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New York State Road Networks and the Transformation of American Federalism

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ROAD HISTORY

PLANNING, BUILDING AND USE

GIJS MOM AND LAURENT TISSOT (EDS.)

ROAD HISTORY

PLANNING, BUILDING AND USE

Collection History of Transport, Tourism and Travel

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INTRODUCTION

GIJS MOM AND LAURENT TISSOT

Roads, and mobility infrastructures in general, are the subject of at least two traditions of scholarship. In the History of Technology they are considered to be a part of Large Technical Systems (LTS) which found a special niche of scholarship since Thomas Hughes's *Networks of Power*, dedicated to the role of electrical networks in several Western countries.

Yet, within the LTS tradition road networks are an elusive part of the 'networked society.' Apart from practical reasons, such as a problematic research infrastructure in terms of availability of centrally kept archives, this may be due to the fact that road networks, especially during the early stages of their adjustment to the automotive society, tend to escape a central system builder's grip. In fact, both reasons boil down to the same result: road building was a decentralized activity and comparisons with other large systems would, therefore, benefit from an emphasis on small-scale, stand-alone systems such as 'isolated plants' in electricity production or 'party lines' in the realm of telephony. Such systems are, however, not very popular within LTS studies, because these are less concerned with the dialectics between centralizing and decentralizing forces, but seem to be governed by a fascination for the development of entrepreneurial 'power' vis-a-vis the traditional societal power arenas such as parliaments and the state. There are, however, signs of efforts to 'rescue' road networks from neglect within the LTS community by focusing upon their material base and put less emphasis on the Hughesian character of systems, such as its centralized

management and its treatment of decentralized alternatives as a mere object of prey. As such, European roads are ‘infrastructures,’ material networks that took on a transnational shape long before politicians started their unification project of ‘Europe.’

The second scholarly tradition of road studies is to be found within the new History of Mobility. Evolved from the traditional transport history, which blossomed in the 1950s and 1960s, mobility history explicitly asked more attention for the user perspective and, in the process, started to systematically integrate the history of automobility and its related histories (such as the history of the motor cycle culture, and the struggle by bicyclists and pedestrians for space to manoeuvre).

This is not to say that roads were not a subject of study within traditional transport history. They were, but they were treated in the same way as the preferential subjects of this tradition (railways and shipping): from the perspective of their contribution to national economic growth. They were also studied mostly in their pre-industrial form (turnpike trusts), a preference which seems to have been dictated by post-war nationalisations in Great Britain, which made available a wealth of archival material for several generations of historians.

Since then, the emergence of a new generation of mobility historians has led to paradigmatic shifts in emphasis and interests, in several respects. First, the breakthrough of the automobile asked attention for the phenomenon of intermodal competition with ‘older’ technologies such as inland navigation and railroads. An ‘intermodal approach’ developed, strengthened by modern transport science and engineering which recognizes that modern users do not follow the traditional divides between mobility modes: they walk to the metro, drive their car to the countryside where they bike for pleasure, and bring their mail on foot to the post office from where it will be brought by train or truck to the harbours, be they wet or dry, to be transported over the ocean by cargo ship or plane. The emergence of air traffic strengthened this approach, as airplanes compete with modern high speed trains and with cars for medium distance holiday travel.

Second, mobility history, just like traditional transport history, also was affected by a ‘cultural turn’ within the History of Technology, where consumption studies, gender studies and a sensibility for flexibility of meaning and semiotics had made their inroads. Hence, mobility history started to address topics such as advertising, the role of stewardesses in air traffic and stewards on cruise ships, the substitution of train passengers’ ‘panoramic view’ by a ‘tourist gaze’ through the windscreen and the formation of ‘sound scapes’ in and around the automobile. Travel, and tourism in general, thus came within the field of study of mobility historians, especially because tourism history had been largely influenced by cultural studies from an earlier date.

A third factor of influence was Urban History. Of old, cities were the melting pots of intermodal competition. The struggle between pedestrians, bicyclists

and car drivers on the one side, and tramway and bus companies on the other inevitably draws our attention to the issue of consumer choices. Cities also were the birthplace of spatial planning, which not only generated attention among mobility historians for the relationship between mobility and space, but also strengthened the need of modern-day spatial planners for knowledge about the long-term development of planning in relation to mobility.

This last development can also be observed in the History of Technology, where technology is less seen as an aggregate of artefacts, but more and more as knowledge, especially engineering knowledge, enabling historians of technology to be inspired by social science in general, and psychology and sociology in particular. Remarkably, this development brought attention back to the production and design side of technology and systems.

In a way, mobility history is not only an emancipation from British-dominated railway and waterway history, it is also a step away from a form of automotive history dominated by American scholars such as Rae, Flink and others. This tradition more or less took the development of roads for granted. Meanwhile, American scholars have discovered the road building project as a promising field of study, as can be deduced from the publication of seminal works by ‘the fathers of road building history,’ Bruce Seely and Mark Rose. Others have dedicated some attention to urban roads (Clay McShane) and, lately, the technology of road building.

Many modern studies, however, focus upon the spectacular, large-scale automobile-only road projects, such as the Interstate Highways in the USA or the *autobahnen* and *autostrade* projects in Germany and Italy. These studies are very welcome, indeed, especially because they generate new insights in the relationship between the engineering community and politics and power and the role of engineering knowledge therein, as well as in the relationship between road builders and spatial planners, and the consumption of space. But at the same time we should keep our minds open for other aspects of road building history, such as the largely decentralized history of road construction before these spectacular construction projects. Also, when we focus upon the roads in Europe, we should be aware of the fact that the transnational aspects of road network planning and construction are still a largely unknown field.

In short, roads are an ideal playground for interdisciplinary research. Roads are complex artefacts as much as systems and networks, subject to planning. They provide space for a tourist culture as much as for a study of intermodal competition.

This volume testifies about the multifaceted character of the study of roads. It is the result of a workshop, organized by the authors of this introduction, in the Swiss city of Neuchâtel. The workshop was a common initiative of two groups of historians: the Mobility History Group within the Tensions of Europe program, sponsored by the European Science Foundation, and the COST 340 network, sponsored by the European Commission. Together with the German *Arbeitskreis*

für Verkehrsgeschichte, part of the *Gesellschaft für Unternehmensgeschichte*, they co-organized, in November 2003, the First International Conference for the History of Transport, Traffic and Mobility. On this conference, mobility historians of both traditions founded an International Association for the History of Transport, Traffic and Mobility (T²M), which started to organize annual conferences and affiliated itself with *The Journal of Transport History*. It is against this scholarly and organizational background that the contributions to this volume should be read.

NEW YORK STATE ROAD NETWORKS AND THE TRANSFORMATION OF AMERICAN FEDERALISM¹

MICHAEL R. FEIN

Scholars have long recognized the central role American road building has played in the development of modern European highway networks. While the German autobahn and the Italian autostrade were pivotal in twentieth-century construction, Americans' pioneering work in urban parkways and interstate highways also offered an appealing model. From the perspective of European transportation planners, Americans embraced road building with exceptional gusto. Little seemed to stand in the way of their engineers, whose actions – at least until the 1960s – appeared to perfectly mirror public desire.

But the robust model of American construction trumpeted by American engineers to European planners was built on flawed assumptions. It appeared to equate Americans' near-universal embrace of a car culture with unqualified support for extensive highway construction.² In truth, American road building

¹ I wish to thank Marjorie Feld, Morton Keller, Gijs Mom, Emily Straus, Laurent Tissot, and Thomas Zeller for their help in preparing this article.

² "Roads" and "highways" were generally considered to be interchangeable terms in early twentieth-century American parlance, though over time "highways" tended to denote roads built for heavier traffic. Note, for instance, that the federal Bureau of Public Roads oversaw countless state Highway Departments, Bureaus, and Commissions. Early parkways were distinguished from roads and highways by their limited-access and recreational nature. This paper focuses on New York's more extensive (though less celebrated) network of public roads.

has always been a contested process: constrained by a political system that aimed to preserve community control over local roads, while drawing on the centralized authority necessary to direct a public works project national in scope. American engineers portrayed their work as a rational, apolitical response to motorists' demands. But an examination of early twentieth-century American highway policy reveals that the major achievements of American road builders rested above all on a political evolution that gradually removed road-building authority from citizens' control. Using New York State as a case study, this paper discusses the origins of that important transformation.

In July 1907, New York's Joint Legislative Committee on Good Roads conducted hearings across the state. Local road authorities, advocates of highway improvement, and concerned citizens expressed their opinions on New York highway law, which had undergone a dramatic transformation over the previous decade and remained in flux. William P. Freeman, a Jefferson County farmer, was one of numerous New Yorkers who offered his comments to the state legislative committee on the changing nature of road use and public responsibility for road construction: "In the olden times when the cows run the roads," Freeman nostalgically reported to the committee, "they kept the bushes down; in certain places it is impossible to till the roads and keep [the bushes] down except by cutting them, and the annual cutting will amount to about all we get [in aid] from the State." Freeman wondered if instead the lawmakers might allow, at certain times, the herding of cattle in the roads. Worried that the committee might object to the slowing of motor traffic, Freeman had an answer: restrict grazing to "between the hours of five and ten A.M., before the automobilists get out of bed; [that way] we wouldn't trouble them."³

Freeman's image of well-heeled, work-shy automobilists had the ring of truth. In 1906, just the year before, William K. Vanderbilt, Jr., grandson of railroad magnate Commodore Vanderbilt, formed a corporation with other members of the American aristocracy to build the Long Island Motor Parkway, the nation's first road built expressly for automobile traffic. The paved parkway, built almost entirely on private land and stretching sixty miles (almost 100 km) from Queens to central Long Island, was chiefly a product of Vanderbilt's ambition to race his red Mercedes without facing the perils of, in his words, "grade crossings, dust, and police surveillance."⁴

Freeman and Vanderbilt represented the extremes of New York road culture: emblems of rural resistance to, and the elite beginnings of, American automobility. In 1907, large-scale motor vehicle ownership still lay in the future,

³ New York State Legislature, Joint Legislative Commission on Good Roads, *Hearing Testimony*, 1907, 352.

⁴ VANDERBILT quoted in LEWIS Tom, *Divided Highways: Building the Interstate Highways, Transforming American Life*, New York, 1997, p. 30.

and automobilists consisted of a small group of wealthy New Yorkers. But just as surely, “the olden times when the cows run the road” had passed.⁵

The words of these two men are windows into the first decade of twentieth-century New York, when public road construction had not yet assumed the permanent place it now holds on the American civic agenda. The future of the nation’s highway network remained uncertain. Though today the necessity of road construction appears as fixed and immutable as concrete, its development was not inevitable. Rather it was the product of continued policy negotiation – a process that led to broad-scale changes in the orientation of the polity, the exercise of public power, and the American political system as a whole. The aim of this article is to explore the role that highway policy played in the remaking of the American political system during the period from 1880 to 1930.

To appreciate the full significance of this development, one must first turn to America’s earliest transportation initiatives and the system of governance that undergirded them. From colonial times, footpaths, wagon roads, and main streets had an important place in the American landscape. But the great transportation revolutions of the nineteenth century were not concerned with these common means of public conveyance. Instead they focused on innovations – turnpikes, canals, and railroads – that promised to collapse space and time. The public nature of these projects attracted strong support from state and national governments in the early nineteenth century, until repeated charges of maladministration led to controversy over public subvention. Private railroad corporations assumed the lead in American transportation development, while public road-building authority shrank into a tighter orbit around communal bodies of government.⁶

The products of this mode of authority were the rough country roads of nineteenth-century New York, administered in near-feudal fashion. Local road overseers managed a residential labor tax: all adult males were required to work at least a day per year in maintaining short stretches of roadway. The system of road administration was highly decentralized; one New York county had

⁵ On farmers innovative and adaptive uses of the automobile, see KLINE Ronald, PINCH Trevor, “Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States,” *Technology and Culture* 37 (1996), p. 763-95.

⁶ On internal improvements and the eventual reaction against them, see esp. LARSON John Lauritz, *Internal Improvements: National Public Works and the Promise of Popular Government in the Early United States*, Chapel Hill, North Carolina, 2001; LARSON, “Liberty by Design: Freedom, Planning, and John Quincy Adams’s American System,” in FURNER Mary O., SUPPLE Barry (eds.), *The State and Economic Knowledge*, Cambridge, 1990, p. 73-102; GUNN L. Ray, *Decline of Authority: Public Economic Policy and Political Development in New York, 1800-1860*, Ithaca, 1988; and LACEY Michael, “Federalism and National Planning: The Nineteenth-Century Legacy,” in FISHMAN Robert (ed.), *The American Planning Tradition*, Washington, DC, 2000, p. 89-146.

over 1,300 pathmasters overseeing just under 2,000 miles (3,200 km) of local roads.⁷

This system made sense when the state was sparsely settled and its citizens were suspicious of expansive and costly exercises of central public authority. But toward the end of the century, as traffic outstripped the capacity of residential maintenance forces, the roads' condition worsened. Narrow and meandering, muddy and rutted, cracked and dusty, pitted and overgrown – these part-season roads were widely condemned, not surprisingly, as obstacles to rural New York's social and economic development. They were a marked contrast to improvements in American cities, where paving spread widely during the 1880s and 90s. Still, for all its shortcomings, rural road administration had produced a vast web of inexpensive and nominally effective town and county roads. It also

⁷ On the labor system and road districting, see WHITE W. Pierrepont, *Oneida County, New York, and Her Road Building*, 2nd edition, Oneida County, New York, 1902, p. 4-5, 13-15. A rough average from the table below, reprinted from White's report, reveals that Oneida County pathmasters had about 35 days labor allotted to maintain one and a half miles of road.

TOWN [IN ONEIDA CO.]	NUMBER OF PATHMASTERS	MILES OF ROAD	DAYS WORK
Annsville	81	90	1,500
Augusta	52	60	1,400
Ava	46	60	700
Boonville	62	200	2,084
Bridgewater	28	48	1,320
Camden	56	65	1,200
Deerfield	46	75	1,450
Florence	88	90	1,200
Floyd	47	60	1,500
Forestport	33	55	1,900
Kirkland	57	80	2,660
Lee	62	80	1,950
Marcy	43	60	1,700
Remsen	37	50	720
Rome	56	175	3,000
Steuben	66	70	1,527.5
Trenton	67	65	2,300
Vernon	64	85	2,272
Verona	111	175	3,000
Vienna	64	128	3,148
Western	62	60	1,850
Westmoreland	69	80	2,700
Whitestown	28	80	4,240
TOTAL	1,325	1,991	45,326.5

kept public power close to the democratic ideal of community self-government. This was no small achievement in America's so-called "organizational age."⁸

But within a single generation, this system of highway administration was entirely upended. By the 1930s, New York State was improving its system of 80,000 miles (130,000 km) of public roads and had nearly completed a 14,000 miles (23,000 km) system of primary highways. The federal government, which took an increasing interest in road building from the 1890s, offered matching grants in aid starting in 1916. New York's peak construction year was 1931. A few years after that, the federal government made road building the cornerstone of New Deal unemployment relief work: a reflection of the central position that road construction had assumed on the civic agenda over the previous three decades.⁹

Road-building in the motor age profoundly changed America's built environment. A technological determinist might argue that roads simply followed the automobile. In fact, the car culture trailed the road-building revolution, which stemmed from a critical political transformation during the late nineteenth and early twentieth centuries. An assessment of the timing and character of the automobile and highway revolutions requires a thorough investigation of the links between road building and state building in this era. How did road-building authority, once the province of local government, come to be reapportioned among federal, state, and local governing bodies? By what means did these public agencies assume new and costly responsibilities, adopt centralized administrative structures, and actively engage in the sort of public construction that promoted new patterns of commerce, work, and residency?

These are important features of the modern, active state. Understanding how that state was generated is tremendously relevant to the research agendas of both political history and transportation history. This article, and the larger project of

⁸ ROCKWOOD Nathan C., *One Hundred and Fifty Years of Roadbuilding in America*, New York, 1914; SCHLESINGER Arthur M., *The Rise of the City*, New York, 1933, p. 87-89; BARRON Hal S., *Those Who Stayed Behind: Rural Society in Nineteenth-Century New England*, Cambridge, 1984; BARRON *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930*, Chapel Hill, North Carolina, 1997; BAKER Paula, *The Moral Frameworks of Public Life: Gender, Politics, and the State in Rural New York, 1870-1930*, New York, 1991; FULLER Wayne, *RFD: The Changing Face of Rural America*, Bloomington, Indiana, 1964. On the organizational synthesis, see CHANDLER Alfred D., *The Visible Hand: The Managerial Revolution in American Business*, Cambridge, 1977; HAYS Samuel P., *The Response to Industrialism, 1885-1914*, Chicago, 1957; GALAMBOS Louis "The Emerging Organizational Synthesis in Modern American History," *Business History Review* 44 (1970), p. 279-290; GALAMBOS, "Technology, Political Economy, and Professionalization: Central Themes of the Organizational Synthesis," *Business History Review* 57 (1983), p. 471-493. For revisions and alternatives to the organizational synthesis, see BALOGH Brian, "Reorganizing the Organizational Synthesis: Federal-Professional Relations in Modern America," *Studies in American Political Development* 5 (1991), p. 119-172; SCRANTON Philip, *Endless Novelty: Specialty Production and American Industrialization, 1865-1925*, Princeton, 1997. For a review of Chandler's work and impact, see JOHN Richard R., "Elaborations, Revisions, Dissents: Alfred D. Chandler, Jr.'s *The Visible Hand* after Twenty Years," *Business History Review* 71 (1997), p. 151-200.

⁹ ICKES Harold, *Back to Work*, New York, 1974, originally published 1935.

which it is a part, seeks to link the theme of the origins of the modern state to the debate over road reform in the late nineteenth and early twentieth centuries.

Drawing on state records, newspaper accounts, and manuscript collections, I demonstrate how local road-building authorities gradually yielded power to system builders. These were engineers and public officials whose expertise ensured that they would view highway construction from a broader, analytic perspective, rather than through the narrower lens of community affairs.¹⁰

But this shift in power did not reflect a straightforward triumph of rational thinking over provincialism. After all, local governing bodies had controlled road building since the collapse of public planning in the early American republic. The management of bold transportation initiatives was in the hands of railroad magnates for much of the nineteenth century. System building coexisted with local and egalitarian impulses, and the return of this initiative to centralized state authority faced substantial obstacles. Efforts to preserve the old political order led to gradual change in road administration. As it unfolded, divisions based on cultural geography, wealth, and party politics shaped its course.

The story gets under way in the early 1890s, when New York's Republicans began a long period of control of state government. Their success depended on coalitions with independent reform groups. One of these was the League of American Wheelmen, an elite, urban-based bicyclists' organization that for some time had been lobbying for touring routes. The Wheelmen wanted a broad-scale road improvement program and initiated a Good Roads campaign. They found allies among academics, railroad industrialists, wealthy automobilists, federal engineers, and progressive reformers.

At the core of the Republican party, however, were two recalcitrant groups, machine politicians and rural farmers, who resisted administrative change. The urban, Progressive leaders of the Good Roads movement found it necessary to enter into alliances with these unlikely interests. They did so with significant implications for early twentieth-century transportation politics. The Wheelmen's experience underlines the important links that tied upper-middle-class leisure activities, the proliferation of civic associations, and their growing political

¹⁰ On the implementation and dissemination of large technical systems, see HUGHES Thomas P., *Networks of Power: Electrification in Western Society, 1880-1930*, Baltimore, 1983; HUGHES, *Rescuing Prometheus*, New York, 1998.

activism; and it suggests that successful road legislation was the product neither of boss rule nor reform politics alone, but of the complex interplay of the two.¹¹

Over the next quarter of a century, demands for road reform filtered through this complex political array of reformers, agrarians, and politicians. These competing interests precluded the wholesale overhaul of highway policy. Instead, a policy-making process emerged in which policy demands first were integrated into existing administrative systems. Only when new public mandates outstripped political capacity did profound structural change occur.

This process occurred not once, but twice in the period before World War I, the first addressing rural road administration, and the second machine politics. In the first instance, during the 1880s and 90s, local road-building authorities achieved a new level of sophistication in their construction of highways. New stone crushing equipment was purchased, county boards coordinated construction among the towns. But by the end of the century it became clear that local governments, some quite impoverished, lacked the resources necessary for systematic, statewide road improvement.

Rural road districts, surrounding villages, connecting railways, and distant cities all had “mutual” interests in road improvement. Each received benefits in communication, passenger travel, and freight transport, and as former New York Agricultural Society president James Wood explained in 1892, “each must bear its proper proportion of the expense of improvement.” This would be “a matter of simple justice,” he argued, “if the rural districts were able to bear the entire expense, [but] as it is now that is impossible.”¹² Lacking the capacity to engage in systematic transportation improvement, local governments, once absolute in

¹¹ On the League of American Wheelmen, see Mason, Philip Parker, “The League of American Wheelmen and the Good Roads Movement, 1880-1905,” Ph.D. thesis, University of Michigan, 1957, p. 44; TOBIN Gary Allan, “The Bicycle Boom of the 1890’s: The Development of Private Transportation and the Birth of the Modern Tourist,” *Journal of Popular Culture* 7 (1974), p. 838-849; DEARING Charles L., *American Highway Policy*, Washington, DC, 1941. On the proliferation of federated associations like the LAW, see SKOCPOL Theda, GANZ Marshall, MUNSON Ziad, “A Nation of Organizers: The Institutional Origins of Civic Voluntarism in the United States,” *American Political Science Review* 94 (2000), p. 527-46. And on the political impact of these groups, see CLEMENS Elisabeth S., *The People’s Lobby: Organizational Innovation and the Rise of Interest Group Politics*, Chicago, 1997.

¹² *The Country Gentleman*, April 7, 1892, p. 266. *The Cultivator* (founded 1834) and *The Country Gentleman* (founded 1859) merged in 1866 to form *The Cultivator and Country Gentleman*, until 1898, when the journal reverted to simply *The Country Gentleman*. Part of upstate New York’s burgeoning agricultural press, these journals “probably circulated more thoroughly among the rural folk of Western New York than any other paper.” CROSS Whitney, *The Burned-Over District: The Social and Intellectual History of Enthusiastic Religion in Western New York, 1800-1850* (Ithaca, New York, 1950), p. 141. On the agricultural press, see PARKERSON Donald H., *The Agricultural Transition in New York State: Markets and Migration in Mid-Nineteenth-Century America*, Ames, Iowa, 1995, p. 16-17; ROSSITER Margaret W., *The Emergence of Agricultural Science: Justus Leibig and the Americans, 1840-1880*, New Haven, 1975, p. 8-9. While the editors of these journals often spoke for the progressive farmer, the papers’ wide readership guaranteed that a broad cross section of rural New York would be represented in the letters and opinion pieces, which form part of the evidentiary basis for this paper.

their road-building authority, agreed for the first time to relinquish some control over highway construction in exchange for state aid in 1898.

Once the logjam of agrarian resistance had been broken, New Yorkers enthusiastically embraced the state's road improvement plan. But their requests for state assistance quickly outpaced state resources. Between 1899 and 1904, the state constructed only 59 miles (95 km) of roads. Petitions for another 1,308 miles (2,106 km) piled up in the State Engineer's Office, with no action taken on them.¹³ In order to meet this new demand, the people of New York ratified a \$50 million road bond issue in 1905.¹⁴ No other state in the nation had yet taken such a bold step in support of highway construction, and over the next ten years one of every three dollars expended by state governments on highway construction was spent in New York State.¹⁵ This support, so integral to New York's highway program, preceded mass automobile use. [See Graph 1.] Not merely a functional response to the coming of the automobile, that program was also a reflection of new thinking about public road-building power.

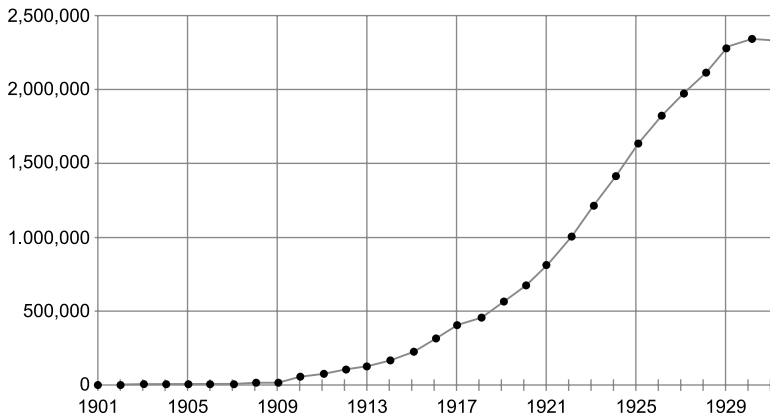
The bond issue solved New York road-building's financial problem, but it raised an administrative one: who would safeguard the expenditure of such vast sums? The state legislature addressed this concern by creating a bi-partisan Highway Commission in 1909, designed to be immune from electoral politics. The Highway Commission was unlike earlier state commissions, which were mostly confined to gathering statistics or restricting certain private activities.¹⁶ What made the Highway Commission different was its positive, constructive function. With the coming of the commission, the state took direct control of

¹³ See New York State, State Engineer and Surveyor, *Record of Contracts for Improvement of Public Highways, 1898-1908*, New York State Archives, Albany, New York.

¹⁴ On the political culture of New York State during this period, see McCORMICK Richard L., *From Realignment to Reform: Political Change in New York State, 1893-1910*, Ithaca, 1981.

¹⁵ As of January 1, 1916, New York State had 6,250 miles of surfaced state and state-aid highways, or 12% of all improved state and state-aid highways, and more than any other state. New York had 17,500 miles of total surfaced highways (6% of the nation's surfaced roads), ranking third behind Ohio and Indiana. New York surfaced 21.8% of its public roads, ranking ninth behind Rhode Island (58.8%), Massachusetts (46.6%), Indiana (42.6%), Ohio (35.8%), New Jersey (31.0%), Vermont (23.1%), Connecticut (22.7%), and Kentucky (22.1%). Comparisons across States are difficult, however, because of non-standard reporting techniques that do not differentiate between a mile of narrow gravel road and a mile of high-grade cement highway. Following the money provides a clearer picture of New York's leadership role. In 1915, New York led the nation in highway expenditures, spending over \$16.5 million (\$14 million from the state government, \$2.5 million from local sources). New York's closest competitor, California, spent \$8.3 million, or about half that of New York. Total public highway expenditures from all states tallied \$80.5 million. Thus one in five American highway dollars was spent in New York. All state money spent on highways from the passage of each state's state-aid law to January 1, 1916 totaled \$265.4 million. New York spent \$96.6 million of that, or more than one of every three dollars. See U.S. Bureau of the Census, *Historical Statistics of the U.S.* (Washington, DC: U.S. Government Printing Office, 1916), 275-278.

¹⁶ On nineteenth-century commissions, see BROCK William R., *Investigation and Responsibility: Public Responsibility in the United States, 1865-1900*, Cambridge, 1984.

Graph 1: Motor Vehicle Registrations, New York State, 1900-1931¹⁷

highway finance and administration, and the labor system of taxation, in place since colonial times, was formally abolished.¹⁸

Despite the pioneering nature of the new commission, it soon was subject to age-old political machinations. As many had feared, machine politicians quickly consolidated party control over the Highway Commission, and applied their time-honored distributive political philosophy to this new grant of power. Patronage was directed toward party regulars, road contracts were dispensed in ways that echoed traditional local boss politics. One road was built expressly to provide access to a legislator's mountain hunting lodge. For years, the Highway Commission faced repeated charges of corruption and constant changes of leadership.¹⁹

In time the party machine acknowledged the difficulty in applying a system of locally oriented politics to the rigorous administrative requirements of an integrated highway system. Highway Commissioner Percy Hooker observed as early as 1909 that "the question of determining the location of the State routes" was "one of the most difficult ... problems with which the Commission has

¹⁷ CURTISS William M., "The Development of Highway Administration and Finance in New York," Department of Agricultural Economics and Farm Management, New York State College of Agriculture Ithaca, New York, 1936, p. 59.

¹⁸ BULLOCK Edward Taylor, "Financial Aspects of Highway Development with Special Reference to New York State," Ph.D. thesis, Harvard University, 1926, p. 63-66.

¹⁹ "Highways and Highwaymen," *Saturday Evening Post*, May 20, 1922; *New York Times*, March 11, 1919, April 4, 1919, February 7, 1923. On political machines, see the work of Terrence McDonald, esp. McDONALD, "Building the Impossible State," in JACKSON John E. (ed.), *Institutions in American Society*, Ann Arbor, Michigan, 1990, p. 217-239.

had to deal.” Engineering dilemmas, community demands, and “numerous [other] conflicting interests [have] all combined to create [the] most perplexing conditions.”²⁰ As the Highway Commission plunged further into corruption, these difficult planning decisions were sidestepped in favor of a highly politicized road-building program.

The engineering community followed these developments closely, and argued that continuous leadership by experts offered clear advantages to politicized road building. An *Engineering News* editorial on the troubled New York State Highway Commission agreed that there was clearly “fraud and graft in plenty, as everyone knows,” but warned “that all this work of chasing criminals is ... looking to the past rather than the future.”

The engineering press proposed that to escape from the cycle of fraud and misadministration, the Highway Commission needed reorganizing along nonpartisan lines, with reliance on the apolitical rationality of engineers. Restructure the commission in this way, the engineers suggested, and competent experts would replace the political tools of earlier administrations. “When engineers can join a state engineering organization with confidence that merit and not political pull will meet with reward,” one editorial argued, “there will be plenty of competent engineers to take up road work. And with competent engineers in control, the questions of what types of roads to build and how to build them economically and efficiently will largely settle themselves.”²¹ These were precisely the questions that challenged Highway Commissioner Hooker in 1909. Rather than directly face the politically unpopular decisions required by road-building, politicians soon yielded to a new regime dominated by engineers and devoted to systematic construction.

These developments suggested that machine politicians had learned the same lesson as the local road officials of the 1890s: that localist politics was ill-equipped to handle the demands of a state-wide highway infrastructure. In this sense rural conservatism and urban bossism were two parts of the same waning political culture. Practitioners of both styles of government had hoped to use road reform to shore up their political authority; neither succeeded.

The rise of the engineers’ authority came at the cusp of mass automobile ownership. As the motor car’s appeal grew in the 1910s, the intensity of highway demands increased accordingly. But by this time, much political restructuring had already taken place. At the dawn of the automobile age, and with the federal

²⁰ New York State, Highway Commission, *Report of the Commission of Highways*, 1909.

²¹ On the engineering press’s criticism of politics in New York road building, see the following articles and editorials in *Engineering News*: “The Prospects of State Highway Administration in New York,” October 23, 1913, p. 829; “The Investigation of the New York State Highway Work,” December 4, 1913, p. 1142; “The New York State Highway Department: After Investigation, What?” February 19, 1914, p. 423-425; “Politics vs. Business in New York State Road Work,” March 26, 1914, p. 686; “Governor Glynn’s Investigation of Highway Work,” March 26, 1914, p. 694-695.

government poised to offer vast amounts of highway aid to the states, the politics of localism had already given way to a costly and complex administration.

In the decades following World War I, the unremitting demands of motor transportation continued to prompt both new highway policy and systemic political change. The highway boom years of the 1920s elevated engineers and other experts to a higher status. The central figure in this evolution was Colonel Frederick Stuart Greene. An officer in World War I, Greene earned fame as a road builder in wartime France. On his return, New York Governor Al Smith offered him the position of highway commissioner.

Map 1: Approved State Highways of New York State, 1911²²



Greene balked at the Governor's proposal, claiming that the job was a political post and that he was no political man. But Smith was persistent, explaining that he wanted a road builder rather than someone who would dispense patronage. He had seen the perils of politicized road building during his years in the New York State Legislature. A good and highly visible road system, the reform-minded Governor believed, would serve his political needs better than an extensive patronage system. Greene's war record would bolster his public image; and his rhetoric of efficiency was sure, in a technological age, to win applause from the popular press. In return for all that Greene offered, he would have the power to make all appointments – a free hand with which to build the best possible

²² New York State, Highway Commission, *Report of the Commission of Highways*, 1910.

roads for New York. The Colonel accepted the post, and received Smith's unconditional backing over the next decade.²³

Politicians, lawyers, and bankers previously headed New York's highway program. Though a politically difficult choice, Smith's selection of Greene – an engineer and a systems builder – made a great deal of sense. He represented a clear advance over the rural conservatism and the urban boss politics that had hamstrung highway development for decades. Largely due to Greene's ability to replace the politics of localism and patronage distribution with the politics of technocratic expertise, the state nearly completed its 14,000 miles (23,000 km) system of state highways by the early 1930s. [See Chart 1.]

Chart 1: Status of New York Highways, January 1, 1935²⁴

CLASSIFICATION	IMPROVED MILES	UNIMPROVED MILES	PERCENT IMPROVED	TOTAL MILES	PERCENTAGE OF TOTAL SYSTEM
STATE HIGHWAYS	12,453	1,109	91%	13,562	14%
COUNTRY ROADS	13,145	4,521	74%	17,666	18%
TOWN HIGHWAYS	20,609	32,156	39%	52,765	52%
CITY STREETS	6,986	3,727	65%	10,713	11%
VILLAGE STREETS	3,212	2,323	58%	5,535	5%
TOTAL	56,405	43,836	56%	100,241	100%

The political system that grew out of this revolution in highway policy during the 1920s was a more fully realized federalism, in which all levels of government worked together to tackle a national problem at the state and local levels. This reapportionment of power left state governments with radically expanded abilities to make policy, amass resources, and direct vast public works projects. In later years, the public would come to question whether these advances were not, in fact, liabilities. Nevertheless they constitute one of the most significant alterations in American political arrangements of the early twentieth century.

National in scope, yet state and local in implementation, the building of the American highway system proved to be one of the toughest infrastructural challenges of the twentieth century. Between 1880 and 1930, the cycle of highway policy demands and responses prompted a broad structural reassessment of the American political system. "Old ways" – both old roads and old methods of

²³ On Greene, see "The Man Who Builds Our State Roads," *New York Times* January 27, 1929; retirement, *New York Times*, March 24, 1939; obituary, *New York Times*, March 7, 1939; "Frederick Stuart Greene," *National Cyclopedia of American Biography*, vol. 37, pp. 274-75. Greene's account of his early meeting with Governor Smith comes from his anonymous, semi-fictionalized "Highways and Highwaymen," published in the *Saturday Evening Post*, May 20, 1922. The exchange is further documented in repeated newspaper accounts, including one in the *New York Times*, August 31, 1923. See also PRINGLE Henry F., *Alfred E. Smith: A Critical Study*, New York, 1927, pp. 258-61. On the popular support of engineering rhetoric, see JORDAN John M., *Machine-Age Ideology: Social Engineering and American Liberalism, 1911-1939*, Chapel Hill North Carolina, 1994, p. 116.

²⁴ State of New York, Legislative Document (1936) no. 89, *Report of the State Highway Survey Committee*.

road administration – were in time rejected, while public power was enlarged, concentrated, and gradually reapportioned among all levels of government.

From this perspective, public road construction was not just a pragmatic response to the automobile but part of a profound evolution in political thought and structure. From the decline of the localist political philosophies of agrarians and party bosses, to the arrival of engineers and experts, to the emergence of a complex and powerful federal and state bureaucracy, this story closely parallels the transition of the political system at large. Road building was not just a product of these political changes, but a major catalyst for this transformation. Its history suggests that public works have been a profound force behind American political development.

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