁶

The city's preference for a fixed bridge, instead of a bridge with a moveable draw, met with an angry reaction from local businessmen.¹⁶⁷ In a petition to the city and the War Department, they argued that a raised bridge would be more expensive than a lift bridge and would "retard" commerce.¹⁶⁸ "New Haven's best and most prominent people are not opposed to spending a reasonable sum of money...to open up the territory [beyond] the Kimberly Avenue bridge...so that industries already located, and others who may choose to locate there, may have a fair and reasonable opportunity to develop the same."¹⁶⁹

¹⁶³ *Id.*

¹⁶⁴ Letter from Elihu Root, Secretary of War, to the City of New Haven (Feb. 2, 1903) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1903 at 476.

¹⁶⁵ Resolution of the New Haven Board of Aldermen, in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1903 at 478.

¹⁶⁶ Letter from Elihu Root, Secretary of War, to the City of New Haven (Mar, 25, 1903) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1903 at 561.

¹⁶⁷ Petition to the New Haven Board of Aldermen (Feb. 26, 1903) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1903 at 477, 478.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 477.

They also argued that a moveable bridge would be a wiser choice, since a future War Department secretary could deem a fifteen-foot high fixed bridge as an unreasonable obstruction.¹⁷⁰ The town of Orange agreed with the businessmen and the dispute was eventually resolved in their favor by the Superior Court, as described in the previous section. The bridge cost the city \$185,000, which was funded through bonds.¹⁷¹

The War Department also intervened in the maintenance of New Haven bridges. In 1907, it ordered that the Humphrey Street Bridge over the Mill River be raised from twenty-four to thirty feet high, which “increased the expense very largely”.¹⁷² In 1913 and 1914, it ordered the installation of large signal lights on the Chapel, Ferry Street, and Grand Avenue bridges.¹⁷³ In 1923, it ordered the installation of new fenders on the Grand Avenue and Chapel Street bridges.¹⁷⁴

The Department also occasionally intervened in bridge operations. In 1923, representatives of the Department met with local residents, companies, and politicians, who complained that the opening of the bridge draws for ships in the morning caused workers to be late for work. In response, the Department permitted the city to keep the draws closed between 6:30 and 7 every morning.¹⁷⁵

V. 1932-1970: The Emergence of Federal and State Grants

Prior to 1930, the only federal and state financial support for New Haven’s bridges was indirect: the interest on bonds issued by the city was exempt from the income tax

¹⁷⁰ *Id.* at 478.

¹⁷¹ 1906 CITY YEAR BOOK.

¹⁷² 1907 CITY YEAR BOOK.

¹⁷³ 1913 CITY YEAR BOOK; 1914 CITY YEAR BOOK.

¹⁷⁴ 1923 CITY YEAR BOOK.

¹⁷⁵ *Id.*

imposed in 1913. During the Depression, the federal and state governments began to provide direct assistance to the city in two ways: both levels of government contributed funds to the construction of bridges, and the state government accepted responsibility for constructing and maintaining some city bridges on state highways. In this Part, I will describe both means of assistance.

A. Direct Contributions

As it did to most cities, the Depression weakened New Haven's financial position and limited the local funds available for public works. The city's annual payments on its bond debt jumped to over 16% of the annual budget as a result of declining city revenues and the surge in bond issues between 1910 and 1930.¹⁷⁶ State legislation requiring the city to provide "emergency relief"—social services—to the poor placed an additional burden on the city. In 1938, the city spent \$800,000—around 9% of the city budget—on state mandated relief programs.¹⁷⁷ Relief spending was greater than the city's entire public works budget.¹⁷⁸

In response to these financial pressures, New Haven announced in 1935 that it would limit new borrowing, including the issuance of bonds.¹⁷⁹ In 1939, the city went further and announced that bonds would only be issued if "absolutely necessary".¹⁸⁰ The mayor expressed concern about the "heavy" debt repayments due in the coming decade¹⁸¹

¹⁷⁶ 1907 CITY YEAR BOOK. This total includes annual interest payments and annual payments to the sinking fund to cover outstanding principal.

¹⁷⁷ 1938 CITY YEAR BOOK.

¹⁷⁸ *Id.*

¹⁷⁹ 1935 CITY YEAR BOOK. City employees also had a portion of their wages withheld. 1936 CITY YEAR BOOK.

¹⁸⁰ 1939 CITY YEAR BOOK.

¹⁸¹ *Id.*

and was particularly critical of what he considered excessive borrowing by the city in the preceding twenty years.¹⁸²

New Haven's only bond issue between 1934 and 1945 for any public infrastructure work was for the construction of a new Ferry Street Lift Bridge on the Quinnipiac River. In 1937, the Board of Aldermen, at the mayor's request, authorized \$785,000 in bonds to fund the bridge.¹⁸³ To minimize costs, the bridge was to be designed in-house by the City Engineer, a departure from the traditional practice of hiring private contractors.¹⁸⁴

After the Board authorized the bonds, but before they were issued, the mayor negotiated \$353,250 in funding for the new bridge from the Public Works Administration (PWA).¹⁸⁵ The PWA was a New Deal agency established by President Roosevelt to stimulate the economy by funding large infrastructure projects. The PWA funding for the Ferry Street Bridge was the first direct funding provided to the construction of a New Haven bridge by either level of government. After receiving the PWA funds, the city reduced its planned bond offering by the amount of the federal grant.¹⁸⁶

Construction on the Ferry Street Bridge began in 1938 and was finished in 1940.¹⁸⁷ Despite being designed in-house, the lift bridge had "outstanding Art Deco detailing".¹⁸⁸ The mayor hailed it as "among the finest in Connecticut and ... a great improvement to the district".¹⁸⁹ In emphasizing the bridge's aesthetics, the City Engineer followed the local

¹⁸² 1935 CITY YEAR BOOK.

¹⁸³ 1937 CITY YEAR BOOK.

¹⁸⁴ 1936 CITY YEAR BOOK.

¹⁸⁵ 1937 CITY YEAR BOOK.

¹⁸⁶ *Id.*

¹⁸⁷ 1940 CITY YEAR BOOK.

¹⁸⁸ CLOUETTE, *supra* note 48, at 40.

¹⁸⁹ 1940 CITY YEAR BOOK.

trend. The Merritt Parkway opened in 1938 with “69 Art Deco masterpiece[] [bridges] that served as highly ornate theatrical arches”.¹⁹⁰

The federal government also contributed to the construction of two other New Haven bridges during the Depression. The Blake Street Bridge over the West River and the Blake Street Bridge over Wilmot Brook were constructed using free labor provided by the Works Progress Administration (WPA).¹⁹¹ The WPA coordinated with the city on many public works projects during the period, including the repair of some bridges. The WPA paid unemployed laborers to work on the projects and the city paid the cost of the materials used. The city estimated that the WPA reduced its project costs by 50%.¹⁹² To maximize the return on its public work expenditures, most of the public works budget during the Depression was spent on WPA-approved projects.¹⁹³

In addition to the WPA and PWA funds, New Haven received limited funding from the state government. Beginning in 1938 and continuing until at least 1943, the state gave New Haven annual transfers between \$1125 and \$3375 for “drawbridges”.¹⁹⁴ It is unclear under what state program the transfers were made, but they followed two significant expansions in state involvement in local road and bridge construction. First, in 1930 the state Highway Department passed the first set of bridge design standards, meant to ensure that bridge design across the state was uniform.¹⁹⁵ Second, in response to the Depression, the state began to provide funding to towns and cities for local road construction and

¹⁹⁰ CONDOTT, *MANAGING TRAVEL IN CONNECTICUT: 100 YEARS OF PROGRESS* (1995) [hereinafter *MANAGING TRAVEL*].

¹⁹¹ 1939 CITY YEAR BOOK.

¹⁹² 1938 CITY YEAR BOOK.

¹⁹³ 1938 CITY YEAR BOOK.

¹⁹⁴ 1938 CITY YEAR BOOK; 1939 CITY YEAR BOOK; 1940 CITY YEAR BOOK; 1941 CITY YEAR BOOK; 1942 CITY YEAR BOOK.

¹⁹⁵ *MANAGING TRAVEL*, *supra* note 190.

maintenance in 1931.¹⁹⁶ The Town Aid Program, as the program was later named, initially appropriated \$3 million to be divided equally among the state's 169 towns and cities.¹⁹⁷

As a result of intergovernmental transfers —largely the WPA and PWA funding— New Haven's debt reduction program was largely effective. The City ended the Depression with a smaller debt load than it had at the start. The City paid \$493,000 in annual interest costs in 1940 compared with over \$800,000 in annual interest in 1932.¹⁹⁸ WPA and PWA funds effectively served as substitutes for municipal bonds. According to the mayor, it was only because of federal funds that the city was able to limit its bond issues between 1934 and 1945 to the Ferry Street Bridge bonds.¹⁹⁹

The WPA and PWA program ended in 1942, which meant that “all projects carried on will have to be performed at public expense and no federal financial aid can be expected.” The city initially proceeded cautiously. When the Grand Avenue Bridge needed substantial repairs in 1943, the city choose to fund the \$30,000 cost using general revenues rather than bonds.²⁰⁰

At the end of the war, however, the city began to issue bonds at a rapid pace. The city's bond debt increased from \$8.1 million in 1944²⁰¹ to \$12.1 million²⁰² in 1952 to \$57

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ 1932 CITY YEAR BOOK; 1940 CITY YEAR BOOK..

¹⁹⁹ 1938 CITY YEAR BOOK.

²⁰⁰ 1943 CITY YEAR BOOK. The bridge was on the verge of being closed when it was repaired. “In the last few weeks [Director of Public Works] Golden reported the bridge has deteriorated so badly that he said he doubted it could be opened more than five or six times without being completely out of commission”. “Grand Avenue Bridge Failing, Golden States”, Apr. 22, 1943 (newspaper article in the New Haven Museum and Historical Society's DANA collection).

²⁰¹ 1944 CITY YEAR BOOK.

²⁰² 1952 CITY YEAR BOOK.

million in 1966.²⁰³ The city was able to take on debt far higher than 5% of its grand list because of a change in Connecticut law. Beginning in the early 1950s, municipalities were permitted to borrow up to 5% of their grand list for general improvements, 5% for schools, and 3% for sewer—a total of 13% of their grand lists.²⁰⁴

Some of the proceeds of the many multi-million bond issues were directed towards the city's bridges. In 1947, \$259,000 in bridge bonds were issued to fund several bridge projects, including the construction of a new bridge on Grand Avenue over the Mill River and the construction of a new fender pier for the Chapel Street Bridge.²⁰⁵ In 1952, part of a \$2.57 million bond issue was used to fund a new bridge on Humphrey Street.²⁰⁶

In 1964, the city launched “a major repair program to replace certain bridges” in response to a review of its bridges by the Bureau of Engineering.²⁰⁷ The city announced that a new Chapel Street Bridge over the Mill River would be constructed by 1966.²⁰⁸ It appropriated \$600,000 to commission a design from private consultants.²⁰⁹

The city's declining financial position soon interfered with the bridge replacement program. Planning for the Chapel Street Bridge was delayed. In 1967, the City Engineer renewed his call for a bridge reconstruction program. “The replacement of several major bridges in the City is a necessity due to their age and poor condition”.²¹⁰ In 1969, the city announced that plans for a new Chapel Street Bridge and a new Grand Avenue Bridge over

²⁰³ CITY OF NEW HAVEN, ANNUAL FINANCIAL REPORT, 1966.

²⁰⁴ 1956 CITY YEAR BOOK.

²⁰⁵ 1947 CITY YEAR BOOK.

²⁰⁶ 1952 CITY YEAR BOOK.

²⁰⁷ CITY OF NEW HAVEN, ANNUAL REPORT OF THE CITY ENGINEER, 1964.

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ CITY OF NEW HAVEN, ANNUAL REPORT OF THE CITY ENGINEER, 1967.

the Quinnipiac River would be ready by 1970, but the projects were once again delayed.²¹¹ The Grand Avenue Bridge was not replaced until 1984. The Chapel Street Bridge was replaced in 1992.

Federal and state transfers to New Haven increased during this period. In 1963, for example, 10.57% of the city's revenue came from federal and state grants, causing the city to note that "revenue sources in municipal government have and still are changing from those of ten and twenty years ago".²¹² A large portion of the grants was for education and housing. The city also received Town Aid for Highways, Traffic and Parking from the state. In 1969, the grant Town Aid grant was \$426,5000.²¹³ Most, if not all, of this transfer, however, was directed toward roads. It was not until the 1970s that the city began to receive direct transfers for its bridges.

B. State Ownership of Bridges

Beginning in the 1940's, New Haven's bridge burden was reduced in a second way: city bridges located on state highways were transferred to the state. The state's acquisition of city bridges occurred in a gradual and haphazard way, often in response to lobbying from the city.

In the 19th century, principal highways, like the Boston Post Road, were constructed and maintained by the towns and cities through which they passed.²¹⁴ Since the towns and cities were legally obligated to pay for these roads "even if they reaped no benefit", the

²¹¹ ANNUAL REPORT OF THE CITY ENGINEER, 1969.

²¹² CITY OF NEW HAVEN, ANNUAL FINANCIAL REPORT, 1963.

²¹³ CITY OF NEW HAVEN, ANNUAL FINANCIAL REPORT, 1969.

²¹⁴ MANAGING TRAVEL, *supra* note 190.

roads were “often neglected”.²¹⁵ In 1905, the state responded to complaints of poor maintenance by taking responsibility for the engineering and maintenance of most key roads.²¹⁶ New Haven roads and bridges, however, were not transferred to the state. The state’s highway program at the time largely favored rural areas over larger industrial centers, such as New Haven, that could afford to perform at least adequate maintenance.²¹⁷

The Tomlinson Bridge, in 1941, was the first city bridge transferred to state jurisdiction. The Tomlinson Bridge was located on the Boston Post Road, also known as US Route 1. Route 1 was the state’s most important highway, serving as the “primary link between the Port of New York and Connecticut’s major industrial centers”.²¹⁸ In the late 19th century, traffic along the road was relatively light. Beginning in 1919, however, there was a “dramatic increase” in traffic, and the road was frequently “clogged with both slow-moving local motorists and long distance truck traffic”.²¹⁹

In 1936, the city, in response to the growing traffic and its deteriorating finances, began to lobby the state to take ownership of the portion of US Route 1 passing through the city, including the Tomlinson Bridge.²²⁰ For the next five years, transferring responsibility was one of the mayor’s top five legislative priorities.²²¹ This position marked a dramatic change for the city: only fifty years earlier it had actively sought to acquire the Tomlinson Bridge. In 1941, the state partially acquiesced by accepting responsibility for the

²¹⁵ *Id.*

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *See, e.g.* 1936 CITY YEAR BOOK; 1937 CITY YEAR BOOK.

²²¹ Speech of the John W. Murphy, Mayor of New Haven, to the New Haven Board of Aldermen (Jan. 4, 1937) in CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1937 at 6.

Tomlinson Bridge.²²² The city praised the state's decision as only fair. "This was the accomplishment of a long sought relief, inasmuch as this bridge being on a Federal and State through highway received much of its load from foreign localities and this was the only lift bridge on this route which was not maintained and operated by the State".²²³

In the following decades, the state acquired many of the other city bridges on state highways, including the Kimberly Avenue Lift Bridge (1945),²²⁴ Derby Avenue Bridge (Route 34), the Whalley Avenue Bridge (Route 63), and the Willow Street Bridge over the Mill River.²²⁵

The city's bridge burden was also reduced by the construction of two interstate highways through New Haven. I-95 and I-91 added two new bridges across the Quinnipiac River: the Q bridge, which opened in 1958, and an unnamed I-91 bridge near the Middletown Avenue Bridge. The bridges were constructed by the state and entirely funded by the state (10%) and federal (90%) governments.²²⁶

Although the bridges were intended to aid travel between towns and states, they also facilitated local travel. Less than fifty percent of the eastbound traffic on the Q Bridge in the 1980s was headed to destinations beyond New Haven, suggesting that most drivers used the bridge to access the city instead of interstate travel.²²⁷ The presence of the bridge inevitably diverted traffic that otherwise would have used one of the city-maintained Quinnipiac bridges.

²²² 1941 CITY YEAR BOOK.

²²³ *Id.*

²²⁴ 1945 CITY YEAR BOOK.

²²⁵ Carol A. Leonetti, *Neglect Takes Toll on City Bridges*, NEW HAVEN REG., May 15, 1988, at A1.

²²⁶ MANAGING TRAVEL, *supra* note 190.

²²⁷ Paul Botts, *New Crossing, Tunnel Eyed*, NEW HAVEN REG., Feb. 16, 1987 at A1.

In combination with the state's acquisition of several New Haven bridges, the interstate highway system greatly changed the status of the city's Quinnipiac bridges. In 1930, four bridges crossed the river, all of which were maintained by the city. In 1960, six bridges crossed the river, three maintained by the city and three maintained by the state.

VI. 1970-2010: Municipal Dependence on Federal and State Grants

Following the end of WPA and PWA funding in 1942, New Haven was left on its own to fund bridge construction and repairs. Major bridge projects quickly came to a halt. Between 1942 and 1982 no major bridges were constructed or rehabilitated in the city. By 1971, the New Haven's bridges were in dire condition. "Four major bridge replacements are necessary at this time and to avoid any future bridge replacement, we must start a comprehensive repair program...This is a program that cannot be delayed for much longer."²²⁸ In the 1960s, the City Engineer's office had prepared much of the groundwork for restoring the city's bridges: preliminary plans to replace the Grand Avenue Bridge and Chapel Street Bridge had been drafted and a city-wide repair schedule was ready to be implemented. But the city claimed it could not afford to proceed. "The only thing holding up this program is the lack of funds".²²⁹

The forty-year pause in major bridge work ended in 1982 when the federal government funded the replacement of the Grand Avenue Bridge over the Quinnipiac River. The project ushered in a new era in bridge financing. Since 1982, every major bridge project in the city has been majority-funded by the state or federal government. In most cases, New Haven's share of total construction or rehabilitation costs has been below

²²⁸ NEW HAVEN DEPARTMENT OF PUBLIC WORKS, COMPREHENSIVE ANNUAL REPORT, 1971.

²²⁹ *Id.*

twenty percent. Federal and state bridge funding programs now largely determine the timing and scale of bridge projects in the city.

A. Federal and State Funding Programs

In 1967, the Silver Bridge between Ohio and West Virginia collapsed, killing 46 people.²³⁰ Congress responded in 1970 to the resulting public concern over bridge safety by establishing two federal bridge programs—the National Bridge Inspection Program (NBIP) and the Special Bridge Replacement Program—that continue in amended form today.²³¹

The 1970 NBIP required states to periodically inspect all bridges on federal-aid highways. Federal-aid highways are state-owned highways that have been designated by the state, in consultation with the Federal Highway Administration, as part of the National Highway System.²³² Locally owned roads are rarely designated as federal-aid highways. In 1978, the NBIP was extended to bridges located off federal-aid highways, including locally owned bridges. Congress has periodically strengthened the inspection procedures, usually in response to high-profile bridge collapses, such as the 1983 Mianus River Bridge Collapse in Connecticut and the 1987 Schoharie Creek Bridge Collapse in New York.²³³

²³⁰ GOVERNMENT ACCOUNTABILITY OFFICE, HIGHWAY BRIDGE PROGRAM: CLEARER GOALS AND PERFORMANCE MEASURES NEEDED FOR A MORE FOCUSED AND SUSTAINABLE PROGRAM 7 (2008).

²³¹ Federal Aid Highway Act of 1970, Pub. L. No 91-605, 84 Stat. 1713.

²³² 23 C.F.R. § 470.109 (1997). While the National Highway System (NHS) includes the Interstate Highway System (IHS), it is approximately four times longer than the IHS. *Id.* at § 470.107. The Special Bridge Replacement Program and its successors do not fund interstate bridges. Instead, interstate bridges are funded 90% by the federal government and 10% by state government, as are all other expenditures on the interstate system.

²³³ FEDERAL HIGHWAY ADMINISTRATION, STATUS OF NATION'S HIGHWAYS, BRIDGES AND TRANSIT: 2004 CONDITIONS AND PERFORMANCE, 15-3 (2004). Following the collapse of the Mianus River Bridge, more "rigorous inspection procedures for fracture critical structures" were implemented. Following the collapse of the Schoharie Creek

Today, the NBIP requires states to inspect, every two years, all bridges publicly owned, over twenty feet in length, and located on public roads, including bridges owned by municipalities.²³⁴ The NBIP also promulgates two bridge inspection standards. First, all bridges are given a sufficiency rating between 0 and 100 based on 24-factor formula. Second, bridges are classified as either not deficient or deficient using a separate assessment scheme. A bridge is deemed deficient if its physical structure is found to be in poor condition (structural deficiency) or if its design is no longer adequate for the traffic it carries (functional obsolescence). As a result, all bridges covered by the NBIP have both a sufficiency score and a designation as not deficient or deficient.²³⁵

The 1970 legislation also established the first federal funding program for bridges. The Special Bridge Replacement Program covered up to 75% of the cost of replacing bridges located on federal-aid highways.²³⁶ Federal funding was expanded in 1978, when Congress replaced the Special Bridge Replacement Program with the Highway Bridge Replacement and Rehabilitation Program (HBRRP).²³⁷ HBRRP increased the maximum federal funding share to 80% of bridge replacement and rehabilitation costs and required states to spend 15-35% of their federal bridge funding on non-federal-aid highway bridges (off-system bridges). These bridges are usually municipal bridges or rural state roads. In 2005, the HBRRP was replaced with the Highway Bridge Program (HBP), which eliminated

Bridge, the NBIP required underwater inspection of bridges and designed new measures to detect “scour damage”.

²³⁴ 23 U.S.C. §151 (2006); *see also* GAO, *supra* note 230.

²³⁵ For a description of the rating system, *see* GAO, *supra* note 230.

²³⁶ Federal Aid Highway Act of 1970, Pub. L. No 91-605, 84 Stat. 1741.

²³⁷ Surface Transportation Assistance Act of 1978, § 124, Pub. L. 95-599.

the cap on the percentage of funds that could be spent on off-system bridges.²³⁸ States can now direct 100% of their federal bridge funding to locally owned bridges.

The HBP distributes approximately \$4 billion annually to the states for bridge projects.²³⁹ The program has four key features. First, the program covers 80% of the cost of eligible projects.²⁴⁰ Second, bridges are only eligible for replacement if they are classified as deficient and have a sufficiency score below 50.²⁴¹ Bridges are eligible for rehabilitation if they are deficient and have a sufficiency score between 50 and 80. Bridges that do not meet these conditions may not receive funding for replacement or rehabilitation; however, they may receive funding for other needs, such as systematic preventive maintenance projects.²⁴² Third, each state receives an annual allotment of federal bridge funds. The allotments are determined by a formula that considers the total surface area of all bridges in the state that are eligible for replacement or rehabilitation—the poorer a state’s bridges, the more funding it receives.²⁴³ States may not receive, however, less than .25% or more than 10% of the entire HBP funding pool.

Fourth, it is the state department of transportation, not the federal government, that determines which eligible bridge projects are funded out of a state’s allotment.²⁴⁴ The states are free to choose any bridge for replacement or rehabilitation as long as it meets the eligibility requirements. Similarly, they can choose to direct all or some of their allotment

²³⁸ Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Pub. L. 109-59, 119 Stat. 1172.

²³⁹ 119 Stat. 1153.

²⁴⁰ 23 U.S.C. § 144(k)(2).

²⁴¹ GAO, *supra* note 230, at 15.

²⁴² 23 U.S.C. § 144(d)(2).

²⁴³ *Id.* at § 144(e).

²⁴⁴ GAO, *supra* note 230, at 18.

to systematic preventative maintenance instead of replacement and rehabilitation. States are even free to transfer up to 50% of their allotment to use on non-bridge transportation projects; however, their allotment in the following year is reduced by the same amount.

In addition to these block grants, local bridges may receive federal funding in two other ways. First, local bridges may be funded through congressional earmarks contained in appropriations bills. Second, the HBRRP and HBP have at times contained discretionary funding programs that allow the Federal Highway Administration (FHWA) to make grants to bridges selected through a competitive application process. These grants differ from HBP block grants in that the recipients are chosen by the FHWA, not state Departments of Transportation. Presently, the FHWA administers one discretionary program. The Long-Term Bridge and Innovative Bridge Research and Deployment Program awards approximately \$20 million annually in grants to bridges that implement new design or construction techniques.²⁴⁵ Between 1978 and 2005, the largest discretionary fund was the aptly named Discretionary Bridge Program.²⁴⁶ The program awarded funds to mega bridges that cost more than \$10 million. Congress replaced the Discretionary Bridge Program in 2005 with a \$100 million Bridge Set-Aside Program.²⁴⁷ Recipients of the Set-Aside funds were designated by Congress at the time of the program's implementation.

²⁴⁵ Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, § 5502, Pub. L. 109-59, 119 Stat. 1785 (2005).

²⁴⁶ Transportation Equity Act for the 21st Century, § 109(b), P.L. 105-78, 112 Stat. 141 (1998).

²⁴⁷ § 1109 (e), Pub. L. 109-59, 119 Stat. 1174. These programs replaced the Innovative Bridge Research and Construction Program, which distributed grants of \$150 million under between 1998 and 2004. Transportation Equity Act for the 21st Century, P.L. 105-78, 112 Stat. 428 (1998); Federal Highway Administration, Overview of the IBRCP, <http://www.fhwa.dot.gov/bridge/ibrc/overview.cfm>.

As will be discussed below, New Haven has received federal funding from all three of these federal funding sources—HBP block grants, NHTWA discretionary grants, and congressional earmarks.

The Connecticut state government established funding programs for municipal bridges following the collapse of the Mianus River Bridge in 1983.²⁴⁸ The bridge was one of the busiest bridges in the state, carrying over 90,000 vehicles a day on the Connecticut Turnpike. Its collapse killed three people. In the wake of the disaster, the state created the Town Bridge Program and the Local Bridge Program.²⁴⁹

The Town Bridge Program was a temporary fund that provided emergency funding to 364 structurally deficient bridges owned by Connecticut municipalities.²⁵⁰ The Local Bridge Program is a permanent fund that provides grants for bridge construction and rehabilitation.²⁵¹ Under the Program, municipalities can apply to receive 10-33% of the cost of bridge construction or rehabilitation.²⁵² The exact percentage a municipality receives depends on a variety of factors, including its grand list per capita, which is a measure of a municipality's tax capacity. New Haven, for example, is eligible to receive 32.84% of its costs.²⁵³ New Canaan is eligible to receive only 11.96%.²⁵⁴ In addition to grants, municipalities can also apply to receive state loans covering up to 50% of the

²⁴⁸ MANAGING TRAVEL, *supra* note 190.

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ Conn. Gen. Stat. 13a-175p to 13a-175w (2009).

²⁵² CONNDOT, LOCAL BRIDGE PROGRAM MANUAL 13.

²⁵³ *Id.* at 113.

²⁵⁴ *Id.*

project's costs. As with the federal grant program, "the main factor determining eligibility for funding under [the] program[] is the bridge's physical condition."²⁵⁵

In addition to the Local Bridge Program, state funds for bridges can be obtained through the appropriation process in the state legislature.

B. Federal and State Grants to New Haven

The federal and state funding system that emerged in the 1970s and early 80s has been critical to the construction of the four major bridge construction projects in New Haven over the last thirty years:²⁵⁶ the Grand Avenue Bridge over the Quinnipiac River in 1982;²⁵⁷ the Chapel Street Bridge over the Mill River in 1992;²⁵⁸ the Ferry Street Bridge over the Quinnipiac River in 2008;²⁵⁹ and the Church Street South Extension Bridge over the New Haven railyards in 2003.²⁶⁰ Federal and state grants have also supported many of the city's smaller bridge rehabilitation and replacement projects.²⁶¹ In most cases, the federal government has taken the lead funding role, followed by the state government. The

²⁵⁵ *Id.* at 6.

²⁵⁶ Excluding state-owned bridges.

²⁵⁷ The federal government funded approximately \$4 million of the \$5 million bridge. Janet Koch, *Logue Orders Bridge Redesign*, NEW HAVEN J. COURIER, Mar. 9, 1979.

²⁵⁸ The state government provided \$11.4 million, the federal government \$820,000, and the city \$3.9 million. James V. Healion, *Fair Haven Getting New Bridge to City*, NEW HAVEN REG., Sept. 4, 1987, at 1.

²⁵⁹ The federal government provided at least \$12.2 million, the state \$2.55 million and the city \$550,000. SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENT, FY 2007-2011 TRANSPORTATION IMPROVEMENT PROGRAM (Revised 2/27/2007) at 41; SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENT, FY 2007-2011 TRANSPORTATION IMPROVEMENT PROGRAM (Revised 9/23/2009) at 37.

²⁶⁰ The federal government provided at least \$19.5 million. Transportation Equity Act for the 21st Century, P.L. 105-78, 112 Stat. 284 (1998).

²⁶¹ For example, the federal government provided \$200,000 of the \$250,000 cost of replacing the East Rock Road Bridge. SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENT, FY 2009 OBLIGATED AND GRANTED PROJECTS LIST 1 (2009); Press Release, City of New Haven, City Announces Plan to Rehabilitate East Rock Road Bridge (Feb. 20, 2009), available at <http://www.cityofnewhaven.com/Mayor/ReadMore.asp?ID={7FE0E417-1E09-4AA7-921E-49ACAE7950FD}>.

city government usually contributes the smallest share. In some cases, the federal and state governments bear the entire cost.²⁶²

In the 2009-2010 fiscal year, for example, New Haven will spend \$12,550,000 on bridge construction and rehabilitation.²⁶³ Of this expenditure, only \$490,000, or 3.9%, will come from the city government. \$7,047,000 (56.2%) will come from the federal government, \$2,675,000 (21.3%) from the state, and 2,345,000 (18.7%) from Yale University.²⁶⁴ The city will also spend \$250,000 on routine bridge maintenance.²⁶⁵ It will fund its \$740,000 in total bridge expenditures through bond issues.²⁶⁶ The city's total bridge bond authorization for the year will be lower, even before adjusting for inflation, than its bridge bond authorization of \$900,000 in 1922. Over the last five years, the city has spent an annual average of \$488,000 on bridge construction, rehabilitation and maintenance, all of which has been funded through bond issues.²⁶⁷

New Haven's dependence on government grants makes lobbying central to its infrastructure planning. Since 2003, the city has employed the Washington lobbying firm Williams & Jensen to lobby Congress for earmarks.²⁶⁸ The city credits the firm, which it

²⁶² Of the \$3.75 million cost of replacing the State Street Bridge over the Mill River, the federal government has provided \$3 million and the state government has provided \$750,000. CONNDOT, 2007 Statewide Transportation Improvement Plan (as of 12/23/09) at 35.

²⁶³ CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2009-2010 BUDGET, at ch. 3-4 (2009).

²⁶⁴ *Id.*

²⁶⁵ *Id.* at ch. 3-2.

²⁶⁶ *Id.* at ch. 3-8.

²⁶⁷ *Id.*; CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2008-2009 BUDGET 176 (2008); CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2007-2008 BUDGET 197, 199 (2007); CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2006-2007 BUDGET 230, 232 (2006); CITY OF NEW HAVEN, ADOPTED FISCAL YEAR 2005-2006 BUDGET 231 (2005).

²⁶⁸ Press Release, City of New Haven, Lobbyist (March 20, 2010), *available at* <http://www.cityofnewhaven.com/Mayor/ReadMore.asp?ID={BEAEFBCB-D7A9-4E3E-9396-6805F9E6D527}>; OpenSecrets.org, Lobbying Spending Database: New Haven, *available at* <http://www.opensecrets.org/lobby/clientsum.php?year=2003&lname=City+of+New+Haven%2C+CT&id=>. Prior to employing Williams & Jensen, New Haven employed another Washington lobbying firm, Verner, Liipfert, Bernhard, McPherson & Hand.

pays \$90,000 a year, for obtaining \$57.5 million in infrastructure grants for New Haven.²⁶⁹ The city often trumpets its own lobbying efforts to residents.²⁷⁰ New Haven's mayor, John Destefano, has testified before Congressional committees five times in the past 13 years.²⁷¹ On each occasion, he lobbied for greater federal governmental funding of municipal infrastructure. In three of the appearances, he also represented the National League of Cities, the preeminent national coalition of municipal governments.

While the lobbying efforts programs have brought federal and state funds to the city, New Haven has not returned to the boom period of bridge construction between 1900 and 1930. Bridge replacement and rehabilitation today is infrequent and long bridge closings—before, after, and during construction—are common. The delays partially stem from the complexity of the federal and state grant process. It can take several years to arrange federal and state financing. They also result from what appears to be a general decline in the capacity of the city to manage construction and maintenance projects. In

²⁶⁹ Press Release, *supra* note 268.

²⁷⁰ See e.g. Press Release, New Haven's Hillhouse Avenue Bridge Re-Opens As Additional Infrastructure Projects Progress (Dec. 29, 2008), ("As the United States Congress prepares to begin assembling a stimulus package to support infrastructure projects nationwide, in an effort to boost the country's economy, New Haven is prepared to submit requests.") <http://www.cityofnewhaven.com/Mayor/ReadMore.asp?ID={D4C2C615-C313-4A8B-B054-5806303DBA40}>; Press Release, City of New Haven, In the Wake of Minnesota Bridge Tragedy, New Haven Assesses Progress on Bridge Repairs, (Aug. 17, 2007), ("We will continue to be proactive with our bridge repairs so that we never have to endure the tragedies that Minnesota recently experienced... We're hoping that the State will support us financially in these efforts."), <http://www.cityofnewhaven.com/Mayor/ReadMore.asp?ID={6DF1725A-5382-475F-A548-FDA43B04F764}>

²⁷¹ *A 21st Century Transportation System: Reducing Gridlock, Tackling Climate Change, and Growing Connecticut's Economy: Hearing Before the S. Comm. on Banking, Housing and Urban Affairs*, 111 Cong. 5 (2009); *Stakeholder Proposals for the Reauthorization of the Surface Transportation Programs: Hearing Before the H. Subcomm. of Highways and Transit of the Comm. on Transportation and Infrastructure*, 107 Cong. 24 (2002); *The Water Quality Financing Act of 2002: Hearing on H.R. 3930 Before the Subcomm. on Water Resources and Environment of the Comm. of Transportation and Infrastructure*, 107 Cong. 199 (2002); *Housing Affordability and Availability: Hearing Before the Subcomm. on Housing and H. Community Opportunity of the Comm. on Financial Services*, 107 Cong. 90 (2001); *Member Policy Initiatives and Requests for Highway and Transit in the ISTEA Reauthorization: Hearing Before the Subcomm. on Surface Transportation of the H. Comm. on Transportation Infrastructure*, 105 Cong. 846 (1997).

this section, I will briefly survey five of the most significant bridge projects in New Haven that have been funded by federal and state grants. I will then consider New Haven's maintenance record since 1980.

Grand Avenue Bridge over the Quinnipiac River

After years of delay, the City released plans in 1977 to replace the 79-year old Grand Avenue Bridge.²⁷² The bridge had been rated the sixth worst in Connecticut and the city was eligible to receive grants covering 75% of the replacement bridge's cost under the federal government's Special Bridge Replacement Program.²⁷³ The city's plans called for an \$11.2 million bridge, 627 feet long, four lanes wide, and eighteen feet above the water.²⁷⁴ The proportions were dramatically larger than the old bridge—the New Haven Register called it “king-sized”.²⁷⁵

The bridge design immediately met with public outrage. Fair Haven residents expressed concern that the bridge would destroy the neighborhood's character. “It's enormous. Just totally out of line with the area. This is an exaggeration, but it would be like plopping the Oak Street connector in the middle of a historic, pleasant village”.²⁷⁶ The New Haven Register similarly opposed the bridge. “What does Fair Haven—or even other

²⁷² Mark Penders, *Rusty and Cranky, Bridge Faces Foes*, NEW HAVEN REG., May 14, 1977.

²⁷³ Donna Kopf, *Grand Avenue Bridge Draws Fair Haven Ire*, New Haven J. Courier, Feb. 24, 1978. In 1977, federal bridge funding was limited to Federal-Aid Highway Bridges. See *supra* Part VIa. It is unclear whether Grand Avenue was designated as a Federal Aid Highway or whether an exception was granted.

²⁷⁴ Janet Koch, *Bridge Divides Fair Haven*, NEW HAVEN J. COURIER, Feb. 22, 1978.

²⁷⁵ Editorial, *Vital Grand Avenue Bridge Decision*, NEW HAVEN REG., Mar. 3, 1978.

²⁷⁶ Koch, *supra* note 274 (quoting unnamed Fair Haven resident).

parts of the city for that matter—gain by being ripped up for a huge bridge that would induce heavier traffic to flow over the Quinnipiac”.²⁷⁷

Most residents supported rehabilitating the old bridge, which would have cost less than half the price of the new bridge.²⁷⁸ The Special Bridge Replacement Program, however, only funded the construction of new bridges—bridge rehabilitation projects were not eligible for grants.²⁷⁹ The city government said it would be “fiscally unwise to retreat from the proposed plans”,²⁸⁰ which prompted The New Haven Register to ask whether the “lure of federal construction funding [was] affecting the best judgment of city officials”.²⁸¹

Area residents made their case to the Coast Guard, which had to approve the bridge, and argued at a hearing before the federal Advisory Council of Historic Preservation that the bridge would violate the National Historic Preservation Act.²⁸² The Coast Guard studied the issue and rejected the residents’ concerns. “There may be a visual effect of a new structure...but the bridge design will be integrated into the historic flavor of the area”.²⁸³ The New Haven Register responded that the bridge was like “King Kong ‘integrating’ with a Volkswagen”.²⁸⁴

Under intense public pressure, the mayor of New Haven ordered the bridge redesigned in 1979.²⁸⁵ He announced that the city would apply for a federal grant to cover the redesign expenses—the city had spent over \$2 million on the design of the rejected

²⁷⁷ Editorial, *supra* note 275.

²⁷⁸ Kopf, *supra* note 274.

²⁷⁹ *Id.*

²⁸⁰ *Id.*

²⁸¹ Editorial, *supra* note 275.

²⁸² Jack Millea, *Study Favors Grand Ave. Bridge*, NEW HAVEN REG., Feb. 22, 1978.

²⁸³ *Id.* (quoting Coast Guard report).

²⁸⁴ *Id.*

²⁸⁵ Janet Koch, *Logue Orders Bridge Redesign*, NEW HAVEN J. COURIER, Mar. 9, 1979.

bridge—and then apply for federal funds for construction. The city eventually settled on a \$5 million replica of the old bridge. Construction began in 1982 and the new bridge opened to great fanfare in 1984.²⁸⁶ Unfortunately, the celebration was short-lived: the bridge temporarily closed for repairs six days after it opened because it became stuck in the open position.²⁸⁷

Chapel Street Bridge

New Haven began constructing a bridge to replace the 86-year old Chapel Street Swing Bridge in 1987. The \$16 million bridge was funded with \$11.4 million in state grants, \$820,000 in federal grants, and \$3.9 million in city funds.²⁸⁸ The new bridge was expected to open in 1990, but the city-managed construction ran into many technical problems. The opening was delayed to the winter of the 1991 and then to the spring of 1992.²⁸⁹ Just before the 1992 grand opening “a piece of the new bridge self-destructed”.²⁹⁰ After the problem was believed fixed, the city’s Director of Public Works declared that the bridge was “lopsided” and that the opening would be further delayed.²⁹¹ The City Engineer denied that the bridge was lopsided, but refused to accept the bridge from the private contractor until several structural problems were fixed.²⁹² Finally, the bridge reopened on

²⁸⁶ Janet Koch, *New Bridge Spans Gap between Dream, Miracle*, NEW HAVEN REG. August 5, 1984.

²⁸⁷ Janet Koch, *Newly Renovated Grand Avenue Bridge Out of Service*, NEW HAVEN REG., Aug. 21, 1984.

²⁸⁸ *Fair Haven Getting New Bridge to City*, NEW HAVEN REG., Sept. 4, 1987, at 1.

²⁸⁹ *City Bridge Reopening Delayed Again*, NEW HAVEN REG. Sept. 17, 1992 at A3.

²⁹⁰ *Id.*

²⁹¹ *Chapel Bridge Lopsided; Opening Date Uncertain*, NEW HAVEN REG., Nov. 17, 1992 (quoting Vanessa Burns, Director of Public Works).

²⁹² Josh Kovner, *Bridge Not Lopsided, City Official Says*, NEW HAVEN REG., Nov. 17, 1992.

December 15, 1992, more than five years after it had closed. The closure was devastating to area businesses, many of which lost 40% or more of their business.²⁹³

Ferry Street Bridge

In 2002, the Ferry Street Bridge was ordered closed because it was in need of “immediate and urgent repairs”.²⁹⁴ For four years, the bridge sat closed while city officials solicited federal and state funds.²⁹⁵ In 2006, reconstruction of the bridge finally began, under the supervision of the State Department of Transportation, which had agreed to supervise the project at the city’s request.²⁹⁶ The reconstruction cost \$21 million, which was mostly raised through state and federal grants.²⁹⁷ Of the first 14.75 million spent on the project, the federal government contributed \$12.2 million through the Highway Bridge Program²⁹⁸ and an earmark (\$2 million) authored by New Haven Congresswoman Rosa DeLauro.²⁹⁹ The state government contributed 2.2 million, and the city \$550,000.³⁰⁰ The bridge reopened in 2008, six years after it closed.³⁰¹ As with the Chapel Street Bridge, the lengthy closure of the Ferry Street Bridge had a devastating effect on area businesses.³⁰²

Church Street Extension Bridge

²⁹³ Joseph T. Brady, *Chapel St. Bridge Reopens—Seriously!* NEW HAVEN REG., Dec. 15, 1992.

²⁹⁴ Melinda Tuhus, *Ferry Street Bridge Reopens, Reconnects Communities*, NEW HAVEN IND., Sept. 14, 2008.

²⁹⁵ Ed Stannard, *Ferry Street Bridge to Reopen After 6 Years*, NEW HAVEN REG., Sept. 10, 2008.

²⁹⁶ Melissa Bailey, *Ferry Street Bridge to Reopen, At Last*, NEW HAVEN IND., July 9, 2008.

²⁹⁷ Stannard, *supra* note 295.

²⁹⁸ SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENT, FY 2007-2011 TRANSPORTATION IMPROVEMENT PROGRAM (Revised 2/27/2007) at 41; SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENT, FY 2007-2011 TRANSPORTATION IMPROVEMENT PROGRAM (Revised 9/23/2009) at 37.

²⁹⁹ H.R. REP. NO. 108-401, at 946 (2003) (Conf. Rep.).

³⁰⁰ *Supra* note 298. The total funding sources do not add up to \$21 million because the project exceeded original cost estimates. Funding data is not available for the cost overruns.

³⁰¹ *Id.*

³⁰² Bailey, *supra* note 296.

In 2003, New Haven opened a major bridge in a new location for the first time since the construction of the interstate in the 1950s. The \$31.3 million Church Street Extension crosses the New Haven Railyards to connect downtown New Haven with the harbor.³⁰³ The project was funded with federal, state, and city funds. The federal government was the largest funder, contributing \$19.5 million through an earmark in the 1998 transportation appropriations bill³⁰⁴ and additional funds through the Innovative Bridge Research and Construction Program.³⁰⁵ Unlike the Grand Avenue, Chapel Street, and Ferry Street bridges, which were replaced for reasons of safety, the Church Street Bridge project was an attempt to grow the local economy. Mayor John Destefano said the bridge “would encourage growth through Church Street, the area of the Yale Medical School and down to Long Wharf.”³⁰⁶ He also praised it for increasing access to the local IKEA store. Governor John Rowland called the bridge the “first chapter in a revitalization program for New Haven”.³⁰⁷ The city had long touted the project as a key component of economic development. The city first proposed the bridge in 1958 as part of the Mayor Richard Lee’s urban renewal program. The city resurrected the proposal in 1994 and began to actively lobby for federal and state grants.³⁰⁸

³⁰³ Mary E. O’Leary, *\$31.3 Million Span Reconnects Downtown, City Harbor*, NEW HAVEN. REG., Dec. 4, 2003; *see also*, Kara Ouellet, *Church Street Bridge Ahead of Schedule*, NEW HAVEN. REG., Oct. 13, 2003.

³⁰⁴ Transportation Equity Act for the 21st Century, P.L. 105-178, 112 Stat. 284 (1998).

³⁰⁵ Federal Highway Administration, Office of Bridge Technology, Project Database, <http://www.fhwa.dot.gov/bridge/ibrc/resources.cfm>. In order to avoid disrupting train traffic, the bridge was constructed next to the tracks and then lifted, in one piece, into place by a high-capacity crane. Federal Highway Administration, Turner-Fairbank Highway Research Center, Best of the Best: May/ June 2005, <http://www.tfsrc.gov/pubrds/05may/04.htm>.

³⁰⁶ O’Leary, *supra* note 303.

³⁰⁷ *Id.*

³⁰⁸ *Id.*



Hillhouse Avenue, Temple Street and Prospect Street Bridges

In 2007, the city began a four-year plan to replace three bridges crossing the Farmington Canal, a 19th century canal that has since been converted into a walking path. The Hillhouse Avenue, Temple Street and Prospect Street Bridges run through the Yale University Campus near downtown New Haven. The Hillhouse Avenue bridge replacement will cost \$4.5 million—\$2 million for the bridge itself, and \$2.5 million for two 19th century-styled pedestrian bridges that will cross the canal on either side of the bridge. The federal government is funding 80% of the cost, while Yale University will pay the city's 20% share.³⁰⁹

The Temple Street Bridge, which has been completed, cost approximately \$1 million. The federal government funded 33% of the cost, while Yale, through an agreement with the city, paid for the remaining 67%. The Prospect Street Bridge, which is currently under construction, will cost \$3 million. The federal government will cover 33% of the cost, while Yale will fund the remaining \$2 million.

³⁰⁹ Press Release, City of New Haven, New Haven's Hillhouse Avenue Bridge Re-opens as Additional Infrastructure Projects Progress (Dec. 29, 2008), <http://www.cityofnewhaven.com/Mayor/ReadMore.asp?ID={D4C2C615-C313-4A8B-B054-5806303DBA40}>.

Maintenance

As Fair Haven residents celebrated the reopening of the Ferry Street Bridge in 2008, they received news that neighborhood's other major bridge—the Grand Avenue Bridge—would close for several years to undergo reconstruction, only twenty-five years after it was first built.³¹⁰ Bridges in New Haven have deteriorated at faster than anticipated rates because maintenance has been poor. While the federal and state governments provide grants for bridge replacement and major bridge reconstruction, they do not provide money for routine maintenance.

New Haven's maintenance record was poorest in the 1980s. In 1988, the city budgeted only \$5000 for bridge repair and maintenance,³¹¹ which is less than it spent in 1873.³¹² The city was not even sure which department was responsible for bridge maintenance. The Engineer's Office claims claimed that "as far as maintaining bridges, that's public works...I don't have a maintenance crew".³¹³ The Public Works Department claimed that it was only responsible for the Ferry Street and Grand Avenue Bridges—"all other bridges are left to the city engineers because 'they have the proper expertise'." ³¹⁴ The City's Chief Administrative Officer, John DeStefano, had a third understanding—Public Works maintains the bridges above the roadway and the Engineer's Office maintains them below the roadway.³¹⁵ A state official characterized the city's maintenance efforts as "pitiful" and said that the Chapel Street Bridge would not need to have been replaced in

³¹⁰ Melinda Tuhus, *Bridge Up, Bridge Down*, New Haven Ind., Jan, 9, 2008.

³¹¹ Carol A. Leonetti, *Neglect Takes Toll on City Bridges*, New Haven Reg., May 15, 1988.

³¹² 1873 CITY YEAR BOOK.

³¹³ Leonetti, *supra* note 311 (quoting City Engineer Leonard Smith)

³¹⁴ *Id.* (quoting Brian Funk, Assistant Public Works Director)

³¹⁵ *Id.*

1987 if it had been properly maintained.³¹⁶ The state ordered five of the city's bridges closed in 1988.³¹⁷

Maintenance has since improved—the city has spent approximately \$200,000 annually on maintenance for its 53 bridges over the last five years—but the expenditures have not been high enough to prevent many city bridges from falling into poor condition.³¹⁸ In general, municipal expenditures on any individual bridge are low until the bridge falls into a state of disrepair. Federal and state funds are then solicited to replace or rehabilitate the bridge. Most of the bridges replaced in the city over the last four years have had extremely poor sufficiency ratings: the Ferry Street Bridge over the Quinnipiac River (29.98%); State Street Bridge over the Mill River (23.45%); Temple Street Bridge (19.49%); Prospect Street Bridge (36%); Hillhouse Avenue Bridge (35.39%); and the East Rock Road Bridge (56.59%).

VII. Explaining the Growth in Federal and State Grants

The state and federal governments have always played a role in the construction, rehabilitation and maintenance of bridges in New Haven, but the role has changed over time. Until the 1930s, the state was a somewhat passive enabler of bridge projects in the city. In the era of private bridges, the state granted charters to corporations, authorized the use of lotteries to raise capital, and authorized and set tolls. Between 1870 and 1914, the state authorized individual bond issues by New Haven and coordinated or imposed joint-financing agreements on New Haven and its surrounding neighbors. Beginning in the

³¹⁶ *Id.* (quoting unnamed state official.)

³¹⁷ *Id.*

³¹⁸ See CONNDOT, MUNICIPAL BRIDGE LIST, MARCH 2009 at 42-43.

1920s, the state enabled bridge projects by granting New Haven general bonding authority and by exempting municipal bonds from state income tax. Since the 1930s, however, the state has assumed a more direct role in bridge financing in two ways. First, it has taken direct ownership of several bridges in the city, beginning with the Tomlinson Bridge in 19XX. Second, since the early 1980s, it has taken a direct role in the funding of many bridge projects in the city.

Similarly, the role of the federal government has changed over time. Initially, the federal government was mainly a regulator of local bridges. Through the War Department and later the Coast Guard, the federal government authorized the design of bridges in the city and ordered occasional modifications to ensure free navigation. Then, like the state government, it played an indirect role in bridge finance by exempting municipal bonds from federal income tax.

Starting in the 1950s, the federal began to play a direct role in municipal bridge construction, rehabilitation, and maintenance. In the 1950s it funded most of the expense of the interstate highway system, including the two interstate bridges crossing New Haven's Quinnipiac River. Then in the 1970s, it began to fund purely local bridges and promulgate safety standards governing their design and maintenance.

What explains the state and federal governments' move from relatively passive enablers to key funders of local bridge projects? In this Part, I will consider each of the three theories described in Part II: efficiency, equity, and politics.

A. Efficiency

Many of the early changes in bridge finance in New Haven appear to be attempts to improve allocative efficiency. The city of New Haven assumed responsibility for bridge construction and maintenance from the private sector in the 19th century because the toll system led to underinvestment in the city's bridges.³¹⁹ First, tolls, which were set by the legislature, were generally too low. Unable to fully capture the benefits of its bridge, the Tomlinson Bridge Company allowed the bridge to deteriorate. Second, the company was unable to collect tolls from ships passing underneath the bridge. As a result, the company underinvested in the bridge's moveable draw. As shipping became more important to the city as it industrialized in the late 19th century, and as ships grew larger, the inadequacies of the Tomlinson Bridge became more pronounced.

The city assumed responsibility for bridges to correct the underinvestment. Since most of the city's important bridges at the time crossed town lines, methods of internalizing the spillover benefits were needed. The city used two. First, it negotiated cost-sharing agreements with neighboring towns. In the absence of negotiated agreements, it turned to the state or the courts for imposed settlements. Second, it annexed neighboring towns. Annexation eliminated the transaction costs, such as delays, associated with negotiated agreements, and eliminated the possibility that an unfair funding agreement would be imposed on the city.

The state's assumption of ownership of several city bridges also appears to be a direct response to growing spillovers. The creation of the state highway system and the widespread use of the automobile in the early twentieth century greatly increased the use

³¹⁹ See *supra* Part III.

of New Haven's bridges by non-residents. Many of the bridges, such as the Tomlinson Bridge, were no longer purely local roads. The state eventually assumed ownership of all bridges in the city on state highways. The change was fairly dramatic. Whereas in the 1880s, New Haven sought ownership of the Tomlinson Bridge, by the 1930s it was anxious to transfer the bridge to the state.

While spillover benefits and allocative efficiency can explain many of the early changes in bridge finance, they do not adequately explain the rise of federal and state funding programs for local bridges. The federal funding program has gradually moved away from any possible spillover justification. Initially, only bridges on federal-aid highways were eligible for federal funding.³²⁰ In 1978, the federal funding program was extended to purely local bridges, and states were required to spend at least 15% of their federal bridge grants on local bridges. In 2005, the cap on the percentage of federal funds that could be used on local bridges—35%—was removed. Today, 100% of federal bridge grants can be spent on local bridges.

There is certainly some use of local bridges by out-of-state residents; however, that use does not explain the federal government's 80% share of the cost of local bridges. Spillover benefits are notoriously difficult to measure, but it can be certain that 80% of the benefits of the East Rock Road Bridge or the Hillhouse Avenue Bridge do not flow to out-of-state residents.

Similarly, the state's Local Bridge Program makes no effort to tie bridge funding to spillover benefits. While the program only funds 32% of the cost of bridges in New

³²⁰ See note 233-35 and accompanying text.

Haven—a number that is plausibly an estimate of the value non-residents receive from the bridge—the program’s funding formula is dependant on New Haven’s grand list, not the importance of its bridges to out-of-town residents.

Two other observations make the lack of a relationship between state and federal grants and spillover benefits even clearer. First, it is the federal government, not the state, that has taken the lead role in funding municipal bridges. If there are large spillover benefits from New Haven’s bridges, state residents, rather than out-of-state residents, are the likely beneficiaries. Second, the rise in funding for local bridges has followed the construction of two interstate highways through New Haven. These highways should divert a substantial portion of the inter-town and interstate traffic traveling through New Haven away from locally owned bridges. Similarly, the state’s assumption of responsibility for state-owned highways should cover much of the non-resident traffic.

The disconnect between spillover benefits and intergovernmental grants in New Haven is unsurprising. Empirical studies by several economists and political scientists have found that spillover benefits do a poor job of explaining the pattern of federal and state grants.³²¹

B. Equity

Equity considerations partially explain the current federal and state funding regimes. Many expansions in federal and state aid for local bridges have followed bridge collapses that have raised concerns for public safety. The first federal bridge funding

³²¹ See, e.g., Inman, *supra* note 17; Grossman, *supra* note 17; Robert Inman and Daniel L. Rubinfeld, *Rethinking Federalism*, 11 J. ECON. PERSP. 43 (1997).

program, the Special Bridge Replacement Program, was a response to the Silver Bridge collapse in 1967. The state's Local Bridge Program and the federal government's modifications to bridge training and inspection programs in the 1980s were responses to the Mianus River Bridge collapse in 1983. In recent years, the collapse of the I-35 Minnesota River Bridge in 2007 has triggered state and federal responses. Following the collapse of the bridge, Connecticut Governor Jodi Rell increased funding for Connecticut's Local Bridge Program by 150%. Similarly, the federal House of Representatives passed a bill increasing federal aid for bridges by \$1 billion.

The growth in state and federal support for local bridges has also been triggered by broader concerns over the quality of local infrastructure. A 1983 book, *America in Ruins: The Decaying Infrastructure* created a national furor over the condition of the nation's infrastructure.³²² Congress established the National Council on Public Works Investments in 1984 to examine infrastructure funding. The council recommended greater federal funding of local projects.³²³

The present state and federal bridge funding programs have clear equity-promoting features, especially in the case of the state. The state's Local Bridge Program has two equity-promoting elements. First, poorer municipalities are eligible to receive state reimbursement for a larger percentage of their costs. The scaled reimbursement rates are a nod to horizontal equity: poorer communities such as New Haven benefit more from the program than wealthier towns, like Greenwich. Second, the state program prioritizes grants for bridges in poor condition. This feature of the program promotes horizontal

³²² Bruce D. McDowell, *Federalism and America's Public Works*, 18 PUBLIUS 97, 97 (1988); David C. Nice, *Interstate and Intergovernmental Factors Affecting the Conditions of Rural Bridges*, 22 PUBLIUS 1 (1992).

³²³ *Id.*

equity in that poorer communities are more likely to have bridges in poor condition. It promotes vertical equity in that all towns, regardless of wealth, are eligible to participate. If the cost of financing bridges proves too great for all municipalities—revealing some degree of mismatch between tax powers and financial responsibilities—the program will help address the revenue-expenditure gap.

Unlike the state program, the federal program does not award higher grants to poorer municipalities. All municipalities, from New Haven to New Canaan, are eligible to receive grants covering 80% of any bridge project. Like the state program, however, the federal program does make eligibility for replacement and rehabilitation funds contingent on the condition of the bridge.

The origins of the state and federal funding regimes and the features of the current funding programs reveal that equity has played a role in the expansion of state and federal support for local bridges. It is unlikely, however, that equity explains the entire story. First, as will be discussed below, bridge collapses and national bestsellers hand a powerful lobbying tool to municipal governments. High-profile events have likely exacerbated the pork-barrel tendencies of Congress.

Second, the state, and in particular, federal funding regimes do not fully track equity considerations. The regimes diverge from true equity-promoting regimes in three ways. First, most large-scale bridge projects are funded through earmarks, not the permanent funding programs. There is little evidence that Congress considers horizontal or vertical equities when approving project-specific funding. Approval of funding for New Haven's Church Street Bridge came after Mayor John DeStefano read a five-page statement in a

Congressional hearing.³²⁴ No questions were asked and no debate ensued. It is hard to see any connection between an economic development project and the public safety concerns that make federal funding of bridges in poor cities compelling.

Second, the state and federal funding programs do not make eligibility for funding dependent on a municipality's inability to fund bridge work. Funding is tied to the condition of a bridge, but bridge condition is just a rough proxy for capacity to pay. A bridge may be in deficient condition because of a municipality's choices, rather than its resources. If equity were the sole objective of the funding programs, the funding would be more clearly tied to municipal fiscal capacity.

Third, two features of the federal funding undercut the equity rationale.³²⁵ First, municipalities draw bridge funds from their state's pool of federal grants. The state pool is determined by bridge conditions across the state. A city with poor bridges located in a state where bridge conditions are generally good will have only a small pool of funds to draw upon. Second, a state does not have to spend its bridge funds on deficient bridges. The funds can be spent on systematic preventative maintenance, restoring historic bridges, or seismic retrofitting, among other uses. A state can also choose to direct its funds to municipalities that are not in financial distress. Similarly, it can choose to transfer up to 50% of its bridge funds to non-bridge uses.

C. Politics

³²⁴ *A 21st Century Transportation System: Reducing Gridlock, Tackling Climate Change, and Growing Connecticut's Economy: Hearing Before the S. Comm. on Banking, Housing and Urban Affairs*, 111 Cong. 5 (2009)

³²⁵ *See supra* Part VIa.

The inadequacies of the efficiency and equity theories in explaining the current system of intergovernmental grants point to the importance of politics. Recent federal transportation appropriations bills, which have renewed the Highway Bridge Program and authorized earmarks, have been shaped by intense lobbying efforts by the municipal government lobby and representatives of the transportation and construction industry.³²⁶ For example, the 1998 Transportation Equity Act for the 21st Century, which reauthorized the Highway Bridge Replacement and Rehabilitation Program, was greatly influenced by a coalition of the National League of Cities, the American Public Transportation Association (a leading industry lobby), the National Governor's Association, and Transportation Revenues Used Solely for Transportation (TRUST), itself a coalition of 750 business, farm, labor, and governmental organizations.³²⁷ Broad coalitions supporting greater transportation infrastructure transfers are key players in the congressional appropriations process. There are few organized interests that actively oppose federal grants for transportation. Municipal leaders strengthen their lobbying position by invoking high-profile bridge disasters. Mayor John DeStefano, for example, invoked the Minnesota River Bridge collapse in calling for greater federal funding of several city bridges.³²⁸

Congressional legislators are susceptible to lobbying pressure. With 73 members, the House transportation subcommittee is among the largest in Congress because it offers members opportunities to direct funds to their home districts.³²⁹ The subcommittee has

³²⁶ Joseph R. Marbach and J. Wesley Leckrone, *Intergovernmental Lobbying for the Passage of TEA-21*, 32 *Publius* 45 (2002); Robert Jay Dilger, *TEA-21L Transportation Policy, Pork Barrel Politics, and American Federalism*, 28 *Publius* 49 (1998).

³²⁷ Marbach, *supra* note 326, at 51.

³²⁸ Press Release, City of New Haven, *In the Wake of Minnesota Bridge Tragedy, New Haven Assess Progress on Bridge Repair Program* (Aug. 17, 2007).

³²⁹ Dilger, *supra* note 326, at 62.

been described as remarkably “non-partisan”—members support each others’ projects in an informal system of quid pro quos.³³⁰ When Rosa DeLauro directed \$2 million to the Ferry Street Bridge in 2004, for example, there was no congressional debate on the project’s merits. Similarly, lobbying and pork barrel spending seems the only plausible explanation for why federal funds are routinely directed to projects like the \$2.5 million pedestrian bridge currently under construction on New Haven’s Hillhouse Avenue.

VIII. Assessing the Merits of Federal and State Grants

In this Part, I will raise three objections to the current funding pattern. State and federal grants 1) crowd-out city expenditures on bridges; 2) lead to allocative inefficiency by encouraging excessive spending on bridges; and 3) weaken political accountability in the New Haven. I will then propose four modifications to the current state and federal funding regime.

A. Crowd-out of Local Expenditures

The strongest argument in favor of the current grant system is that it enables New Haven to replace and rehabilitate bridges that would otherwise be closed. The Mill and Quinnipiac Rivers intersect many of the city’s major arteries. Residents and businesses choose where to live and work, in part, in reliance on the continued operation of key city bridges. The closure of these bridges disconnects neighborhoods, disrupts traffic, and harms business. There is a strong economic case for replacing and rehabilitating bridges as quickly as possible.

³³⁰ Marbach, *supra* note 326, at 47.

The lengthy delays in replacing the Grand Avenue, Chapel Street, and Ferry Street Bridges suggest, on face, that federal and state funds are essential to major bridge projects in the city. The Grand Avenue Bridge had been delayed 13 years by the time the city started construction with state and federal funds in 1982; the Chapel Street Bridge had been delayed 20 years by the time of its construction in 1987; and the Ferry Street Bridge was closed for four years before the city began construction in 2006. It is possible that the city would have would have been unable to replace any of the bridges in the absence of state and federal funds.

It is difficult to distinguish, however, between economic need and strategic behavior. New Haven's decisions to seemingly endlessly delay the replacement of the Grand Avenue, Chapel Street, and Ferry Street Bridges were made with the knowledge that state and federal funds would eventually be available. New Haven may delay its own bridge expenditures in anticipation of future bridge grants. In particular, as economist Roger Faith has argued, the existence of federal grants awarded based on "need" encourages municipalities to compete for grants by becoming relatively more "needy".³³¹ In the context of New Haven's bridges, this matters in two ways. First, New Haven has an incentive to irrevocably commit funds to other expenditures, so that when an important bridge closes it can accurately claim that it cannot afford to replace or rehabilitate the bridge.³³² Overspending on union contracts, for example, is more likely if the city knows the federal and state government will pick up any resulting shortfalls in other funding areas.

³³¹ Roger L. Faith, *Local Fiscal Crises and Intergovernmental Grants*, 34 PUB. CHOICE 316, 318 (1979).

³³² *Id.* at 325.

Second, the system of federal and states grants discourages the city from properly maintaining its bridges. The Government Accountability Office has criticized the federal Highway Bridge Program for creating incentives for municipalities to allow bridges to deteriorate.³³³ It is highly unlikely that New Haven would have essentially abandoned bridge maintenance in the 1980s if it believed it would be financially responsible for replacing the bridges. Similarly, it is unlikely the managerial competency of the city's Engineering and Public Works Department would have declined to the extent evident in the reconstruction of the Chapel Street Bridge if the city had not felt that the state and federal government would pick up the tab. Indeed, the state now manages the construction of important local bridges, such as the Ferry Street Bridge replacement in 2006. Whereas the city once funded and managed the construction of all its bridges, it now does neither. The decline hints at the municipal version of learned helplessness.

Two facts support skepticism regarding New Haven's inability to fund its bridges. First, the interest rate the city pays on its bonds, 4.32%, is within the range of interest rates it paid between 1870 and 1930.³³⁴ Interest rates during its bridge-building boom ranged from 3-4.5%. Second, New Haven's debt is not historically high. The city has \$526 million in bonded debt, which is only 37% of the maximum debt it is permitted by the state to issue.³³⁵ This is a similar ratio to the 1930s, when New Haven funded its own bridges. The similarities raise the possibility that New Haven's response to state and federal grants

³³³ GOVERNMENT ACCOUNTABILITY OFFICE, HIGHWAY BRIDGE PROGRAM: CLEARER GOALS AND PERFORMANCE MEASURES NEEDED FOR A MORE FOCUSED AND SUSTAINABLE PROGRAM 20 (2008).

³³⁴ Press Release, City of New Haven, City's Credit Rating Remains High While Successfully Marketing \$45 Million in Bonds (March 18, 2008).

³³⁵ CITY OF NEW HAVEN, MAYOR'S PROPOSED FISCAL YEAR 2010-2011 BUDGET AT 2-49 (2010).

today is exactly as it was in 1938. When the PWA awarded the city a grant for the Ferry Street Bridge, the city merely reduced its planned bond issue by the amount of the grant.

B. Allocative Inefficiency

Grants can lead to allocative inefficiency by encouraging excessive spending on certain bridge projects. When a city is responsible for fully funding its own bridges, it is unlikely to fund a project for which the costs exceed the benefits. As Oates has observed, “[capital] markets, through the determination of credit ratings and other forms of monitoring fiscal performance, create an environment in which the fiscal authorities must behave in responsible ways. These markets, by creating a hard budget constraint in terms of debt finance, have imposed a very useful discipline on decentralized fiscal behavior.”³³⁶ When a bridge project is financed by the state and federal governments, however, the project is worth pursuing, from the city’s perspective, as long as the project benefits exceed the city’s costs. As Inman has argued, “since each district pays only a small fraction of its own project’s costs, the incentive is to prefer a much larger project than if the district were responsible for the full marginal costs of the added project spending”.³³⁷

It is highly unlikely that New Haven would have constructed a \$2.5 million pedestrian bridge on Hillhouse Avenue if it were responsible for covering the full cost. Similarly, the city would not have spent \$32 million of its own money to construct a Church Street Bridge with only generalized and undetermined economic benefits. Even the first bridge proposed by the city during the era of federal grants—the Grand Avenue Bridge in 1977—shows signs of excessive spending. It is unlikely the city would have proposed an

³³⁶ Oates, *supra* note 15, at 1129.

³³⁷ Inman, *supra* note 17.

\$11 million dollar bridge in the absence of federal grants when there were more popular alternatives that cost less than half that.

The problem with wasteful spending is most pronounced with respect to bridges aimed at economic development. State and federal employees can somewhat control excessive spending on replacement bridges by ensuring that industry-standard designs and construction materials are used. Bridges in new locations and expansions of existing bridges, however, pose greater problems. It is hard for anyone to determine whether the economic benefits of the Church Street Bridge will exceed its \$32 million cost. It is particular difficult for the federal and state governments, who know less about the project than the city, to make the determination. The best way to ensure that the project is financially justified is to require the party that benefits from it—New Haven—to fund it. If the city is confident the bridge will generate sufficient returns to pay off the bonds used to fund it, the city should proceed. If it is not sufficiently confident to do so, then there is a reliable signal that no level of government should.

The current funding scheme is in some respects the opposite of the funding scheme that existed in 1894. When the federal War Department ordered New Haven to replace the Grand Avenue Bridge, it did so to promote navigation and commerce in the area. The fact that the party deciding to proceed with the bridge (the War Department) was different from the party funding the bridge (New Haven) indicates that the commercial case for the bridge was likely weak. If the commercial benefits were apparent, New Haven would likely have decided to proceed on its own.

C. Political Accountability

There is widespread dissatisfaction in New Haven with the condition of the city's bridges.³³⁸ Bridge closures are frequent and often last for years. It is unclear, however, whom voters should blame. The city attributes the long delays to its own financial constraints and the lengthy process of soliciting state and federal funds. Yet, the state and federal governments lack employees with direct responsibilities for the city's bridges to whom local voters can turn.

If, as I have argued above, the city's bridge policies are at least partially strategic, then the city could be blamed for the costs imposed by its decisions to allow bridges to deteriorate and to delay their replacement until federal funds are available. Yet any mayor who used city funds today to finance the construction of a bridge would quickly face criticism from opponents that he was unnecessarily wasting the city's money. For example, when the city funded repairs to the Grand Avenue Bridge over the Quinnipiac River in 1943, the mayor was criticized for not having pursued PWA funding.³³⁹ Expectations of federal and state funding can quickly become entrenched.

A second harm posed to the political process by the current grants system is that it is the state and federal governments that decide which municipal projects proceed. The projects for which the city receives funding may not be the projects it most values. There may be value in having prioritization decisions made through the local political process rather than the grant application process.

³³⁸ Melissa Bailey, *Ferry Street Bridge to Reopen, At Last*, NEW HAVEN IND., July 9, 2008; Joseph T. Brady, *Chapel St. Bridge Reopens—Seriously!* NEW HAVEN REG., Dec. 15, 1992.

³³⁹ CITY OF NEW HAVEN, JOURNAL OF THE BOARD OF ALDERMAN, 1943.

D. Recommendations

While the problems with the grant system are complex, four changes could be made to reduce crowding-out, allocative inefficiencies, and damage to the local political process. I will present them in order of most, to least, politically feasible.

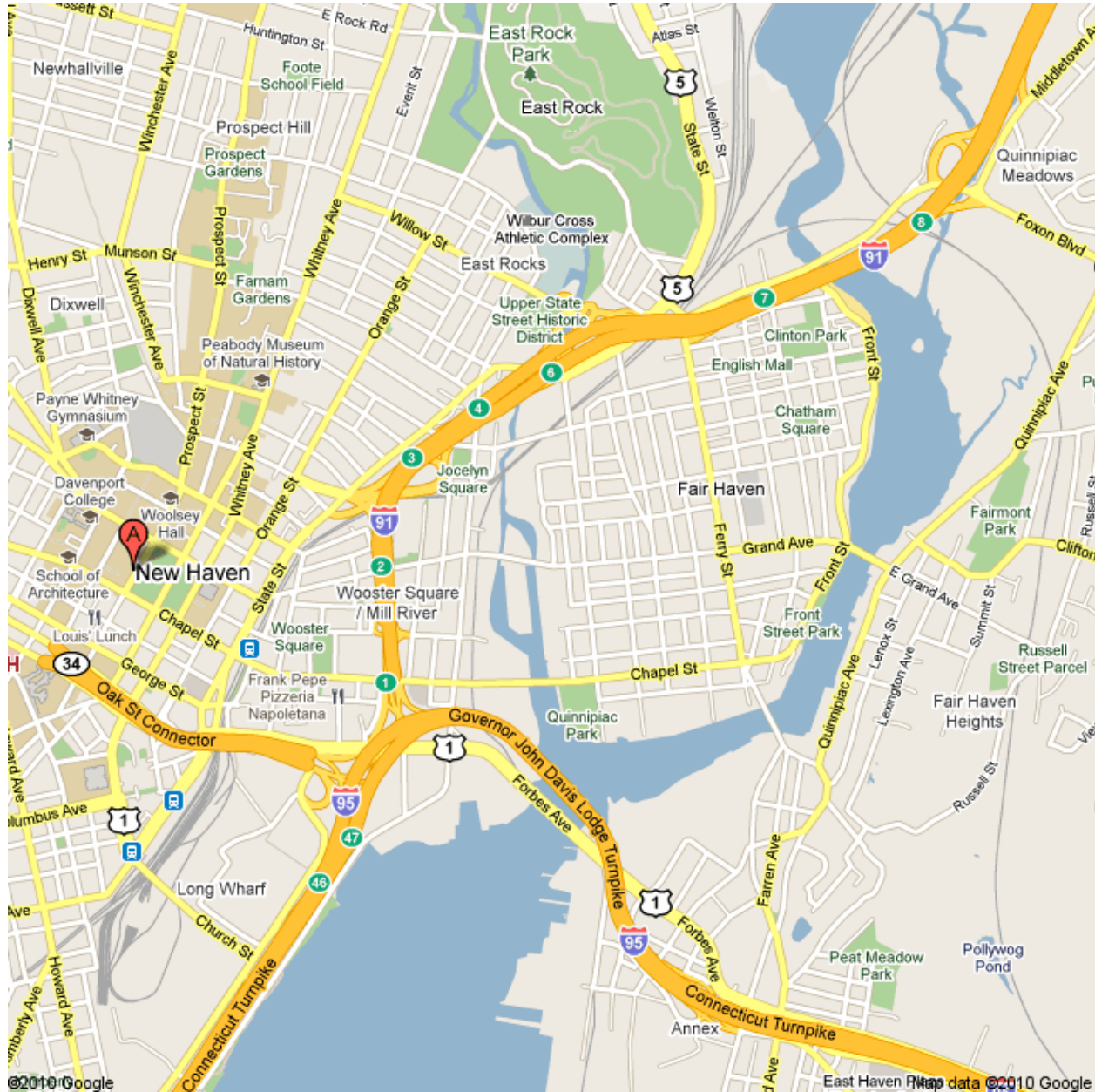
First, bridge grants should be used to replace or rehabilitate existing bridges, instead of for the construction of bridges in new locations, like the Church Street Bridge. State and federal officials can exercise some control over the costs of replacing or rehabilitating existing bridges by ensuring that industry-standard designs and materials are used. It is harder for state and federal officials to assess the costs and benefits of bridges in new locations, since bridges in new locations are usually sought for economic development, not public safety. The likelihood of wasteful spending is lower when funds are targeted at public safety, rather than economic development.

Second, the federal Highway Bridge Program should consider the tax capacity of municipalities in determining its grant awards. The current system, which focuses exclusively on bridge quality, encourages municipalities to allow their bridges to deteriorate. Placing the emphasis on tax-capacity directs funds toward cities with poor bridges due to legitimate financial restraints, rather than strategic choices.

Third, the state government, rather than the federal government, should take the lead role in funding local bridge replacement and rehabilitation. The state captures most of the spillover benefits from local bridges. It is also more likely than the federal government to be held to account by voters for its decisions to fund or not fund bridges. State involvement enhances political accountability.

Fourth, grants should be awarded through formula-based funding programs, rather than earmarks. Earmarks are often the product of political calculations, not reasoned consideration of the public interest. The use of formula-based funding programs increases the likelihood that projects are selected on the basis of welfare increasing principles.

Appendix: Quinnipiac River Bridges



Bridges along the Quinnipiac River (from southwest to northeast):

1. Tomlinson Bridge (Forbes Avenue)
2. I-95 Q Bridge (Governor John Davis Lodge Turnpike)
3. Ferry Street Bridge
4. Grand Avenue Bridge
5. I-91 Bridge
6. Middletown Avenue Bridge