

**A Vast System of Interconnected Highways:
Before the Interstates**

By
Richard F. Weingroff

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Introduction

In the presidential election year of 1956, a Congress controlled by Democrats combined with a Republican President to give the country a national highway network that President Dwight D. Eisenhower later spoke of as one of the greatest accomplishments of his 8 years in office. It is now named in his honor: The Dwight D. Eisenhower National System of Interstate and Defense Highways.

He had submitted his recommendations to Congress on February 22, 1955. The transmittal letter began with a passage that has often been quoted as a summary of the President's vision:

Our unity as a nation is sustained by free communication of thought and by easy transportation of people and goods. The ceaseless flow of information throughout the Republic is matched by individual and commercial movement over a vast system of interconnected highways crisscrossing the country and joining at our national borders with friendly neighbors to the north and south.

Together, the united forces of our communication and transportation systems are dynamic elements in the very name we bear—United States. Without them, we would be a mere alliance of many separate parts.

The Nation's highway system, he said, is "a gigantic enterprise" but "is inadequate for the nation's growing needs." The need for action was inescapable. He cited safety (more than 36,000 killed and a million injured each year on the highways at a cost of more than \$4.3 billion a year), the poor physical condition of the roads (translating into higher shipping costs, about \$5 billion a year, that are passed on to consumers), the need to evacuate cities in the event of an atomic bomb attack (the present road network would be "the breeder of a deadly congestion within hours of an attack"), and the inevitable increase in traffic as the population and the gross national product increased ("existing traffic jams only faintly foreshadow those of 10 years hence").

The President described the Nation's highway systems, including the National System of Interstate Highways (its statutory name at the time), the primary system and the secondary system. He also noted the Federal responsibility for roads on federally owned land:

Of all these, the interstate system must be given top priority in construction planning. But at the current rate of development, the interstate network would not reach even a reasonable level of extent and efficiency in half a century. [Eisenhower, Dwight D., A President's Message, February 22, 1955, *National Highway Program (Message from the President of the United States Relative to a National Highway Program)*, 84th Congress, 1st Session, House Document No. 93, pages III-VI]

As these comments suggest, President Eisenhower saw the Interstate System as a transformative project that would provide benefits far beyond the highway lanes.

By the time President Eisenhower launched the Interstate era by signing the Federal-Aid Highway Act of 1956 on June 30, politicians, the public, and most observers perceived it as “The Greatest Public Works Project in History.” In the view of its advocates, the Interstate System would surpass the pyramids of Egypt, the ancient Roman road network, the Panama Canal, and any other great public works projects of past millennia. However, long before the Federal-Aid Highway Act of 1956, the idea of a national road network pulling the country together in common purpose had been considered many times.

19th Century Part 1

The Gallatin Plan, 1807

In the early years of the United States, Congress was faced with pressure for internal improvements to pull together a diverse country, including its territories west of the Allegheny Mountains. As Caroline E. MacGill wrote in *History of Transportation in the United States Before 1860*:

Washington and Jefferson, and other public-spirited men who had labored for a “broader national life” had foreseen that a national policy of improvement of land and water routes was essential An empire of rich territory, isolated from the Atlantic seaboard, and with no outlet except by way of New Orleans or the St. Lawrence, was being rapidly occupied, and no systematic effort was being made for its relief or to insure its loyalty. The isolation of the West was felt to be a menace to that national unity which meant national life. The industrial and commercial seaboard, the cotton-producing South, and the grain-producing trans-Allegheny region, developing as they were into three separate social entities, were beginning to conceive of their interests as being in some respects mutually antagonistic. Manufacturing was relatively undeveloped and politically impotent, but under the influence of a new school of political economy—the so-called “national school”—and from motives of obvious self-interest, the manufacturers united with the farmers to overcome the indifference of the shipping interests in the agitation for internal improvements

As production increased in any community, two distinct services were involved in the transportation problem: first, the local problem of collecting products at centers of distribution within the district; second, the national problem of providing practical routes and facilities for reshipment to distant markets. [MacGill, Caroline E., under the direction of Balthasar Henry Meyer, *History of Transportation in the United States Before 1860*, Reprinted by the Carnegie Institution of Washington, 1948, pages 131-135]

As the 18th century gave way to the 19th, “the primitive facilities provided for this traffic had become inadequate.” Congress responded to the pressure to link east with west in 1806 by passing legislation directing the President to establish a commission to build a portage road from the Potomac River at Cumberland, Maryland, to the Ohio River at Wheeling (then in Virginia) for moving settlers and trade. Funds would come from revenue raised under the Enabling Act of 1802 on statehood for Ohio. It set aside 5 percent of the funds from the sale of public land in the new State for construction of roads in the State (3 percent) and roads to and through the State (2 percent). This 2-percent fund paid for construction of this first phase of the National Road.

From the earliest days of the Republic, officials had disagreed on the power of the general government under the Constitution, usually interpreting its words based on whether they thought those powers should be strong in relation to the States or that the States should be dominant. This same issue would be true for the power the Constitution granted Congress in Article 2, section 8, to “establish post offices and post roads.” The meaning of “establish” would be the source of debate through much of the 19th century.

The Articles of Confederation that governed the country before ratification of the Constitution gave Congress “the sole and exclusive right and power . . . of establishing and regulating postoffices from one state to another throughout all the United States” During the Constitutional convention, the Committee of Detail prepared a rough draft of the Constitution that retained the power to establish post offices in the draft submitted to the convention on August 6, 1887. In a 1916 study of postal power, Lindsay Rogers summarized the result:

Ten days later, the Committee’s report being under consideration it was proposed that the words “and postroads” be added. This was carried by a close vote, though it is difficult to attribute the opposition to any source other than a general fear of giving the federal government too much power and thus endangering the chances for adoption

The approved draft was assigned to a Committee of Style to produce a final version:

The report of the Committee of Style, made on September 12, fixed that grant as that “to establish postoffices and postroads,” this being the form in which it became a part of the Constitution. Dr. [Benjamin] Franklin, however, advocated that there be added “a power to provide for cutting canals where deemed necessary.” The motion was seconded, but Mr. [Roger] Sherman [of Connecticut] started the opposition by objecting on the ground that the “expense in such cases will fall on the United States and the benefits accrue to the places where the canals may be cut.” Mr. [James] Wilson [of Pennsylvania], on the contrary, argued that instead of being an expense to the United States, the canals might be made a source of revenue, and [James] Madison wanted “an enlargement of the motion into a power to grant charters of incorporation where the interest of the United States might require, and the legislative provisions of the individual States might be incompetent. His primary object, however, was to secure an easy communication between the states which the free intercourse, now to be opened, seemed to call for. The political obstacles being removed, a removal of the natural ones as far as possible ought to follow.” The question, however, was limited to the single case of canals, and when put to a vote was defeated, because there was an antipathy to monopolies, and because, as Gouverneur Morris [of Pennsylvania] admitted, “It was extremely doubtful whether the Constitution they were framing could ever be passed at all by the people of America; that to give it its best chance, however, they should make it as palatable as possible, and put nothing into it, not very essential, which might raise up enemies.” [Rogers, Lindsay, *The Postal Power of Congress: A Study in Constitutional Expansion*, The Johns Hopkins Press, 1916 (Bibliolife Reprint 2014, pages 16, 22-24)]

When the completed Constitution was submitted to the States for ratification, many contentious issues were debated, but the power to establish post offices and post roads was rarely one of them:

In the state conventions there was practically no discussion of the postal power. Its innocuousness was granted. Mr. Jones of New York was alone in finding a latent aggression, and it was resolved, as the opinion of the state committee, “that the power of Congress to establish postoffices and postroads is not to be construed to extend to the laying out, making, altering, or repairing of highways, in any state, without the consent of

the legislature of such state.” Such a stipulation was destined very soon to become a mere *brutum fulmen*. [Rogers, page 25. The Latin phrase means a harmless thunderbolt, indicating an empty threat or one with no practical effect.]

To encourage ratification, James Madison, Alexander Hamilton, and John Jay wrote papers on the Constitution that were collected as *The Federalist Papers*. In paper #14, Madison returned to an argument he had made during the discussion of the canal amendment. First, he assured readers that the general government would not have “the whole power of making and administering laws.” The general government would have only the powers enumerated in the Constitution. Second, he said that “the immediate object of the federal Constitution is to secure the union of the thirteen primitive States, which we know to be practicable; and to add to them such other States [as may wish to join the union]” He continued:

Let it be remarked, in the third place, that the intercourse throughout the Union will be facilitated by new improvements. Roads will everywhere be shortened and kept in better order; accommodations for travelers will be multiplied and meliorated; and interior navigation on our eastern side will be opened throughout, or nearly throughout, the whole extent of the thirteen States. The communication between the Western and Atlantic districts, and between different parts of each, will be rendered more and more easy by those numerous canals with which the beneficence of nature has intersected our country, and which art finds it so little difficult to connect and complete.

Madison also discussed a “fourth and still more important consideration,” namely that the 13 States were generally bordered by frontiers. Those frontiers that were farthest from “the heart of the Union” would be drawn towards the foreign countries closest to them. For those frontier areas to join the union, they “should derive greater benefit” from doing so than from remaining outside it. [*The Federalist Papers*, A Mentor Book, New American Library, 1961, pages 102-103]

Madison’s discussion did not say whether Congress could pass laws under the Constitution to build the necessary transportation network to hold the new Nation together, but that is the implication.

On February 5, 1796, Madison, now a member of the U.S. House of Representatives, introduced a resolution authorizing the President to secure a survey of a post road from Portland, Maine, to Savannah, Georgia, with the cost of the survey paid by the central government. Rogers summarized Madison’s reasoning:

Two good effects, said Madison, would accrue; “the shortest route from one place to another would be determined upon, and persons, having a certainty of the stability of the roads, would not hesitate to make improvements on them.” It was to be the “commencement of an extensive work” [Rogers, pages 65-66]

The Madison resolution prompted an inquiry from Thomas Jefferson, then a private citizen after serving as Secretary of State during President George Washington’s first term. Unlike Madison, Jefferson had not participated in the Constitutional Convention; he was the country’s ambassador

to France at the time. On March 6, 1796, he added a postscript to a letter on other subjects, asking Madison:

Have you considered all the consequences of your proposition respecting post roads? I view it as a source of boundless patronage to the executive, jobbing to members of Congress & their friends, and a bottomless abyss of public money. You will begin by only appropriating the surplus of the post office revenues; but the other revenues will soon be called into their aid, and it will be a scene of eternal scramble among the members, who can get the most money wasted in their State; and they will always get most who are meanest. We have thought, hitherto, that the roads of a State could not be so well administered even by the State legislature as by the magistracy of the county, on the spot. What will it be when a member of N H is to mark out a road for Georgia? Does the power to *establish* post roads, given you by Congress, mean that you shall *make* the roads, or only *select* from those already made, those on which there shall be a post? If the term be equivocal, (& I really do not think it so,) which is the safest construction? That which permits a majority of Congress to go to cutting down mountains & bridging of rivers, or the other, which if too restricted may refer it to the states for amendment, securing still due measure & proportion among us, and providing some means of information to the members of Congress tantamount to that ocular inspection, which, even in our county determinations, the magistrate finds cannot be supplied by any other evidence? The fortification of harbors were liable to great objection. But national circumstances furnished some color. In this case there is none. The roads of America are the best in the world except those of France & England. But does the state of our population, the extent of our internal commerce, the want of sea & river navigation, call for such expense on roads here, or are our means adequate to it? Think of all this, and a great deal more which your good judgment will suggest, and pardon my freedom.

Madison replied on April 4, 1796, covering several topical issues, including Jefferson's question about the post road resolution:

I was not unaware of the considerations you suggest with regard to the post roads; but do not consider my proposition as involving any dangerous consequences. It is limited to the choice of roads where that is presented, and to the opening them, in other cases, so far only as may be necessary for the transportation of the mail. This I think fairly within the object of the Constn. It had, in fact, become essential that something should be done, and something would have been attempted, on a worse principle. If the route shall be once fixt for the post road, the local authorities will probably undertake the improvement &c. of the roads; and individuals will go to work in providing the proper accomodations [sic] on them for general use. [Founders Online, National Archives, at <http://founders.archives.gov/documents>]

The House approved Madison's resolution and forwarded it to the Senate, which rejected the bill on May 24.

Later that year, Jefferson lost his bid for the Presidency to Vice President John Adams. However, Jefferson secured the second highest number of votes from the Electoral College and

became, under the Constitution, the Vice President. In 1800, he defeated Adams to become President of the United States on March 4, 1801.

President Jefferson understood the need for internal improvements such as the National Road, but as he had said in his 1796 letter to Madison, he was concerned about the potential corruption if Congress began funding internal improvements. His constitutional views reflected this concern. In his second inaugural address on March 4, 1805, he suggested that once all governmental needs are met, Congress should “repartition” the surplus among the States” and, pending approval of “a corresponding amendment of the Constitution,” apply the revenue “in time of peace to rivers, canals, roads, arts, manufactures, education, and other great objects within each State.”

In Congress, the critical constitutional issue had been whether the central government could build a road on State land. The solution was to ask each State through which the road would pass to consent to Federal construction, ownership, and operation. When Pennsylvania delayed consent until the commissioners routed the road through Uniontown and Washington, President Jefferson saw his worst fears confirmed. He commented that “a few towns in that quarter seem to consider all this expense as undertaken merely for their benefit.” [Minicucci, Stephen, “Internal Improvements and the Union, 1790-1860,” *Studies in American Political Development*, 18 (Fall 2004), page 172]

In the case of the National Road, President Jefferson found a way around his constitutional concern, as explained by Professor Maurice G. Baxter:

He had relaxed his strict constructionism somewhat . . . in connection with the congressional law of 1802 on statehood for Ohio. Since that measure preceded actual admission of Ohio and therefore concerned a territory, over which there was a larger scope of national power than over a state, and since the Ohio legislature had entered a kind of compact, Jefferson felt comfortable about this legislation Later, the policy [of financing via public land sales] would be extended to Indiana and Illinois. Still, this undertaking seemed to be a special case, not a precedent for other improvements. They would require an amendment to the Constitution, and Jefferson had recommended such a course. [Baxter, Maurice G., *Henry Clay and the American System*, The University of Kentucky Press, 2004, pages 6-7]

As other sectors of the country and the commercial interests put pressure on Congress to fund additional transportation projects, the Senate passed a resolution on March 2, 1807, asking the Secretary of the Treasury to submit a report on roads and canals. Historian Stephen Minicucci explained:

The plan was a response to rising calls for federal action occasioned by the perceived ineffectiveness of state efforts at the close of the previous century. It also reflected a republican distaste for piecemeal approaches and the legislative logrolling they required. [Minicucci, pages 163-164]

Secretary Gallatin's report on roads and canals, sent to the Senate on April 4, 1808, was the first attempt to establish a national transportation policy.

Gallatin, who had migrated from Geneva, Switzerland, to the United States in 1780, had settled in western Pennsylvania. He entered the House of Representatives in 1795, where he impressed his colleagues with his grasp of financial issues. He served in the House until President Jefferson selected him in 1801 to be Secretary of the Treasury.

Gallatin's report began by stating, "The general utility of artificial roads and canals is at this time so universally admitted, as hardly to require any additional proofs." Artificial roads and canals were typically provided by private enterprise, but did not always repay their investors because "the tolls may not have been fixed at a rate sufficient to pay to the undertakers the interest on the capital laid out." The investors lose, "but the community is nevertheless benefited by the undertaking."

In a country "possessed of large capital" or where population resides in a small area, "those improvements may often, in ordinary cases, be left to individual exertion, without any direct aid from Government." In the United States, the size and diversity of the country "render the facility of communications . . . an object of primary importance" but "check the application of private capital and enterprise to improvements on a large scale."

Financial, commercial, and geographic challenges prevented private investment from providing the artificial roads and canals the Nation needed:

The General Government can alone remove these obstacles.

With resources amply sufficient for the completion of every practicable improvement, it will always supply the capital wanted for any work which it may undertake, as fast as the work itself can progress; avoiding thereby the ruinous loss of interest on a dormant capital, and reducing the real expense to its lowest rate.

With these resources, and embracing the whole Union, it will complete on any given line all the improvement, however distant, which may be necessary to render the whole productive, and eminently beneficial.

The early and efficient aid of the Federal Government is recommended by still more important considerations. The inconveniences, complaints, and perhaps dangers, which may result from a vast extent of territory, can not otherwise be radically removed or prevented than by opening speedy and easy communications through all its parts. Good roads and canals will shorten distances, facilitate commercial and personal intercourse, and unite, by a still more intimate community of interests, the most remote quarters of the United States. No other single operation, within the power of Government, can more effectually tend to strengthen and perpetuate that Union which secures external independence, domestic peace, and internal liberty. [Gallatin, Albert, *Report of the Secretary of the Treasury on Roads and Canals*, 10th Congress, 1st Session, Senate Document No. 250, April 6, 1808, pages 724-725]

As Albert C. Rose, the longtime unofficial historian of the U.S. Bureau of Public Roads (BPR), explained, Gallatin's proposal for a network of roads and canals was based on three basic concepts. First, given "the legitimacy of Government aid to finance transportation projects transcending local needs," the report demonstrated that "the through routes of national importance could be financed only by the General Government because the central authority alone possessed 'resources amply sufficient for the completion of every practicable improvement.'" Second, the general government should undertake only improvements that would yield reasonable returns on the original investment. Third, a nationwide system of transportation would be essential to the national defense. [Rose, Albert C., *Historic American Roads: From Frontier Trails to Superhighways*, Crown Publishers, Inc., 1976, page 27]

The Federal Highway Administration (FHWA) summarized the plan in its Bicentennial history:

The works proposed by Gallatin were, first, a series of great canals along the Atlantic coast connecting the natural bays and estuaries into one continuous waterway for the carriage of heavy freight. Supplementing this waterway, there would be a light-duty turnpike from Maine to Georgia for passengers, mail and light goods hauling. The second part of the plan was to form communications between the four great Atlantic rivers and the Western rivers by river improvements, short canals and four heavy-duty freight turnpikes across the mountains. These would be supplemented by internal roads to Detroit, St. Louis and New Orleans. The third part was to open inland navigation between the Hudson River and the Great Lakes and the St. Lawrence River, plus a canal around the Niagara rapids to open the Great Lakes to sloop navigation as far as the extremities of Lake Michigan. [*America's Highways 1776-1976: A History of the Federal Aid Program*, Federal Highway Administration, page 18]

As MacGill pointed out, Secretary Gallatin's report displayed "the characteristics of a shrewd politician, as well as of a statesman of comprehensive foresight." He understood that "the interest of the different sections of the country must be united in support of a national scheme of improving transportation facilities as a condition of securing legislation which would benefit western Pennsylvania or any other section." Nearly every State would benefit directly, and the others indirectly, from the Gallatin plan.

The report estimated that the plan would cost \$20 million and could be completed in 10 years at a cost of \$2 million a year. The plan worked best if seen as a system rather than a collection of individual projects:

He showed how the benefits to be derived from any given improvement on investigation were dependent upon the completion of other improvements, and closed his report with the assertion that the General Government alone was competent to undertake the work outlined. [MacGill, page 136]

The key, as Professor John Lauritz Larson pointed out in his book on 19th century internal improvements, was Congress and that was the problem:

Neither private nor local public capital was competent to proceed on these major projects: the sums were too large, the fruits of investment depended on the coordination of simultaneous and distant operations, and the greatest benefits often fell outside the jurisdiction where the work was to be done. In many cases general improvements would cause immediate injury to local merchants, ferry-men, and tavern keepers—whose protests state and county government scarcely could ignore. Only the “general government,” Gallatin believed, could remove such “obstacles” to progress by defining a national plan “best calculated to suppress every bias of partiality.” An amendment [of the Constitution] would be needed to empower the government for these specific purposes because Gallatin thought it was essential to override local interests with a grand design: “The national legislature alone, embracing every local interest, and superior to every local consideration, is competent to the selection of such national objects.”

Gallatin’s appeal here was for congressmen to rise above parochial interests and demonstrate the kind of statesmanship the framers had imagined when the Congress was designed. But theories of disinterestedness in office never accurately described reality, and Republican attacks on Federalist pretensions (led by Jefferson and [Secretary of State James] Madison and often carried into execution by Gallatin himself) had done more than a little to advance the style of politics that made this image sadly obsolete. [Larson, John Lauritz, *Internal Improvement: National Public Works and the Promise of Popular Government in the Early United States*, The University of North Carolina Press, 2001, page 61]

(Federalists believed in a strong central government while Republicans such as Jefferson and Madison favored strong State governments.)

Secretary Gallatin, anticipating a surplus of \$2 to \$5 million, assured the President that it would take “at least the two intervening years to obtain an amendment, pass the laws designating improvements, and make the arrangements preparatory to any large expense.” The President insisted that the amendment was needed and was convinced it would be approved promptly:

Without constitutional limits, Jefferson believed, those would “get the most who are meanest.” Proportional spending in each state according to the “federal ratio” he thought might minimize the danger of logrolling. Gallatin suppressed this idea as unworkable: “neither improvements nor education can ever in practice be exactly partitioned in this manner.” Consequently, Jefferson fixed his hopes on an amendment expressly covering roads, canals, and universities, so that *this* enlargement of federal power would be no precedent for other “elastic” experimentation. [Larson, pages 57-58]

Despite the popularity of internal improvements, Congress would not go along with President Jefferson’s request. Those who feared a strong central government opposed additional consolidation of national powers. Those who favored a strong central government did not want to reward the President for his contrary views. Others were more interested in securing their own projects through legislative maneuvers, such as logrolling for pet projects, that President Jefferson despised.

Another reason for the lack of congressional cohesion was that the President's power was in decline. According to Larson, "Jefferson failed to notice that by 1806 he had lost control of the Republican Party," with its members "estranged either by Gallatin's abrasive personality or Jefferson's peremptory handling of patronage and the details of administration." As a result:

With no whip to crack over Congress as he tried to steer an aggressive new course of national purpose, the president could only watch his amendment, his university, and his program of roads and canals languish unattended while conditions around him disintegrated.

President Jefferson thought the novelty of his proposals accounted for what he called "a snail-paced gait for the advance of new ideas on the general mind," but novelty was not the problem:

Divergent, competitive ambitions invaded congressional debates and fostered bare-knuckles interest-group contests where informed deliberation was supposed to prevail. The immediate result of Jefferson's effort to launch his own program of internal improvements was an explosion of special pleading that appalled even friends of the administration's design. [Larson, page 58]

A more specific problem also was undermining the Gallatin plan. A few months earlier, in December 1807, President Jefferson had signed the Embargo Act, an attempt to stop England and France, then at war, from seizing American ships. The British added to the harassment by declaring sailors on the seized ships to be British citizens and forcing them to work on the British ships. Economic historian John Steele Gordon explained:

In hopes of forcing France and Britain to respect neutral rights, President Jefferson rammed through Congress the Embargo Act, which he signed on December 22, 1807. It was one of the most remarkable acts of statecraft in American history. Indeed it is nearly without precedent in the history of any country. The Embargo Act forbade American ships from dealing in foreign commerce, and the American navy was deployed to enforce it. In effect, to put pressure on Britain and France, the United States went to war with itself and blockaded its own shipping.

The act "devastated" New England, which was heavily dependent on maritime commerce, and prompted "an epidemic of smuggling along the Canadian border" that President Jefferson thought was little short of an insurrection:

The reaction against the Embargo Act in all the seaboard cities was so intense that it lasted only fourteen months, but the Nonintercourse Act, which replaced it, forbade commerce with both Britain and France, our largest trading partners, and American foreign commerce stayed in deep depression. [Gordon, John Steele, *An Empire of Wealth: The Epic History of American Economic Power*, HarperCollins, 2004, pages 94-95]

With anger rising, especially in New England, Gallatin's proposal made no progress in the 10th Congress.

During the second session of the 11th Congress (November 27, 1809–May 1, 1810), Representative Peter B. Porter of New York and Senator John Pope of Kentucky introduced a proposal to develop a national system of roads and canals. Professor Larson described the plan:

The Pope-Porter bill, written by [engineer Benjamin Henry] Latrobe and enthusiastically endorsed by Gallatin, committed the federal government to buying one-third of the stock of private companies chartered in the states to build every major project named in Gallatin's report—except the Potomac Canal. Proceeds from the sale of public land would accumulate in a fund (like the Ohio road funds) to pay for the government's investments. The program appeared to be fully constitutional (although Virginia's John Wayles Eppes insisted it was not) because it operated only when private parties in the states initiated corporations.

Supporters of the Potomac Canal, favored by Presidents Washington and Jefferson, were unsatisfied and support in Pennsylvania was divided between Philadelphia and western forces. Professor Larson added:

[The] deadliest blow came from New England Federalists, who in retaliation for the embargo swore that “no measure of the [Republican] party ought to be suffered to succeed, until commerce is restored & so forth.”

In the face of opposition, Senator Pope's committee “stripped from the bill every project except the Delaware and Louisville canals, whose chief sponsors dominated the committee.” In the end, the bill was doomed:

Paralyzed by intramural rivalries and distracted by worsening conditions overseas, the national legislature did nothing more about the Pope-Porter bill before the outbreak of the War of 1812 The legislative death of the Pope-Porter bill confirmed, all the rhetoric of national purpose and harmonizing interests notwithstanding, that congressmen might jockey for competitive advantage but felt no compelling obligation to devise a comprehensive system of internal improvements. Accumulated hatred for Albert Gallatin, dark suspicions of engineers like Benjamin Latrobe (who was financially interested in several of these projects and notorious for running over budget), genuine or strategic concern for preserving limits on federal power, bitter rivalries among the Atlantic seaports, calculated partisan ambitions—any or all were reason enough to do nothing for roads and canals. [Larson, pages 61-63]

Despite the many factors blocking enactment of a national plan, Rose concluded that Gallatin's observations and recommendations “established the pattern which was expanded and modified as the national frontiers moved westward from the Allegheny Mountains to the Pacific Ocean.” [Rose, page 27]

The Bonus Bill, 1817

In 1814, the end of the War of 1812 resulted in renewed interest in internal improvements. President James Madison supported internal improvements, but was convinced that an

amendment to the Constitution was needed to allow Federal involvement in them. According to Larson:

He rebuilt his cabinet and tried once more to assert that nonpartisan leadership he thought defined the American presidency. Without the distractions of war and commercial restriction, perhaps Congress would rediscover the practice of “disinterested” government. In an almost buoyant message to Congress in December 1915, he praised the conditions of peace and confidently asked for a new national bank, protective tariffs, a reformed and efficient military establishment, coastal defense works, a national university, and the construction of roads and canals for the purpose of “systematically completing” the “inestimable” work begun recently in the States. [Larson, pages 63-64]

On December 5, 1815, President Madison’s 7th annual message, the equivalent of today’s State of the Union Address, explained:

Among the means of advancing the public interest the occasion is a proper one for recalling the attention of Congress to the great importance of establishing throughout our country the roads and canals which can best be executed under the national authority. No objects within the circle of political economy so richly repay the expense bestowed on them; there are none the utility of which is more universally ascertained and acknowledged; none that do more honor to the governments whose wise and enlarged patriotism duly appreciates them. Nor is there any country which presents a field where nature invites more the art of man to complete her own work for his accommodation and benefit.

These considerations are strengthened, moreover, by the political effect of these facilities for intercommunication in bringing and binding more closely together the various parts of our extended confederacy. Whilst the States individually, with a laudable enterprise and emulation, avail themselves of their local advantages by new roads, by navigable canals, and by improving the streams susceptible of navigation, the General Government is the more urged to similar undertakings, requiring a national jurisdiction and national means, by the prospect of thus systematically completing so inestimable a work; and it is a happy reflection that any defect of constitutional authority which may be encountered can be supplied in a mode which the Constitution itself has providently pointed out.

In short, amend the Constitution.

As he neared the end of his second term in office, he reiterated his support in his annual message to the Congress on December 3, 1816:

And I particularly invite again their attention to the expediency of exercising their existing powers, and, where necessary, of resorting to the prescribed mode of enlarging them, in order to effectuate a comprehensive system of roads and canals, such as will have the effect of drawing more closely together every part of our country.

Congress approved the Second National Bank and tariff restrictions to protect U.S. interests, but, Lauren said, “Few high-minded statesmen stalked the halls of Congress, and no effort of the president’s was likely to restore public virtue or transcendent vision.” [Larson, page 64]

With the chartering of a Second National Bank in 1816, supporters of internal improvements saw a new way to finance them. In return for the charter, the United States would receive a \$1.5-million bonus and annual dividends on the stock it held in the bank. A special committee headed by Representative John C. Calhoun of South Carolina proposed, with the support of Speaker of the House Henry Clay, to set aside this money for the construction of roads and canals in each State, with State consent.

On February 4, 1817, Calhoun explained the bill on the House floor. With the war over, and revenues available, good roads and canal would lead to “wealth, the strength, and the political prosperity” of the country. He praised the States and individuals pursuing improvements, but added, “Let it not be said that internal improvements may be wholly left to the enterprise of the States and individuals.”

Such projects would provide commercial advantage, but they also would strengthen the republic. “No country enjoying freedom, ever occupied anything like as great an extent of country as this Republic,” he said. To counter the tendency toward disunion by rival parts, he recommended taking advantage of the country’s lakes and oceans, bays and rivers” to bring the different parts together. If the country did not do so, “We will divide, and in its consequences will follow misery and despotism.”

He dismissed constitutional objections on several grounds. The Bonus Bill simply made funds available without identifying specific projects. He pointed out that the Constitution “was not intended as a thesis for the logician to exercise his ingenuity. It ought to be construed with plain good sense.” The Constitution did not explicitly give Congress the authority to build roads and canals, but “our laws are full of instances of money appropriated without reference to the enumerated powers.” The fact that Congress from the start had appropriated funds for activities that contributed to defense or general welfare is “better evidence of the true interpretation of the Constitution than the most refined and subtle arguments.”

Representative Calhoun continued:

Many of the improvements contemplated are on too great a scale for the resources of the States or individuals; and many of such nature that the rival jealousy of the States, if left alone, might prevent.

Let us then bind the Republic together with a perfect system of roads and canals. Let us conquer space. It is thus the most distant parts of the Republic will be brought within a few days travel of the centre...

During debate, the House added an amendment to distribute the funds to the States based on population to keep nationalists from using the bill to create “one grand, magnificent, consolidated empire,” as an opponent, Representative Thomas Bolling Robertson of Louisiana, put it. The House also adopted an amendment adding “with the consent of the State” as a requirement. Calhoun objected to both amendments, fearing they ruined the bill by stripping away the central government’s ability to create a national system. [Larson, pages 65-67]

Professor Daniel Walker Howe explained the sectional rivalries that threatened Calhoun’s proposal:

Marked regional differences in attitude toward the Bonus Bill appeared. New England and much of the South opposed it, feeling that they had little to gain from encouraging the development of the West and the out-migration of their own people. By contrast the Middle Atlantic states were eager, expecting commercial benefits from a transportation system linking the Hudson and Delaware Rivers with the Ohio and the Great Lakes. In order to maximize support for the Bonus Bill, Clay and Calhoun did not specify which projects would get aid, leaving as many congressmen as possible hopeful. [Howe, Daniel Walker, *What Hath God Wrought: The Transformation of America, 1815-1848*, Oxford University Press, 2007, pages 87-88]

Minicucci said:

Although the bill proposed no particular system, when pressed, Calhoun endorsed something like Gallatin's original list. Originally offered as an open-ended financing mechanism, by the time of its passage the bill required that each state benefit equally from the new fund and approve all federal activities. These compromises weakened the bill and underscore how difficult it was to effect improvements at one go. [Minicucci, page 164]

Congress approved the Bonus Bill by narrow majorities of 86-84 in the House and 20-15 in the Senate. The bill went to President Madison for his approval.

Clay biographers David S. Heidler and Jeanne T. Heidler explained that President Madison's December 1816 encouragement of internal improvements was one reason Congress passed the bill. "Madison's seeming conversion . . . to the idea of limited federal projects convinced skeptics that the Constitution's 'Necessary and Proper' clause might indeed sanction such enterprises."

Speaker Clay and Representative Calhoun thought that with congressional passage, "the difficult part was done." Then:

On March 2, Calhoun paid a customary courtesy call on the outgoing president and Mrs. Madison at the Octagon House, a wealthy Virginia planter's property that served as the president's residence while the gutted Executive Mansion was being rebuilt. Calhoun chatted politely with the Madisons, wished them well, and prepared to leave. As Calhoun walked toward the door, Madison called to him. The president seemed uncomfortable and clearly had something on his mind as he accompanied Calhoun toward the exit. After a pause, he hesitantly said that he planned to veto the Bonus Bill because he thought it unconstitutional.

The information stunned Calhoun. All of his hard work had been carried out on the assumption that the president wanted a bill authorizing internal improvements, and now with one in hand he was going to strike it down. Calhoun rushed to Henry Clay with this news, and Clay quickly wrote to the president to implore that he not use the veto and instead leave the matter to James Monroe [his successor] to decide. Madison was not swayed. He vetoed the bill. [Heidler, David S., and Heidler, Jeanne T., *Henry Clay: The Essential American*, Random House, 2010, page 133]

President Madison's veto message explained that he could not reconcile the proposal with the Constitution. Section 8 of the first article of the Constitution enumerated the powers of Congress "and it does not appear that the power proposed to be exercised by the bill is among the enumerated powers, or that it falls by any just interpretation with the power to make laws necessary and proper for carrying into execution those or other powers vested by the Constitution"

He dismissed each of the enumerated powers as authority for the bill. The power "to regulate commerce among the several States" could not be stretched to cover construction of roads and canals "without a latitude of construction departing from the ordinary import of the terms" in the article. Justifying the Bonus Act under the phrase "to provide for common defense and general welfare" would be "contrary to the established and consistent rules of interpretation" and would give Congress "a general power of legislation instead of the defined and limited one hitherto understood" since the phrase, if broadly interpreted, could embrace "every object and act within the purview of a legislative trust." He also rejected the procedure Congress had used to justify construction of the National Road:

If a general power to construct roads and canals, and to improve the navigation of water courses, with the train of powers incident thereto, be not possessed by congress, the assent of the States in the mode provided in the bill can not confer the power.

His message concluded that despite "the great importance of roads and canals and the improved navigation of water courses," the power to provide for them was not specifically granted to Congress and could not be deduced from the enumerated powers.

President Madison withheld his signature from the act but said he cherished the hope that Congress would pursue this additional power through the means provided by the Constitution, which established "a safe and practicable mode of improving it as experience might suggest."

As the Heidlers pointed out, in discussing the intent of the Constitution, President Madison, "could speak with more authority than anyone else, to remind Congress that the Framers had drafted the 'Necessary and Proper' clause not to give it infinite unrestrained power but as a gauge to measure the worth and consequences of individual initiatives." President Madison had not only participated in the Constitutional Convention but was the author of many of *The Federalist Papers* explaining the powers granted by the Constitution helped convince the States to ratify it.

(His transcription of the proceedings of the Constitutional Convention provides the most complete record of what happened during those months in Philadelphia, but his journals remained secret until his death and were not published until 1840.)

Following the veto, Congress had only one option to save the Bonus Bill:

Revealing the level of his disappointment in this episode, Clay took the additional extraordinary step of trying to override the veto of his own party's president. Revealing the level of opposition to the very concept of internal improvements, the override failed. A major element of the program that he and Calhoun felt was essential to national progress had been repudiated. [Heidler, page 133]

A Very Important Circumstance

The failure of Gallatin's plan for a national network of internal improvements and the less specific Bonus Act meant that States would have to bear the burden of providing needed transportation projects. Roads remained a popular option, often financed as turnpikes, but canals were the more promising option for interstate travel because they provided faster and easier transportation of people and goods than possible on roads.

Canals, however, also were more expensive and difficult to construct. The Erie Canal, which opened in 1822, provided the object lesson. Efforts to secure funds from Congress had failed. Despite political, financial, and geographical obstacles and the skepticism of many observers who considered the project a folly, the Erie Canal was a stunning success in promoting New York's economy and making New York City the Nation's dominant city.

Elsewhere, State-sponsored or chartered internal improvements were less successful. Larson summarized the problem:

While the Erie Canal was being built—a period of time that coincided almost exactly with the presidential administrations of James Monroe—internal improvers in every state found themselves awash in grand designs, extravagant claims, false starts, failed experiments, stubborn opponents, political adventurers, local protectionists, and endless expenditures for digging, designing, and surveying. They quickly discovered that private investors did not always—in fact did not often—lead the way in public works, even when the future of whole communities seemed to hang in the balance. They learned that technological innovation did not proceed in straight lines but offered uncertain choices, some of which led to expensive mistakes. They found that interstate and interurban rivalries always subverted cooperative ventures despite the most elevated promises of mutuality or harmony of interests. They discovered that engineers chronically “low-balled” projected costs in order to maximize public enthusiasm (and they learned to encourage this treacherous practice by hiring the man whose figures most closely matched the public purse). They found that the instant roads and canals became fixed to the ground, voters and taxpayers quickly divided into those who felt well served and those who felt neglected by the exact location of the route. In short, internal improvements often suffered as much from cultural as from economic or technological shortcomings.

With this experience, “demands for federal aid, guidance, and integration bombarded Congress” as James Monroe became President in 1817. [Larson, pages 106-107] In his first annual message to Congress on December 12, 1817, he acknowledged the need for a national program of internal improvements:

When we consider the vast extent of territory within the United States, the great amount and value of its productions, the connection of its parts, and other circumstances on which their prosperity and happiness depend, we can not fail to entertain a high sense of the advantage to be derived from the facility which may be afforded in the intercourse between them by means of good roads and canals. Never did a country of such vast extent offer equal inducements to improvements of this kind, nor ever were consequences of such magnitude involved in them.

Congress, he noted, had acted on such a plan, without success, and might revive a similar proposal. Therefore, he wanted to communicate his “sentiments on a very important circumstance” in a spirit of “freedom and candor.” The circumstance was the constitutional enumeration of powers:

A difference of opinion has existed from the first formation of our Constitution to the present time among our most enlightened and virtuous citizens respecting the right of Congress to establish such a system of improvement. Taking into view the trust with which I am now honored, it would be improper after what has passed that this discussion should be revived with an uncertainty of my opinion respecting the right. Disregarding early impressions I have bestowed on the subject all the deliberation which its great importance and a just sense of my duty required, and the result is a settled conviction in my mind that Congress do not possess the right. It is not contained in any of the specified powers granted to Congress, nor can I consider it incidental to or a necessary means, viewed on the most liberal scale, for carrying into effect any of the powers which are specifically granted.

In communicating this result I can not resist the obligation which I feel to suggest to Congress the propriety of recommending to the States the adoption of an amendment to the Constitution which shall give to Congress the right in question. In cases of doubtful construction, especially of such vital interest, it comports with the nature and origin of our institutions, and will contribute much to preserve them, to apply to our constituents for an explicit grant of the power. We may confidently rely that if it appears to their satisfaction that the power is necessary, it will always be granted.

In this case I am happy to observe that experience has afforded the most ample proof of its utility, and that the benign spirit of conciliation and harmony which now manifests itself throughout our Union promises to such a recommendation the most prompt and favorable result.

Many Members of Congress believed they already possessed the power that a constitutional amendment was intended to convey. The Constitution granted Congress the authority “to establish post offices and post roads,” which many Members believed involved providing roads and bridges for transportation of mail. National defense required roads and river improvements for transportation of military personnel and supplies. Regulation of internal commerce among the States required canals as well as lighthouses, breakwaters, piers, and harbors. Further, Members of Congress could cite many precedents of bills approved for all these purposes.

Because of this certainty, the prospect of promoting a constitutional amendment for internal improvements carried with it the danger of failure. It implied that Congress did not possess the enumerated or implied power under Section 8 of the first article of the Constitution to develop roads and canals. If the amendment failed in Congress or among the States, supporters would be unable to claim the power, which would be yielded to the States whether they were capable of exercising it for national purposes or not.

Senator James Barbour of Virginia, who thought Congress had the power, drafted a constitutional amendment coinciding with President Monroe's recommendations. It granted Congress the power "to pass laws appropriating money for constructing roads and canals, and improving the navigation of water-courses." If approved, the constitutional amendment would forever end the debate.

States' rights advocates in the House responded with a "blistering attack on the exercise of power in Washington." [Larson, pages 112-113]

In the end, a Congress divided on whether the Constitution already granted the authority and whether such authority was a good idea, did not adopt the amendment. The result was an unresolved issue that President Monroe and his successors would interpret differently in accordance with their own understanding of the Constitution. Larson described the outcome of the debates in 1818:

In the end these debates, long on passion and rhetorical art, had failed to settle a quarrel that began with the Bonus Bill veto. Instead, they fueled a new campaign to redefine the American Union and tilt the balance of power in federalism, a campaign that would spread and last into Andrew Jackson's presidency—and beyond. By the spring of 1818 the problem of internal improvements embodied the question of liberty and power for a new generation of American republicans. [Larson, pages 111-113, 119]

Secretary of War Calhoun's Report

President Monroe appointed John C. Calhoun to be his Secretary of War. The House Committee on Roads and Canals asked Secretary Calhoun and Treasury Secretary William H. Crawford to submit plans "for the application of such means as are within the power of Congress" to make national roads and canals. Mindful of President Monroe's views, Secretary Crawford did not respond, but Secretary Calhoun submitted a report in January 1819.

He saw an "intimate connexion" between national defense and the country's "improvement and prosperity." A "judicious system" of roads and canals that served civilian needs would be a "more efficient means" of ensuring national defense. An inland waterway from Boston to Savannah would avoid the problems of blockades such as the British had imposed during the War of 1812. States were advancing many of the trans-Appalachian links in the Gallatin plan, but roads and canals were needed on the northern and southern frontiers.

The Secretary urged Congress to direct the War Department to conduct a "military survey" of roads and canals as the "*basis* of a system" and the beginning of a "plan." He offered the U.S. Army's engineers and surveyors for the task and suggested that the general government might provide aid to State plans already underway or planned or provide a contracting function for such works.

Speaker Clay managed to include \$10,000 in extra pay for soldiers "employed in constructing and repairing military roads" in the War Department's appropriation act, but the appropriation left the constitutional issue unresolved. [Larson, pages 128-129, italics in original]

Calhoun, in promoting his Bonus Act, had anticipated that revenue from the national bank would finance internal improvements. The bank, however, not only failed, but plunged the country into an economic panic, as Larson described:

The trouble with the national bank began immediately in 1817. Taking advantage of the private authority within this mixed corporation (private stockholders elected four-fifths of the directors), President William Jones and a band of intensely self-interested directors virtually hijacked the new central bank, subverting all requirements (most notoriously the requirement to stock the vault with specie), expanding loans (often to themselves) far in excess of authorized limits, and covering their misappropriations by freely issuing notes to all who desired them.

Because of these and other misdeeds, the bank was unable in October 1818 to meet a government call for \$2 million to pay off the Louisiana Purchase. The repercussions rippled through the economy as State banks failed; merchants, farmers, and land speculators struggled as prices declined; increased bankruptcies resulted in more unemployment. The Panic of 1819 would last through the early 1820s, causing not only economic strife but polarization in Congress. Senators and Representatives drew lessons from the panic based on their views on the role of the general government prior to the downturn and as proof that the measures they had advocated should now be employed to rescue the country. [Larson, pages 129-130]

The American System

In the wake of the panic, many officials saw a higher tariff as the solution. They reasoned that it would discourage importation of goods, thereby promoting manufacturing in the United States, increased employment, and recovery. Reliance on foreign goods, Speaker Clay argued, undermined American independence.

Clay continued to promote internal improvements as one element of a plan for American economic sovereignty that he first referred to as the American System in 1820. Minicucci described the concept:

For some time, Speaker Clay had been linking support for internal improvements with a protective tariff as the cornerstones both for a pro-development strategy of economic nationalism as well as for a political alliance between agricultural regions and emerging manufacturing interests. By 1824, these had been rhetorically linked in a cross-policy linkage that Clay called “the American System.” Fully articulated, the System also included a strong pro-Bank stance with opposition to the reduction of public land prices and a nonaggressive Indian policy, both of which were intended to support orderly development rooted in the East. [Minicucci, pages 164-165]

In 1820, Clay managed to get his tariff bill through the House after a week-long debate, but the measure failed in the Senate. The divided Congress, with advocates of a strong and a weak central government undermining each other’s solution, managed to pass legislation to extend the National Road, but could not agree on economic solutions. Clay left Congress to improve his personal finances, which had been damaged by the panic.

With the economy rebounding, Congress began in 1821 looking again at internal improvements, responding to appeals for roads, canals, military highways, and river and harbor improvements. Larson explained:

Bouyed by evidence of popular demand, the House Committee on Roads and Canals in 1822 ventured to report another forceful proposal for a national system. Reiterating Gallatin's claim, that certain projects could not be done by state or private enterprise, committee members listed five examples of urgent national projects: the Atlantic coastal waterway; a Washington-to-New Orleans road; canals around the falls of the Ohio and connecting that stream with Lake Erie and the Potomac; a waterway linking the Susquehannah with New York's Finger Lakes drainage; and canals linking the Tennessee with the Savannah, Alabama, and Tombigbee Rivers. The report culminated in a bill for a program of surveys to "lay the foundation of a well-digested and regular system," that would enable Congress "the better to decide on the propriety of engaging in these undertakings."

The U.S. Army's engineers, including cadets at West Point, could conduct the surveys and provide impartial recommendations to Congress:

The time was right to commence a system; the greatest burden of expense would be deferred until such time when the improvements themselves helped pay the debt; and the power of Congress to do so had been settled by precedent (if not by presidential blessing). [Larson, pages 138-139]

President Monroe's Veto

Congress did not act on the proposal in 1822, but a problem had arisen on the original section of the National Road. It was deteriorating from use and misuse, prompting Congress to debate how to restore the heavily used road. Many Members of Congress opposed further appropriations for the road since it did not pass through their State and, in their view, provided no benefits to their constituents. Instead of appropriating funds for its repair, Congress approved legislation authorizing the National Road commissioners to erect toll booths on the road to Wheeling and use the revenue to restore the road.

President James Monroe vetoed the bill on May 4, 1822, "with deep regret . . . under a conviction that Congress do not possess the power under the Constitution to pass such a law." His concern was that the power to establish turnpikes and enforce toll collection by penalties "implies a power to adopt and execute a complete system of internal improvement." It also implied "a complete right of jurisdiction and sovereignty for all the purposes of internal improvement," not merely the right to make appropriations that permitted, with the consent of the States it passed through, construction of the road. He continued:

I am of opinion that Congress do not possess this power; that the States individually can not grant it, for although they may assent to the appropriation of money within their limits for such purposes, they can grant no power of jurisdiction or sovereignty by special compacts with the United States.

If the power did exist, it would have been granted specifically by the Constitution or been incidental to some other power specifically granted:

It has never been contended that the power was specifically granted. It is claimed only as being incidental to some one or more of the powers which are specifically granted. The following are the powers from which it is said to be derived:

First, from the right to establish post-offices and post-roads; second, from the right to declare war; third, to regulate commerce; fourth, to pay the debts and provide for the common defense and general welfare; fifth, from the power to make all laws necessary and proper for carrying into execution all the powers vested by the Constitution in the Government of the United States or in any department or officer thereof; sixth and lastly, from the power to dispose of and make all needful rules and regulations respecting the territory and other property of the United States.

According to my judgment it can not be derived from either of those powers, nor from all of them united, and in consequence it does not exist.

As explained in *America's Highways 1776-1976*:

It was one thing to make appropriations for public improvements, but an entirely different thing to assume jurisdiction and sovereignty over the land whereon those improvements were made. This has been the Federal position on highway grants to States down to the present day. [*America's Highways 1776-1976*, page 21]

Professor Baxter wrote that President Monroe had been waiting for this opportunity:

Ever since becoming president, Monroe had kept in his possession a long paper he had written on the question, and now he enclosed it with his message vetoing the bill. He defined the power to appropriate funds as virtually unlimited, but he categorically rejected any additional power to administer a road, including plans, acquisition of land by eminent domain, enforcement of a criminal code, and in this instance maintenance supported by tolls. These were functions, he said, belonging to the states. His reasoning ranged across constitutional history from colonial days to the present, as he examined various parts of the Constitution, notably postal, military commercial, and financial clauses.

He added, "Monroe's persistent call for a constitutional amendment is strange in light of his fear of broad federal power. An amendment would merely countenance the danger." [Baxter, page 51]

President Monroe's paper is a lengthy history of the evolution of power distribution among the States and general government, from colonial days, through the Revolutionary War, under the Articles of Confederation, and finally the Constitution. He debunked each item cited as authority for Congress to authorize roads and canals. He began with the power "to establish post offices and post roads," pointing out that "establish" was the ruling term. "The sense in which words are commonly used is that in which they are to be understood in all transactions between public bodies and individuals." If "our most enlightened citizens" who did not have a prejudice on the subject were asked what "establish" meant," he said:

We are satisfied that all of them would answer that a power was thereby given to Congress to fix on the towns, court-houses, and other places throughout our Union at which there should be post-offices, the routes by which the mails should be carried from one post-office to another, so as to diffuse intelligence as extensively and to make the institution as useful as possible, to fix the postage to be paid on every letter and packet thus carried, to support the establishment, and to protect the post-office and mails from robbery by punishing those who should commit the offence. The idea of a right to lay off the roads of the United States on a general scale of improvement, to take the soil from the proprietor by force, to establish turnpikes and tolls, and to punish offenders in the manner stated above would never occur to any such person. The use of the existing road by the stage, mail carrier, or postboy in passing over it as others do is all that would be thought of, the jurisdiction and soil remaining to the State, with a right in the State or those authorized by its legislature to change the road at pleasure.

The President pointed out that a similar phrase had been used in the Articles of Confederation giving the States in Congress assembled “the sole and exclusive right and power of establishing and regulating post-offices from one State to another throughout all the United States” After quoting the provision, President Monroe explained:

The term “establish” was likewise the ruling one in that instrument, and was evidently intended and understood to give a power simply and solely to fix where there should be post-offices. By transferring this term from the Confederation into the Constitution it was doubtless intended that it should be understood in the same sense in the latter that it was in the former instrument, and to be applied alike to post-roads Had it been intended to convey a more enlarged power in the constitution than had been granted in the Confederation, surely the same controlling term would not have been used, or other words would have been added, to show such intention and to mark the extent to which the power should be carried.

He considered it “absurd” to argue that even though the Constitution used the same word as the Articles of Confederation, the term was “enlarged, and with it the powers of the Constitution, in a proportional degree, beyond what they were in the Confederation.”

President Monroe added a practical consideration in support of his point:

It is believed that not one example can be given, from the first settlement of our country to the adoption of this Constitution, of a post-office being established without a view to existing roads or of a single road having been made by pavement, turnpike, etc., for the sole purpose of accommodating a post-office. Such, too, is the uniform progress of all societies. In granting, then, this power to the United States it was undoubtedly intended by the framers and ratifiers of the Constitution to convey it in the sense and extent only in which it had been understood and exercised by the previous authorities of the country.

The point was “transportation of the mail throughout the United States,” something previously done on horseback and, more recently, in stagecoaches. If stagecoaches, primarily intended to

convey passengers, were not satisfactory for existing roads, riders on horseback could transport the mail:

For an object so simple and so easy in its execution it would doubtless excite surprise if it should be thought proper to appoint commissioners to lay off the country on a great scheme of improvement, with the power to shorten distances, reduce heights, level mountains, and pave surfaces.

President Monroe similarly dismissed the other provisions cited as authority for congressional power to authorize a road network. One was the right to declare war, a power the Constitution took from the States and gave to Congress. Because a threat to the Nation could come from any direction, if such a power existed, it “must apply to all the roads of the Union, there being no limitation to it.” The authority over roads, therefore, would be incidental to a power given to Congress along with all other specified powers to conduct war, such as raising money to support armies and a navy:

By specifically granting, then, these powers it is manifest that every power was thus granted which it was intended to grant for military purposes, and that it was also intended that no important power should be included in this grant by way of incident, however useful it might be for some of the purposes of the grant.

Further, the Constitution gave Congress exclusive authority over a district, no more than 10 miles square, that would serve as the Nation’s capital and similar authority over forts, magazines, arsenals, dockyards, and other needful buildings erected in the States with the consent of the State legislature. The list of authorities in the Constitution for military purposes was specific and limited; it cannot be extended to other purposes, such as internal improvements, that might have been listed but were not. “That right does not exist.”

Next he addressed a source often cited as authority for internal improvements:

Congress shall have power to regulate commerce with foreign nations and among the several States and with the Indian tribes.

The intent, he said, was to transfer the authority to regulate commerce, previously exercised by the individual States, to the central government. “The sense in which the power was understood and exercised by the States was doubtless that in which it was transferred to the United States.” President Monroe explained that commerce among nations or communities “is universally regulated by duties and imposts.” That was how the States regulated commerce before the Constitution. “The goods and vessels employed in the trade are the only subjects of regulation. It can act on none other.”

In fact, he pointed out, the way the States implemented this authority to seek advantage over other States was one of the main reasons for the Constitutional Convention. Prior to the Constitution, Congress had on several occasions attempted to impose duties and imposts on imports, but the Articles of Confederation required State consent for such actions. The States did not consent:

In 1786 a meeting took place at Annapolis of delegates from several of the States on this subject, and on their report a convention was formed at Philadelphia the ensuing year from all the States, to whose deliberations we are indebted for the present Constitution.

The President added:

In none of the measures was the subject of internal improvement mentioned or even glanced at.

The original goal of the Annapolis report was to amend the Articles of Confederation to give the central government the authority to regulate commerce by imposing duties and imposts on foreign trade without State consent. Instead, the Constitutional Convention created an entirely new instrument of government, but the participants had not forgotten the original concern:

Among the first and most important effects of this great Revolution was the complete abolition of this pernicious policy. The States were brought together by the Constitution as to commerce into one community equally in regard to foreign nations and each other. The regulations that were adopted regarded us in both respects as one people.

The Constitutional Convention added the authority to regulate commerce among States and Indian Tribes. If the power to authorize internal improvements were incident either to imposing duties and imposts or regulating commerce, "I should suppose that it was the first rather than the second." He added, however, that the "pretension to it . . . under that branch has never been set up," and as for the latter, "no reason has been assigned which appears to have the least weight."

President Monroe also rejected the idea that the authority for internal improvements derived from the power given to Congress to "provide for the common defense and general welfare of the United States." He pointed out that this phrase was part of a larger enumerated power and had to be considered in the context of the entire grant, not as an isolated phrase:

Congress shall have power to lay and collect taxes, duties, imposts, and excises; to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.

This authority granted to Congress under the Constitution, but not under the Articles of Confederation, was "one of the principal inducements to the adoption of this Constitution." The entire clause specified that Congress could raise funds and for what purpose those funds could be used. The phrase "general welfare of the United States" cannot be understood outside of this context:

An unqualified power to pay the debts and provide for common defense and general welfare, as the second part of this clause would be if considered as a distinct and separate grant, would extend to every object in which the public could be interested. A power to provide for the common defense would give to Congress the command of the whole force and of all the resources of the Union; but a right to provide for the general welfare would

go much further. It would, in effect, break down all the barriers between the States and the General Government and consolidate the whole under the latter.

Interpreting “general welfare” in this broad context meant that “all the other grants in the Constitution, being completely absorbed in the transcendent power granted in the latter part” are entirely done away with.

Clearly, he indicated, the power of Congress is limited, with all other authority allowed to the States. The power of the central government was “instituted for great national purposes, and for those only.” Just as the States would not undertake national enterprises, Congress should not provide funds for strictly local purposes, even if a State should desire it.

While arguing against the constitutional authority, President Monroe understood the value of internal improvements:

Good roads and canals will promote many very important national purposes. They will facilitate the operations of war, the movement of troops, the transportation of cannon, of provisions, and every warlike store, much to our advantage and to the disadvantage of the enemy in time of war. Good roads will facilitate the transportation of the mail, and thereby promote the purposes of commerce and political intelligence among the people. They will by being properly directed to these objects enhance the value of our vacant lands, a treasure of vast resource to the nation. To the appropriation of the public money to improvements having these objects in view and carried to a certain extent I do not see any well-founded constitutional objection.

The right of appropriation granted by the enumerated power “is nothing more than a right to apply the public money to this or that purpose.” It did not grant incidental power:

All that Congress could do under it in the case of internal improvements would be to appropriate the money necessary to make them. For every act requiring legislative sanction or support the State authority must be relied on. The condemnation of the land, if the proprietors should refuse to sell it, the establishment of turnpikes and tolls, and the protection of the work when finished must be done by the State. To these purposes the powers of the General Government are believed to be utterly incompetent.

He did not base his argument on the idea that Congress could not appropriate funds for internal improvements “because they have not the right of sovereignty and jurisdiction” over the lands. Instead he summarized his view on the power granted to appropriate funds to provide for the general welfare:

The substance of what has been urged on this subject may be expressed in a few words. My idea is that Congress have an unlimited power to raise money, and that in its appropriation they have a discretionary power, restricted only by the duty to appropriate it to purposes of common defense and of general, not local, national, not State, benefit.

Next, President Monroe examined the enumerated power to “make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution” This power, he argued, did not convey any specific power not expressly enumerated. It conveyed only the authority to implement the powers granted elsewhere in the Constitution:

In examining the right of the General Government to adopt and execute under this grant a system of internal improvement the sole question to be decided is whether the power has been granted under any of the other grants. It is has, this power is applicable to it to the extent stated. If it has not, it does not exist at all, for it has not been hereby granted. I have already examined all the other grants (one only excepted, which will next claim attention) and shown, as I presume, on the most liberal construction of their powers that the right has not been granted by any of them; hence it follows that in regard to them it has not been granted by this [provision].

Finally, he examined whether the power granted in article IV, section 3, provided authority for internal improvements:

The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular state.

President Monroe explained that this provision grew out of State claims to western territory. For the most part, the States had ceded the territory to the central government before the Constitutional Convention. Article IV, section 3, related to creation of States out of this territory:

Thus the power of Congress over ceded territory was not only limited to these special objects, but was also temporary. As soon as the territory became a State the jurisdiction over it as it had before existed ceased. It extended afterwards only to the unsold lands, and as soon as the whole were sold it ceased in that sense also altogether.

Since the authority of section 3 applied only in the territories, “it follows that this power gives no authority, and has even no bearing on the question of internal improvement.

President Monroe concluded that based on his examination of the Constitution regarding internal improvements, “it may be fairly concluded that such a right has not been granted.” But he continued:

It appears and is admitted that much may be done in aid of such a system by the right which is derived from several of the existing grants, and more especially from that to appropriate the public money. But still it is manifest that as a system for the United States it can never be carried into effect under that grant nor under all of them united, the great and essential power being deficient, consisting of a right to take up the subject on principle; to cause our Union to be examined by men of science, with a view to such

improvements; to authorize commissioners to lay off the roads and canals in all proper directions; to take the land at a valuation if necessary, and to construct the works; to pass laws with suitable penalties for their protection; and to raise a revenue from them, to keep them in repair, and make further improvement by the establishment of turnpikes and tolls, with gates to be placed at the proper distances.

It need scarcely be remarked that this power will operate, like many others now existing, without affecting the sovereignty of the States except in the particular offices to be performed. The jurisdiction of the several States may still exist over the roads and canals within their respective limits, extending alike to persons and property, as if the right to make and protect such improvements had not been vested in Congress. The right, being made commensurate simply with the purposes indispensable to the system, may be strictly confined to them. The right of Congress to protect the works by laws imposing penalties would operate on the same principles as the right to protect the mail. The act being punishable only, a jurisdiction over the place would be altogether unnecessary and even absurd.

Although President Monroe questioned the constitutional authority of the Congress on internal improvements, he did not doubt their value. Having discussed each possible basis for constitutional authority, he returned to what he called the “almost incalculable” value of roads and canals:

It appears by the light already before the public that it is practicable and easy to connect by canals the whole coast from its southern to its northern extremity in one continued inland navigation, and to connect in like manner in many parts the Western lakes and rivers with each other. It is equally practicable and easy to facilitate the intercourse between the Atlantic and West Country by improving the navigation of many of the rivers which have their sources near to each other in the mountains on each side, and by good roads across the mountains between the highest navigable points of those rivers

Great improvements may also be made by good roads in proper directions through the interior of the country. As these roads would be laid out on principle on a full view of the country, its mountains, rivers, etc., it would be useless, if I have the knowledge, to go into detail respecting them. Much has been done by some of the States, but yet much remains to be done with a view to the Union.

Such improvements would benefit commerce, defense, transport of the mail, and the bond of union. President Monroe emphasized this latter benefit:

Our union is not held together by standing armies or by any ties other than the positive interests and powerful attractions of its parts toward each other.

With a strong transportation network, the diverse parts of the country “would soon become so compacted and bound together that nothing could break it.”

Citing the way the States had abused their authority to regulate commerce, President Monroe saw a very important role for the central government:

It can not be doubted that improvements for great national purposes would be better made by the National Government than by the governments of the several States. Our experience prior to the adoption of the Constitution demonstrated that in the exercise by the individual States of most of the powers [subsequently] granted to the United States a contracted rivalry of interest and misapplied jealousy of each other had an important influence on all their measures to the great injury of the whole The members composing their respective legislatures represent the people of each State only, and might not feel themselves at liberty to look to objects in these respects beyond that limit. If the resources of the Union were to be brought into operation under the direction of the State assemblies, or in concern with them, it may be apprehended that every measure would become the object of negotiation, or bargain and barter, much to the disadvantage of the system, as well as discredit to both governments. But Congress would look to the whole and make improvements to promote the welfare of the whole.

For Congress to have such power, an amendment to the Constitution would be needed. The States could not transfer that authority to Congress except in the form of an amendment. Moreover, if Congress gains that authority, it must exercise it to the benefit of all the States. Having shown the need for an amendment, he offered his opinion “that the power should be confined to great national works only, since if it were unlimited it would be liable to abuse and might be productive of evil.” He added:

For all minor improvements the resources of the States individually would be fully adequate, and by the States such improvements might be made with greater advantage than by the Union, as they would understand better such as their more immediate and local interests required.

President Monroe concluded his paper with a discussion of the Revolutionary War. With the successful separation of the colonies from England, the newly independent States adopted the Articles of Confederation to preserve and augment the sense of union:

To the same cause the greater change which has since occurred by the adoption of the Constitution is to be traced. The establishment of our institutions forms the most important epoch that history hath recorded. They extend unexampled felicity to the whole body of our fellow-citizens, and are the admiration of other nations. To preserve and hand them down in their utmost purity to the remotest ages will require the existence and practice of virtues and talents equal to those which were displayed in acquiring them. It is ardently hoped and confidently believed that these will not be wanting.

President Monroe’s veto was controversial at the time, but he spelled out a policy that would be the foundation of the Federal-aid highway program in the 20th century:

It was one thing to make appropriations for public improvements, but an entirely different thing to assume jurisdiction and sovereignty over the land whereon those improvements

were made. This has been the Federal position on highway grants to the States down to the present day. [*America's Highways 1776-1976*, page 21]

Professor Larson explained that after the House sustained the veto, “Congress stood prohibited from doing what the people (and the president) wanted because the guardians of constitutional balance feared the prospect of further encroachment.” A constitutional amendment would resolve the debate, once and for all, but as noted, supporters of internal improvements feared that the failure of an amendment would empower “the neo-Antifederalists [who] had staked the limits of a re-defined Union far less powerful than the one that was ratified originally.” Larson continued:

If they killed an internal improvement amendment, this could affirm their new interpretation and undermine powers long acknowledged, opening the Constitution to eventual recision, clause by clause. As long as states' rights proponents insisted on restoring the confederation model, nationalistic improvers pressed ahead wherever they found votes to act—thereby proving themselves “guilty” of aggressively loose construction. [Larson, page 140]

In the absence of support for a constitutional amendment, Congress adopted a compromise with the States of Maryland, Pennsylvania, Virginia, and Ohio. They agreed to accept ownership of the National Road if the general government reconstructed the deteriorating older segment. After the States accepted ownership, they would have the authority to collect tolls on what became known as the National Pike. The turnover was completed by 1835.

The National Road would be extended westward under similar conditions. The plan was to extend it to the Mississippi River, but it would end in Vandalia, then the capital of Illinois, because a dispute over its river terminus was not resolved before construction funds ran out in 1840. The U.S. Army Corps of Engineers began construction of the extension in 1825. In eastern Ohio, the Corps maintained a fairly high construction standard, but Congress never provided funds to create the type of pavement the commissioners had provided from Cumberland to Wheeling:

From Wheeling to Vandalia the road was laid out with Roman straightness in an 80-foot right-of-way, but except in eastern Ohio, it did not approach the high construction standard of the Cumberland Road east of the Ohio River. This was partly because of the scarcity of good roadbuilding stone, which had to be hauled long distances. In Indiana and Illinois the road was only a cleared and graded dirt track.

The western portion of the road would be turned over to Indiana in 1848 and to Illinois in 1856:

The National Road never reached the Mississippi, but petered out in the Illinois prairies. Its ultimate demise could have been forecast in 1831 when Congress agreed to turn the eastern sections over to the States for operation and maintenance. The end was due not so much to the constitutional and sectional objections that had plagued the road from the beginning, as to the growing feeling in the country and in Congress that roads and canals

were already obsolete for long-distance transportation. The day of the railroad was at hand. [*America's Highways 1776-1976*, page 21-22]

The General Survey Act of 1824

Secretary of War Calhoun had proposed the use of army engineers for survey and construction of roads and canals, particularly in sparsely populated areas where the States could not provide the needed facilities for the national transportation network. As early as 1822, Representative Joseph Hemphill of Pennsylvania introduced a survey act “to procure the necessary surveys, plans, and estimates, on the subject of roads and canals.” The bill named some of the proposed projects, but directed the President to consider “such other routes for roads and canals as he may deem of national importance in a commercial or military point of view.” Congress debated the bill in 1822 and 1823, but did not approve it.

President Monroe, in his message to Congress on December 2, 1823, had discussed surveying for a canal between the Chesapeake and Ohio Rivers. He made clear that he supported the congressional right “to appropriate money for such a national object (the jurisdiction remaining to the States through which the canal would pass) . . .” He thought it “advisable” to appropriate funds for the Corps of Engineers to survey the land for such a canal and one connecting the Ohio River with Lake Erie. Aside from the advantage of moving troops “with cannon and every kind of munition” in the event of war, he said of the Chesapeake and Ohio canal:

Connecting the Atlantic with the Western country in a line passing through the seat of the National Government, it would contribute essentially to strengthen the bond of union itself.

With this evidence of presidential support, Representative Hemphill reintroduced his bill in 1824 but without reference to specific projects. He explained that the surveys would establish the “foundation of a well-digested and regular system” based on reliable data provided by the army engineers:

The information, when obtained, would be valuable; for it cannot be otherwise than important to be acquainted with the capabilities of the country for internal improvements. It would be useful to the States who have not the same economical means of acquiring it; and this part of the question cannot be embarrassed by any constitutional question.

The House debated the Hemphill bill for what Larson described as “three solid weeks of mind-numbing argument.” Supporters repeated their arguments on the value of such improvements and the constitutional authority for them. States’ rights advocates warned that the act would lead to, as one put it, the “prostration of the States.” Representative Andrew Stewart of Pennsylvania, a supporter, delivered a major address on the history of public works in the country and the need for such works to bind the east and west. “Defeat this bill and you give the death-blow to the best hopes and best interests of the nation,” he said. But pass the bill and the 18th congress would “be hailed by future generations as having laid the foundation of a system of policy which would soon raise this nation to the high and brilliant destiny that awaits it.” [Larson, page 142]

Finally, supporters prevailed on February 10, 1824, by a vote of 113 to 86.

As the Senate took up the act, Senator Thomas Hart Benton of Missouri introduced an amendment specifying which projects should be surveyed. He argued that selection of projects was a legislative responsibility. He listed six canals and five roads and explained that funds for “this great system” could be raised by increased tariffs. His amendment failed in a tie vote, but the Senate approved the act.

President Monroe signed the act on April 30, 1824. It stated:

That the President of the United States is hereby authorized to cause the necessary surveys, plans, and estimates, to be made of the routes of such Roads and Canals as he may deem of national importance, in a commercial or military point of view, or necessary for the transportation of the public mail; designating, in the case of each canal, what parts may be made capable of sloop navigation: the surveys, plans, and estimates, for each, when completed, to be laid before Congress.

He was directed to “employ two or more skillful civil engineers, and such officers of the corps of engineers” as he thought necessary. The General Survey Act of 1824 authorized \$30,000 for these purposes. [Hill, Forest G., *Roads, Rails, & Waterways: The Army Engineers and Early Transportation*, University of Oklahoma Press, 1957, pages 47-48]

To implement the surveys, President Monroe established the Board of Engineers for Internal Improvements. He appointed General Simon Bernard, Colonel Joseph G. Totten, and civil engineer John L. Sullivan to the board. General Bernard, a French engineer who had served under Napoleon, had come to the United States in 1816 to serve on the new Board of Engineers for Fortifications. Colonel Totten also had served on the Fortifications Board. Professor Forest G. Hill, in his book on the Army Corps’ contribution to transportation, said, “It was evident that the most able and experienced engineer officers were being used to staff the newly created agency.”

On December 7, 1824, President Monroe’s final annual message to Congress summarized his actions under the General Survey Act of 1824. The board, he reported, had examined the route for canals between the Potomac and Ohio Rivers; the Ohio River and Lake Erie; the Delaware and Raritan Rivers; Barnstable and Buzzards Bay; and Boston Harbor and Narragansett Bay. The survey of “the very important route” between the Potomac and Ohio Rivers could not be completed until the next season, but President Monroe was gratified to add that “there is good cause to believe that this great national object may be fully accomplished.” It would, in effect, replace the National Road by providing an easier water passage to the Northwest Territories.

He added:

It is contemplated to commence early in the next season the execution of the other branch of the act – that which relates to roads – and with the survey of a route from this city, through the Southern States, to New Orleans, the importance of which can not be too highly estimated. All the officers of both the corps of engineers [sic] who could be spared from other services have been employed in exploring and surveying the routes for

canals. [To] digest a plan for both objects for the great purposes specified will require a thorough knowledge of every part of our Union and of the relation of each part to the others and of all to the seat of the General Government. For such a digest it will be necessary that the information be full, minute, and precise.

In view of the importance of the surveys of canal and road locations, President Monroe asked Congress to enlarge the Corps. [Hill, pages 49-51]

By the end of the decade, the board had considered several roads, including roads from Washington to Buffalo, Washington to the Cumberland Road, and Baltimore to Philadelphia. However, the board's surveys were predominately for canals or, late in the decade, railways. During the remaining life of the board, the engineers increasingly considered "road" to include railroads. (According to Hill, "The first investigation involving railroads took place in 1826 to determine the practicality of uniting the Kanawha with the James and Roanoke rivers by canals or railways or both." [Hill, page 72]) The Corps' Topographical Bureau took over the board's work in 1831.

The Corrupt Bargain

On March 4, 1825, President John Quincy Adams, son of the Nation's second President, took the oath of office. His election was one of the most controversial in the country's history. The four candidates were Secretary of State Adams, Speaker of the House Clay, Senator Andrew Jackson and former Secretary of the Treasury Crawford. Jackson won the popular vote and more votes in the electoral college than Adams, but not a majority as required by the Constitution. The House decided the election on February 9, 1825, selecting Adams. When Adams selected Clay to be Secretary of State, Jackson's supporters claimed the House had acted on a "corrupt bargain" in selecting Adams instead of their man. Although no evidence of such a bargain has been found, President Adams was never able to silence the critics during his single term.

In his inaugural address, President Adams said that as far as he was concerned, internal improvements not only were important, but were within the powers of Congress under the Constitution. He pointed out that, "The magnificence and splendor of their public works are among the imperishable glories of ancient republics." He added that, "The roads and aqueducts of Rome have been the admiration of all ages, and have survived thousands of years after all her conquests have been swallowed up in despotism or become the spoil of barbarians." Similarly, "The unborn millions" of future generations of Americans would reserve "their most fervent gratitude" for the "beneficent action" of the present generation in its creation of internal improvements.

He acknowledged the argument over constitutional authority and respected the views of those whose doubts were the result of "pure patriotism and sustained by venerated authority." However, he disagreed with them:

But nearly twenty years have passed since the construction of the first national road was commenced. The authority for its construction was then unquestioned. To how many

thousands of our countrymen has it proved a benefit? To what single individual has it ever proved an injury?

Congress had debated the question of constitutional power repeatedly. He hoped that through “friendly, patient, and persevering deliberation,” all the objections “will ultimately be removed” so the authority of “the General Government in relation to this transcendently important interest will be settled and acknowledged to common satisfaction of all, and every speculative scruple will be solved by a practical public blessing.”

His first annual message to Congress, on December 6, 1825, reflected his support for internal improvements. He reported on the Board’s survey work, which included a pending report to Congress on the completed surveys on the feasibility of a canal linking the Potomac and Ohio Rivers. He also expected the board to report to the present session of Congress on “two other objects of national importance,” namely the road to New Orleans and a canal involving the Connecticut River. He added that progress had been made on “the surveying, marking, or laying out roads in the Territories of Florida, Arkansas, and Michigan, from Missouri to Mexico, and for the continuation of the Cumberland road.” Of all the canals, roads, and harbor improvements undertaken, he said, the Cumberland or National Road was “the most important of them all.” Its continuation west “after surmounting no inconsiderable difficulty in fixing upon the direction of the road, had commenced under the most promising of auspices, with the improvements of recent invention in the mode of construction, and with the advantage of a great reduction in the comparative cost of the work.”

President Adams’s third annual message, dated December 4, 1827, listed the reports resulting from the Board’s surveys:

1. Of the Board of Internal Improvement, on the Chesapeake and Ohio Canal.
2. On the continuation of the national road from Cumberland to the tide waters within the District of Columbia.
3. On the continuation of the national road from Canton to Zanesville.
4. On the location of the national road from Zanesville to Columbus.
5. On the continuation of the same to the seat of government in Missouri.
6. On a post road from Baltimore to Philadelphia.
7. Of a survey of Kennebec River (in part).
8. On a national road from Washington to Buffalo.
9. On the survey of Saugatuck Harbor and River.
10. On a canal from Lake PontChartrain [sic] to the Mississippi River.
11. On surveys at Edgartown, Newburyport, and Hyannis Harbor.
12. On survey of La Plaisance Bay, in the Territory of Michigan.

The surveys were valuable simply for “the fund of topographical knowledge” they accumulated, but the funds appropriated for repair and extension of the National Road, construction of other roads, harbor and rivers improvements, and to assist individual associations in completion of canals “may be considered as treasures laid up from the contributions of the present age for the benefit of posterity”

The 1820s were the canal era, sparked by the Erie Canal in New York. As a result, the General Survey Act of 1824 focused on canals, but the road to New Orleans was seen, as the National Road had been, as vital to linking the parts of the country into a single nation. The canal surveys in the first years were north of the Potomac River, but General Alexander Macomb, Chief Engineer of the Corps, advised the board in a letter on October 2, 1824, that “the first great national object for your consideration” was the “great Southern post road” from Washington to New Orleans.” He explained:

Besides the importance of establishing the route as early as possible, in order to facilitate the communication between the Seat of Government and the City of New Orleans, and the intermediate States through which it will pass, it is desirable that the Southern portion of the Union should not only see, but feel some of the immediate benefits which will result from a system of internal improvement. This is the more important at this time, as there seems to be a doubt in the minds of the Southern people as to support, which they ought to give to the System. Convinced by the practical operations affecting their own immediate interests, and demonstrating the advantages which may be expected to result from the System, they would perhaps be earlier induced to consider the subject in its true point of view, and to afford it their countenance and support. [Hill, page 55]

On April 11, 1826, the board submitted its report to the Secretary of War on the road to New Orleans, as described by Henry DeLeon Southerland, Jr., and Jerry Elijah Brown in their book on the Federal Road:

The engineers charged with reconnaissance for a national road defined three possible routes from Washington to New Orleans: the *eastern* route, through Richmond, Raleigh, Columbia, Milledgeville, and across Alabama; the *middle* route, with two options—an upper section through Charlottesville, Lynchburg, Danville, Spartanburg, Athens, and Monticello, Georgia, and a lower section through Alexandria, Fredericksburg, Cumberland Court House, Greensboro, Salisbury, Charlotte, Lawrenceville, and Monticello; and the *western* route, through Fairfax Court House, Rockfish Gap, Lexington, Salem, Abingdon, Knoxville, Centreville, and Demopolis.

The report indicated the advantages and disadvantages of the routings:

Although the eastern route had the advantage of linking capitals of five states, the engineers described difficulties that earlier road builders, soldiers, travelers, and settlers had learned by heart. The eastern route was shorter than the western, but it required almost a mile more of bridges than the middle; also, the middle route was shortest, and in its vicinity more materials for construction were available—particularly the stone to crush for macadam.

The report considered the advantages and disadvantages of the routing:

Without great political pressures to create a better road through the lower South, the status quo prevailed; even as the issue was being considered, it appeared that those who were complaining about the ordeal of overland travel by horse- or footpower via the

Federal Road would be delivered from their suffering by new means of transportation. [Southerland, Jr., Henry DeLeon, and Brown, Jerry Elijah, *The Federal Road Through Georgia, the Creek Nation, and Alabama, 1806-1836*, The University of Alabama Press, 1989, pages 136-137, italics in original]

Steamboats had begun providing relief for travelers through the South, but the railroad, which was not dependent on existing rivers, “ensured the demise of the Federal Road.” As in other parts of the country, the coming of the railroad meant that roads and canals were no longer the best means of interstate travel.

President Adams’ strong support for internal improvements, without a constitutional amendment, unleashed Congress to propose projects, mainly local projects of limited or no national importance. As Larson put it:

First, genuine support for a national system required that everyone take a generous view of the advantages (and costs) of any specific road or canal. In practice neither advocates nor their opponents could resist the temptation to snipe at each other Second, it became clear that spending much money in any one place engendered such quick and forceful objections from places not served as to endanger the consensus on which all appropriations depended. This posed a significant problem because the alternatives—scattering limited resources too thinly over many projects, or proportional distributions to the states—crippled expensive works and destroyed the potential for coherent integration

In a community defined by goodwill and mutual objectives, engineers might direct the selection of projects for a comprehensive plan; but in a hotly contested political universe, no surveyor’s prospectus could match the force of determined local spoilsmen or the enemies of federal aid who could block every action with calls for better technical data.

The animosity toward President Adams stemming from the election, the desire for revenge by Jackson supporters, and the hope of a different outcome in the next presidential election undermined President Adams in many ways, not least in the area of internal improvements. Members of Congress, “filled with either desire or righteous indignation,” turned away from any sense of a regular or national program. [Larson, pages 163-165]

The Jackson Veto

In 1828, Jackson defeated President Adams by the first “landslide” in presidential history:

The election returns, as they gradually came in, gave Jackson the victory, 178 to 83 in the electoral college. His 56 percent of the popular vote set a record that was not surpassed until the twentieth century. His followers also won control of both houses of Congress, by a particularly impressive 138 to 74 in the House of Representatives. [Howe, pages 280-281]

In the new President’s first annual message to Congress on December 8, 1829, he anticipated the retirement of the national debt, after which “the disposition of the surplus will present a subject for the serious deliberation of Congress; and it may be fortunate for the country that it is yet to be decided.” He saw internal improvements as an option for the surplus:

Considered in connection with the difficulties which have heretofore attended appropriations for purposes of internal improvement, and with those which this experience tells us will certainly arise when ever power over such subjects may be exercised by the Central Government, it is hoped that it may lead to the adoption of some plan which will reconcile the diversified interests of the States and strengthen the bonds which unite them. Every member of the Union, in peace and in war, will be benefited by the improvement of inland navigation and the construction of high ways [sic] in the several States. Let us, then, endeavor to attain this benefit in a mode which will be satisfactory to all. That hitherto adopted has by many of our fellow citizens been deprecated as an infraction of the Constitution, while by others it has been viewed as inexpedient. All feel that it has been employed at the expense of harmony in the legislative councils.

To avoid these evils it appears to me that the most safe, just, and federal disposition which could be made of the surplus revenue would be its apportionment among the several States according to their ratio of representation, and should this measure not be found warranted by the Constitution that it would be expedient to propose to the States an amendment authorizing it. I regard an appeal to the source of power in cases of real doubt, and where its exercise is deemed indispensable to the general welfare, as among the most sacred of all our obligations.

When Congress considered a bill reflecting President Jackson's proposed proportional distribution, Larson wrote, "It was met by a firestorm of protests from the West," which felt that the funds it desperately needed to grow would be shifted "to the states that already absorbed most of the federal revenue." Georgia and South Carolina objected because they considered it "a ploy to perpetuate the hated tariff." [Larson, pages 181-182]

Amid the bitter debates, Congress managed to approve stock subscriptions for several projects, including the Louisville and Portland Canal and the Maysville and Washington Turnpikes, as well as the annual river and harbor appropriations. Stock subscriptions had been a common approach to advance internal improvements financed largely by the private sector.

The subscription to aid the Maysville Turnpike would prove to be fateful. In January 1827, Kentucky had asked Congress to provide Federal aid for a road from Maysville to Lexington as an extension of the mail route from Zanesville, Ohio, on the extended National Road. Rose described it:

This thoroughfare was a 64-mile unit of the long mail road branching from the National Pike, or Cumberland Road, at Zanesville, Ohio, and running southwest across the Ohio River, through Maysville and Lexington, in Kentucky; Nashville, in Tennessee; and Florence, in Alabama; to New Orleans, in Louisiana. [Rose, page 40]

President Adams supported the proposal, but a bill for this purpose failed in the Senate by a single vote in 1828. Having failed to convince Congress to pay for the road, the Kentucky legislature in January 1829 authorized incorporation of the Maysville and Washington Turnpike Road Company to raise funds by selling stock to build a 4-mile "artificial road." After that project was completed in November 1830 ("the first macadamized road built in the State of Kentucky"), the State legislature amended the authorizing legislation to create the Maysville,

Washington, Paris, and Lexington Turnpike Road Company to build an “artificial road” linking those points.

The company reserved 1,500 shares for the central government to purchase, subject to congressional action. According to Larson, the bill “drew familiar objections from predictable sources.” Some claimed it was a local, not a national road, but a bill authorizing the Secretary of the Treasury to subscribe in the amount of 1,500 shares passed the House on April 29, 1830, and the Senate on May 15:

Although there was talk that Jackson resented internal improvement, Secretary of State Martin Van Buren had urged the president to say nothing until a notoriously local bill came through and then shock Congress into submission. Thus Clay and others were caught by surprise when Jackson struck down the Maysville Road. [Larson, page 183]

The Maysville bill, involving a project in rival Henry Clay’s own State, proved the ideal vehicle for expressing the President’s views. Professing to be “friendly to the improvement of our country by means of roads and canals,” President Jackson regretted having to veto the bill. He pointed out that he had made his views clear in his December message:

I was desirous of presenting to the representatives of the several States in Congress assembled the inquiry whether some mode could not be devised which would reconcile the diversity of opinion concerning the powers of this Government over the subject of internal improvement, and the manner in which these powers, if conferred by the Constitution, ought to be exercised.

Considering the battles over past appropriations for internal improvements and their likely continuation, “it is hoped that it may lead to the adoption of some plan which will reconcile the diversified interests of the States and strengthen the bonds which unite them.” Since every State would be “benefited by the improvement of inland navigation and the construction of highways,” he urged an effort to find “a mode which will be satisfactory to all.” The “most safe, just, and federal disposition” of the pending surplus “would be its apportionment among the several States according to their ratio of representation.” If such a plan were not permitted by the Constitution, “it would be expedient to propose to the States an amendment authorizing it.”

President Jackson recalled the history of past appropriations as well as vetoes of internal improvement measures. After recalling President Monroe’s veto, President Jackson referred to his immediate predecessor:

The views of the last Administration are of such recent date as to render a particular reference to them unnecessary. It is well known that the appropriating power, to the utmost extent which had been claimed for it, in relation to internal improvements was fully recognized and exercised by it.

In view of all these difficulties and different results, “it is the duty of all to look to that sacred instrument [the Constitution] instead of the statute book, to repudiate at all times encroachments upon its spirit.”

He considered the Maysville stock bill under the long claimed authority that “such grants have always been professedly under the control of the general principle that the works which might be

thus aided should be ‘of a general, not local, national, not State,’ character.” Disregarding this general concept “would by necessity lead to the subversion of the federal system.”

He had carefully examined the bill:

I am not able to view it in any other light than as a measure of purely local character; or, if it can be considered national, that no further distinction between the appropriate duties of the General and State Governments need be attempted, for there can be no local interest that may not with equal propriety be denominated national. It has no connection with any established system of improvements; is exclusively within the limits of a State, starting at a point on the Ohio River and running out 60 miles to an interior town, and even as far as the State is interested conferring partial instead of general advantages.

As this example illustrated, distinguishing between local and national interests “is often extremely difficult of solution.” Presidents and Congress had come up with varying and conflicting views on this subject over the years, as illustrated by the history of the National Road. Now, with the national debt to be eliminated, the time was right to determine whether an accumulating surplus “may be beneficially applied to some well-digested system of improvement.” He continued:

Under this view the question as to the manner in which the Federal Government can or ought to embark in the construction of roads and canals, and the extent to which it may impose burthens on the people for these purposes, may be presented on its own merits, free of all disguise and of every embarrassment, except such as may arise from the Constitution itself.

In the other view of the subject, and the only remaining one which it is my intention to present at this time, is involved the expediency of embarking in a system of internal improvement without a previous amendment of the Constitution explaining and defining the precise powers of the Federal Government over it . . .

He did not want to waste time professing his “zeal in the cause of internal improvements” because, he said, “I do not suppose there is an intelligent citizen who does not wish to see them flourish.” Under that circumstance, “it is not only highly expedient, but indispensably necessary, that a previous amendment of the Constitution, delegating the necessary power and defining and restricting its exercise with reference to the sovereignty of the States, should be made.”

He recognized the “difficulty and supposed impracticability” of securing such an amendment, but he considered this concern to be “a great deal unfounded.” He did not know of a time when “the patriotism and intelligence of the American people were not fully equal to the greatest exigency” when “the subject calling forth their interposition is plainly presented to them.” He added:

To do so with the questions involved in this bill, and to urge them to an early, zealous, and full consideration of their deep importance, is, in my estimation, among the highest of our duties.

President Jackson’s ideal of distributing funds equally among the States proved “harder to implement than to applaud,” as Professor Larson explained. Representative Polk, the President’s

Tennessee ally and chairman of the Ways and Means Committee, “concluded that no scheme of distribution could be devised that was ‘wholly free from objection.’” [Larson, page 185]

(With State and local stock purchases, the company completed the Maysville turnpike without Federal assistance. Rose added:

Attention was focused upon the road again, in 1838, when a United States mail contractor claimed the right to travel free of tolls. Chief Justice [George] Robertson for the [Kentucky] Court of Appeals held that President Jackson’s refusal to aid construction of the road made it mandatory for the Federal Government’s agents to pay the same fees as the general public. [Rose, page 40]

As Larson summarized, the Jackson veto may have reflected “legitimate doubts about the progress of internal improvements since the end of the Monroe administration,” but internal improvement initiatives were “not producing harmony and political happiness.” Moreover:

No plan or system of national works (called for in the General Survey Act) had ever been adopted by Congress, and the logrolling system that grew up in its place seemed capable of infinite expansion. Appropriations did not flow equally to the states—*could not* do so if the object was to aid works of national significance, because such projects were not equally distributed among the twenty-four states

On its face Jackson’s argument echoed Madison’s concerns in 1817: both presidents feared the corrupting implications of a scramble for funds in a national democratic legislature. The temptation for congressmen to gratify ever more numerous demands from their constituents seemed to Jackson virtually to guarantee overspending, requiring finally direct taxes [instead of reliance on the tariff on imported goods to support the government’s business] to pay for extravagant internal improvements. [Larson, pages 183-184, italics in original]

In a country facing bitter sectional divides, philosophical arguments about the powers of the central government, and political ambition and resentments, “early, zealous, and full consideration” to resolve the internal improvements debate was not possible. In 1832, with the presidential race underway between President Jackson and Henry Clay, Congress did not resolve the matter, “but not for lack of interest in internal improvements,” as Larson put it:

From the beginning of the session anti-improvers announced a desire to settle forever the “question of national internal improvements,” yet one by one members of the popular chamber [the House of Representatives] added to a \$30,000 package of improvements until, at \$1.2 million, it scandalized James K. Polk and reminded North Carolina’s Thomas Hall of a “pile of logs” rolled up by the “log rollers”—they ought to set fire and burn it! This “demoniacal system” of internal improvement, Hall concluded, struck “more directly at the vitals of the sovereignty of the States” than that “canker of our peace and harmony, the tariff itself.” Nevertheless, the House passed this well-fatted barrel of pork, 99 to 75, the Senate agreed, and Jackson gave his silent assent (although Clay later heard that Jackson intended to “suspend the execution” of parts of this bill to which he objected). Apparently nobody wished to go home empty-handed in the closing months of the 1832 presidential canvass. [Larson, page 188]

President Jackson won a second term, but a national system of roads could not be achieved. Larson summarized the result:

By the end of the Jackson administration two things were equally apparent: Americans still wanted and needed internal improvements on a monumental scale, but they would not support a consolidated national government intentionally mounting or directing such projects. Nourished by the federal money and land grants disbursed under Adams and Clay—and reinforced by significant infusions of cash slipped past Jackson’s vetoes in appropriations for miscellaneous rivers, harbors, and internal improvements—political and economic leaders in the states once more put their shoulders to the wheels of progress in a second burst of state-level initiatives that quickly filled the space left by Jackson’s retreat from national action. The result, for another brief period, was that a decentralized approach might be satisfactory after all. [Larson, page 192-193]

Minicucci summarized Jackson’s impact on internal improvements:

As his policy emerged, Jackson made clear that projects of a *national* character were appropriate objects of Congressional action (these included projects related to ports of entry and those dealing with the Mississippi and Ohio River systems). Thus the link between nation building and improvements was still clearly in evidence

Jackson’s improvement vetoes closed one avenue for transportation-related projects but federal improvements activity, as measured by total spending, continued to rise. The common historical truism that “President Jackson’s veto of the Maysville Road Bill essentially ended efforts to implement a national transportation program” is simply wrong. Spending rose steadily from Jackson’s first to his fourth Congress, the 24th, which appropriated more funds (direct spending) for internal improvements than any other during the antebellum period.

Although Jackson did not slow the expansion of federal internal improvements spending, he did bring about a significant shift in its composition away from canals (more than one-third of direct improvements spending under Adams, but less than 1 percent under Jackson) and toward territorial roads and river improvements, especially in the West. [Minicucci, pages 165-166, italics in original]

The Panic of 1837

With a strong national economy and the national debt retired, the States undertook many improvements:

Across the nation, the popularity of improvements schemes was never greater than during the last six years of Jackson’s administration. State constitutions written during the period, in Tennessee, Michigan, and Arkansas, contained explicit clauses encouraging state support for internal improvements. In part inspired by the success of New York’s \$7 million Erie Canal, opened in 1825, a number of states undertook very ambitious schemes of improvement and were willing to incur substantial debts to do so Collectively, the states that borrowed only \$25 million during the 1820s, incurred more than \$40 million in debt in the first five years of the 1830s, and almost \$108 million in the three boom years before the depression. Many of these efforts were undertaken with

the express expectation that the projects, like Erie, would be self-financing (that is, that projected earnings would service the debt). [Minicucci, page 166]

Illinois provides an example. In 1836, internal improvements fervor swept the State. That year, when young State Representative Abraham Lincoln arrived in the capital of Vandalia, he was eager to support internal improvements for Illinois, a tenet of his Whig Party and a personal preference. As former Senator Paul Simon described in his book about Lincoln's years in the Illinois legislature:

Lincoln had always favored a system of canals and roads and railroads for the state. In Vandalia he found that most of the other members of the Tenth General Assembly were of the same mind. One legislator wrote to the Galena newspaper, "This is doubtless a mammoth undertaking for a state like ours; yet I am in favor of it in almost every particular, and particularly the state doing the work. [Simon, Paul, *Lincoln's Preparation for Greatness: The Illinois Legislative Years*, University of Illinois Press, 1971, page 49]

Governor Joseph Duncan recommended that the General Assembly approve a cooperative public-private approach, with the State providing one-third of the money and private companies providing the rest:

The Governor's approach met with little enthusiasm among the members. Before the session ended, they had voted \$10,250,000 in bonds, including \$200,000 to be divided among counties that received neither a railroad nor a canal under the plan. The Governor's plan would have encouraged private enterprise to help bear the burden, but the legislators were afraid of monopoly

To add to the financial weakness of the bill, the legislature provided that construction on the various of railroads and canals was to be commenced simultaneously at each end and at major points along the way. [Simon, pages 50, 52]

Governor Duncan vetoed the measure, but the General Assembly overrode his victory, with Representative Lincoln in strong support of the override:

Vandalia went wild the night of the bill's passage. "The huzzas and acclamation of the people were unprecedented," the *Sangamo Journal* reported. "All Vandalia was illuminated. Bonfires were built, and fire balls were thrown in every direction." The newspaper also noted, "The names of those who have been conspicuous in bringing forward and sustaining this law will go down in the future as great benefactors." Several newspapers called it the beginning of "a new era." [Simon, page 51]

Martin Van Buren, a former United States Senator, New York Governor, and President Jackson's Secretary of State and then Minister to the United Kingdom, became President in March 1837. In his inaugural address, he promised a continuation of peace and prosperity. A few weeks later, the nation plunged into a depression known as the Panic of 1837. As the Heidlers explained:

The Panic of 1837 had many causes, some related to the ill-judged policies of Jackson's administration, some completely beyond the control of any president or any government.

Gold and silver prices, cotton demand, President's Jackson's elimination of the Bank of the United States, a poor harvest in England, and other factors contributed to the downturn:

These accumulating events reached a critical mass in early 1837, just as Van Buren was being sworn in. Panic shot through American financial markets, shattering the banking system and throwing the general population into disarray as a tide of business failures swept over the country. By summer, America had simply stopped working, and forlorn crowds of hollow-eyed men clustered at the doors of more and more banks, trying to get their money, wandering away dazed as those doors closed early, the vaults empty, their contents vanished Earlier financial downturns had never been so thorough and smashing [Heidler, pages 278-279]

The panic also affected State attitudes about internal improvements:

The Panic of 1837 brought an abrupt end to both state and federal improvements activities. The federal government was thrown into deficit for the first time since 1824 and federal improvements spending nearly halted. Suddenly, too, state improvement efforts seemed reckless, not ambitious. As the downturn lengthened into 1841 and 1842, nine states (Florida, Mississippi, Arkansas, Indiana, Illinois, Maryland, Michigan, Pennsylvania, and Louisiana) defaulted on debts, with four of these (Arkansas, Florida, Michigan, and Mississippi) actually repudiating debts of \$13.8 million. These failures, sometimes tainted by corruption, along with a popular rejection of state taxation to fund the not-self-financing improvements, led to a widespread “revulsion” against all government improvement efforts that included even successful states such as New York. [Minicucci, page 166]

Illinois, as Minicucci indicated, suffered the consequences of its earlier enthusiasm for internal improvements financed with bonds. Senator Simon summarized:

The net result of the whole project was a mammoth debt for the state. The state was dotted with bridges from nowhere to nowhere, with partially dug canals, with roads with no meaningful beginning or ending. Of all the projects, only the Illinois and Michigan Canal (a separate bill and an additional debt) ever achieved success.

Four years after the passage of the measure, Illinois had a debt of \$15,000,000, and Illinois bonds were selling for fifteen cents on the dollar. In 1842, for example, interest charges for the bonds amounted to almost \$800,000, while the total state revenue for that year was \$98,546.14. The state debt kept climbing. By 1853 the debt had reached almost \$17,000,000. Not until 1857 was the state able to pay even the interest on the bonds. Not until 1882 were the bonds finally paid—forty-five years after passage of the measure and seventeen years after Lincoln’s death.

Meantime, the legislature in which Lincoln served refused to authorize private corporations to build where there might be “competition” with the state. The result was that neither the state nor private concerns met the need. While other states experienced rapid population growth, some settlers avoided Illinois because of the Gargantuan debt the taxpayers had.

All in all, it was a most unhappy chapter in Illinois history [Simon, pages 52-53]

Governor Duncan called a special session of the legislature for July 10, 1837, to address the State’s response to the national panic. In an address to the legislature, he urged repeal of the

Internal Improvement Act. “In the midst of disasters which have already fallen on the commercial world, and which are still threatening us on all sides, a favorable opportunity occurs to escape from the perils of that system of Internal Improvements . . . so fraught with evil.”

The legislature did not agree. “Instead of repealing the measure, the Senate passed a bill increasing the scope of internal improvements, with Lincoln voting for it.” [Simon, page 70]

By 1839, the internal improvements issue remained a “big political headache,” with the State’s solvency at stake and no obvious solutions. Aside from the financial difficulties, “the plans in Illinois were riddled with corruption A lot of money went into unbelievable schemes and found its way into the pockets of unconscionable rascals in public office or in charge of operations.” [Simon, page 173]

Governor Thomas Carlin called a special session of the legislature for December 1839, the first time the General Assembly met in the new capital of Springfield, a switch that Lincoln had worked hard, along with other legislators, to accomplish. In an address to the legislators, Governor Carlin said the Internal Improvement Act had caused a “truly alarming” situation. He urged passage of a law that would concentrate “all future labor and expenditures upon the most useful and promising [rail]road [sic] and to the improvement of such of the larger class of rivers as may be susceptible of steamboat navigation, and to suspend operations and expenditures upon all others.” He also called for an investigation of the Board of Public Works. [Simon, page 182]

The legislature considered many ideas, including repeal of the Internal Improvement Act, an option it rejected. It did pass a bill prohibiting new contracts for “any rail road, turnpike road, or river in this State.” It also passed a bill providing for settlement of debts and liabilities resulting from the Internal Improvements Act, but as Simon pointed out, the problem would not be resolved for decades.

Lincoln, in his fourth and final term in the General Assembly, continued to promote internal improvements. For example, in 1841, he introduced a bill to supplement the charter of the Springfield and Alton Turnpike Company to allow the company to build the western division of the Alton and Mount Carmel Railroad:

The committee to which it was assigned reported it back with an amendment which permitted the railroad line to use state property. A legislator far from the area to be served by the railroad objected to the use of state land because it was being used to help one section of the state and not another. Lincoln replied that state property “would all be lost and go to ruin, if the principle be adopted that no one shall have any, for fear all shall not have some.” [Simon, pages 260-261]

The amended bill went into force on February 27, 1841.

Through his tenure in the General Assembly, Abraham Lincoln promoted internal improvements, although he “rarely entered into debate.” Simon summarized his record by saying that “sensible Lincoln actions on internal improvements were few.” For contrast, Simon cited one positive action:

In one of the rare sensible moves Lincoln made on the whole question of internal improvements, he placed an amendment on the Illinois and Michigan Canal bill which said that “no more than \$500,000 of said certificates shall be at any time outstanding.”

The House agreed to this. The next day he successfully opposed an amendment on this bill, and again his was a reasonable motion; he moved to table a proposed amendment adding another river project to the canal bill.

He added that, “Viewed from the perspective of the present, Lincoln was always wrong.” [Simon, page 186]

The panic lasted through the remainder of Van Buren’s single term in office and undermined the Democrats in the 1840 election. The circumstances favored the Whigs.

President Tyler’s Vetoes

Henry Clay hoped to be the Whig Party’s nominee, despite his defeat in two previous presidential elections. Whig supporters of strong States’ rights favored Clay. Instead, the Whigs, holding their first national convention in Harrisburg, Pennsylvania, in December 1839, chose a war hero, Generalworthy object William Henry Harrison, following the example of former President Jackson. Writer Chris DeRose described how the Whigs promoted their candidate:

The Whigs portrayed Harrison as a log-cabin-dwelling, coonskin-cap-wearing, hard-cider-drinking frontier farmer. The opposite was true. Harrison was from one of the oldest and most prosperous families in Virginia and his log cabin was in reality a mansion in Indiana. [DeRose, Chris, *The Presidents’ War: Six American Presidents and the Civil War That Divided Them*, Lyons Press, 2014, page 21]

Harrison, whose father had signed the Declaration of Independence, had served in Congress, as minister to Colombia, and as governor of the Indiana Territory. For electoral purposes, however, he was best known as the hero of the November 1811 Battle of Tippecanoe near the site of today’s Lafayette, Indiana. His troops, aligned with warriors led by Tecumseh, defeated a confederacy of Native Americans opposed to United States infringement on their lands.

Clay supporters, having lost the fight over the presidential nominee, demanded a strong States’ rights man as Vice President. The convention chose John Tyler, who had represented Virginia in the House and Senate and served as the State’s governor. This choice gave rise to the campaign slogan: “Tippecanoe and Tyler too.”

General Harrison defeated Van Buren, again the Democratic nominee, to gain the presidency. However, President Harrison, 68 years old at the time of his inauguration on March 4, 1841, served the shortest term in office, only 32 days, before passing away. Vice President Tyler became President on April 4, 1841.

President Harrison had called an unusual session of Congress to begin May 31, instead of waiting for the usual session that would start in December, to address the continuing economic crisis. In a June 1 message to Congress, President Tyler said that he had thought about canceling the session out of respect for the late President Harrison who had called it, but decided against doing so. “In entering upon the duties of this office I did not feel that it would be becoming in me to disturb what had been ordered by my lamented predecessor.” Despite the unusual circumstances of his presidency, “My first wish . . . would necessarily have been to have called to my aid in the administration of public affairs the combined wisdom of the two Houses of

Congress, in order to take their counsel and advice as to the best mode of extricating the Government and the country from the embarrassments weighing heavily on both.”

He agreed with his fellow Whigs that the closing of the second national bank under President Jackson had disastrous consequences that were felt shortly after he left office:

To you, then, who have come more directly from the body of our common constituents, I submit the entire question, as best qualified to give a full exposition of their wishes and opinions. I shall be ready to concur with you in the adoption of such system as you may propose, reserving to myself the ultimate power of rejecting any measure which may, in my view of it, conflict with the Constitution or otherwise jeopardize the prosperity of the country—a power which I could not part with even if I would, but which I will not believe any act of yours will call into requisition.

Recovery was urgent, but President Tyler had to consider a larger context:

With the adoption of a financial agency of a satisfactory character the hope may be indulged that the country may once more return to a state of prosperity. Measures auxiliary thereto, and in some measure inseparably connected with its success, will doubtless claim the attention of Congress. Among such, a distribution of the proceeds of the sales of the public lands, provided such distribution does not force upon Congress the necessity of imposing upon commerce heavier burthens than those contemplated by the act of 1833, would act as an efficient remedial measure by being brought directly in aid of the States. As one sincerely devoted to the task of preserving a just balance in our system of Government by the maintenance of the States in a condition the most free and respectable and in the full possession of all their power, I can no otherwise than feel desirous for their emancipation from the situation to which the pressure on their finances now subjects them.

He could not sanction a bill to relieve the States by assuming their debt, a measure he considered unconstitutional. That was why sharing the proceeds from the sales of public land was one of the acceptable options:

The happy effects of such a measure upon all the States would immediately be manifested. With the debtor States it would effect the relief to a great extent of the citizens from a heavy burthen of direct taxation, which presses with severity on the laboring classes, and eminently assist in restoring the general prosperity.

It would result in an “immediate advance . . . in the price of the State securities, and the attitude of the States would become once more, as it should ever be, lofty and erect.”

The President had never favored a national bank, many aspects of which he considered unconstitutional. In search of a compromise, he informed his Whigs colleagues that he could support legislation establishing a bank in the District of Columbia, the one jurisdiction over which Congress had full constitutional authority. To exercise a stabilizing effect nationally, that bank could establish branches in States that agreed to the arrangement. [DeRose, page 24]

Instead of that option, Clay challenged President Tyler by promoting bills that Clay knew Tyler could not sign. As a result, President Tyler vetoed two bank bills strongly supported by Whigs.

After the second veto, most of his cabinet members resigned. By September 1841, the Whigs had formally renounced President Tyler's membership in their party.

DeRose repeated a story, perhaps apocryphal, that showed the decline in President Tyler's power:

Six months into his presidency, Tyler may be fairly said to have had as little party support as anyone in his position. Tyler's son, who served as his father's personal secretary, attempted to arrange train travel for the president. The railroad superintendent, a strong Whig, refused, saying that he was not presently running any special cars for presidents. "Did you not furnish a special train for the funeral of General Harrison?" Tyler asked. "Yes," said the superintendent, "and if you will only bring your father here in that shape you shall have the best train on the road."

DeRose pointed out that President Abraham Lincoln told the story "to memorable effect while planning his first train trip in office." [DeRose, pages 25-26]

During the panic, many projects resulting from the general survey had been suspended but as the economy improved, President Tyler and his Secretary of War began to focus again on the works, as Hill explained:

Secretary of War William Wilkins favored vigorous improvement of western rivers and lake harbors. Suspension of unfinished projects caused great sacrifice of boats and machinery, interruption of navigation, and unprofitable use of previously appropriated funds. Only a small number of important works should be begun, and these should never be abandoned until completed. [Hill, pages 183-184]

However, when Congress approved a bill entitled "An act making appropriations for the improvement of certain harbors and rivers," President Tyler vetoed it on June 11, 1844. His veto message pointed out that under the Constitution, "each State was possessed of a separate and independent sovereignty and an exclusive jurisdiction over all streams and water courses within its territorial limits." States could surrender that jurisdiction to the general government which could undertake the work under the clause in the Constitution giving the authority "to make all laws which are necessary and proper for carrying into execution" the granted power. That was not the case with this bill:

There is, in my view of the subject, no pretense whatever for the claim to power which the bill now returned substantially sets up. The inferential power, in order to be legitimate, must be clearly and plainly incidental to some granted power and necessary to its exercise. To refer it to the head of convenience or usefulness would be to throw open the door to a boundless and unlimited discretion and to invest Congress with an unrestrained authority.

President Tyler rejected the idea that such authority was conveyed by the constitutional power "to regulate commerce with foreign nations, *among the several States*, and with the Indian tribes":

[The] plain and obvious meaning of this grant is that Congress may adopt rules and regulations prescribing the terms and conditions on which the citizens of the United States may carry on commercial operations with foreign states or kingdoms, and on

which the citizens or subjects of foreign states or kingdoms may prosecute trade with the United States or either of them. And so the power to regulate commerce *among the several States* no more invests Congress with jurisdiction over the water courses of the States than the first branch of the grant does over the water courses of foreign powers, which would be an absurdity. [Italics in original.]

President Tyler also was concerned that many of the improvements in the bill “would be for the most part productive only of local benefit.” Such localized benefits might harm other communities. He cited an example from his home State. The bill appropriated \$20,000 to improve the harbor of Richmond. That improvement would benefit the citizens of Richmond, but “might have a most disastrous influence over the wealth and prosperity of Petersburg, which is situated some 25 miles distant on a branch of the James River, and which now enjoys its fair portion of the trade.” He continued:

There can not, in fact, be drawn the slightest discrimination between the improving [of] the streams of a State under the power to regulate commerce and the most extended system of internal improvements on land. The excavating a canal and paving a road are equally as much incidents to such claim of power as the removing of obstructions from water courses; nor can such power be restricted by any fair course of reasoning to the mere fact of making the improvements.

He also rejected involvement in projects seeking return on the investment “through the exaction of tolls and the levying of contributions”:

Thus, while the Constitution denies to this Government the privilege of acquiring a property in the soil of any State, even for the purpose of erecting a necessary fortification, without a grant from such State, this claim to power would invest it with control and dominion over the waters and soil of each State without restriction. Power so incongruous can not exist in the same instrument.

The mix of projects was another problem. Some projects might be acceptable while others would not be. For example, he could approve the Delaware Breakwater project because it “looks to the security from the storms of our extended Atlantic seaboard of the vessels of all the country engaged either in the foreign or the coastwise trade.” Many other projects involved “improvements of rivers at points far in the interior” and, therefore, not connected to national or international trade.

President Tyler was concerned that some observers might think the veto was inconsistent since he had approved a bill appropriating funds to improve the Mississippi River and its chief tributaries. The distinction was clear:

The Mississippi occupies a footing altogether different from the rivers and water courses of the different States It belongs to no particular State or States, but of common right, by express reservation, to all the States. It is reserved as a great common highway for the commerce of the whole country.

He was willing to approve appropriations for national projects, but the present bill funded projects that “originated more in a spirit of speculation and local interest than in one of the character alluded to.” He added, in conclusion, “Every system is liable to run into abuse, and

none more so than that under consideration; and measures can not be too soon taken by Congress to guard against this evil.”

The veto was sustained later on June 11.

By the time of President Tyler’s fourth annual message to Congress on December 3, 1844, he could report that the condition of the Treasury had “greatly improved”:

The paralysis which had fallen on trade and commerce, and which subjected the Government to the necessity of resorting to loans and the issue of Treasury notes to a large amount, has passed away The dangers to be guarded against are greatly augmented by too large a surplus of revenue. When that surplus greatly exceeds in amount what shall be required by a wise and prudent forecast to meet unforeseen contingencies, the Legislature itself may come to be seized with a disposition to indulge in extravagant appropriations to objects many of which may, and most probably would, be found in conflict with the Constitution. A fancied expediency is elevated above constitutional authority, and a reckless and wasteful extravagance but too certainly follows.

Most river and harbor work had been suspended during the panic, with the last appropriation in 1838. Some work resumed in 1844, with military engineers focused on improved navigation among the Great Lakes. [Hill, page 183] President Tyler continued to support navigation improvements, but with an important caution:

The appropriations made by Congress for the improvement of the rivers of the West and of the harbors on the Lakes are in a course of judicious expenditure under suitable agents, and are destined, it is to be hoped, to realize all the benefits designed to be accomplished by Congress. I can not, however, sufficiently impress upon Congress the great importance of withholding appropriations from improvements which are not ascertained by previous examination and survey to be necessary for the shelter and protection of trade from the dangers of stores [sic, storms] and tempests. Without this precaution the expenditures are but too apt to inure to the benefit of individuals, without reference to the only consideration which can render them constitutional—the public interests and the general good.

President Tyler received another rivers and harbors appropriations act in the final days of the 28th Congress. He pocket vetoed it on March 3, 1845, the final day of the Congress.

Congress failed to pass a rivers and harbors appropriation act in 1845, a situation that would remain true until 1852. [Hill, pages 184-186]

President Tyler had spent much of his term seeking to add the independent Republic of Texas to the United States. The Senate rejected a negotiated treaty, which could not secure the needed two-thirds support, but near the end of his term, Congress approved a bill, which required only a majority in the House and Senate, admitting Texas as a State, subject to its concurrence. That concurrence would take place under President Tyler’s successor.

With no chance of securing the nomination of the Whig party, President Tyler sought the nomination of the Democrats. The party deadlocked over President Tyler and former President Van Buren, finally giving the nomination to James K. Polk.

His public service at an end after Polk took office on March 4, 1845, Tyler retired to his Virginia estate, Sherwood Forest. His neighbors, mainly Whig supporters of Clay, despised him and refused even courtesy visits to the estate. As DeRose described, they had one additional insult:

One day the clerk of the court interrupted the isolation at Sherwood Forest to announce that Tyler's neighbors had voted him overseer of roads. Even the newspapers noted that it had been done to insult Tyler, who would have to pay a fine if he declined, which they fully expected him to do. Instead, the former president expressed his honor at this favor, and promised to fulfill his duty as faithfully as he had all of his other offices.

His son noted, "Mr. Tyler commenced his duties with the same faithful purpose as had ever characterized him. The road being very undulating, he resolved to cut down the hills, fill up the ravines, and make it an example to the state. He summoned to all the hands in the township. Day by day he applied himself to his work, the law of Virginia specifying no limited time for working on the roads."

As overseer of roads, he had the power to summon his neighbors' slaves to work on the roads:

"The effect of his diligence was seen, not only on the road, but in the mournful silence that prevailed on the various plantations, which were chiefly owned by the Whigs." When the harvest was ready to be picked, "The hands were all upon the road. The smiles that lately illuminated the countenances of the Whigs turned to dismay." Finally, Tyler's neighbors graced him with their presence at Sherwood Forest, commending his work and asking him to let someone else have a chance. Tyler declined, citing a solemn obligation to continue his duty.

And so it was John Tyler—as he had time and again before—who had the last laugh at the expense of his antagonists. [DeRose, page 32]

While Tyler's work as overseer of roads may have turned the joke on his neighbors, the image of the former President as a road maker would be recalled when he reemerged on the national scene in 1860 as southern States began to leave the union. *The New York Daily Tribune* mocked him by saying, "Did not John Tyler, though a poor president, make a first rate Virginia Road-master?" [*The New York Daily Tribune*, September 15, 1860; cited in DeRose, page 111].

(In the year before the Civil War, former President Tyler emerged from Sherwood Forest as a leader of the Virginia Peace Conference, held in Washington in February 1861 with delegates from north and south, seeking a compromise that would avoid war, but when those efforts failed, he turned his energies to the Confederate cause. He served in the provisional Confederate Congress and, in 1862, was elected to the Confederate House of Representatives. He died before taking his seat. *The New York Herald* said of him, "He had been Chief Magistrate of the glorious Union, to the destruction of which he devoted the last ill-spent hours of his life." [DeRose, 212-213])

By the mid-1840s, when the effects of the devastating Panic of 1837 had passed through the country's economic system, the railroad had surpassed roads and canals in national interest.

According to Minicucci's count of internal improvements prior to the Civil War:

Federal appropriations for internal improvements amounted to \$119.8 million between 1790 and 1860. The bulk of this amount, \$77.2 million, was distributed to the states through indirect methods, such as land grants or distribution of land sale revenues, which would today be labeled “off-budget.” And this figure included the 1836 “deposit” of the federal surplus in state banks, which was not explicitly earmarked for improvements. Thus, the first thirty-five Congresses appropriated \$42.6 million in federal funds for improvements to transportation of all sorts.

The largest category involved aids to navigation (\$14.9 million), including expenditures on rivers and harbors:

Of the \$10.4 million in direct road spending, the majority was dedicated to the National Road [\$6,834,000], the single largest federal project of the antebellum era. [Minicucci, pages 161-162]

Polk Versus Lincoln

In November 1844, Polk, President Jackson’s Tennessee ally, won election as the country’s 11th President. He had served in the House of Representatives (March 1825-March 1839) and as Governor of Tennessee (October 1839-October 1841). During his years in the House, he became chairman of the House Ways and Means Committee in 1833 and Speaker in December 1835.

In accepting the Democratic nomination, he made clear he would serve only one term. He had four goals, as he explained to his new Secretary of the Navy, George Bancroft:

Speaking with a degree of animation seldom seen in the man, he slapped his hand upon his thigh and laid out the four central elements of his presidential ambition.

First, he said, he planned to settle the Oregon question with Great Britain and extend America to its Pacific Ocean. Second, he would acquire California from Mexico and secure for his country an additional broad expanse of coastal territory. Third, he would reduce the Tariff of 1842 and replace its overt protectionism with a pure revenue rationale. And finally he would revive Martin Van Buren’s “independent treasury” designed to protect federal monies and ensure currency stability. [Merry, Robert W., *A Country of Vast Designs: James K. Polk, the Mexican War, and the Conquest of the American Continent*, Simon and Schuster Paperbacks, 2010, page 131]

(The goal of an independent treasury was to place Federal revenue in a Federal treasury instead of depositing it in State banks around the country.)

President Polk’s inauguration on March 4, 1845, took place on a rainy afternoon:

At the appointed time, before the swearing in, Polk stepped forward to deliver his inaugural address “to a large assemblage of umbrellas,” as John Quincy Adams wryly noted in his diary. Standing at the front of the platform, protected from the rain by an umbrella held by a servant, Polk sought to quicken the hearts of Democrats while assuaging fears of Whigs and others. [Merry, page 9]

Beginning with the fourth paragraph of his inaugural address, he stated his central goal of adherence to the Constitution, which he called “the safeguard of our federative compact”:

It will be my first care to administer the Government in the true spirit of that instrument, and to assume no powers not expressly granted or clearly implied in its terms. The Government of the United States is one of delegated and limited powers, and it is by a strict adherence to the clearly granted powers and by abstaining from the exercise of doubtful or unauthorized implied powers that we have the only sure guaranty against the recurrence of those unfortunate collisions between the Federal and State authorities which have occasionally so much disturbed the harmony of our system and even threatened the perpetuity of our glorious Union.

The States and the central government, he said, were sovereigns of their separate spheres of reserved powers:

While the General Government should abstain from the exercise of authority not clearly delegated to it, the States should be equally careful that in the maintenance of their rights they do not overstep the limits of powers reserved to them.

The new President quoted President Jefferson who, in his first inaugural address “attached deserved importance to ‘the support of the State governments in all their rights, as the most competent administration for our domestic concerns and the surest bulwark against antirepublican tendencies’ and to the ‘preservation of the General Government in its whole constitutional vigor, as the sheet anchor of our peace at home and safety abroad.’”

During his 4 years in office, President Polk vetoed only three bills, two of which involved internal improvements, with his arguments aligning with those of President Jackson. On August 3, 1846, he vetoed a bill appropriating \$1,378,450 for the improvement of certain harbors and rivers. His veto message stated:

The Constitution has not, in my judgment, conferred upon the Federal Government the power to construct works of internal improvement within the States, or to appropriate money from the Treasury for that purpose.

This “general proposition . . . is so well established . . . that it is not deemed necessary to reiterate the arguments by which it is sustained.” That this power was not “properly an incident to any of the granted powers I am fully satisfied.” He also rejected the idea that the power was incidental to the granted powers. The fact that an action is convenient or beneficial does not make it an incidental power. “A construction of the Constitution so broad as that by which the power in question is defended tends imperceptibly to a consolidation of power in a Government intended by its framers to be thus limited in its authority.”

He had no doubt on the issue, but said “if there were doubts on this subject, experience has demonstrated the wisdom of the rule that all the functionaries of the Federal Government should abstain from the exercise of all questionable or doubtful powers.” If enlarging the powers of the government were deemed proper, Congress should pursue an amendment to the Constitution, thereby appealing to the States and the people to seek their approval of such an expansion:

This bill assumes the existence of the power, and in some of its provisions asserts the principle that Congress may exercise it as fully as though the appropriations which it proposes were applicable to the construction of roads and canals. If there be a distinction in principle, it is not perceived, and should be clearly defined.

Some of the projects to be funded were in a single State and though some projects were referred to as harbors, “they are not connected with foreign commerce, nor are they places of refuge or shelter for our Navy or commercial marine [sic] on the ocean or lake shores.” He acknowledged that every previous Administration had accepted bills appropriating funds for lighthouses, beacon, buoys, and other measures “for the purpose of rendering navigation safe and easy and of affording protection and shelter for our Navy and other shipping.” He was “not disposed to question or disturb the authority to make appropriations for such purposes.”

Beyond that, however, “the difficulty arises in drawing a line beyond which appropriations may not be made by the Federal Government.” In trying to make that distinction, he said:

To sanction the bill with such provisions would be to concede the *principle* that the Federal Government possesses the power to expend the public money in a general system of internal improvements, limited in its extent only by the ever-varying discretion of successive Congresses and successive Executives. It would be to efface and remove the limitations and restrictions of power which the Constitution has wisely provided to limit the authority and action of the Federal Government to a few well-defined and specified objects. Besides these objections, the practical evils which must flow from the exercise on the part of the Federal Government of the powers asserted in this bill impress my mind with a grave sense of my duty to avert them from the country as far as my constitutional action may enable me to do so.

It not only leads to a consolidation of power in the Federal Government at the expense of rightful authority of the States, but its inevitable tendency is to embrace objects for the expenditure of the public money which are local in their character, benefiting but few at the expense of the common Treasury of the whole. It will engender sectional feelings and prejudices calculated to disturb the harmony of the Union. It will destroy the harmony which should prevail in our legislative councils.

Aside from the constitutional objections, President Polk made clear he had other objections “of a serious nature.” Between \$1 million and \$2 million of the projects were “of no pressing necessity, and this is proposed at a time when the country is engaged in a foreign war,” namely the war with Mexico. Under such circumstances, he did not want to “waste” financial resources “on comparatively unimportant objects.” He also wanted to “avoid the accumulation of a large public debt, the existence of which would be opposed to the interests of our people as well as to the genius of our free institutions.” Further, if he approved the bill, it would “inevitably lead to large and annually increasing appropriations and drains upon the Treasury, for it is not to be doubted that numerous other localities not embraced in its provisions, but quite as much entitled to the favor of the Government as those which are embraced, will demand, through their representatives in Congress, to be placed on an equal footing with them.”

The bill’s supporters tried to secure a vote overturning the veto, but Congress sustained it.

On March 3, 1847, the final day of the 29th Congress, H.R. 84 was passed appropriating \$6,000 to continue works in the territory of Wisconsin and over half a million dollars for harbor and river projects in several States. President Polk pocket vetoed the bill by taking no action on it. With Congress adjourned until December, the bill was not enacted.

President Polk sent a message to Congress on December 15, 1847, explaining his pocket veto:

I entertained insuperable objections to its becoming a law, but the short period of the session which remained afforded me no sufficient opportunity to prepare my objections and communicate them with the bill to the House of Representatives, in which it originated. For this reason the bill was retained, and I deem it proper now to state my objections to it.

He recalled his veto of the earlier harbor and rivers bill and his fear that if it had become law, it would have resulted in increasing appropriations for other similar projects.

In pocket vetoing the new bill, he pointed out:

The policy of embarking the Federal Government in a general system of internal improvements had its origin but little more than twenty years ago. In a very few years the applications to Congress for appropriations in furtherance of such objects exceeded \$200,000,000. In this alarming crisis President Jackson refused to approve and sign the Maysville road bill, the Wabash River bill, and other bills of similar character. His interposition put a check upon the new policy of throwing the cost of local improvements upon the National Treasury, preserved the revenues of the nation for their legitimate objects, by which he was enabled to extinguish the then existing public debt and to present to an admiring world the unprecedented spectacle in modern times of a nation free from debt and advancing to greatness with unequalled strides under a Government which was content to act within its appropriate sphere in protecting the States and individuals in their own chosen career of improvement and of enterprise.

The present bill did not appropriate funds for a road or canal, but he could see that if it became law, “it is not easy to perceive the difference in principle or mischievous tendency between appropriations for making roads and digging canals and appropriations to deepen rivers and improve harbors.” The history of congressional involvement in internal improvements was “full of eloquent warnings.” Several States embarked on systems of roads and canals, not by taxing residents, but through debt to “ruinous” effect:

If the abuse of power has been so fatal in the States, where the systems of taxation are direct and the representatives responsible at short periods to small masses of constituents, how much greater danger of abuse is to be apprehended in the General Government, whose revenues are raised by indirect taxation and whose functionaries are responsible to the people in larger masses and for longer terms.

By the time President Jackson put a check on the practice, “it had begun to be considered the highest merit in a member of Congress to be able to procure appropriations of public money to be expended within his district or State, whatever might be the object.” He added:

We should be blind to the experience of the past if we did not see abundant evidences that if this system of expenditure is to be indulged in[,] combinations of individual and local interests will be found strong enough to control legislation, absorb the revenues of the country, and plunge the Government into a hopeless indebtedness.

One example of the abuse was how Congress stretched terms such as “harbors” and “rivers” to secure funds for bodies of water that in no other context than a Federal appropriations act would

be so called. This illustrated how appropriations for internal improvements could be “perverted to the accomplishment of the worst of political purposes.” He continued:

During the few years it was in full operation, and which immediately preceded the veto of President Jackson of the Maysville road bill, instances were numerous of public men seeking to gain popular favor by holding out to the people interested in particular localities the promise of large disbursements of public money. Numerous reconnoissances [sic] and surveys were made during that period for roads and canals through many parts of the Union, and the people in the vicinity of each were led to believe that their property would be enhanced in value and they themselves enriched by the large expenditures which they were promised by the advocates of the system Whole sections of the country were thus sought to be influenced, and the system was fast becoming one not only of profuse and wasteful expenditure, but a potent political engine.

Inevitably, Congress would be called on “under the cloak of public good” for all sorts of improvements. “To enrich neighborhoods by spending within them the moneys of the nation will be the aim and boast of those who prize their local interests above the good of the nation” No such system could be administered “with any approach to equality among the several States and sections of the Union.” (As mentioned earlier, President Polk had reached the same conclusion while serving as chairman of the House Ways and Means Committee during the Jackson Administration.) Further, “a greater practical evil” would arise in how the projects were chosen:

The most artful and industrious would be the most successful. The true interests of the country would be lost sight of in an annual scramble for the contents of the Treasury, and the Member of Congress who could procure the largest appropriations to be expended in his district would claim the reward of victory from his enriched constituents. The necessary consequence would be sectional discontents and heartburnings, increased taxation, and a national debt never to be extinguished.

Considering “these portentous consequences,” he thought “this course of legislation should be arrested, even were there nothing to forbid it in the fundamental laws of our Union.”

In fact, even if practical considerations did not argue against approval, he would veto the bill because the Constitution indicates a process for improving harbors and rivers within the States, “a process not susceptible to the abuses necessarily to flow from the assumption of the power to improve them by the General Government.” The Constitution provided that “no State shall, without the consent of Congress, lay any duty of tonnage.” President Polk said, “Here is a safe provision for the improvement of harbors and rivers in the reserved powers of the States and in the aid they may derive from duties of tonnage levied with the consent of Congress.” He cited the many examples of congressional consent, the first for Rhode Island in 1790 and the most recent in 1843 for Maryland. “That the power was constitutionally and rightfully exercised in these cases does not admit of a doubt.”

Previous Presidents had sometimes approved appropriations for internal improvements that they did not believe were permitted under the Constitution, but President Polk believed the government should return “to the early and approved construction of the Constitution.”

President Polk recalled that he had been in the House when the Maysville bill was considered:

When the bill authorizing a subscription on the part of the United States for stock in the Maysville and Lexington Turnpike Company passed the two Houses, there had been reported by the Committees of Internal Improvements bills containing appropriations for such objects, inclusive of those for the Cumberland road and for harbors and light-houses, to the amount of \$106,000,000. In this amount was included authority to the Secretary of the Treasury to subscribe for the stock of different companies to a great extent, and the residue was principally for the direct construction of roads by this Government. In addition to these projects, which had been presented to the two Houses under the sanction and recommendation of their respective Committees on Internal Improvements, there were then still pending before the committees and in memorials to Congress presented but not referred[,] different projects for works of a similar character, the expense of which can not be estimated with certainty, but must have exceeded \$100,000,000

President Jackson's powerful and disinterested appeals to his country appear to have put down forever the assumption of power to make roads and cut canals, and to have checked the prevalent disposition to bring all rivers in any degree navigable within the control of the General Government. But an immense field for expending the public money and increasing the power and patronage of this Government was left open in the concession of even a limited power of Congress to improve harbors and rivers

He pointed out that Madison's report on the debates during the Constitutional Convention, published in 1840, did not contain any evidence that the founders intended to grant the General Government the power to build and maintain internal improvements within the States. The founders saw themselves as protecting the rights of their States and did not wish to concede any right of jurisdiction to the General Government over their soil:

A proposition was made in the Convention to provide for the appointment of a "Secretary of Domestic Affairs," and make it his duty, among other things, "to attend to the opening of roads and navigation and the facilitating [of] communications through the United States." It was referred to a committee, and that appears to have been the last of it. On a subsequent occasion a proposition was made to confer on Congress the power to "provide for the cutting of canals when deemed necessary," which was rejected by the strong majority of eight States to three. Among the reasons given for the rejection of this proposition, it was urged that "the expense in such cases will fall on the United States and the benefits accrue to the places where the canals may be cut."

During the consideration of this proposition a motion was made to enlarge the proposed power for "cutting canals" into a power "to grant charters of incorporation when the interest of the United States might require and the legislative provisions of the individual States may be incompetent;" and the reason assigned by Mr. Madison for the proposed enlargement of the power was that it would "secure an easy communication between the States, which the free intercourse now to be opened seemed to call for. The political obstacles being removed, a removal of the natural ones, as far as possible, ought to follow."

The original proposition and all the amendments were rejected, after deliberate discussion, not on the ground, as so much of that discussion as has been preserved

indicates, that no direct grant was necessary, but because it was deemed inexpedient to grant it at all. When it is considered that some of the members of the Convention, who afterwards participated in the organization and administration of the Government, advocated and practiced upon a very liberal construction of the Constitution, grasping at many high powers as implied in its various provisions, not one of them, it is believed, at that day claimed the power to make roads and canals, or improve rivers and harbors, or appropriate money for that purpose. Among our early statesmen of the strict-construction class the opinion was universal, when the subject was first broached, that Congress did not possess the power, although some of them thought it desirable.

President Jackson had acknowledged the precedents established by earlier Presidents and Congresses, but his veto of the Maysville bill and other internal improvement measures had “reversed the precedents which existed prior to that time on the subject of internal improvements.”

President Polk also rejected the view of those who thought internal improvement appropriations could be justified because the Constitution granted Congress the “power to regulate commerce with foreign nations, and among the several States, and with the Indian tribes.” The authority to “regulate,” he said, “presupposes the existence of commerce, and, of course, the means by which and the channels through which commerce is carried on.” He added that the term did not confer “creative power”:

If the definition of the word “regulate” is to include the provision of means to carry on commerce, then have Congress not only power to deepen harbors, clear out rivers, dig canals, and make roads, but also to build ships, railroad cars, and other vehicles, all of which are necessary to commerce. There is no middle ground.

Following establishment of President Washington’s first administration under the Constitution, the provision was applied “by prescribing general rules by which commerce should be conducted,” for example by treaties with other countries and among the States by laws involving “the coasting trade and the vessels employed therein, and for the better security of passengers in vessels propelled by steam, and by the removal of all restrictions upon internal trade.” From the earliest years to the present that is how the constitutional grant of power had been administered.

If a power to appropriate funds for internal improvements was desirable, a constitutional amendment was the appropriate means for conveying that power to the Congress. “This course has been recommended successively by Presidents Jefferson, Madison, Monroe, and Jackson, and I fully concur with them in opinion.”

(President Polk’s third veto occurred on August 8, 1846. He vetoed S. 68, a bill to provide for the ascertainment and satisfaction of claims of American citizens for spoliations committed by the French prior to July 31, 1801. The veto was sustained.)

One person who did not concur with President Polk was Representative Abraham Lincoln. He had won election to the House as a Whig in 1846, pledging to serve only one term (the 30th Congress, December 6, 1847 – March 3, 1849), a common practice of the period. Representative Lincoln had been a member of the Whig Party since its inception and was active in the Illinois State Whig organization. The Whigs began as an opposition party to President Jackson, with their name dating to 1834. Senator Clay, Representative Lincoln’s political hero, had secured a

Senate censure of President Jackson for exceeding his authority in removing deposits from the Bank of the United States and placing the funds in State banks. The Heidlers explained the origin of the party's name:

In a speech to the Senate on April 14, 1834, Clay likened the opposition to Jackson to the British Whigs' opposing the dictatorial policies of their King [in the 17th through 19th century, still active at the time of Clay's speech]. Clay was not the first to call Jackson's antagonists Whigs, but his use of the label in the speech struck a chord because of the growing impression that the Democrat Old Hickory was becoming "King Andrew." This loose coalition of allies would henceforth be called Whigs. [Heidler, page 266]

Like any national party, the Whig Party consisted of a coalition of viewpoints, but the essence was Clay's American System:

Whigs wanted the government to establish a national bank to stabilize the currency, wanted protective tariffs to promote American industry, wanted internal improvements to facilitate American commerce. Democrats wanted an expanding, expansive "agricultural empire" and consequently pushed for Texas annexation and later fought a war to acquire California. Whigs wanted economic improvement through internal improvements and recoiled from expansionism. [Heidler, page 315]

During organization of the 30th Congress, Representative Lincoln was assigned to the Committee on Post Offices and Post Roads. In a book about Representative Lincoln's single term, DeRose described the committee's work:

This was a major committee, charged with making policy for what was, and still is for many, the function of the federal government most relevant to their everyday lives. At the time, regular mail delivery was not guaranteed, which affected where people could choose to live and do business. The post office was also one of the largest components of the national government. The committee's mandate was "to consider all petitions, resolutions, and matters relating to post offices and post roads." This included 153,000 miles of postal routes; their employees and contractors traveled 39 million miles in the course of a year, 4 million by rail and 3.2 million by steamboat, 15 million by coaches and yet another 15 million by "modes of inferior grade." [DeRose, Chris, *Congressman Lincoln: The Making of America's Greatest President*, Threshold Editions, 2013, page 100]

Throughout his term, Representative Lincoln championed a committee bill establishing new postal routes:

If passed, it would stitch together thousands of new miles of postal routes, creating new migration and business opportunities for many Americans. Lincoln's handwriting is all over the legislation, not only for Illinois but elsewhere. This strongly suggests that he was conferring with other members, trying to see what the needs were in their home states and trying to secure their support for the bill. The bill itself was revised many times to reflect these concerns, with little scribbled amendments written on scraps of paper stuck to the page, lines crossed out by hand, sections covered over with paper that changed their language. Lincoln was careful to pay attention to the petitions of his constituents on the subject The bill faced a number of procedural setbacks,

however, and it was returned to committee with its fate very uncertain. [DeRose, page 165]

Representative Lincoln “scored his most significant legislative achievement” when H.R. 599, “an act to establish certain post routes,” emerged from committee again on July 19, 1848, for House consideration:

This time it passed the House of Representatives without a recorded vote, and headed for the Senate. A bill does not get shelved in committee only to return months later and pass without a recorded vote unless there is a substantial amount of behind-the-scenes work. No doubt Lincoln did his share and more to see this important legislation succeed. [DeRose, pages 183-184]

After the bill passed the Senate, President Polk signed H.R. 599 into law on August 14, 1848:

Lincoln had worked hard on this bill in committee and had navigated it through rough waters on the floor, working with members from other states to win their support. Lincoln did not give up when the bill was sent back to committee or again faced trouble on the floor. And now it was signed into law by the president of the United States. Thousands of Americans would benefit from the ability to send and receive letters and packages through the mail, and thousands more would be able to move to new towns. It might not have the excitement of the questions of war and slavery, but this is a concrete example of Congress doing real good for real people. And it was a major accomplishment for the freshman congressman who ran point on the bill. [DeRose, pages 198-199]

Representative Lincoln, the Whig, opposed much of the agenda of the Democratic President, including the Mexican war. The young Congressman’s best known venture in the House was to introduce the “Spot Resolutions,” which called on President Polk to show the exact spot on United States soil where blood was spilled in an attack that justified the war with Mexico. The bills failed and Representative Lincoln was later ridiculed for being “spotty” and lost popularity in Illinois.

Representative Lincoln, as in his days in the Illinois General assembly, was interested in internal improvements, a key tenet of the Whigs, as discussed earlier. In the long interval between his election and the start of his first session of Congress, Lincoln attended the Northwestern River and Harbor Convention in Chicago on July 5-7, 1847. Sponsors had called the convention to protest President Polk’s veto.

On the second day of the convention, David Dudley Field of New York, a leading attorney, defended the veto. According to a contemporary account in *The New York Weekly Tribune* on July 17, 1847, Field’s was an “able and courteous speech in favor of strict construction and of such river and harbor improvements only as are consistent therewith.” However, as Mentor L. Williams wrote in a 1949 article about the convention, “He was severely heckled from the floor and the meeting was conveniently adjourned.”

Representative-elect Lincoln was a minor figure during the convention, but that afternoon began with Lincoln briefly responding to Field while the committee on resolutions completed its work

behind the scenes. The Weekly Tribute described Lincoln as “a tall specimen of Illinoian, just elected to congress from the only Whig District in the state, spoke briefly and happily in reply to Mr. Field.” Lincoln told the convention he had not planned an address, but agreed to respond in the few minutes before the committee on resolutions was ready to report. “We meet here to promote and advance the cause of internal improvements.” He did not want to cause “division and discord,” but harmony and good feeling. The Democratic and Whig parties disagreed on internal improvements, but he urged the convention “to unite, like a band of brothers, for the welfare of the common country.” He urged the parties to “meet each other in the spirit of conciliation and good feeling.”

In any debate on internal improvements, “it is impossible to speak without alluding, in some manner, to constitutional questions.” He urged the convention to listen to Democrats:

Democrats do not wish to do any thing in this Convention that will conflict with their past course, and if questions should come up which they do not approve, they should be permitted to protest against them. I hope there will be no more interruption—no hisses—no jibes.

Although Field had begun his argument by questioning the constitutionality of making appropriations for internal improvement, Lincoln did not feel he could respond in detail in the limited time available, nor had he prepared to do so:

All agree that something in the way of internal improvement must be done. The difficulty is to discriminate, when to begin and where to stop. There is great danger in going too far. Members of Congress will be influenced by sectional interests and sectional feelings. I have not taken the pains to write out my opinions upon the construction to be put upon the constitution. Any construction, that there is something to be done for the general good and no power to do it, would be wrong. I do not go for sectional improvements, though all are more or less sectional. Is there any way to make improvements, except some persons are benefited more than others? No improvement can be made that will benefit all alike.

Field had asked a “pertinent question” that he had not answered, as Lincoln summarized:

Who is to decide differences of opinion on constitutional questions? What tribunal? How shall we make it out? The gentleman from Pennsylvania, the Hon. Andrew Stewart, says Congress must decide. If Congress has not the power, who has? Is it not, at least, for Congress to remedy the objection, and settle this great question?

He concluded:

I have the highest respect for the gentleman from New York. In his speech, he made a beautiful appeal in behalf of the Constitution. He implores us, by all considerations, to foster and protect it. He loves the Constitution. I hope I may love it as well as he does, but in a different way. He looks upon it as a net work, through which may be sifted the seeds of discord and dissension. I look upon it as a complete protection to the Union. He loves it in his way; I in mine. There are many here who entertain the same views which I do, who will, I doubt not, sustain me and with these remarks I beg leave to close. [“Speech of Mr. Lincoln, of Illinois,” *Missouri [St. Louis] Daily Republican*, July 12,

1847; Williams, Mentor L., “The Chicago River and Harbor Convention, 1847, *The Mississippi Valley Historical Review*, March 1949, page 610; also cited in Simon, page 317]

On June 20, 1848, Representative Lincoln took to the floor of the House to deliver an address on internal improvements in response to President Polk’s veto message of December 15, 1847. In the speech, Lincoln elaborated on the themes he had not introduced in his brief convention speech. Many years later, when circumstances had revived interest in Federal involvement in roads, good roads advocates occasionally cited Representative Lincoln’s floor speech as illustrating the need for Federal involvement in improving the country’s roads. For example, the National Old Trails Road Association reprinted the speech in editions of its promotional book, *The Great Historic Highway*. The following excerpts are from the 1925 edition.

Representative Lincoln began by referring to the Democratic convention, held in May 1848 in Baltimore, that had nominated Senator Lewis Cass of Michigan, a General during the War of 1812, and a Governor of his State, for President. (As noted, President Polk had pledged to serve only one term.) The convention had adopted a resolution stating:

That the Constitution does not confer upon the General Government the power to commence and carry on a general system of internal improvements.

Senator Cass pledged to adhere to this and other resolutions adopted during the convention.

Representative Lincoln stated that these developments, including the Polk veto message, showed that the internal improvements question was more intense than at any period. He knew many Democrats who disagreed with the resolution on internal improvements but would vote for Senator Cass out of party loyalty. “In this way the internal improvement Democrats are to be, by a sort of forced consent, carried over and arrayed against themselves on this measure of policy.” President Cass would then justify vetoing internal improvements bills by citing President Polk’s veto from the previous December and the “Democratic Platform” (quotation marks supplied by Representative Lincoln):

This being the case, the question of improvements is verging to a final crisis; and the friends of this policy must now battle, and battle manfully, or surrender all.

Supporters of internal improvements “must now battle, and battle manfully, or surrender all.” He listed the general arguments against appropriations for internal improvements as cited by President Polk:

First—because they would overwhelm the treasury. Second—Because, while their burdens would be general, their benefits would be local and partial, involving an obnoxious inequality. Third—because they would be unconstitutional. Fourth—Because the States may do enough by the levy and collection of tonnage duties; or if not. Fifth—That the Constitution may be amended.

He summed up these arguments by saying, “Do nothing at all, lest you do something wrong.” In short, “we must abandon the improvements of the country altogether, by any and every authority, or we must resist and repudiate the doctrines of this message.” He then responded to each point.

He could not deny that a system of internal improvements would lead to “a tendency to undue expansion. Such a tendency is founded in the nature of the subject.” He explained:

A member of Congress will prefer voting for a bill which contains an appropriation for his district, to voting for one which does not; and when a bill shall be expanded till every district shall be provided for, that it will be too greatly expanded is obvious.

This was true, however, also of State legislatures:

Go where we will, the difficulty is the same. Allow it to drive us from the halls of Congress, and it will, just as easily, drive us from the State legislatures. Let us, then, grapple with it, and test its strength. Let us, judging of the future by the past, ascertain whether there may not be, in the discretion of Congress, a sufficient power to limit and restrain this expansive tendency within reasonable and proper bounds.

President Polk’s veto message demonstrated that he valued the evidence of history, as when he stated that at one point Members of Congress had \$200 million in appropriations pending for internal improvements:

Why did he not tell us how much was granted? Would that not have been better evidence?

President Polk had referred to the single term of President John Quincy Adams as the period when authority to appropriate funds for internal improvements “was fully asserted and exercised.” Having quoted the President, Representative Lincoln said:

This, then, was the period of greatest enormity. These, if any, must have been the days of the two hundred millions. And how much do you suppose was really expended for improvements during that four years? Two hundred millions? One hundred? Fifty? Ten? Five? No, sir; less than two millions. As shown by authentic documents, the expenditures on improvements during 1825, 1826, 1827, and 1828 amounted to one million eight hundred and seventy-nine thousand six hundred and twenty-seven dollars one cent This fact shows that when the power to make improvements “was fully asserted and exercised,” the Congress did keep within reasonable limits; and what has been done, it seems to me, can be done again.

As for the President’s second point, Representative Lincoln again had to concede that “there is some degree of truth” in saying that while the burden of paying for improvements was general, the benefit would be local. “No commercial object of government patronage can be so exclusively general as to not be of some peculiar local advantage.” He cited the U.S. Navy, which provided general protection by driving pirates from the ocean or removing a snag from a navigable river. Despite these undeniable general benefits, “yet even the navy is of some peculiar advantage to Charleston, Baltimore, Philadelphia, New York, and Boston, beyond what it is to the interior towns of Illinois.”

He added that, “the converse is also true. Nothing is so local as to not be of some general benefit.” He cited the Illinois and Michigan Canal, which had opened a couple of months earlier in 1848, as an example. The State had established a commission in 1823 to build the 96-mile canal linking the Chicago River at Bridgeport near Chicago and the Illinois River at LaSalle. “Every inch of it is within the State of Illinois,” but it was carrying sugar from New Orleans to

Buffalo. “Supposing benefit of the reduction of the cost of carriage to be shared between seller and buyer, the result is that the New Orleans merchant sold his sugar a little dearer, and the people of Buffalo sweetened their coffee a little cheaper than before—a benefit resulting from the canal, not to Illinois, where the canal is, but to Louisiana and New York, where it is not.” He drew the conclusion:

The just conclusion from all this is that if the nation refuse to make improvements of the more general kind because their benefits may be somewhat local, a State may for the same reason refuse to make an improvement of a local kind because its benefits may be somewhat general. A State may well say to the nation, “If you will do nothing for me, I will do nothing for you.” Thus it is seen that if this argument of “inequality” is sufficient anywhere, it is sufficient everywhere, and puts an end to improvements altogether.

Inequality should “never be embraced for its own sake,” he said, “but is every good thing to be discarded which may be inseparably connected with some degree of it?” Since the capital, Washington, benefited local land owners, he asked if it should be removed?

And if so, where shall we set it down, and be free from the difficulty? To make sure of our object, shall we locate it nowhere, and have Congress hereafter to hold its sessions, as the loafer lodged, “in spots about?” I make no allusion of the present President when I say there are few stronger cases in this world of “burden to the many and benefit to the few,” of “inequality,” than the presidency itself is by some thought to be. An honest laborer digs coal at about seventy cents a day, while the President digs abstractions at about seventy dollars a day. The coal is clearly worth more than the abstractions, and yet what a monstrous inequality in the prices! Does the President, for this reason, propose to abolish the presidency? He does not, and he ought not.

The question should be whether something had more evil than good because “few things [are] wholly evil or wholly good,” and that was certainly true of government policy. In considering policies, therefore, “our best judgment of the preponderance between them is continually demanded.” Why should not this proposition be applied to the question of internal improvements? “Why, as to improvements, magnify the evil, and stoutly refuse to see any good in them?”

Representative Lincoln admitted that on the third question, that of constitutionality, “I have not much to say.” Being simply a new congressman from Illinois, he could not compete with the arguments advanced over the years by the “ablest and the best of men” who had “gone over the whole ground long ago.” He would, however, briefly note a few of the arguments.

President Polk had cited President Jefferson’s 1806 message to Congress arguing that an amendment would be needed if Congress wished to exercise the authority to appropriate funds for “the great purpose” of internal improvements. Representative Lincoln quoted from President Jefferson’s 1806 message to Congress calling for an amendment. Referring to the fact that in contrast with President Polk, former President Jefferson thought such an amendment would be good for the country, Representative Lincoln said:

I introduce this not to controvert just now the constitutional opinion, but to show that, on the question of expediency Mr. Jefferson’s opinion was against the present President—

that this opinion of Mr. Jefferson, in one branch at least, is in the hands of Mr. Polk like McFingal's gun—"bears wide and kicks the owner over."

Regarding the President's argument from the Constitution, Representative Lincoln turned to Chancellor James Kent's *Commentaries on American Law*. The 1825 edition described the arguments for and against the constitutional authority and noted that the subject had never been raised in court. "He shows that the legislative branch has usually been for, and the executive against, the power, till the period of Mr. J. Q Adams' administration, at which point he considers the executive influence as withdrawn from opposition, and added to the support of the power."

The 1844 edition included notes on what had happened since the mid-1820s. One note described the arguments in *Commentaries on the Constitution of the United States* by Associate Justice Joseph Story of the Supreme Court (1833). Justice Story summarized the arguments, pro and con, on whether Congress had the constitutional authority to impose taxes and apply the power to regulate commerce as a way of encouraging and protecting domestic manufacturers. Representative Lincoln read from Chancellor Kent's note stating that Justice Story had not given his own opinion on the issue, but had "left the reader to draw his own conclusions." The Chancellor's note continued:

I should think, however, from the arguments stated, that every mind which has taken no part in the discussion, and felt no prejudice or territorial bias on either side of the question, would deem the arguments in favor of the Congressional power vastly superior.

Representative Lincoln conceded that after all, this was but the opinion of one man and that many "great and good men" have disagreed. "It is not disparagement to Mr. Polk, nor indeed to anyone who devotes much time to politics, to be placed far beyond Chancellor Kent as a lawyer." The chancellor, he said, employed truth and sound reasoning:

Can the party opinion of a party President on a law question, as this purely is, be at all compared or set in opposition to that of such a man, in such an attitude, as Chancellor Kent? This constitutional question will probably never be better settled than it is, until it shall pass under judicial consideration; but I do think no man who is clear on the questions of expediency need feel his conscience much pricked upon this.

President Polk argued that States could provide for their own internal improvements through tonnage duties with the consent of Congress. Representative Lincoln thought that improvement financed by tonnage duties might be satisfactory "in its own sphere," for example "to make slight improvements and repairs in harbors already in use and not much out of repair." But by President Polk's own arguments, allowing tonnage duties collected in one harbor to be used to repair or build a harbor or canal elsewhere in the State "would be an extremely aggravated form of that inequality which the President so much deprecates." Representative Lincoln continued:

If I be right in this, how could we make any entirely new improvement by means of tonnage duties? How make a road, a canal, or clear a greatly obstructed river? This idea that we could [do so] involve[s] the same absurdity as the Irish bull about the new boots. "I shall never get 'em on," says Patrick, "till I wear them a day or two, and stretch 'em a little." We shall never make a canal by tonnage duties until it shall already have been made awhile, so the tonnage can get into it.

Representative Lincoln pointed out that if President Polk, like President Jefferson, believed that some improvements were “expedient, but not constitutional, it would be natural enough for him to recommend such an amendment” to the Constitution. However, Representative Lincoln quoted the President’s comment about the inevitable congressional abuse “under the cloak of public good”:

In view of these portentous consequences, I cannot but think that this course of legislation should be arrested, even were there nothing to forbid it in the fundamental laws of our Union.

Representative Lincoln responded:

For what, then, would he have the Constitution amended? With him it is a proposition to remove one impediment merely to be met by others, which, in his opinion, cannot be removed—to enable Congress to do what, in his opinion, they ought not to do it if they could.

Representative Richard K. Meade, a Democrat from Virginia, interrupted to ask if Representative Lincoln thought the President was opposed to every improvement on grounds of expediency. Representative Lincoln replied:

In the very part of his message of which I am speaking, I understand him as giving some vague expression in favor of some possible objects of improvement; but in doing so I understand him to be directly on the teeth of his own arguments in other parts of it. Neither the President nor any one can possibly specify an improvement which shall not be clearly liable to one or another of the objections he has urged on the score of expediency. I have shown, and might show again, that no work—no object—can be so general as to dispense its benefits with precise equality; and this inequality is chief among the “portentous consequences” for which he declares that improvements should be arrested. No, sir. When the President intimates that something in the way of improvements may properly be done by the General Government, he is shrinking from the conclusions to which his own arguments would force him. He feels that the improvements of this broad and goodly land are a mighty interest; and he is unwilling to confess to the people, or perhaps to himself, that he built an argument which, when pressed to its conclusions, entirely annihilates his interest.

Returning to the argument about the Constitution, Representative Lincoln said he thought it would be “much better to leave it alone.” The men who made the Constitution, he said, “have done their work, and have passed away. Who shall improve on what they did?” He added, “It can scarcely be made better than it is.”

Having analyzed President Polk’s arguments, Representative Lincoln turned to “some general remarks upon the subject of improvements.” It was a difficult subject for Congress, no doubt, but also for State legislatures, counties, and even the “smallest municipal districts” anywhere in the country:

All can recur to instances of this difficulty in the case of country roads, bridges, and the like. One man is offended because a road passes over his land, and another is offended because it does not pass over his; one is dissatisfied because the bridge for which he is

taxed crosses the river on a different road from that which leads from his house to town; another cannot bear that the county should be got into debt for these same roads and bridges; while not a few struggle hard to have roads located over their lands, and then stoutly refuse to let them be opened until they are first paid the damages. Even between the different wards and streets of towns and cities we find this same wrangling and difficulty. Now these are no other than the very difficulties against which, and out of which, the President constructs his objections of “inequality,” “speculation,” and “crushing the treasury.”

The real question was, “How to do something, and still not do too much.” Each person could “contribute his mite in the way of suggestion,” he said, adding, “I will now contribute mine, which may be worth nothing” but at least “will mislead nobody, and therefore will do no harm.” He continued:

I would not borrow money. I am against an overwhelming crushing system. Suppose that, at each session, Congress will first determine how much money can, for that year, be spared for improvements; then apportion that sum to the most important objects. So far all is easy; but how shall we determine which are the most important? On this question comes the collision of interests. I shall be slow to acknowledge that your harbor or your river is more important than mine, and vice versa. To clear this difficulty, let us have that same statistical information which the gentleman from Ohio [Representative Samuel F. Vinton, a Whig] suggested at the beginning of this session. In that information we shall have a stern, unbending basis of facts—a basis in no wise subject to whim, caprice, or local interest. The pre-limited amount of means will save us from doing too much, and the statistics will save us from doing what we do in wrong places. Adopt and adhere to this course, and, it seems to me, the difficulty is cleared.

One of the gentlemen from South Carolina [Representative Robert B. Rhett, a Democrat] very much deprecates these statistics. He particularly objects, as I understand him, to counting all the pigs and chickens in the land. I do not perceive much force in the objection. It is true that if everything be enumerated, a portion of such statistics may not be very useful to this object. Such products of the country as are to be consumed where they are produced need no roads or rivers, no means of transportation, and have no very proper connection with this subject. The surplus—that which is produced in one place to be consumed in another; the capacity of each locality for producing a greater surplus; the natural means of transportation, and their susceptibility of improvements; the hindrances, delays, and losses of life and property during transportation and the causes of each, would be among the most valuable statistics in this connection. From these it would readily appear where a given amount of expenditure would do the most good. These statistics might be equally accessible, as they would be equally useful, to both the nation and the States. In this way, and by these means, let the nation take hold of the larger works, and the States the smaller ones; and thus, working in a meeting direction, discreetly, but steadily and firmly, what is made unequal in one place may be equalized in another, extravagance avoided and the whole country put on that career of prosperity which shall correspond with its extent of territory, its natural resources, and the intelligence and enterprise of its people. [Speech of Abraham Lincoln in Favor of Internal Improvements, *The Great Historic Highway of America*, National Old Trails Road Association, March 1925, pages 173-184]

In these last comments, Representative Lincoln suggested the data-oriented approach that would be at the heart of road development in the 20th century, especially during the years in the 1930s leading to the Interstate System, as will be discussed later.

(When Lincoln returned to Washington as President in March 1861, the country would soon be divided by war. He nevertheless took an important step to unite the Nation, from east to west, by approving several Pacific Railroad Acts leading to construction of the first transcontinental railroad between San Francisco and the Missouri River at Iowa Bluffs, Iowa, where travelers could transfer to numerous existing rail lines reaching points on the East Coast.

(When construction began on December 3, 1863, in Omaha, President Lincoln was recovering from smallpox contracted a month earlier around the time of his Gettysburg Address on November 19. John Hay, Lincoln's Assistant Private Secretary, sent a message stating that the President wanted him "to express his deep regrets that his illness will prevent him from giving expression to the profound interest he feels in the success of a work so vast and beneficial as that which you are about to inaugurate." A few days later, in his annual message on December 8, President Lincoln mentioned "the actual commencement of work upon the Pacific Railroad, under auspices so favorable to progress and completion." The transcontinental railroad was completed on May 10, 1869, at Promontory Point in Utah, when the last spike was driven linking the Central Pacific and Union Pacific Railroads.)

On December 5, 1848, President Polk sent his final annual message to Congress. After a brief prayer, he began:

Peace, Plenty, and contentment reign throughout our borders, and our beloved country presents a sublime moral spectacle to the world While enlightened nations of Europe are convulsed and distracted by civil war and intestine strife, we settle all our political controversies by the peaceful exercise of the rights of freemen at the ballot box.

In reviewing the activities of the government, he discussed the Postal Department. Revenues were up as was transportation over mail routes:

The mail routes on the 30th day of June last year were 163,208 miles in extent, being an increase during the last year of 9,390 miles. The mails were transported over them during the same time 41,012,579 miles, making an increase of transportation for the year of 2,124,680 miles, whilst the expense was less than that of the previous year by \$4,235.

The increase in the mail transportation within the last three years has been 5,378,310 miles, whilst the expenses were reduced \$456,738, making an increase of service at the rate of 15 per cent and a reduction in the expenses of more than 15 per cent.

After discussing many topics, he turned to internal improvements. "Nothing can retard the onward progress of our country and prevent us from assuming and maintaining the first rank among nations but a disregard of the experience of the past and a recurrence to an unwise public policy." Having recently concluded the war with Mexico, President Polk believed the country was in some ways in the same condition as it had been after the War of 1812:

[The] occasion is deemed to be a proper one to take a retrospect of the measures of public policy which followed that war. There was at that period of our history a departure from our earlier policy. The enlargement of the powers of the Federal Government by

construction [i.e., interpretation], which obtained, was not warranted by any just interpretation of the Constitution. A few years after the close of that war a series of measures was adopted which, united and combined, constituted what was termed by the authors and advocates the “American system.”

This was a reference to and a refutation of the vision of Henry Clay, whom Presidents Jackson and Polk despised, campaigned against, and thwarted whenever they could.

The unique post-war conditions, President Polk said, resulted in the new policy. Many statesmen thought the country “was not strong enough, and that to wield its resources successfully in great emergencies, and especially in war, more power should be concentrated in its hands.” They did not seek this increased power “by the legitimate and prescribed mode—an amendment of the Constitution—but by construction.” As a model for the United States, they preferred to emulate the countries that placed “the whole power of nations into the hands of a few, who taxed and controlled the many without responsibility or restraint.” They failed to see that those countries that they so greatly admired, particularly England, were populated by citizens who were “scantily fed and . . . were bound in chains of oppressive servitude for the benefit of the favored classes, who were the exclusive objects of the care of the Government.”

President Polk saw the flaw in such thinking. “It was not possible to reconstruct society in the United States upon the European plan.” The United States had a Constitution that separated the country from the European model.

One difference was the national bank, such as the national bank of Great Britain. Some American statesmen “were induced to yield their scruples” to support what they knew was unconstitutional. “The corrupt power of such a political engine is no longer a matter of speculation, having been displayed in numerous instances, but most signally in the political struggles of 1832, 1833, and 1834 in opposition to the public will represented by a fearless and patriotic President,” namely Andrew Jackson.

Advocates of the American System, President Polk wrote, looked upon increased debt “as no national evil” and called for a high protective tariff. It was promoted “under the plausible but delusive pretext of a measure to protect ‘home industry,’” but it was really intended “to afford bounties to favored classes and particular pursuits at the expense of all others.” These tariffs had imposed “artificial restrictions upon the natural course of the business and trade of the country” while advancing “the interests of large capitalists and monopolists at the expense of the great mass of people, who were taxed to increase their wealth.”

Another purpose of the tariffs was to aid another branch of the American System, “a comprehensive scheme of internal improvements, capable of indefinite enlargement and sufficient to swallow up as many millions annually as could be exacted from the foreign commerce of the country.” This branch “was a convenient and necessary adjunct of the protective tariff” because it would “be the great absorbent of any surplus which might at any time accumulate in the Treasury”

These branches of the American System “were sustained by popular names and plausible arguments” that deluded many onlookers. For example, “Internal improvements were to bring trade into every neighborhood and enhance the value of every man’s property.” The deceit masked the fact that the goal of the entire system, blended together, was to “add new burthens

[sic] of taxation and . . . encourage a largely increased and wasteful expenditure of public money,” all to benefit the “favored classes.” The deceit encouraged the supposed beneficiaries to support the American System. “It was the interest of the people of all those sections and localities who expected to be benefited by expenditures for internal improvements that the amount collected should be as large as possible, to the end that the sum disbursed might also be the larger.”

Had the scheme prevailed, it would have converted the government from the Founders’ intended “plain, cheap, and simple confederation of States . . . into a consolidated empire, depriving the States of their reserved rights and the people of their just power and control . . .” The nature of government, in other words, would have been changed, “not by an amendment of the Constitution, but by resorting to an unwarrantable and unauthorized construction of that instrument.”

President Polk thought it was revealing that none of the elements of the American System was authorized by the Constitution. If the Founders had intended to confer those powers, he said that “it is but reasonable to conclude that it would have been done by plain and unequivocal grants.” Instead, advocates of the American System claimed their proposals were constitutional based on “forced implications and inferences.”

He discussed how elements of the American System, after debate and practice, had been succeeded by better constitutional alternatives:

The bank has been succeeded by a practical system of finance, conducted and controlled solely by the Government. The constitutional currency has been restored, the public credit maintained unimpaired even in a period of a foreign war, and the whole country has become satisfied that banks, national or State, are not necessary as fiscal agents of the Government. Revenue duties have taken the place of the protective tariff. The distribution of the money derived from the sale of the public lands has been abandoned and the corrupting system of internal improvements, it is hoped, has been effectually checked.

It is not doubted that if this whole train of measures, designed to take wealth from the many and bestow it upon the few, were to prevail the effect would be to change the entire character of the Government. Only one danger remains. It is the seductions of that branch of the system which consists in internal improvements, holding out, as it does, inducements to the people of particular sections and localities to embark the Government in them without stopping to calculate the inevitable consequences I entertain the solemn conviction that if the internal-improvement branch of the “American System” be not firmly resisted at this time the whole series of measures composing it will be speedily reestablished and the country be thrown back from its present high state of prosperity, which the existing policy has produced, and be destined again to witness all the evils, commercial revulsions, depression of prices, and pecuniary embarrassment through which we have passed during the last twenty-five years.

To guard against consequences so ruinous is an object of high national importance, involving, in my judgment, the continued prosperity of the country.

That was why, he said, he had vetoed two internal improvement bills.

In 1848, Representative Abraham Lincoln worked hard to secure the Whig presidential nomination for General Zachary Taylor and campaigned for him in several States. In November, General Taylor defeated Senator Cass. “Old Rough and Ready,” as General Taylor was known, was a hero of the Mexican war who had never given much thought to national issues; his views were unclear even to him. He had not voted in 1844, but in agreeing reluctantly to accept the nomination of the Whig Party, he said he would have voted for the Whig candidate, Henry Clay.

As President Polk prepared his final message to Congress, he knew that his successor would be a Whig. In denouncing the American System long after it had been introduced and its chief architect had been defeated in his national ambitions, President Polk was warning the country that it should beware of the consequences of electing a man whose party was the chief advocate of the denounced ideas.

President Taylor’s brief inaugural address on March 5, 1849, confirmed that expectation:

It shall be my study to recommend such constitutional measures to Congress as may be necessary and proper to secure encouragement and protection to the great interests of agriculture, commerce, and manufacturers, to improve our rivers and harbors, to provide for the speedy extinguishment of the public debt, to enforce a strict accountability on the part of all officers of the Government and the utmost economy in all public expenditures

Later that year, on December 4, he submitted an annual message as Congress began a new session. He commented on many topics, including the following:

I recommend early appropriations for continuing the river and harbor improvements which have been already begun, and also for the construction of those for which estimates have been made, as well as for examinations and estimates preparatory to the commencement of such others as the wants of the country, and especially the advance of our population over new districts and the extension of commerce, may render necessary.

President Taylor died of food poisoning on July 9, 1850, and was succeeded by Vice President Millard Fillmore, a former U.S. Representative from New York. In the House, he had supported internal improvements, a view reflected in his first annual message on December 2, 1850:

I entertain no doubt of the authority of Congress to make appropriations for leading objects in that class of public works comprising what are usually called works of internal improvement. This authority I suppose to be derived chiefly from the power of regulating commerce with foreign nations and among the States and the power of laying and collecting imposts. Where commerce is to be carried on and imposts collected there must be ports and harbors as well as wharves and custom-houses

And this construction of the Constitution appears the more reasonable from the consideration that if these works, of such evident importance and utility, are not to be accomplished by Congress they can not be accomplished at all.

President Fillmore thought that if Congress could make appropriations to aid ocean commerce, it could make appropriations for river transportation. He cited an example similar to one Representative Lincoln had used:

The magnificent Mississippi and its tributaries and the vast lakes of the North and Northwest appear to me to fall within the exercise of the power as justly and as clearly as the ocean and the Gulf of Mexico. It is a mistake to regard expenditures judiciously made for these objects as expenditures for local purposes. The position or sight of the work is necessarily local, but its utility is general. A ship canal around the Falls of St. Mary of less than a mile in length, though local in its construction, would yet be national in its purpose and its benefits, as it would remove the only obstruction to a navigation of more than 1,000 miles, affecting several States, as well as our commercial relations with Canada.

The fate of internal improvements varied over the years, as Hill discussed:

Questions of the expediency and legality of river and harbor improvements became involved in such issues as the protective tariff and disposal of the revenue surplus, which increasingly assumed a sectional character. The Whigs commonly supported and the Democrats opposed large river and harbor bills As a result of deadlocks over the wisdom and legality of less important works, no appropriations were made during many sessions of Congress. River and harbor bills were either defeated or vetoed, and the only appropriations secured were those in special acts or riders attached to other legislation.

These divisions were reflected in the views of President prior to the Civil War:

After 1838 there was a major change in national policy toward river and harbor improvements. All Presidents after Jackson except Taylor and Fillmore, who were Whigs, followed such a strict interpretation of the Constitution that Jacksonian policies were later regarded as liberal by comparison. There was increased hostility toward those policies from term to term with Van Buren, Tyler, Polk, [Franklin] Pierce [1843-1849], and [James] Buchanan [1857-1861]. These five Presidents either submitted estimates for only a few strictly national improvements or presented none at all. They urged execution of minor works by state or local government and vetoed several river and harbor bills on the premise that they authorized local works which were unrelated to delegated federal powers and thus unconstitutional.

Given this uncertainty, particularly on interpretation of the Constitution, “continuous execution even of major improvements admitted by all parties to be of a national character and within the government’s power” were blocked from “continuous execution”:

Under these conditions the government was unable to formulate an effective system of administering these improvements, and the army engineers failed to achieve extensive or lasting benefits. [Hill, pages 195-196]

One reason General Taylor had been hesitant to accept the Whig nomination was the plague of office-seekers who tormented every President. Once elected, he decided to let his Cabinet Secretaries do the hiring. When Representative Lincoln sought the leadership of the General Land Office in the newly formed Department of the Interior, he thought he would have the advantage of having been a strong Taylor supporter. However, the decision was left to Secretary of the Interior Thomas Ewing, Sr., who selected another Illinois attorney, Justin Butterfield, a Whig who had done nothing for President Taylor’s election.

Former Representative Lincoln had returned to Washington to campaign for the job. DeRose wrote:

Yes, he had wanted a position in the national capital, the seat of power. But in this he had failed. Lincoln had much to consider as his train steamed out of Washington City, starting his long journey back to the West. From his earliest days, he was certain that he was bound for great things. But as the endless fields of the West now came into view, that dream seemed farther away than ever before. A train is fixed on its tracks, driven by an unseen engineer, and this one was carrying Abraham Lincoln, a former member of Congress, back to Illinois, where it had all begun, as though nothing had intervened, back to his family, friends, and frontier law practice, toward an uncertain future. [DeRose, pages 251-262]

A Worthy Object Lesson

As railroads built by private companies created a national network that dominated long distance surface transportation, roads faded as a subject of constitutional debate until the popularity of the bicycle spurred the Good Roads Movement in the 1880s. The movement put pressure on the Federal Government to get involved again in road improvement.

Although the railroads dominated interstate transportation, the rail companies were among the most hated institutions in the country, a sentiment that increased when they were at the heart of the devastating panic of 1893, as author Doris Kearns Goodwin explained:

In 1893, the most serious depression the nation had yet experienced settled over the land. The downturn began when the railroads, having borrowed heavily from banks, rashly expanded their operations beyond current demand. More than seventy overbuilt railroads fell into bankruptcy, compromising banks unable to recoup their loans. Scrambling to shore up capital, these institutions called in the loans of all their borrowers. Small businesses and heavily mortgaged farmers, unable to cover their notes followed railroads into bankruptcy. As the economic situation deteriorated, frightened depositors rushed to withdraw funds and hundreds of insolvent banks were forced to close their doors. Within twelve months, more than 4 million jobs had been lost. At the nadir of this collapse, nearly one in four workers was unemployed. Jobless men begged for food; homeless families slept on streets; farmers burned their crops rather than send them to market at a loss. Millions feared that in the wreckage of the Gilded Age, democracy itself would crumble. [Goodwin, Doris Kearns, *The Bully Pulpit: Theodore Roosevelt, William Howard Taft, and the Golden Age of Journalism*, Simon and Schuster, 2013, page 159]

By then, the bicycle was a national craze that its proponents predicted would free people from the schedules of the ruthless railroad companies and the expense of local transit companies. Bicycle manufacturer Colonel Albert Pope, along with the League of American Wheelmen (L.A.W.) and its advocate in Washington, General Roy Stone of New York City, put pressure on Congress to improve the Nation's roads.

As earlier in the 19th century, the constitutionality of Federal involvement was an issue. Because State and local governments had been responsible for roads since mid-century, many people thought that roads were properly a State and local responsibility. One who questioned the

Federal role was President Benjamin Harrison's Secretary of Agriculture, Jeremiah M. Rusk. "Uncle Jerry," as he was nicknamed, was a jovial, kind-hearted Secretary whose paternal view of the Federal role in helping farmers threatened, as conservative critics contended, to turn the Department into "a national feed bag." He had greatly expanded its functions. [Olson, James C., *J. Sterling Morton*, University of Nebraska Press, 1942 (Reprinted by the Nebraska State Historical Society Foundation, 1972), pages 353-356].

In January 1893, Secretary Rusk addressed the National League of Good Roads, a promotional organization that General Stone had established the previous fall. The Secretary told the convention that he was in sympathy with the good roads movement. He believed, however, that road improvement was a local matter "and ought not to be made a government affair except in so far as the government may be charged with the duty of collecting data and disseminating information." In that regard, he said that at the request of Representative Allan C. Durborow, Jr. (D-II.), the Department had amended its recommendations on its annual appropriations act to include \$10,000 for the collection and dissemination of information on road laws and the methods of road construction. [*Proceedings of a Convention of the National League for Good Roads*, Office of Experiment Stations, Bulletin No. 14, 1894, pages 57-58]

On March 3, 1893, just weeks before the economic collapse, Congress appropriated \$10,000 for a road inquiry by the Department of Agriculture. President Benjamin Harrison signed it the same day, his last full date in office.

The new President, Grover Cleveland, was returning to office. After serving one term, he had been defeated by President Harrison, but won reelection in 1892, becoming the only President to serve two non-consecutive terms. For Secretary of Agriculture, President Cleveland appointed J. Sterling Morton, a former territorial Governor of Nebraska who is best known today as the founder of Arbor Day. Secretary Morton, whose love of argument earned him a reputation as the "stormy petrel" of the Cleveland Administration, was a foe of Federal paternalism and a fiscal conservative who would devote himself to reducing Departmental costs.

Secretary Morton selected General Stone to carry out the \$10,000 investigation, but with a stern warning that none of the money appropriated for the U.S. Office of Road Inquiry (ORI) should be spent on construction of roads.

Secretary Morton did not, however, prohibit General Stone from thinking big. In a September 1897 address to the National Road Parliament, meeting in Nashville during the Tennessee Centennial Exposition, he proposed construction of a national road network:

A great national highway might be constructed, called perhaps "The Great Road of America," which should first join together the States along the Atlantic seaboard; then strike across the country on a central line, say from Washington to San Francisco, joining there another line which connects the States on the Pacific coast; this road to be built, not by the general government alone, but by the States, under such arrangements as they may make within their own borders, and by the government through the territories and its own lands and reservations; built not by taxation of the States or the people, but practically out of its own benefits. I have seen so much of the benefits of good roads, and of the advance in the value of property along their lines, that I see the possibility of building

even a great national thoroughfare, costing ten or twenty thousand dollars a mile, and building it ultimately out of its own benefits, by a temporary use of the government or State credit to tide over until those benefits can be realized.

One option, he suggested, to help with financing was to tax property based on how close it was to the Great Road to reflect the increased value of that property.

He suggested locating the road based on “great historic value and importance.” It could follow the Post Road from Revolutionary War days, the pioneer route across the Allegheny Mountain that Daniel Boone identified, the trails of Lewis and Clark, and El Camino Real.

He continued:

I have merely outlined this, not as a perfect scheme, but as something that has suggested itself to me out of my experience in road building which, I think, with proper study and care, might be applied on a grand scale. Such a scheme would arouse great interest among the whole people of the United States; it would be something worthy of the Nation; something worthy of the beginning of the twentieth century.

He added:

The whole scheme would carry with it something that would inspire the entire Nation. It is not any new scheme; it is not any new idea. It was the idea of Jefferson and Madison and Gallatin and many other great men who helped start the National Road [“The Great Road of America,” *L.A.W. Bulletin and Good Roads*, November 19, 1897, page 605]

General Stone returned to this “worthy object lesson” in later years, as in the following comments from 1902, after he had left office:

It is often easier to do great things than small ones of the same kind, and what the Government undertakes in this regard should be something big enough to excite the imagination and stir the pride and patriotism of the country—something that will put us in respect of roads as far ahead of other nations as we have been behind them heretofore. Let it be a national highway. A continental boulevard—the greatest and best road in the world. The time is ripe for it. The old century went out with the triumphs of war and expansion. Let the new one bring in a triumph of peace and internal development. The country has wealth and credit abundant for the work. Moreover, a revolution is taking place in road locomotion through the automobile, which demands such accommodation in America that we may take our proper lead in its progress—the lead due to American enterprise, ingenuity and mechanical skill

The road should be worthy of its builders and of the age. Broad steel tracks for carriages, automobiles and bicycles, bridle and foot paths, plenty of shade and fountains, plenty of room on the borders for ornamental trees and plants, not set in stiff rows, but artistically grouped or scattered, the whole forming a continuous and practical lesson in forestry, floriculture and landscape as well as in roadbuilding . . .

[Stone, Roy O., "Work for the Twentieth Century," *Good Roads Magazine*, November 1902, pages 7-9]

Stone's comments, in addition to proposing an early version of a national highway network, outlined a design that would become known as a "superhighway," the original definition being a roadway that encompassed all types of traffic in separate lanes.

Transcontinentals

General Stone wasn't the only good roads advocate thinking in grand terms. A January 1898 issue of *L.A.W. Bulletin and Good Roads* quoted a correspondent of a Denver newspaper who advocated a national boulevard. The subject, the correspondent wrote, "has at various times been touched upon, not with much seriousness or hope of its being undertaken, but from lack of influence, enormous cost, and the old cry of 'paternalism,' which has been a political club used for years to block anything that would benefit the people at large." The correspondent continued:

When considered from a business standpoint, this same enterprise would be one of untold value to the masses, as well as the classes, and it certainly appears that the time is very near when something will be done in this matter

This highway should be one hundred feet wide, covered with broken stone one foot thick, concreted thereon, and the right of way should include ten feet on either side, this space to be reserved for tree-planting. The starting point of this line should be Boston, thence west through southern New York, touching Cleveland, Indianapolis, St. Louis, Kansas City, Salt Lake [sic] and San Francisco. Its cost would be in the neighborhood of perhaps \$200,000,000, but would be of vast benefit to the country on one question alone,—from its influence in favor of good roads

During the pleasant seasons of the year, thousands would travel in every class of conveyance on such a boulevard, thus necessitating the establishment of hotels, livery stables, etc., at intervals to accommodate those demanding them. Besides the thousands of men required in construction and repair of such work, there would be many others employed in the States contiguous to this line in improving roadways leading into it, as well as the increased number in new buildings, additional bicycle, carriage and other manufactories. There would very likely be along this thoroughfare a Government telegraph line, with offices at frequent intervals to accommodate travelers

As this question is of utmost importance to bicycle and carriage makers, as well as labor generally, the combined influence is more than sufficient to induce prompt action on the part of our senators and representatives in Congress, and could not be ignored without danger to their political aspirations. ["For a National Boulevard," *L.A.W. Bulletin and Good Roads*, January 7, 1898, page 15]

In November 1899, *The Cosmopolitan*, an influential cultural magazine based in New York City, published a long article titled "A Transcontinental Roadway" by Julian Hawthorne, a well-

known journalist, editor, and novelist of the day (and son of author Nathaniel Hawthorne). Hawthorne began:

Thackeray said, speaking of railroads, that we no longer travel—we arrive; and he might have added that by thus arriving without traveling, we lose many enjoyments and experiences which more than counterbalance the gain in time.

Hawthorne acknowledged the great accomplishment of the railroads in shrinking the continent:

It is true, no doubt, that our continent has been reduced in practical size about ten times since railroads began; San Francisco is nearer Boston than Philadelphia used to be; but on the other hand, which of us can pretend to know as much about the intervening three thousand miles as did the Argonauts of '49?

Awareness of all parts of the country was important, but “this finer knowledge is a closed book for a railroad generation.” Hawthorne thought this “comprehension and sympathy are urgently desirable and expedient, if this Union is to grow into a homogeneous and vital organism.” Commerce was well served at railroad speeds, but “what is needed is a sort of quiet, uncommercial, social circulation of the inhabitants of the land among one another’s homes and birthplaces.”

To address this need, Hawthorne had an idea that he did not claim authorship of. A friend who was an active humanitarian had suggested it to him:

What is this marvel? The very simplest and most obvious thing you can imagine!

It is, in a word, having marked out whatever route would be most agreeable and expedient, to build a magnificent boulevard clear across the continent, from Boston or New York to San Francisco or Los Angeles. And after this is done, and has proved its value, build others, three, six, a dozen of them, grilling the continent, east and west, north and south. Bring out, now, your bicycles, tandems, automobiles and driving-wagons, and for the first time in more than a generation, do some real traveling. Get on your walking-boots, if you are among the hitherto dwindling but presently to be multiplied believers in shanks’ mare, and learn for yourself the secret of the fascination which keeps the army of our tramps recruited year after year Make yourself a cosmopolitan of the American cosmos; it is big and beautiful and interesting enough to make you forget the beaten paths of tourist-ridden Europe.

He pointed out that “there is nothing new in the idea of national highways.” The ancient Romans, he said, had “bound their empire together with them” and he cited other intervening civilizations known for their roadbuilding:

There was a highway out of Egypt into Assyria; and the vast kingdom of the Peruvian Incas is traversed from end to end by roads so masterfully built that they are still the marvel of engineers, struggling to hang their iron rails around the necks of the Andes. Still more interesting, perhaps, are the endless foot-paths through primeval forests which Du

Chaillyu and Stanley describe in the African continent. These trails, but two or three feet in width, traverse the vast expanse from one side to another; you walk in them single-file; if you step aside for a few rods, you may spend the rest of your life trying to find the route again.

He described how the Native Americans who populated North America before the arrival of the Europeans had provided trails around the country that were available “when colonists first came hither; and the routes which some of them followed are to-day occupied by the steel rails” of today.

Hawthorne did not want his boulevard to be the shortest; “that necessity we leave to the railroads.” He added:

We are not to lay a ruler down on the map, like Peter the Great of Russia, and insist that our road shall not depart from the line marked by the ruler’s edge.

Curves could be beautiful, while “charm and variety of scenery should be carefully considered” in planning the road. At the same time, he suggested:

Our great American Boulevard is to be the king of its kind. Every resource of the engineer’s art is to be lavished upon it. It should be not less than two hundred feet wide; two hundred and fifty feet would be better. It should be free at all times alike from dust and from mud; it should be planted from end to end with trees—the characteristic trees of the several states through which it passes—a hundred feet apart one from the other. There should be a path for pedestrians, two for bicycles, two roadways for automobiles; and a riding-path for horsemen might be added. At intervals along the route there should be wells, artesian or otherwise, each with a shady pavilion and benches. At intervals, also, there should be road-houses, supplied with necessary refreshments and facilities for rest; and regular inns, fitted out with every accommodation.

He understood that his 3,000-mile long road would be “a mighty undertaking,” but the cost could be “so distributed as to be burdensome to none.” The States could build their portions, while accepting contributions from “rich individuals who might choose to show their public spirit in that manner.” He emphasized:

Anything in the shape of monopoly—any slime of corporations—should be rigidly excluded. The road must be absolutely national; free to all, without fear or favor.

He added that “cost is the least of the obstacles to be looked for.” It would attract travelers otherwise bound for European vacations, whose expenditures would “in a few years go far toward defraying the cost of building the road.” Further, the transcontinental boulevard would be “an Elysium for bicyclers and automobilists” that would benefit manufacturers of those machines.

Hawthorne concluded:

So here, my countrymen and countrywomen, is the idea in bare outline. It remains for you to fill it out, and put it into execution. The sooner you set about it, the better; and on the day when a clear and flawless path, free to all the population, is opened from our west coast to our east, we may credit ourselves with having made a distinct step forward in human development. [Hawthorne, Julian, "A Transcontinental Road," *The Cosmopolitan*, November 1899, pages 125-128]

In the 1890s, General Roy Stone had proposed a network of roads while Julian Hawthorne had proposed a single transcontinental road as a prelude to such a network. These two concepts—a network or a single transcontinental route—would be at the heart of the Good Roads debate well into the 20th century.

20th Century Part 2

Pursuing Federal-Aid

With the revival of interest in road transportation, the 19th century doubts about the constitutionality of a Federal role in their construction returned. However, Supreme Court rulings in the late 19th century and early 20th century erased most of the doubt about the Federal role under the Constitution that had for so long been at the heart of congressional debate on internal improvements. Although the provision on establishing post roads was a convenient reference, the Supreme Court looked elsewhere in Article I, Section 8, of the Constitution for support for Federal involvement in road improvements.

An 1893 decision, *Monongahela Navigation Company vs. United States*, concerned just compensation under the 5th amendment for Federal acquisition of a lock and dam of the Monongahela Navigation Company. Supreme Court Justice David Brewer saw the authority to regulate commerce as the basis for congressional action:

This is one of the great powers of the national government, one whose existence and far-reaching extent have been affirmed again and again by this court in its leading opinions, and the power of congress over such natural highways as navigable streams is confessedly supreme.

Regarding the lock and dam, “the power of congress to take this property is unquestionable,” as is the requirement for just compensation. Justice Brewer cited an example:

A railroad between Columbus, Ohio, and Harrisburg, Pa., is an interstate highway, created under franchises granted by the two states of Ohio and Pennsylvania; franchises not merely to construct, but to take tolls for the carrying of passengers and freight

Congress, in exercising its “supreme power to regulate commerce,” could condemn and take this interstate highway, but it must pay for the tracks, bridges, and rails, but also the franchise to collect tolls. Justice Brewer discussed whether the railroad offered an analogy for a ruling on a lock and dam:

Nowhere in the constitution is there given power in terms over highways, unless it be in that clause to establish post offices and post roads. The power which congress possesses in respect to this taking of property springs from the grant of power to regulate commerce, and the regulation of commerce implies as much control, as far reaching power, over an artificial as over a natural highway. They are simply the means and instrumentalities by which commerce is carried on. There may be differences in the modes and manner of using these different highways, but such differences do not affect or limit that supreme power of congress to regulate commerce, and in such regulation to control its means and instrumentalities. We are so much accustomed to see artificial highways, such as common roads, turnpike roads and railroads, constructed under the authority of the States, and the improvement of natural highways carried on by the

general government, that at the first it might seem that there was some inherent difference in the power of the national government over them. But the grant of power is the same.

A similar ruling based on the authority to regulate interstate commerce followed in a 1907 decision, *Wilson v. Shaw*, involving a challenge to Federal authority to construct the Panama Canal. Justice Brewer again wrote the decision, which was based on Supreme Court precedents. "The decisions of this court are adverse to this contention." One of the examples Justice Brewer cited, *California v. Central Pacific Railroad Company*, involved whether State or local governments in California could tax the Central Pacific Railroad franchise to build a portion of the transcontinental railroad. In an 1888 ruling against the State or local authority, Justice Joseph B. Bradley wrote:

It cannot at the present day be doubted that congress, under the power to regulate commerce among the several states, as well as to provide for postal accommodations and military exigencies, had authority to pass these laws. The power to construct, or to authorize individuals or corporations to construct, national highways and bridges from state to state, is essential to the complete control and regulation of interstate commerce. Without authority in Congress to establish and maintain such highways and bridges, it would be without authority to regulate one of the most important adjuncts of commerce. This power in former times was exerted to a very limited extent, the Cumberland or National road being the most notable instance. Its exertion was but little called for, as commerce was then mostly conducted by water, and many of our statesmen entertained doubts as to the existence of the power to establish ways of communication by land. But since, in consequence of the expansion of the country, the multiplication of its products, and the invention of railroads and locomotion by steam, land transportation has so vastly increased, a sounder consideration of the subject has prevailed and led to the conclusion that Congress has plenary power over the whole subject. Of course the authority of Congress over the territories of the United States, and its power to grant franchises exercisable therein, are, and ever have been, undoubted. But the wider power was very freely exercised, and much to the general satisfaction, in the creation of the vast system of railroads connecting the East with the Pacific, traversing states as well as territories, and employing the agency of state as well as Federal corporations.

In this and other cases, Justice Brewer wrote, the Supreme Court made clear that, "These authorities recognize the power of Congress to construct interstate highways" under the constitutional right to regulate interstate commerce.

Judge Brewer's decision effectively ended the debate over whether the Federal Government could fund roads, but how it would do so remained to be determined.

From the earliest days of the 20th century, good roads advocates aggressively pursued a Federal-aid concept for road improvement. The first battle can be traced to a 1902 railroad trip that happened to include M. O. Eldridge and Representative Walter P. Brownlow (R-Tn.).

In 1894, Eldridge became the third employee of the ORI (after General Stone and his stenographer) at a salary of \$60 a month. He quickly established a national reputation as a road

expert and a gifted speaker and writer on the subject. One day in November 1902, he was returning to Washington by train from his native Tennessee when he struck up a conversation with a fellow Tennessean, Representative Brownlow. Brownlow had been a telegraph messenger boy, an apprentice in the tinning business at age 14, a locomotive engineer, and a newspaper reporter. In 1896, he had been elected to the House of Representatives, where he would serve until his death on July 8, 1910.

On that train ride in November 1902, the subject turned to the deplorable condition of the Nation's roads. Brownlow asked what could be done. Eldridge suggested adapting New Jersey's State-aid plan to function at the Federal level. Brownlow asked Eldridge to draft a bill to that effect, which he did after securing approval from General Stone's successor, Martin Dodge, Director of the renamed U.S. Office of Public Road Inquiries (OPRI).

In December 1902, Brownlow introduced the bill, which would create a "Bureau of Public Roads" to administer \$20 million a year in Federal-aid. Grants would be made to any State or county for the improvement of public highways "for the purposes of common traffic and travel, and for the rural free delivery of mail" outside cities and incorporated villages, with each State limited to a share of the funding equal to its percentage of the Nation's population. The State or county must agree to pay 50 percent of the cost. The Federal Government would prepare the plans and specifications for the roads, but the State or county would administer and supervise the contracts.

Representative Brownlow said that he would not try to secure a vote on the bill in the short 1903 session that would end in March, but would use the time to build the groundwork for its success in the next Congress. He told a reporter for Washington's *Evening Star*:

The fact that the United States government has taken no substantial part in building or maintaining public highways in this country, for the last two generations, is accepted by many people as final proof that the general government is forbidden, either by constitutional limitations or by sound public policy, from engaging in any such internal improvement. On the other hand it should be noted that no system of public highways was ever built up or maintained in any country without the substantial aid of the general government of that country. The almost universal lack of improvement in regard to our public road system is directly referable to the fact that there has been no well established system or policy pertaining to the question.

After summarizing his bill, he continued:

The Constitution of the United States puts no such limitation upon the government as to prevent the co-operation provided for in this bill, and so far as public policy is concerned, that remains to be settled by the consensus of opinion of the people of the United States Once let it be understood that the desired result can be accomplished, fostered and encouraged by the general government, and then let the people of the country express themselves in favor of the plan, and you will find that Congress and the Constitution will not be against but for it. ["To Build Highways," *The Evening Star*, Washington, D.C., January 14, 1903]

On April 27 to 29, 1903, the National Good Roads Association (NGRA) sponsored a National Good Roads Convention in St. Louis. The final speaker was President Theodore Roosevelt, who was on a 9-week transcontinental tour of the country by train covering 14,000 miles and 24 States and territories. [Goodwin, page 348] He began:

When we wish to use descriptive adjectives fit to characterize great empires, and the men who made those empires great, invariably one of the adjectives used is to signify that they built good roads. [Applause.]

After discussing the importance of the ancient Roman road network, he said:

The faculty, the art, the habit of road building marks in a nation those solid, stable qualities, which tell for permanent greatness. [Applause.] Merely from the standpoint of historical analogy we should have a right to ask that this people which has tamed a continent, which has built up a nation with a continent for its base, which boasts itself with truth as the mightiest republic that the world has ever seen, and which we firmly believe will in the century now opening rise to a place of leadership such as no other nation has yet attained [loud applause], merely from historical analogy, I say, we should have a right to demand that such a nation build good roads.

President Roosevelt acknowledged the importance of the Nation's railroad network, but disagreed with "a great many people" who assumed that "having good railways was a substitute for having good highways." He said, "A more untenable position can not be imagined. [Loud applause.]" It was a matter of "national humiliation" that the country had paid so little attention to roads, such that their condition had worsened in recent decades.

One of his concerns was the growth of cities "at the expense of country districts." He said, "It is a good thing to encourage in every way any movement which will tend to check an unhealthy flow from the country to the city," citing the growth of electricity in country areas, trolley lines extending into the country, the telephone, and rural free delivery of the mail, introduced in the mid-1890s, as examples of recent advances that contributed to reversing the trend:

But no one thing can do so much to offset the tendency toward an unhealthy drain from the country into the city as the making and keeping of good roads. [Loud applause.]

Good roads were needed to support industry, stabilize country districts, and improve the social conditions of the country.

He concluded his remarks by congratulating audience members for their work in the best "interest of the Nation as a whole." Associations had done good work in many areas:

And among all the excellent objects for which men and women combine to work to-day, there are few, indeed, which have a better right to command the energies of those engaged in the movement, and the hearty sympathy and support of those outside, than this in which you are engaged. [Loud applause.] [*Proceedings of the National Good*

Roads Convention, Bulletin No. 26, Office of Public Road Inquiries, U.S. Department of Agriculture, 1903, pages 79-80]

President Roosevelt, while endorsing good roads, did not discuss Representative Brownlow's bill in the speech.

(President Roosevelt was on the longest

Representative Brownlow reintroduced his bill on November 19. On December 14, 1903, he had an opportunity to discuss it briefly with the President when Members of Congress visited the White House:

Representative Brownlow of Tennessee and A. R. Shattuck of New York, both much interested in good roads, today suggested to the President that he urge in his annual message national aid for good roads. The President is a strong believer in better roads everywhere and would like to see the entire people impressed with the importance of the question, but has not decided just how he will express his views to Congress, especially along the lines of government aid. The officials of the Good Roads Association recently talked with him and found him a hearty advocate of what they are doing. They have likewise asked that he recommend national aid. ["At the White House," *The Evening Star*, December 14, 1903]

Senator Jacob H. Gallinger (R-NH) introduced a similar bill in the Senate and Senator Asbury C. Latimer (D-SC) introduced a good roads bill as well:

All these bills agree as to the principle of national aid, the only points of disagreement being in the matter of details in legislation especially pertaining to the execution of the work when the money is once appropriated to carry on the same. ["Federal Aid For Roads," *The Evening Star*, December 29, 1903]

The President's December 7 message mentioned roads, briefly, in the context of the importance of encouraging country residents to stay in the country. His remarks on this subject were similar to those in St. Louis the previous April. He focused on the advantages of rural free delivery, as well as trolley lines and the bicycle, as contributing "toward lessening the isolation of farm life and making it brighter and more attractive." He added:

It is for the same reason that we sympathize with and approve of the policy of building good roads. The movement for good roads is one fraught with the greatest benefit to the country districts.

In the end, the Roosevelt administration opposed the Brownlow bill. However, despite opposition from Secretary of Agriculture James Wilson, and congressional leaders, Dodge and Eldridge aggressively promoted their Federal-aid bill. Historian Bruce Seely summarized OPRI's activities in support of the bill:

Special agents [unpaid good roads advocates affiliated with the OPRI] distributed copies of the bill across the country; one even drafted a memorial from the Colorado legislature to the state's congressional delegation. Dodge lobbied railroad officials and good roads groups, and reminded congressmen of the Republican Party's platform plank favoring good roads.

Dodge also agreed to cosponsor a good roads convention at the Louisiana Purchase Exposition in St. Louis, Missouri, in cooperation with the National Good Roads Association (NGRA), a private group he had close ties to (too close, as described in "Congressional Revenge on Martin Dodge," a chapter of "A Maximum of Good Results: Martin Dodge and the Good Roads Trains" on this Web site at <http://www.fhwa.dot.gov/highwayhistory/dodge/>). He even provided a cover letter to be included with the invitations the NGRA mailed in 25,000 envelopes franked by OPRI. [Seely, Bruce E., *Building the American Highway System: Engineers as Policy Makers*, Temple University Press, 1987, page 19]

Eldridge, however, committed what Seely called "the worst indiscretion." He agreed to work, outside his official duties, with the Automobile Club of America on a \$10,000 campaign to promote the bill. His campaign, directed from a New York City office with the help of a publicity agent, included printing Brownlow's January 1903 speech on the bill at government expense and having friendly congressmen mail it in franked envelopes to 1 million people. The OPRI's and Eldridge's campaigns were successful in generating public interest but unsuccessful in securing passage of the bill.

When Eldridge's role in the campaign was discovered, he was fired. He was soon reinstated but at a reduced salary with loss of his rank as second in command of OPRI and his chance to succeed Dodge as Director. As noted in *America's Highways 1776-1976*, ". . . he had pushed a right idea before its time." (Eldridge remained with the agency in a lesser capacity until 1919, when he joined AAA.) [*America's Highways 1776-1976: A History of the Federal-Aid Program*, Federal Highway Administration, 1976, page 216]

On December 1, 1904, exactly 2 years after Brownlow had introduced Eldridge's bill, Dodge wrote to A. R. Shattuck, who headed the Automobile Club of America:

. . . [Many] members of Congress thought last winter that we went a step too far in the circulation of literature. The skyrocket which you fired made a greater commotion in the halls of Congress than, perhaps, you are aware of yourself. The effect of this reached the secretary in many ways and I am sorry to say annoyed him greatly. As a consequence of this, he thinks it best to be extremely conservative.

Quoting this letter, Seely described Secretary Wilson's reaction somewhat differently: "The secretary of agriculture exploded at Dodge's disregard of directives to limit ties to the NGRA because it advocated a particular legislative proposal."

Congress took a bit longer to exact its revenge for Dodge's advocacy of the unsuccessful Federal-aid bill. The Agriculture Appropriation Act of March 3, 1905, upgraded OPRI to permanent status as the Office of Public Roads (OPR). The legislation increased its annual budget to

\$50,000 and gave OPR a statutory roll that included a Chief of Records, an Instrument Maker, and six clerks. The new OPR was headed by a Director "who shall be a scientist and have charge of all scientific and technical work." This language excluded Dodge, a lawyer, from continuing as Director of the new Agency he had fought to create. He was replaced by Logan Waller Page. [Seely, pages 19-20]

For the emerging Good Roads Movement, Page was the embodiment of the Progressive Era, in which politicians were supposed to step aside to allow experts to gather the data needed to determine the solutions to society's problems. Born in Richmond, Virginia, Page graduated from the Virginia Polytechnic Institute in 1889 and was one of the first to graduate from the highway engineering program that his uncle, Professor Nathaniel Shaler, had begun at Harvard. After leaving Harvard, Page served as geologist and testing engineer for the Massachusetts State Highway Commission, the Nation's first State highway agency, as well as director of the testing laboratory of the Lawrence Scientific School at Harvard (1893-1900). To learn about laboratory testing from the acknowledged international leader, Page enrolled in France's Laboratory of Bridges and Roads.

In 1900, Dodge established a road materials laboratory in the Agriculture Department's Bureau of Chemistry. Secretary Wilson supported this effort because, although he believed the States and territories should build their own roads, ". . . the Federal Government should do scientific work for the whole country that all the states cannot do quite so well." To head the laboratory, Dodge brought Page to Washington. By 1905, when Page became Director of OPR, he had established the laboratory as the Nation's premiere scientific laboratory on road building materials.

As Director, Page continued the promotional activities of his predecessors, General Stone and Martin Dodge. However, Page, more than his predecessors, launched OPR on a scientific evaluation of road building and on gathering technical data—the lifeblood of the Progressive Era—on which sound conclusions could be drawn. This effort included collection of data on national road conditions, taxation, sources of revenue, road laws, maintenance, and total expenditures. [*America's Highways 1776-1976*, pages 64-79]

Page saw himself as a scientist, and he had little patience for State and county officials who relied on the unscientific concepts that had been applied to roads, without success, for generations.

Imagining Road Networks

When the Automobile Club of America held its first banquet in 1900 at the Waldorf-Astoria Hotel in New York City, it considered an Atlantic-to-the-Pacific highway. It would run from Boston to San Francisco via Albany, Cleveland, Chicago, and points in Iowa and Nebraska to Denver, Salt Lake City, to Sacramento and San Francisco. It had legs to Portland, Maine; Los Angeles and Seattle; and Philadelphia, Baltimore, Washington, Richmond, and St. Augustine, Florida. The route would be at least 120 feet wide, with right-of-way acquired for this width although only half the roadway might be built initially. It should be as straight as possible to avoid collisions between carriages "moving rapidly around curves."

Colonel Pope's resolution on the route suggested that the States through which it would pass should petition Congress to begin a survey of the route. The petitioners should ask Congress to pay one-third of the cost. Each State would pay one-third while the counties, townships, and cities the road passed through would pay the balance. ["Transcontinental Highway Proposed Route," *The Road Maker*, June 1900, pages 9-10]

In October 1900, Martin Dodge attended a good roads convention in Denver sponsored by bicyclists. He discussed the idea of transcontinental road. His speech could not be located, but he summarized it in a later address:

Perhaps many of you will recall the fact that some eight or ten years ago an article was published in the "Cosmopolitan Magazine" advocating that a boulevard from ocean to ocean should be built by the United States Government and maintained by it. That enterprise was encouraged by many, but not by the majority, and nothing was done so far as I know to really advance the scheme.

In October 1900, I was in the city of Denver addressing an audience, and I then called their attention to the fact that it was exceedingly desirable that a road should be built so that automobiles could go from east to west and be able to go through the mountain districts of that state and other western states. They then had in contemplation a boulevard system for the city of Denver. I also found that the state of Colorado was from year to year appropriating money for a good roads system. I said to them that if all the great cities and all the states would agree upon a general alignment and would make the yearly appropriations from time to time with a view of having sections of good roads built, as time went by, that we would be finally able to get the great road which had been asked for by the article already referred to.

It was my opinion that we should not wait for the government of the United States, but that we should try to induce the local authorities here and there along the line of this course to do whatever they can do to construct portions of the road. Now I have been very much pleased to notice from year to year that the suggestion made at that time has been adopted. ["Annual Convention of the New York and Chicago Road Association," *Good Roads Magazine*, April 1905, page 211]

The American Automobile Association (AAA) did not want to wait for State and local officials to do what its members believed the Federal Government should do. One of AAA's first actions after automobile clubs formed the association in Chicago in 1902 was to begin promoting a macadamized road between New York City and Sacramento. It would pass through Albany, Buffalo, Erie, Cleveland, Chicago, Omaha, Denver, and Salt Lake City, incorporating "long stretches of excellent roads along the proposed route" to reduce the cost. AAA's plan was to have bills introduced in Congress and the States providing for proportional contributions of funds.

(At the time, macadam surfacing, a concept involving layers of crushed stones of varying sizes, was the best known method of pavement construction for horses and horse-drawn traffic as well as bicycles. However, automobiles soon undermined macadam pavements. Scientific studies

during the first decade of the 20th century were unable to identify a corrective, leading to the eventual dominance of asphalt and concrete surfaces.

(The idea that long stretches of excellent intercity roads existed was fanciful, as demonstrated repeatedly by early transcontinental journeys by automobile. The first trips, beginning in 1903, took months of ordeal, regardless of the route followed. The absence of a roadside infrastructure of gas stations, mechanics, restaurants, road signs, and lodgings made long-distance travel in the primitive automobiles of the day, subject to regular equipment breakdowns, a challenge for the wealthy individuals who could afford the expense of weeks on the road.)

Good Roads Magazine liked AAA's idea, which it considered better than General Stone's Great Road because it passed through larger, more enterprising cities. Unfortunately, an editorial pointed out, "it is inevitably felt that such a project, if presented to Congress, would not stand a ghost of a chance of success; it would meet with opposition and be ridiculed to death because it is impractical." It would be of little military value because with railroads crisscrossing the country, "it cannot be conceived that . . . the occasion will ever arise for marching troops across the country from ocean to ocean." The railroads also provided better service for military equipment transport.

The proposal was "spectacular; but Congress cannot be induced to support a spectacle." The editorial suggested that road advocates "ask the Government to help us improve those roads that we, in common with drivers of horses and riders of bicycles, use most." State and county officials could best judge which roads to build. ["American Automobile Association Project," *Good Roads Magazine*, May 1902, pages 20-21; "Transcontinental Highway Project," *Good Roads Magazine*, May 1902, pages 16-17]

James W. Abbott of Lake City, Colorado, was another advocate for transcontinental highways. Martin Dodge had selected Abbott, a civil and mining engineer, to be OPRI's Special Agent for the Rocky Mountain and Pacific Coast States. On June 23, 1905, he addressed the 5th National Good Roads Convention in Portland, Oregon, on "Transcontinental Highways." After recalling the trails and rail lines that made the country's westward expansion possible, he said the railroad meant that the "great importance" of the overland wagon road "in our national commerce ceased." He continued:

It is an interesting industrial fact that the traveler who attempts to-day [sic] to ride from ocean to ocean by highway meets with infinitely more obstacle and hardship due to the trip itself than those who traveled west by stage coach [sic] before the days of the railroad.

The history of how the railroads had developed "our material resources has never had an equal in the world's annals," but at the same time, "the average standard of the transcontinental highway has gradually declined." He pointed to a recent example:

It was with a view of bringing this subject vividly to the attention of the American people that the recent automobile race from New York to Portland was undertaken. The

narrative of the hardships of that trip and the almost incredible road conditions which were developed is indeed one of the marvels of this opening century.

Abbott was referring to a race across the country between Dwight B. Huss and Percy F. Megargel, both in Oldsmobile Runabouts. They left New York City on May 8, 1905, traveling to Portland via Chicago, Omaha, Cheyenne, Laramie, Pocatello, Boise, and Oregon City. Huss reached Portland on June 20, 1905, well ahead of Megargel. He arrived on June 25, having encountered more breakdowns and other problems than Huss. [Bliss, Carey S., *Autos Across America: A Bibliography of Transcontinental Automobile Travel: 1903-1940*, Jenkins & Reese Companies, 1982, page 4]

The race was “a history of strange and almost unexplainable paradoxes.” He cited their trip through “the rich agricultural lands of the prairie states” as an example:

Two of the most beautiful cities of their size to be found on the American continent are Davenport and Des Moines, Iowa, but the unspeakable abysses of mud through which these cars passed in labor and travel between these points have left a remembrance upon the memories of Huss and Megargel, whose awful terrors will never fade.

By contrast, they encountered “the very best roads” west of Chicago “on the desert in Wyoming, the Camas prairie in Idaho and the beautiful Harney valley in Oregon [regions that] were sparsely settled, and the indications of human habitation and occupancy infrequent.”

In Davenport and Des Moines, Abbott said, people say their wealth came from the fertile corn belt. What, he asked, “would these people have been able to accomplish . . . if they had not so improvidently year after year thrown away a large percentage of potential wealth into the mud holes of their roads?”

He continued:

The automobile has brought to the world a new source of recreation, health, pleasure and education. The touring habit will grow.

We ought to have established one or more good through wagon roads from the Atlantic to San Francisco, and to the Northwest.

He mentioned Director Dodge’s October 1900 speech in Denver in which “the controlling thought was this great need for such highways.” His proposal “was practical and timely.” Like Dodge, Abbott referred to Hawthorne’s article:

A short time before that a wild and visionary article had appeared in one of the magazines advocating a boulevard 200 feet wide from ocean to ocean, with its separate divisions for vehicles, bicycles, pedestrians, trees, grass, flowers, and I don’t know what else.

He cited efforts in western States to improve highways, such as Colorado’s efforts to build a road across the State through its mountain ranges and “the El Camino Real agitation in California, led

by that remarkable woman, Caroline R. Olney” that was “going to result in a continuous highway from Tia Juana to Oregon.”

He concluded:

I believe that it will be an epoch in the movement for highway reform, if the discussions here shall start a demand throughout the country for the construction of some transcontinental highways [Abbott, James W., “Transcontinental Highways,” *Good Roads Magazine*, August 1905, pages 531-533]

(Mrs. Olney was the secretary of the Camino Real Association of California, which was formed in 1904 to promote improvement of El Camino Real, the historic road connecting the State’s 21 Franciscan Missions, as well as to encourage the State to develop a comprehensive system of roads with El Camino Real as the main trunk line in the network. According to a contemporary news report:

Since her appointment as secretary of the state association Mrs. Olney has been traveling from city to city and in stated addresses and by personal appeal has aroused an interest among men and women of affairs that is taking definite form in the organization of effective branch associations. While meeting with the State Federation of Women’s Clubs, in convention here a year ago, Mrs. Olney caught the Camino Real inspiration, since which time she has made it her pleasure to foster the interests of the plans for the restoration of the highway. Through work in other lines Mrs. Olney has a wide acquaintance in the state, a fact that is of great advantage to her in her present undertaking. [“Local Branch of El Camino Real Society Hard at Work,” *Los Angeles Herald*, June 9, 1904]

(The road Mrs. Olney and her organization promoted closely corresponded with future U.S. 101 between San Diego and Los Angeles, although that segment was de-designated as a U.S. highway in the mid-1960s at the State’s request because it closely paralleled I-5. [Rose, page 19])

A year later, *Good Roads* reported on a proposal to build an American Appian Way across the country on historic trails from Washington, D.C., including the National Pike to St. Louis, “and then into two great boulevards on to the Pacific, one of which will cross Montana to Puget Sound and the other through Denver and Salt Lake over the Rockies and Sierras to San Francisco.” The magazine added:

Automobile associations and good roads folks all over the country are pledged to the support of the bill. “Honk! Honk!” is the war cry of the new movement.” [“An American Apian [sic] Way,” *Good Roads*, August 1906, pages 57-58]

Later that year, the magazine reported on a proposal by Layman and Layman of Chicago for an “American highway.” The plan, “which suggests great beauty and usefulness in highways,” was a superhighway concept in the sense that the term meant the road accommodated all types of

traffic. It would be 120 feet wide, divided into eight sections, four in each direction carrying pedestrian, animal traffic, auto traffic, and commercial auto traffic:

The macadam sections are to be open to vehicles drawn by animals, and to none other, except so far as may be necessary to allow automobiles to reach gates by which access will be given to the enclosed auto sections. All crossings by the auto sections are to be above the grade of all railway tracks and other roads.

Concrete curbs would separate the sections, with “wires for power, for lighting and for telegraph and telephone uses are to be carried in these curbs.” The article added:

The proposal is to light this boulevard by electricity, and to have folding side arms or trolleys so arranged as to make the boulevard practically a trackless trolley road.

Layman and Layman did not propose to build the highway in cities.

Financing was a unique feature of the Layman and Layman plan:

One, perhaps the chief, object is to buy real estate along the line of each such road, and by renting, or by selling that realty, make a profit on the whole transaction, including the construction and maintenance of the road, improvement of the real estate, and other operations of the constructing company.

Another striking feature of the plan under consideration is that when the earnings of the highway company shall be enough, from tolls, sales of real estate or otherwise, to pay for all its obligations, including 10 per cent. per annum on its common stock, then such highway is to be turned over to the State in which it is situated.

The cost to the State would be nothing except for a commitment to keep the road in first-class shape. Following the transfer, the ownership company would use 75 percent of its net receipts to build and maintain industrial schools.

The article added that if such a boulevard were built from Washington to Baltimore or from Washington to New York, “it would be seen by more people than would be likely to see such highway if it were built in any other part of America.” [“A Proposed American Highway,” *Good Roads Magazine*, December 1906, pages 970-972]

Congress Takes Up the Idea

Since the failure of Brownlow's Federal-aid concept, other Members of Congress had introduced dozens of good roads bills. Many of them proposed designation and construction of a national "interstate" highway system, with the routes specified in the bills and, in some cases, given names.

During the 62nd Congress (1911-1913) Members of Congress introduced nearly 50 road bills. Some involved a specific road, such as S. 6271, which authorized a national highway from the

Canadian border south of Winnipeg to Galveston, Texas, and H.R. 17919, which provided for a national ocean-to-ocean highway over the pioneer trails of the Nation. One bill authorized \$10,000 to build a road through the Medicine Bow Forest Reserve in Colorado, while another proposed public highways or roads along all section lines of Indian reservations.

Many of the bills, however, proposed a Federal-aid type of program. Several proposed to distribute the surplus in the Treasury of the United States to the States, Territories, and the District of Columbia to improve their roads. Others proposed variations on the Federal-aid concept once championed by Brownlow and Eldridge.

On March 26, 1910, Representative Richmond P. Hobson (D-Al.) introduced H.R. 23591 to build national highways along the 35th parallel of north latitude and a route from Canada to Mexico along the 23rd meridian west from Washington. *Southern Good Roads* magazine, which called this a “whale of a bill,” explained:

The government shall create two commissions, one to have charge of the ocean-to-ocean route and the other of the north-south route. These routes shall be wide strips in the way of modern conveniences and inventions being included. In other words, each route would be one long city. The commission would issue bonds which the government would buy, issuing notes based on the two highways and their improvements. The stupendous task blocked out in the measure suggests that the brain which conceived it has dipped very far into the future, indeed, farther, in fact, than most dreamers can see. That the consummation of the author’s wishes is a thing that any one would greatly desire is not doubted; equally certain is it that the bill will gather much dust in some pigeon hole of the committee on ways and means, to which it has been referred. [“Bill for Two National Highways,” *Southern Good Roads*, April 1910, page 10]

Representative Harry Lee Maynard (D-Va.) introduced an even more ambitious plan in late June 1910. He proposed a commission to build seven national highways, each with its own name, that in keeping with the ancient Roman highway network, all began in the Nation's capital. The termini were:

- Portland, Maine (Washington National Interstate Highway);
- Niagara Falls, New York (Roosevelt National Interstate Highway);
- Seattle (Lincoln National Interstate Highway);
- San Francisco (Jefferson National Interstate Highway);
- California via Kentucky, Texas, and Arizona (Grant National Interstate Highway);
- Austin, Texas (Monroe National Interstate Highway);
- Miami (Lee National Interstate Highway).

The bill appropriated \$1 million for the commission to survey the routes.

Southern Good Roads told its readers;

It was referred to the committee on agriculture, where, like other good roads bills, it is likely to die naturally and quietly.

While the demise of such bills was inevitable, they did serve a purpose:

The chief value of the multitude of good roads bills introduced is that they indicate a growing sentiment in congress for national aid in the cause of good roads throughout the country; and that they focus attention on one of the greatest problems of the republic. ["Seven Great National Highways Proposed," *Southern Good Roads*, August 1910, page 26]

Senator Shelby M. Cullom (R-Ill.) introduced a similar bill in 1911. He did so at the request of former U.S. Representative J. Floyd King, who had represented a Louisiana district from 1879 to 1887. The plan, with an estimated cost of \$148 million, would connect all but six States with the Nation's capital. The bill would establish a commission to issue bonds to finance construction and charge tolls to retire the bonds and pay for maintenance. *Better Roads* magazine explained:

The plan proposes that all of the great highways be macadamized. It is also proposed that the engineers in charge of the highway system make estimates for the building of roadways connecting the highways with all of the large cities of the nation, and that the legislature and city governments of the several States and cities be advised of this data and encouraged to construct the connecting roadways. By means of this system of supplementary roadways, it is proposed to extend over the entire nation a system of good, modern roads.

The article concluded with information about King:

Former Representative King, the originator of the highways plan, was the originator and chairman of the first committee on the interoceanic ship canal, which later resulted in the beginning of the Panama Canal. He also was chairman of the Mississippi River commission, which was the father of the lakes-to-the-gulf deep waterway project. ["Vast Road System," *Better Roads*, September 1911, pages 29-31]

(The Panama Canal was still under construction and would not open until 1914.)

One motivation for such bills was to halt the tendency of wealthier Americans to vacation in Europe. If good roads were available, the thinking went, Americans would travel the United States—and spend their money in this country instead of European nations that presently had better roads. The motto for this idea was "See America First."

Touring Topics, published by the Automobile Club of Southern California, saw the Cullom-King proposal as part of the effort to encourage travel within the United States:

That the movement has gained sufficient impetus to bring the project to a successful conclusion is now undoubted. The nation as a whole is aroused to the needs of such roadways.

That it will be accomplished and that thereby hundreds of millions of dollars will be diverted from the European countries that have benefited by the expenditures of

American automobile tourists, who will now spend this money in viewing the wonders of their own land, is certain. The pathway blazed by the American Automobile Association and its subsequent great effort in arousing national enthusiasm for the work has been crowned with success and the next session of Congress will probably see the formulation of definite plans and the actual beginning of work on at least one great Ocean to Ocean route. [“Nation May Build Trans-Continental Roads,” *Better Roads*, October 1911, page 41-44, reprinted from *Touring Topics*]

Martin Dodge, OPRI’s ex-director, thought that Senator Cullom’s \$148 million plan was remarkable, especially because of the Senator who had introduced it:

He is a stand-pat republican senator of great length of service in the Senate, and much greater length in the public service having been governor of the great State of Illinois before he was Senator. During all these years of public service he and those most closely associated with him have not looked with favor upon legislation of the kind now introduced, and the fact that a conservative stand-pat republican senator would introduce this bill shows in the highest degree the trend of public sentiment which most certainly is strongly in favor of federal-aid to road building.

Dodge appreciated the idea of modeling the plan on the ancient Roman road network by having all the highways begin in Washington and naming each after a distinguished American. “The rhetoricians speak of monuments more lasting than brass and more solid than marble, but there can be no more lasting monument than a great road built and used by a great people, that bears the name of any distinguished citizen.” [Dodge, Martin, “Senator Cullom’s \$148,000,000 Bill for Federal Aid to Road Building,” *Better Roads*, December 1911, pages 38-39]

Representative William Randolph Hearst introduced one such bill, H.R. 19017, on May 5, 1906. The wealthy newspaper publisher had followed the Good Roads Movement since its inception. When bicycles were the rage, his newspapers covered them extensively. Hearst, however, was not a bicyclist. [Swanberg, W. A., *Citizen Hearst*, Charles Scribner's Sons, 1961, pages 88-89.] He drove a French automobile, the first of its kind in New York City. In 1903, he had been stopped by a police officer for speeding on Riverside Drive. The officer reported that Hearst's response to the charge was that he was not running his automobile any faster than usual. His interest in automobiles was reflected in the fact that *Motor* was the first of many magazines Hearst would publish. [Swanberg, pages 205-207]

But the real passion of Hearst's life during this period was the feeling that he should be the President. He had long been a crusader—against the trusts, against the railroads, and others he perceived as society's predators. Now he was ready for national leadership. To start, though, he thought he could use some government experience so in 1902, he ran for a seat in the House of Representatives. When, with the help of coverage in his own newspaper, he won, he celebrated his victory with a trip to Europe and a visit to his grandmother in California. (His arrest for speeding occurred while he was returning to New York, making him reportedly the first Member of Congress stopped for speeding.) [Swanberg, pages 200-205]

As a Member of Congress, Hearst's problem was an inability to cooperate in the legislative process. Biographer W. A. Swanberg said of Representative Hearst:

[He] introduced a number of progressive measures, among them an amendment to the Sherman Anti-Trust Act to give it more teeth, an inquiry into the coal-railroad trust, and an amendment to give the Interstate Commerce Commission power to fix railroad rates Through his staff of Washington correspondents, he saw to it that they were publicized in his papers, although few were passed. Being bored with routine House meetings, he was a conspicuous absentee, answering rollcall [sic] only nine times in the first two sessions. Speaker [of the House Joseph G.] Cannon joked that he did not know Hearst by sight. It was the old story: Hearst, with his sense of possessiveness, was interested only in his own program. [Swanberg, page 210]

H.R. 19017 was an example. It proposed a \$50 million road construction program, with \$10 million a year to be apportioned based on the population that each State and Territory bears to the total population of the United States. The funds should be used to pay 50 percent of the cost of projects to construct or reconstruct more than 10 miles of public road outside the limits of any city or incorporated village. Each road must be of sufficient public importance based on "its use, location, and value as a main market road, a mail route, and as an integral part of a national system of good roads." Like all of Hearst's bills—in fact, like all the good roads bills during this first decade of the 20th century—H.R. 19017 was introduced, referred to committee, and stayed there.

Despite his service in the House, Hearst did not receive the nomination for President in 1904. In 1906, he decided to run for Governor of New York, but was defeated by Charles Evans Hughes. His final term in the House came to an end the following March. [Swanberg, pages 245-252]

Given the poor prospects of Good Roads bills in Congress, *Southern Good Roads* had good news for its readers in early 1911. An article in the *Chicago-Record Herald* on March 1 advised that the National Highways Club had been incorporated in New York City. The president of the club, H. D. Layman, "stated to-day that forty multi-millionaires are back of the enterprise of building national highways without taxation." The article continued:

The plans of the National Highways Club contemplate building of a 144-foot wide highway from this city to Washington; and then an extension of the thoroughfare to other large cities. The estimated cost is \$100,000 a mile. This means an expenditure of nearly \$23,000,000 for the New York to Washington highway alone. Mr. Layman said the estimates were by the club's constructing engineer, Captain A. N. Milner, said to have been a former officer of the army.

The highway, according to plans shown to the reporter, provided for twelve-foot sidewalks or footpaths on each side, two twenty-foot wide public roads for animal traffic only, and two twenty-foot roads for automobiles and motorcycles. Next came two trolley tracks in the center of the thoroughfare and two roads for commercial traffic. ["Millionaires Plan Highway Project," *Southern Good Roads*, May 1911, page 30]

(The article did not indicate whether Mr. Layman was one of the team of Layman and Layman of Chicago who had proposed an “American highway.”)

Although many good roads bills were introduced, none made it out of committee until 1912, when Representative Dorsey W. Shackelford (D-Mo.) introduced his bill. Under Representative Shackelford's bill, all roads over which the mails were carried would be classified as A, B, or C roads. The Federal Government would “rent” the use of these roads from the States for mail by paying \$25 per mile for Class A roads (macadam), \$20 for Class B roads (gravel), and \$15 for Class C roads (dirt). While leaving the roads under State control, the proposal would provide a stimulus to road improvement and benefit farmers throughout the country. The bill passed the House of Representatives, 240 to 86.

The partial success of the bill worried good roads advocates who favored Federal construction of interstate roads. On March 6 and 7, 1913, AAA sponsored the second Federal Aid Good Roads Convention in the Raleigh Hotel in Washington “to create a concrete plan which shall logically concern our National Government in the highways progress of the country.” One of the speakers was Stanton Warburton (R-Wa.), who had just completed his single term in the House of Representatives (March 4, 1911-March 3, 1913). He said he had “given all the thought that I am capable of giving to” the issue of good roads and was convinced that the “great big danger confronting the good roads movement, is the ill-considered bills that have been introduced in the House and Senate.” The Federal-aid concept that many favored was “utterly futile.”

He favored a national system, built and maintained by the Federal Government, connecting the national capital with State capitals. Since State capitals were recognized as the center of each State, his plan would avoid arousing jealousy among cities desiring to be included in the line. Only the Federal Government could afford to build such a system. A few States, such as New York, could build their part, but most States couldn't:

This is a big proposition. When you give a State 400 or 500 miles of trunk line, you are giving it the very best aid you can give a State, and then you are getting a system of roads.

If my bill would go through you could step out there on that street into an automobile and go to any city of 20,000 people in the United States of America without getting on a worse road than you have right here in front of this hotel. (Applause.) [Address of the Hon. Stanton Warburton, *Printed Proceedings of the Second Federal-Aid Good Roads Convention*, March 6 and 7, 1913, pages 97-99]

Amidst the flood of good roads bills, one critic, Representative Michael E. Driscoll (R-NY), dismissed them by complaining in 1912:

Twenty-nine road bills have been introduced by the Democrats and 10 by Republicans but not one from an Eastern State, not one from a Middle State, very few from the Mississippi Valley; but all from the great broad states in the South and West of large areas, long roads, small populations, and small taxing power. [Fuller, Wayne E., "Good

Roads and Rural Free Delivery of Mail," *The Mississippi Valley Historical Review*, June 1955, page 79.]

National Highways Association

Charles Henry Davis was a civil engineer, a Quaker, a yachtsman, and a wealthy businessman from South Yarmouth, Massachusetts. His grandfather, Edward Morris Davis of Philadelphia, and father, Henry Corbit Davis, had been involved in road construction commercially. Known to his friends as Carl, Davis was president of the American Road Machine Company, which he had inherited, for many years.

The Davis family had considerable holdings in the coal fields of Harlan County, Kentucky. Davis expanded the holdings and controlled them through his Kentenia Company, Inc. According to a biographical sketch by an acquaintance, Ted Frothingham, these coal holdings allowed Davis to take advantage of an opportunity when it presented itself:

It was the early 1900's and the American public was looking to the newly developed automobile for transportation. The business was in its infancy, and most makes of cars were too high priced for the general public. Carl was convinced a reasonably priced car that could be bought by everyone was about to appear on the market. Just who was to bring it out was a mystery.

A young man named Henry Ford had ideas about such a car Carl approached Henry with the proposition that he lease his whole Kentenia area to him on a basis that Ford do all the mining himself and pay Davis an agreed price per car load of coal at the minehead plus a royalty on each Ford car that was produced After lengthy negotiations this contract was achieved. As the years passed, this became the main source of Charles Henry Davis's wealth. [Frothingham, Ted, "Charles Henry Davis: Amazing Millionaire," *Yarmouth Register*, June 15 through September 17, 1972. The quote is from Chapter IV.]

Given this background, it was not surprising that Davis took an active interest in the Good Roads Movement.

In 1912, he incorporated the National Highways Association in the District of Columbia. The National Highways Association advocated a "Four-Fold System" of highway development, the most important portion of which was a 50,000-mile network of National Highways that would be constructed and forever maintained entirely at the Federal Government's expense.

Federal-aid was, he felt, "getting roads built throughout the nation piecemeal," because:

The nation can not permit the states to dictate the terms and conditions upon which our United States HIGHWAYS shall be built Only the nation can build the roads heavy enough, wide enough, straight enough for our national industrial and military needs.

The emphasis on rural farm-to-market roads, which Federal-aid advocates often cited, made no sense to him. That was not, he pointed out, how the Nation's railroad network had been built.

"Branch railroad lines were built after the trunk lines were established—otherwise they could not have existed. It must be the same with roads."

To get the project started, Davis proposed creation of a National Highway Commission to study and report to Congress on the proper Federal role in establishing a system of National Highways. Davis and his engineers laid out the system:

[It] consists of six great Main Highways, thirteen Trunk Line Highways and forty Link Highways, connecting the Mains and Trunks and reaching out in all directions until the country as a whole is covered with almost a spider-web tracery of highways. In spite of their effective disposition and the results they will accomplish when built, this spider-web of suggested roads aggregates barely more than 2 per cent of the total highways of the nation.

The need for such a network was clear, in Davis' view:

The National Highways Association believes that, when established, these national highways will increase the wealth, the power, and the importance of this country as nothing else can do besides that which has brought civilization to the savage, wealth to the poor, and happiness to all—GOOD ROADS.

Three other systems would feed into the National Highways: United States highways, totalling about 100,000 miles, to be built and maintained by the Federal Government; State highways built under the Federal-aid concept, also totaling about 100,000 miles; and local roads to be built by counties and towns without State or Federal aid.

Davis unleashed a publicity barrage of publications and speeches supporting the Four-Fold System. He also affiliated with the named trails associations that were just then, in 1912 and 1913, proliferating and he testified before the congressional committees considering highway legislation. By the time *The Automobile Journal* interviewed Davis for a September 1913 article, the National Highways Association employed nearly 40 people in an office he had built on his property in South Yarmouth.

To ensure he would not be accused of a conflict of interest, Davis divested himself of the American Road Machine Company and devoted his life to the National Highways Association.

Davis pursued his program zealously, traveling a million miles on speaking and inspection tours. According to Frothingham, Davis traveled the country in two unique cars:

To publicize National Highways and Good Roads everywhere he got all the states in the union to issue him license plate number 25. His ancient Hudson bore all these license tags. The other car, that always went along in case of a breakdown so Carl could be sure to be on time for his scheduled meetings, was plastered with the insignia of all the automobile societies in the country. Taken together these vehicles were an imposing sight and certainly got the general public to come to the alert and question just what this all stood for Davis always drove the lead car, followed by his two chauffeurs [sic]

in the rear one He was a fantastic driver. Very fast, but equally careful and safe. At one time he held the record of having the fastest time of any single man driving from the Atlantic to the Pacific.

Cooperation was one of the concepts behind Davis' promotional activity. His inspiration was a speech by Speaker of the House James B. "Champ" Clark (D-Mo.) regarding his methods of securing congressional action. "Get together" was the substance of the speech, as Davis recalled. The National Highways Associations, therefore, always sought to get together with other good roads organizations.

Accordingly, he was disappointed when AAA and other long-distance road advocates rallied behind a trade group organized during World War I, the Highway Industries Association, which supported creation of a Federal Highway Commission to build a 50,000-mile national highway system. He could only attribute the existence of separate groups such as this to "the personal equation," adding that, "We are a nation of individualists instead of cooperatists as we should be."

Davis would promote his concepts for many years, long after they had been rejected by Congress and most good roads advocates. The Highway History Web site contains additional information on Davis at:

<http://www.fhwa.dot.gov/infrastructure/davis.cfm>
<http://www.fhwa.dot.gov/infrastructure/davis2.cfm>
<http://www.fhwa.dot.gov/infrastructure/trailgal.cfm>

A New Good Roads Era

Although Representative Shackelford's bill was rejected in 1912, it reflected a trend that would lead to rejection of the idea that the Federal Government would build interstate systems for tourist and other long-distance road needs.

On July 11, 1916, President Woodrow Wilson signed the Federal Aid Road Act establishing the Federal-aid highway program along lines proposed by the American Association of State Highway Officials (AASHO) and introduced by Senator John H. Bankhead (D-Al.), chairman of the Committee on Post Offices and Post Roads. The Federal Government would pay 50 percent of the cost of building "rural post roads." The law defined "rural post roads" as "any public road over which the United States mails now are or may hereafter be transported" in rural areas. To be eligible for Federal-aid funds, each State must have a State highway department capable of carrying out the provisions of the law, including the selection and development of the projects, subject to oversight by the Office of Public Roads and Rural Engineering (OPRRE), as OPR was then called.

In signing the bill, President Wilson said:

I take a great pleasure in signing this bill . . . particularly because it tends to thread the various parts of the country together and assists the farmer in his intercourse with others.

[“Presidential Support of Highway Development,” *The Role of the Federal Government in Highway Development: An Analysis of Needs for Post-War Action*, Special Committee on Post-War Economic Policy and Planning, Senate Committee Print, 78th Congress, 2d Session, 1944, page 9]

For the story of this legislation, see the chapters on “Establishing a Principle” and “The Case for Federal-Aid” in “Clearly Vicious as a Matter of Policy: The Fight Against Federal-Aid” at <http://www.fhwa.dot.gov/infrastructure/hwyhist01.cfm>.

While the new program was still in its formative stage, the United States entered World War I on April 2, 1917. From engineers to construction workers, many of those who were to implement the Federal-aid highway program went to war in Europe. The remaining road builders, including Page, focused on support for the war effort. Across the country, personnel shortages were compounded by shortages of road building materials. Further, a shortage of railroad cars made shipment of the available materials difficult.

Meanwhile, rail shortages gave the fledgling trucking industry an opportunity to demonstrate its interstate capability. With American forces in need of trucks in France, Roy D. Chapin, an early good roads enthusiast who was now president of the Hudson Motor Company, suggested that the 30,000 trucks that the U.S. Army had ordered could be driven from the factory to the coast, instead of carried on railroad cars, for shipment to Europe. A trailblazing party left Toledo, Ohio, on November 22, 1917, including representatives of the Ohio Highway Department, the U.S. Army, the Lincoln Highway Association, and OPRRE:

The route they selected crossed Ohio via Toledo and Akron to East Palestine, where the Pennsylvania Highway Department picked it up, continuing on to Pittsburgh and across the Allegheny Mountains to Harrisburg, Lancaster, and Philadelphia. This became the main military truck route. Later, other truck routes were designated by Ohio, West Virginia, Pennsylvania, and Maryland over the Old National Road, and by Ohio, Pennsylvania, and New York via Cleveland, Erie, Buffalo, and Albany to New York City.

The U.S. Army’s first official truck convoy left Detroit on December 14, 1917, during one of the most severe winters in recent history, including heavy snowstorms in western Pennsylvania, and arrived in Philadelphia on January 3, 1918.

In the months following the first convoy, the Army sent the remaining 30,000 trucks east via the truck routes, each loaded with 3 tons or more of spare parts and munitions. This operation released 17,250 railroad cars for other work, but the cost per ton-mile was high, even without considering the efforts of the States and counties to keep the roads open. From a historical viewpoint, the main accomplishment of the truck routes was to demonstrate that it was possible to keep long stretches of highway open to traffic through a severe winter and that dependable long-distance interstate travel on the highways was desirable and even necessary. [*America’s Highways 1776-1976*, pages 94-96, “Army Truck Train on Way to Coast,” *The Evening Star*, December 23, 1917]

The roads that the States did not have the resources to improve deteriorated under the weight of the new loads they were carrying. Even the higher type pavements failed.

Despite the difficulties of wartime road construction, AAA, AASHO, the American Road Builders' Association (ARBA), and other advocacy groups proposed construction of a continuous marginal highway around the country to be used for transporting troops, equipment, munitions, and supplies. Senator George E. Chamberlain (D-Or.), chairman of the Committee on Military Affairs, introduced the Military Marginal Highway Bill. It directed the Secretary of War to ask the Chief of Engineers to prepare a comprehensive plan for:

. . . a continuous main national highway to be constructed and maintained at national expense along or near the Atlantic seaboard; thence along or near the southernmost boundaries of the United States, and thence north along or near the Pacific Coast to a point at or near the Canadian line, with a further view to such marginal highway being extended ultimately along the Canadian boundary of the United States.

The bill included a supplementary plan for radial roads intersecting the Military Marginal Highway "at points and of locations and routes best calculated to best serve military requirements." Further, these radial highways were to "have heretofore been constructed by the states, or as may hereafter be constructed by them independently or with federal aid." The Secretary was to confer with the State highway agencies to avoid duplication of effort. ["Military Marginal Highway Bill Introduced in Congress," *Good Roads*, June 16, 1917, page 337; "Military Marginal Highway Bill," *Southern Good Roads*, July 1917, page 11]

Although highway advocates favored the Military Marginal Highway Bill, Congress did not approve it.

By the time the war ended in November 1918, the Federal-aid highway program, which had begun with such high hopes, had little to show for the effort that went into its creation. *America's Highways 1776-1976* summarized the war's impact on the new program:

By July 1918, the OPRRE had approved 572 projects, totaling 6,249 miles in length, estimated to cost \$42.28 million, of which \$16.05 million was Federal aid. However, only five projects, totaling 17.6 miles, had actually been completed. [*America's Highways 1776-1976*, page 100]

Shortly after the war's end, Secretary of Agriculture David F. Houston addressed editors of agricultural journals. He urged a quick return to the cooperative Federal-aid highway construction program, not only because of the value of good roads, but because the projects would provide jobs during the Nation's readjustment to a peacetime economy. "There need be no delay in the execution of such a program," he said:

The task will be one of selection, and those roads should be designated for improvement which are of the greatest importance, with due regard to such military and other needs as are proper for consideration. There is no necessity for any departure from this scheme. The suggestions made have been canvassed with the President, the Secretary of War, and

the Postmaster General, and these officials are in accord with the view that additional funds should be available to the Department of Agriculture, and that they should be expended through the existing machinery. [“Would Expedite Highway Development,” *Engineering News-Record*, December 5, 1918, page 1045]

As Secretary Houston indicated, President Wilson also wanted road construction to resume promptly. He wrote to Secretary Houston:

I heartily agree with you that it would be in the public interest to resume in full measure the highway construction operations under the Federal-aid road act, and to do so as speedily as possible.

He supported an additional appropriation “to be used in conjunction, if possible, with any surplus state and community funds, in order that these operations may be extended.” He added:

It is important not only to develop good highways throughout the country as quickly as possible, but it is also at this time especially advisable to resume and extend all such essential public works, with a view to furnishing employment for laborers who may be seeking new tasks during the period of readjustment.

With Federal and State highway officials having developed road systems and project plans and specifications prior to the war’s end, President Wilson had no doubt “that all activities in this field can be vigorously conducted through these two sets of existing agencies, acting in full accord.” [“President Favors Early Resumption of Highway Construction,” *Engineering News-Record*, December 19, 1918, page 1151]

Aside from the difficulties of construction during wartime, the flaws in the original Federal-aid highway program were a stumbling block. The restriction to "rural post roads" proved a major problem because mail was usually carried on railroads over long distances, not on the roads that might be included in an interstate network. The Bureau of Public Roads (BPR), as the Federal road agency had been renamed on July 1, 1918, had encouraged the States to focus on main highways. However, since the railroads usually carried the mail on long-distance routes, the main highways often were not the rural post roads that were eligible for Federal-aid. This was especially a problem for the large, sparsely populated States, which had long lengths of road through difficult terrain and unpopulated areas.

The large urban States found the limitation of \$10,000 per mile to be burdensome. In these States, increasing traffic required heavier, wider pavements that often cost much more per mile.

In addition, the amounts authorized by the 1916 Act were sufficient for a new program but as noted in BPR’s annual report, “it could not be foreseen how enthusiastically the proposal of the Federal Government would be received by the public generally.” Many State highway agencies were “embarrassed” that they did not have enough Federal-aid funds for all the applications received and sometimes had State funds left over that had been intended as the matching share. The result was that “the whole plan in the fall of 1918 was in a most disappointing status.” [Report of the Chief of the Bureau of Public Roads, Fiscal Year 1919, page 6]

Another problem with the 1916 program was that State highway agencies tended to select projects in all their political jurisdictions, without thought of establishing a State highway system or links in an interstate system. This defect became clear after the end of World War I allowed the program to operate at full strength. As discussed in “Clearly Vicious as a Matter of Policy,” this failing gave new strength to those who favored interstate roads. Thus, those who thought Federal-aid would be used on the main routes found that it would not be so. They again began promoting the idea of a Federal highway agency that would construct national interstate highways.

Senator Townsend’s Bill

The Post Office Appropriation Act of February 28, 1919 (40 Stat. 1200), signed by President Wilson, addressed most of the problems facing the Federal-aid highway program. It included a provision, introduced by Senator Bankhead but drafted by Page and AASHO, modifying the definition of “rural post road.” The phrase now referred to “any public road a major portion of which is now used, or can be used, or forms a connecting link not to exceed ten miles in length of any road or roads now or hereafter used for the transportation of the United States mails.” The new definition strengthened the Federal-aid concept by making long-distance roads eligible for Federal-aid highway funds.

In addition, the legislation increased the maximum cost per mile to \$20,000, exclusive of the cost of bridges of more than 20 feet clear span. According to the annual report, this change “meets fairly well the demands of the several States in that respect.” In addition:

At the suggestion of the Secretary the original appropriation of \$75,000,000 for Federal aid roads available for the five-year period, 1916-1921, was increased by \$200,000,000, of which \$50,000,000 was available at once, \$75,000,000 on July 1, 1919, and \$75,000,000 on July 1, 1920. [Report, 1919, page 6]

However, the forces favoring national highway construction on interstate roads continued to fight. Even before the Post Office Appropriation Act became law on February 28, Senator Charles E. Townsend (R-Mi.) had introduced a bill to establish a Federal Highway Commission, each member to be appointed by the President and paid \$10,000 a year. The commission would establish a Federal highway system of not less than two trunkline roads in each State. Appropriations would total \$425 million through FY 1923. The Secretary of War would provide surplus motor vehicles and equipment from the war to the commission, which would take over all Federal Government highway agencies.

Senator Townsend did not ask Congress to approve his bill during the current short session. He introduced it to secure comments that would lead to intelligent action during the 66th Congress, which would begin in May. [“New Highway Bill Introduced in Congress,” *Engineering News-Record*, February 27, 1919, page 446]

On April 8, 1919, advocates of national highway construction organized the Federal Highway Council to support creation of a Federal Highway Commission and a national system of interstate highways. For these groups, BPR symbolized the State-oriented view that advocates of

long-distance roads saw as lacking in vision. Criticism of BPR, therefore, became part of the debate over the direction of the Federal road program. The editor of *Engineering News-Record*, a strong supporter of national construction, called BPR “the most conservative body in the country on highway policy.” [“National Highway System Gets Strong Backing,” *Engineering News-Record*, December 19, 1918, page 1108.]

When the 66th Congress convened on May 19, 1919, the Republicans had gained control of the Senate and House of Representatives during the November 1918 mid-term election. Senator Townsend became Chairman of the Committee on Post Offices and Post Roads, while Congressman Thomas B. Dunn (R-NY), who had opposed enactment of the Federal Aid Road Act of 1916, became Chairman of the House Committee on Roads.

Townsend introduced a modified bill in the 66th Congress on June 2, 1919, after discussions with long-distance road advocates. *Engineering News-Record* summarized the new bill (S. 5626):

Among the principal changes is the reduction in the number of commissioners from five to three, decreasing their terms from seven to six years. The bill provides that not more than two of the commissioners may be of the same political party. In cases where states have so framed their highway laws that they can take advantage of Federal aid only through the Secretary of Agriculture, he shall act jointly with the proposed Federal Highway Commission in administering the Federal-aid law in those states.

All present Governmental road agencies, with the exception of those pertaining to the War and Navy Departments, are transferred to the proposed new commission. [“Townsend Highway Bill Reintroduced in Congress,” *Engineering News-Record*, June 12, 1919, page 1180]

The commission was to select the highways to be included in the national highway system within 2 years of enactment of the legislation.

Secretary of Agriculture David Houston responded to supporters of Federal highway construction in a widely reprinted letter. He began by pointing out “certain fundamental considerations” that should be reflected in a sound policy of highway administration and development. In a big country with varying needs, State highway agencies could best determine priority needs. Further, “the Federal Government, under the present law, is aiding the State highway departments in the classification of their roads on the basis of importance and needs, and Federal aid is rapidly being extended for their improvement, on projects submitted by the States and approved by this department.”

He was “unable to see the need for the creation of a separate Federal highway commission or the wisdom of substituting for the present cooperative program a plan which would commit or limit the Federal Government to the construction of two federally owned and maintained trunk lines in each State of the Union.” The 1916 Act contained “certain features . . . that made its smooth administration difficult,” but they had been corrected by the Bankhead amendment to the post-office appropriations act.

In addition, the Department had brought in Thomas H. MacDonald, “one of the most successful former State highway engineers in the country,” to head BPR beginning April 1, 1919, following the death of Page while attending an AASHO meeting in Chicago on December 9, 1918. As Chief Engineer of the Iowa State Highway Commission, MacDonald had worked with AASHO to draft the bill that was the model for the 1916 Act. The amended legislation, Secretary Houston said, would be implemented by BPR, “one of the largest and most effective organizations of its kind in the world,” in close cooperation with the 48 State highway departments.

He did not think the American people would support diversion of the funds to two main or trunk-line automobile roads in each State. Moreover, he thought the present system would result in roads that would serve the needs of long-distance travel by automobile or motor-truck, but also the farm interests. “I have no prejudice against any sort of road except a bad road, or against any sort of construction except wasteful and unsubstantial construction.”

Why introduce complications, Secretary Houston asked, when the present law “will result, in a shorter time than most people imagine, not only in a network of good, substantial roads in the various States of the Union, but also in the requisite interstate highways”? [“Secretary Houston Discusses Federal Road Commission Bill,” *Public Roads*, June 1919, page 3.]

Advocates of the Townsend Bill continued to fight for national highway construction, but with the Federal-aid highway program funded through FY 1921, Congress had no need to return to the subject. In the meantime, the post-war Federal-aid highway program was booming. In June 1919 alone, BPR approved project statements covering 1,426.84 miles of road at an estimated cost of \$25,611,314.99 (Federal share: \$11,725,500.61). “The road-building era,” BPR said in its research journal, *Public Roads*, “is in full swing, and it would seem that the end is not yet.” BPR expected “greater records in the months immediately to come.” [“June a Record-Breaking Month for Federal-Aid Allotments,” *Public Roads*, July 1919, page 19]

Former Colonel Charles W. McClure supported the Townsend plan. In 1919, he had been the Expeditionary Commander of the U.S. Army’s first transcontinental convoy of motor vehicles. The convoy drove from Washington to Gettysburg, then followed the Lincoln Highway, a route that originated in New York City, to San Francisco, a journey that took about 2 months. Colonel McClure retired shortly after the journey and joined the Packard Motor Company, one of the key sponsors of the Lincoln Highway. In 1920, Colonel McClure recalled the start of the convoy from the Ellipse south of the White House:

Secretary of War [Nelson] Baker said that one of the great problems before our people was that of improved hard surfaced highways.

Baker knew from the experience of World War I that France had been “saved by its highways—saved because the French have always considered their roads part of the system of national defence [sic].” Colonel McClure contrasted the French experience with the convoy’s journey:

Between New York and San Francisco practically every type of road, including trails, is encountered. West of the Mississippi there are few stretches of road improved to the

extent demanded by motor truck transportation, until the California line is reached. The Illinois, Iowa and Nebraska dirt roads are practically impassable for motor trucks in wet weather. Such improved roads as we have in the East and in parts of the West differ greatly in construction; everything from waterbound macadam to concrete is represented.

The country's highway system "must be built up with an intelligent understanding of present and future requirements, and it must not be left to local whims and prejudices":

It does seem strange to think that in this country the only practical overland route from the Atlantic to the Pacific has been provided through the efforts of the Lincoln Highway Association, a private organization, a group of public-spirited individuals who are generously and enthusiastically giving their time and money to the project.

Colonel McClure proposed to use the "logical method" to create the needed network based on the experience in France. Two systems of roads were needed: "the system of national highways constructed and maintained by the Federal Government," as proposed by Senator Townsend, "and state highways constructed and maintained by the states and connecting with and leading into the Federal System." The national highways would be the main interstate routes, "their location would be determined by the topography of the country and the density of the population." They should be concrete and wide enough to permit vehicles to pass safely. The highways, including bridges and culverts of steel and reinforced concrete, should be appropriate to expected loads. "It would be a criminal waste of money to build roads that will prove inadequate." [McClure, Colonel Charles W., "Need for Federal Highway System," *Highway Engineer & Contractor*, March 1920, pages 35-36]

(One participant in the 1919 transcontinental convoy was a young officer, Dwight D. Eisenhower. Accounts sometimes describe him as the leader of the convoy because of his later activities as a General and President. However, he was only an observer. In later years, President Eisenhower cited the 1919 convoy as one of the reasons he supported the Interstate System.)

The period after the 1919 legislation gave Federal-aid supporters time to counter the national highway advocates even as they began to falter. Seely identified some of the factors that led to the waning enthusiasm for a Federal Highway Commission:

Quarrels among the various backers of the Townsend bill over who should lead the campaign hampered genuine coordination of the public relations effort. A more serious problem was the continuance of federal-aid, for even highway engineers who supported a national commission hesitated to jeopardize the money already appropriated. Congress in 1919 certainly had no desire to consider a plan that would not take effect for two years. So in spite of warnings that waiting until federal aid expired in 1921 would jeopardize their chances, most supporters of the commission favored such a delay. As a result, the sense of urgency about a national highway commission palpable in early 1919 was frittered away. [Seely, page 53]

The improving relations between the State highway agencies and BPR under Chief MacDonald further damaged the push for a Federal Highway Commission. Although many States had endorsed the Townsend Bill early in the year, when AASHO held its annual meeting in Louisville, Kentucky, on December 8-11, 1919, its members adopted a resolution urging “continuance of Federal operation with the States in the building of roads under the terms of existing law and under the direction of present agencies.” After recommending the appropriation of \$100 million a year through FY 1924, the resolution provided:

That we favor an adequate national highway system upon which the Federal aid funds will be concentrated. This system shall be selected by the various States in cooperation with the Bureau of Public Roads, and connected at the State lines by the Federal department in cases where connections are not made by the adjoining States.

Realizing that the improvement of a system of national highways will be brought about in much shorter time through the cooperation of the Federal Government and the States under the plan proposed by this resolution, we favor the passage at this time of only such appropriations as will insure the continuation of the Federal aid as provided for in this resolution. [“Papers and Discussions at the Highway Officials’ Convention,” Public Roads, December 1919, pages 3-5

A New President Shifts the Focus

During the presidential election of 1920, Republicans nominated Senator Warren G. Harding of Ohio, with Governor Calvin Coolidge of Massachusetts as the Vice Presidential candidate. The Democratic nominee was Governor James M. Cox of Ohio. His Vice Presidential candidate was Assistant Secretary of the Navy Franklin Delano Roosevelt, who had assumed office in March 1913 with the incoming Wilson Administration. Roosevelt was a vigorous 38-year old who was then perhaps best known as a cousin to former President Theodore Roosevelt.

As Federal-aid gained momentum on its own, Senator Townsend’s Republican Party endorsed Federal-aid in its platform. “We favor liberal appropriations in cooperation with the States for the construction of highways,” the plank read. The platform did not address the subject of a Federal Highway Commission. The Democratic Party’s platform also favored “continuance of the present Federal aid plan under existing Federal and State agencies.” Neither statement was encouraging to advocates of the Townsend Bill, but M.O. Eldridge, now AAA’s Director of Road Activities, pointed out that “advocates of highway improvement can find solace in the fact that the subject is now one which calls for national attention in some form or another.” [Eldridge, M. O., “Party Planks on Good Roads,” Highway News, Views and Gossip, *American Motorist*, August 1920, page 30.]

Harding won a landslide victory over Cox on November 2, 1920. In a statement, the President-elect summarized his views on highway development:

One of the greatest economic problems, if not the greatest problem of modern civilization, is distribution. There can be no doubt of the position of the good roads movement in the solution of the problem.

I believe that federal and state governments must not only put their shoulders to the wheel to create good roads, but they must insist on the maintenance of roads in good condition. A good road gone wrong is almost worse than no road, because it is a streak of memorial to neglect and waste.

The roads we build in America must be built, first, for use in the distribution of products rather than for merely passenger riding. We must foster the use of motor trucks. We must build urban terminals for truck service to make new ties between communities and between city consumption and country production. [“President-Elect Harding on Good Roads,” *Good Roads*, November 10, 1920, page 233.]

By then, the momentum had shifted to advocates of Federal-aid, as illustrated when AASHO held its annual meeting on December 13-16, 1920, in Washington, D.C. The members adopted a resolution supporting extension of Federal-aid and appointed a legislative committee of 18 members to work on Federal legislative issues. The committee selected William C. Markham, Secretary-Director of the Kansas State Highway Department, to remain in Washington to represent AASHO on legislative matters. (After completing his assignment, Markham would remain in Washington as AASHO’s first executive secretary.)

A similar change occurred within ARBA during its annual meeting in Chicago on February 9-12, 1921. President-elect Harding wrote to ARBA president M. J. Flaherty on January 21, 1921, saying:

Our civilization depends on communication and transportation, and as it becomes increasingly complex, that dependence increases. Every great community is held together by its means of transportation, and so vast a country as ours is the more in need of ample facilities. Our country roads we have not kept pace with. The development of other transportation, railroads, waterways, our new merchant marine, cannot be of fullest utility unless good country roads supplement them. The country road bears the same relation to these, that the capillary circulation does to the system of veins and arteries in the human organism.

In recent years there has been nation wide realization of the road problem. We need to devise and adopt means, financial and engineering, to solve it. I believe we shall progress greatly, in the years of peace and prosperity which I am confident lie ahead of us, toward this solution, and such organizations as your own will contribute much to that end. [*Proceedings of the Eighteen Annual Convention of the American Road Builders’ Association*, February 9, 10, 11, and 12, 1921, ARBA, pages 37-38]

ARBA resolved “that it is the sense of this convention that federal aid as now practiced be continued and extended and that federal aid be applied on such interstate highways as will ultimately form a national highway system.” [*Proceedings ARBA 1921*, page 143]

As the new year began, the Federal-aid highway program was authorized through FY 1921, which would end on June 30, 1921. The State highway agencies had no way to know if Congress would act on FY 1922 funding or, if so, when it would do so. With the 66th Congress

set to end on March 3, 1921, an extension would eliminate the urgency of action on an extension that could include Senator Townsend's major program changes.

The House Committee on Roads approved an amendment to the Post Office Appropriations Act for FY 1922 that would provide \$100 million for continuation of the Federal-aid highway program and \$3 million for forest roads and trails. Chairman Dunn, who opposed the Federal Aid Road Act of 1916, and would have voted against the amendment on the House floor, was absent. The House adopted the amendment by a vote of 278 to 58, more than the two-thirds required under the special rules of consideration. However, with Senator Townsend in opposition, the Senate declined to approve the FY 1922 funding before the 66th Congress ended.

(In 1916, Representative Dunn explained that he was "an advocate of the general proposition connected with the question of good roads." He might have supported the bill if it "was seeking to put into operation an initial system of Federal trunk-line roads," but thought that many elements of the bill were "vague and indefinite." Still, he said, if the Treasury were in surplus, the country did not face complications around the world (namely the war in Europe) that might require large appropriations, and an increase in the income tax were not under consideration, "it might be a proper time to consider this measure." At present, "I believe this entire subject should be deferred until matters of much graver importance are definitely settled." [Rural Post Roads, *Congressional Record-House*, January 24, 1916, page 1470])

Federal Highway Act of 1921

Shortly after his inauguration on March 4, 1921, President Harding called for a special session of the 67th Congress in April to address the post-war depression that had lingered during the rough transition from war to peace. Early in April, advocates of a Federal Highway Commission met with the President. Roy D. Chapin, the Hudson Motor Car Company executive who had proposed the U.S. Army's truck convoys during the war, explained the delegation's opposition to continuation of Federal-aid and BPR, which administered funds that greatly exceeded the entire budget of the remaining elements of the Department of Agriculture. A separate agency was the answer, Chapin told the President.

Chapin and his committee also met with MacDonald, Secretary of Agriculture Henry C. Wallace, and Secretary of the Treasury Andrew Mellon. The meeting prompted MacDonald to outline his position: "The task today is to provide highway service; we cannot afford to wait for the construction of new and modern types of highways." He also emphasized the importance of maintenance, saying, "The returns will more than compensate the cost." ["Want Federal Highway Commission Created," *Engineering News-Record*, April 14, 1921, page 656.]

On April 12, 1921, the new President addressed a joint session of Congress. He regretted that the country was "so illy prepared for war's aftermath, so little made ready to return to the ways of peace." He spoke of the difficult "readjustments, reconstruction, and restoration which must follow in the wake of war"; the national budget ("no more pressing problem at home than to restrict our national expenditures within the limits of our national income [applause] and at the same time measurably lift the burdens of war taxation from the shoulders of the American people"); retirement of the "staggering load of war debt" through "orderly funding and gradual

liquidation”; readjustment of internal taxes and “an instant tariff enactment, emergency in character [for] protection of American industry”; and improved government efficiency (“I have said to the people we meant to have less of government in business as well as more business in government”).

President Harding also discussed several transportation issues, including the need to “bring transportation cost into a helpful relationship rather than continue it as a hindrance to resumed activities.” Regarding the present “low tide of business,” he stressed that “no improvement will be permanent until the railways are operated efficiently at a cost within that which the traffic can bear.”

He added:

Transportation over the highways is little less important, but the problems relate to construction and development, and deserve your most earnest attention, because we are laying a foundation for a long time to come, and the creation is very difficult to visualize in its great possibilities.

Highways were, he said, “the smaller arteries of the larger portion of our commerce, and the motor car has become an indispensable instrument in our political, social, and industrial life.” He continued:

There is begun a new era in highway construction, the outlay for which runs far into the hundreds of millions of dollars. Bond issues by road districts, counties, and States mount to enormous figures, and the country is facing such an outlay that it is vital that every effort shall be directed against wasted effort and unjustifiable expenditure.

The Federal Government can place no inhibition on the expenditure in the several States; but, since Congress has embarked upon a policy of assisting the States in highway improvement, wisely, I believe, it can assert a wholly becoming [sic] influence in shaping policy

The principle of Federal-aid was “acceptably established, probably never to be abandoned.” The Federal Government should exert influence “in developing comprehensive plans looking to the promotion of commerce, and apply our expenditures in the surest way to guarantee a public return for money expended.” Still, Congress could not “justify a mere gift from the Federal purse,” without conditions, because that would “invite abuses which it were better to guard against in the beginning.”

He called for amendments to strengthen the existing law:

The Federal agency of administration should be elevated to the importance and vested with authority comparable to the work before it. And Congress ought to prescribe conditions to Federal appropriations which will necessitate a consistent program of uniformity which will justify the Federal outlay.

He expressed another concern:

I know of nothing more shocking than the millions of public funds wasted in improved highways, wasted because there is no policy of maintenance. The neglect is not universal, but it is very near it. There is nothing the Congress can do more effectively to end this shocking waste than condition all Federal aid on provisions for maintenance. [Applause] Highways, no matter how generous the outlay for construction, can not be maintained without patrol and constant repair. Such conditions insisted upon in the grant of Federal aid will safeguard the public which pays [for the roads] and guard the Federal Government against political abuses which tend to defeat the very purposes for which we authorize Federal expenditure. [Address of the President, *Congressional Record-House*, April 12, 1921, pages 169-171

AASHO's 18-member legislative committee, with input from MacDonald, had drafted a legislative proposal that strengthened the essential features of the Federal-aid program. At the same time, it reached out to those who supported a national highway system by limiting Federal funds to 7 percent of the Nation's roads, three-sevenths of which must be "interstate in character." At least 60 percent of the Federal-aid funds must be spent on the "interstate" roads. The maintenance requirement, dating to the 1916 Act, was strengthened. Funds for maintenance, as well as matching Federal-aid, must be under direct State control.

The committee met with Secretary Wallace, gained his support, and then with the President and Secretary on April 14. A contemporary account stated:

President Harding stated that he was averse to the National Government contributing any considerable funds for construction when there was no assurance that the highway would receive proper care. Members of the executive Committee concurred in his views and agreed to urge earnestly the adoption of such a policy of their respective states. ["Federal Aid Roads Must be maintained, Says President Harding," *Good Roads*, April 20, 1921]

Markham recalled the meeting in his autobiography:

[We] found President Harding to be very much road-minded. He encouraged us to go ahead with our plans but very earnestly warned us that unless we placed a section in the law which required (with teeth) that the States must properly maintain the roads when once constructed with Federal aid, that he would veto the bill. [Markham, William Colfax, *Autobiography of William Colfax Markham*, Ransdell, Inc., 1946, page 150]

Representative Cassius C. Dowell (R-Ia.), a member of the Committee on Roads, introduced AASHO's bill in the House of Representatives on May 3 as H.R. 5663.

Senator Townsend introduced a new version of his bill, which attempted to mix a highway commission with State highway officials, on April 29. The bill proposed a "post roads and federal highway commission" consisting of five members appointed by the President with Senate consent. The commission would establish an "interstate highway system" of highways following the most practicable routes. In selecting the network, the commission would consider

agricultural, commercial, postal, and military needs. The State highway agencies would construct the system, but all contracts would be subject to the strengthened maintenance requirement. The bill authorized \$200 million for a 2-year period, with the funds apportioned to the States. [“Revised Townsend Road Bill Introduced,” *Engineering News-Record*, May 5, 1921, page 783.]

Comparing the Dowell and Townsend bills, the editor of *Engineering News-Record* provided a surprising analysis in view of the magazine’s longstanding support for Federal highway construction. The Dowell bill, “has been referred to as a golden mean between inadvisable extremes.” It addressed many of the problems that had been cited in criticisms of the Federal-aid program:

The bill deserves unqualified support. It represents the best thought of an organization which recognizes that the great roadbuilding program of the future must be carried out on a sound economic basis The new bill, giving increased control to the federal authorities, puts teeth in the original act and will insure the selection and construction and later the adequate maintenance of a system defensible upon economic lines.

The editorial added, “we do not wish to belittle the efforts of those who” sponsored the 1916 Act. “Imperfections were to be expected.” The Dowell bill was based on “the lessons of experience.”

The Townsend Bill, the magazine said, was a “very material step forward in composing the differences which exist regarding a proper federal highway policy.” When a Federal Highway Commission had been proposed 3 years earlier “there was widespread dissatisfaction” with the existing program:

In the last two years, however, there has been a material change for the better, and highway officials throughout the country are thoroughly satisfied with the way the government highway activities have been administered.

As a result, the main reason the commission had been proposed “is now removed.”

Another factor affected the magazine’s assessment:

Moreover, there is growing up today in governmental circles a strong opposition to all of the “independent establishments,” except those having judicial functions. In many quarters in Washington there is strong conviction that all of these independent establishments should be thrown into appropriate departments wherever administrative functions are involved.

Advocacy of the formation of a Federal Highway Commission at the present time, therefore, not only lacks the backing which circumstances gave to the proposal originally, but must meet with the strongly developed opposition to commissions and other establishments outside of the departments and reporting directly to the President. [“The New Federal-Aid Road Bill,” *Engineering News-Record*, May 5, 1921, page 748-749]

On June 20, after 13 days of hearings, Senator Townsend introduced a revised bill. Section 3 called for an independent post roads and Federal Highway Commission of three members (reduced from five) that would take over all highway responsibilities from the Department of Agriculture. Section 6 described the purpose of the commission:

That the commission in cooperation with the State highway departments shall, from time to time and subject to such changes as they may deem advisable, designate, and establish an interstate system of highways, composed of primary interstate roads which shall, by the most practicable routes and with due consideration for the agricultural, commercial, postal, and military needs of the Nation afford ingress into and egress from each State and the District of Columbia. Such interstate system may include highways to and from important water ports, and highways connecting at the border with the main highways in countries adjoining the United States; but shall not include any highway in a municipality having a population, as shown by the latest available Federal census, of five thousand or more, except that portion of any such highway along which, within a distance of one mile, the houses average more than 200 feet apart.

The commissioners would have final say on which roads were included in the interstate system, which was to be free of tolls. However, under Section 8, the State highway departments would construct and reconstruct the interstate highways, subject to commission approval.

Under Section 13, only “durable types of surface and kinds of material” were to be used so the system “will adequately meet the existing and probable future traffic needs and conditions thereon.”

Section 14 provided that the right-of-way would be “of ample width and a wearing surface of an adequate width, which shall not be less than twenty feet” unless the commissioner approved a variance.

In May, Senator Lawrence C. Phipps (R-Co.) had introduced a bill, S. 1072, that provided for a higher Federal share to the 11 western States with large amounts of untaxed public lands. The bill also added a year of availability for Federal-aid highway funds not expended by a State highway agency during its 2-years of availability under current law (the year for which it was authorized, and one additional year). These provisions were part of the Dowell and Townsend Bills, but the Phipps Bill, if enacted, would make them law without waiting for the more contentious provisions of the comprehensive bills to pass. The bill passed the Senate unanimously and was forwarded to the House, where the Committee on Roads substituted a bill developed by committee member Representative John M. Robsion (R-Ky.). The Robsion Bill incorporated the Phipps Bill and the Dowell Bill developed by the AASHO legislative committee. The revised bill was silent on funding.

On June 27, the House took up the Phipps-Dowell Bill, which Representative Robsion told his colleagues had been approved by every member of the committee except its chairman, Representative Dunn, who still believed there were more important matters for the House to consider, especially since the program was not a “square deal” since eastern and middle States paid far more in taxes than other States. Nevertheless, the House passed the bill by a vote of 266 to 77 that same day.

On June 30, Senator Townsend introduced the Phipps-Dowell bill with the recommendation that the Senate refer it to the Committee on Post Offices and Post Roads that he chaired. The Senate considered the idea that since the bill was an amendment of the Phipps bill, which the Senate had passed unanimously, the bill should be referred to a House-Senate conference committee, but agreed to Senator Townsend's request.

Senator Townsend's committee was divided among supports of the Townsend commission bill and the Dowell Federal-aid bill. The bill the Senator finally presented to the Senate on August 15 was a combination of the two concepts. It retained the three-member commission, but State highway officials would play in important part of project development. The key features of the Dowell bill were retained (Federal-aid limited to 7 percent of total rural highway mileage in each State, with three-sevenths of this mileage to be interstate in character.

During debate on August 16, Senator Atlee Pomerene (D-Oh.) asked how 7 percent had been chosen as the cutoff point for the State systems. Senator Townsend replied:

I do not know why they decided on 7 per cent, except that this is about the proportion of roads within a State which could reasonably receive Federal aid. Indeed, that is about as large a percentage as could receive State aid.

E. W. James, a BPR official who was involved behind the scenes, would discuss this question in a recollection written in 1967:

I have never had a better explanation than that of Markham, Secretary for years of the Association of State Highway Officials [sic]. Of course, 5 percent or 10 percent would have been a more natural figure, but why 7 percent? As Markham explained: Senators [Tasker L.] Oddie of Nevada, long gone, and Carl Hayden of Arizona, still on duty at 88 years plus or minus, were both strongly interested and concerned in the whole Federal Aid Road program. They wanted to be sure that their States would have at least two cross State roads, based on their certified public road mileage, one say east and west and one at approximate right angles north and south. Using undoubtedly incorrect or questionable mileage, they figured that 7 percent was the lowest fraction that would give them what they wanted and figured they needed. So they saw to it that 7 percent was written into the law. That's that. Whether Markham was right, I cannot say. [James, E. W., Letter to Frederic W. Cron of the FHWA, February/March 1967. The letter is available at <http://www.fhwa.dot.gov/infrastructure/ewjames.cfm>.]

The most surprising amendment of the bill occurred on August 17 when Senator Charles Curtis (R-Ks.), a friend of Markham's, moved to eliminate Section 3, which established the Federal Highway Commission. His motion reflected the congressional dissatisfaction with operation of other commissions, including the Interstate Commerce Commission:

I am opposed to the creation of any more commissions. I think the time has come for the Senate to express itself in regard to that matter Arrangements have already been made in the Department of Agriculture for carrying on this work; the work has been satisfactorily carried on up to date, and it seems to me that a commission is unnecessary.

Surely, this Government has too many commissions now, and it would be a good thing if some of them were eliminated. Some of them were very good commissions, but we have some that are absolutely unnecessary and are doing no good; and if one looks over the amount of appropriations that we have made for commissions in the last 10 or 12 years I know he will be astonished and surprised at the amount of money that has been expended; I think much of it unnecessarily. [Interstate Highway System, *Congressional Record-Senate*, August 17, 1921, page 5102]

The vote to remove Section 3 was 36 to 15. Senator Townsend acknowledged that “a good many changes” would now be needed to align his bill with the Federal-aid concept. Additional amendments, among other adjustments, replaced “commission” with “Secretary of Agriculture.” [Interstate Highway System, page 5109. Senator Curtis served as Vice President under President Herbert Hoover (1929-1933)]

The amended Townsend Bill passed the Senate on August 19, sending the measure to Conference Committee to resolve differences between the House and Senate bills. Following a congressional recess, conferees completed a unified bill after extended sessions on October 6, 7, and 8. The committee retained the \$75 million single-year appropriation in the Senate bill, with \$25 million to become available immediately, and the remainder to be available on January 1, 1922. The Federal-State matching ratio remained 50-50, but the Secretary could increase the Federal share in States with large amounts of untaxed public land.

Section 7 was altered to clarify that each State must “make provisions for State funds required . . . for construction, reconstruction, and maintenance of Federal-aid highways within the States, which funds shall be under the direct control of the State highway department.” The committee also addressed concerns about the bill overriding State constitutions. States were given 3 years after passage of the Act to bring State laws into compliance.

As AASHO’s committee had proposed, Federal-aid highway funds would now be restricted to roads contained in a designated system of Federal-aid highways. The system would comprise up to 7 percent of all rural public roads in each State, but three-sevenths of the system must consist of roads that were “interstate in character.” (Prior to designation of the 7-percent interstate system, the Secretary could approve projects “if he may reasonably anticipate that such projects will become a part of such system.”) The roads that were “interstate in character” would have a right-of-way “of ample width and a wearing surface of an adequate width which shall not be less than eighteen feet, unless, in the opinion of the Secretary of Agriculture, it is rendered impracticable by physical conditions, excessive costs, probable traffic requirements, or legal obstacles.”

During development of the bill, much debate had centered on whether to require the State highway agencies to use up to 60 percent or at least 60 percent of the Federal-aid highway funds on these interstate roads. The conferees settled on “not more than” 60 percent.

The legislation, like all previous versions, also addressed the President’s concern about maintenance by strengthening the provisions of the 1916 Act. Section 2 of the new legislation redefined “maintenance” to mean “the constant making of needed repairs to preserve a smooth

surfaced highway.” Under Section 14, a State highway agency would receive a 90-day notice of a failure to maintain a Federal-aid highway. If the road was not “placed in proper condition of maintenance” during that period, the Secretary “shall proceed immediately to have such highway placed in a proper condition of maintenance and charge the cost thereof against the Federal funds allotted to such State, and shall refuse to approve any other project in such State” until the State reimbursed the Federal highway fund for the amount expended.

The legislation also redefined the term “State highway department” to be any department, commission, board, or official “having adequate powers and suitably equipped and organized to discharge to the satisfaction of the Secretary of Agriculture the duties herein required.” (The Federal-Aid Road Act of 1916 had defined a “State highway department” as one that was empowered “to exercise the functions ordinarily exercised by a State highway department.”)

The House approved the bill on November 1, with the Senate acting on November 3.

President Harding approved the Federal Highway Act of 1921 on November 9, during a signing ceremony that *Engineering News-Record* described:

The signing of the bill was accompanied by more than the usual ceremony, so that a motion picture could be made of the event which marks the establishment of an important precedent in the government’s highway policy. There was a preliminary statement by W. C. Markham, of the Kansas Highway Commission His remarks were followed by a statement from the Secretary of Agriculture [Henry C. Wallace], who pointed out that the bill contains provisions for road maintenance, which should meet the full requirements specified by the President in his message to Congress. Senator Townsend then handed a specially wrought pen to the President who signed the engrossed bill. Others who participated in the exercises incident to the filming of the ceremony were John M. Parker, Governor of Louisiana; Thomas H. MacDonald, chief of the U.S. Bureau of Public Roads; the senators and representatives making up the conference committee which perfected the bill, and Paul Wooton, Washington correspondent of *Engineering News-Record*. [“President Signs \$75,000,000 Federal-Aid Road Bill,” *News of the Week, Engineering News-Record*, November 17, 1921, pages 831-832]

Conceding defeat, the editor of *Engineering News-Record* described the battle for the Federal Highway Commission as “the bitterest fight” of the struggle for national road construction, but it had been defeated. That was not the only result:

The passage of the bill, too, probably marks the end of the propaganda for a federal-built and maintained “national highway system.” The federal-aid plan has come off victorious. [“Constructive Progress in New Highway Act,” *Engineering News-Record*, November 17, 1921, page 799]

When AASHO held its 7th annual meeting in Omaha, Nebraska, on December 5-8, 1921, MacDonald began his remarks by saying:

Again we meet in conference to measure critically our efforts of the year, and to plan more thoroughly, more understandingly, I trust, our future work together. With the deepest conviction I record my faith in the principles set forth in the Federal highway legislation founded on the certainty of the progress that is being made, and that will, in a larger way result from the new legislation.

He commented on designation of the interstate system:

The Act itself is remarkably comprehensive in defining and demanding a systematic plan, national in its extent, for future highway development. None of us has had, or is ever likely to have a more serious responsibility than the one imposed of selecting the Federal-aid system to be composed of the most important highways, articulating not only within the States, but with the systems of the contiguous States. Here is an opportunity to do a big, basic work, such as comes to few in the course of a life-time. The individual who fails to vision the importance of the task has no moral right to hold a position of authority in its performance.

He also put the bill in historical context:

From a conception of highways as a purely local institution, a viewpoint we held for over a half century of our national life, we progressed to an acceptance of their importance to the State. This attitude persisted for another quarter of a century, until through the universal use of the motor vehicle, the transportation crises of a great war, the repeated threats of extensive railroad tie-ups, and the results already secured with Federal aid, we have, in the short period of five years, visioned our more important highways extended and interconnected to form a vast network, serving local, State and national traffic, only limited by the confines of the United States. This is the conception which has been written into the law, and which, because of the projected effect of that which is done now into the future, lifts the importance of this requirement, that is, the selection of the Federal-aid system, above any other principle or duty therein announced.

A letter from President Harding, dated January 10, 1922, to ARBA stated:

There is now pretty nearly universal agreement that no single public improvement has done in recent years or will do in the coming years, more for the general good of the country, than the development of our highway system. The task is an enormous one, but better methods both in physical construction and in the relations of the community to highway development have been taking form in a most encouraging way. [Letter from President Harding to Colonel H. L. Bowlby, president of ARBA, *Good Roads*, January 25, 1922, page 50]

The Federal Highway Act of 1921 settled the long running dispute between advocates of long-distance roads and farm-to-market roads. The Federal Government would not build a system of national roads, as proposed by the AAA and other advocates. But it also would not devote its road funds to the county roads favored by farm advocates or let State and local officials use the funds on any other road. MacDonald, with AASHO's help, had bridged the gap between

Federal-aid supporters and proponents of a national road system. Each thought it got more or less what it wanted and each was, therefore, ready to move forward under the banner of the Federal-aid highway program.

(President Harding died August 2, 1923, while traveling in California. Vice President Coolidge became President and won a term as President in his own name in 1924.)

The First Interstate System

The first step was to designate the Federal-aid mileage, the largest and most important task ever assigned to the BPR up to that point. Before passage of the Act, MacDonald had asked each State highway agency to certify the mileage of rural public roads within its State borders. The certifications indicated the Nation's public roads totaled 2,859,575, so the 7-percent system would have a maximum length of 200,170 miles. Now, following enactment, he asked the States to submit tentative Federal-aid systems.

Meanwhile, MacDonald established a task force under James to devise an equitable way of testing the States' proposed systems. Using information from the Bureau of the Census, the James task force developed a system for rating each county by population and the value of its agricultural, mineral, forest, and manufactured products. Translating this data into indices, then applying emblems of the indices on a map, the task force had a series of emblems through which diagrammatic routes could be laid out. As James wrote in his letter of recollections, "Road locations could be made catching obvious local control points along these diagrammatic lines and you had a selection from best to poorest almost staring you in the face."

As each State submitted its tentative system, BPR compared it with the task force's map. Most were consistent. The greatest differences were in the heavily populated eastern States, including Massachusetts and New York, where the principal roads had already been improved. The tendency in these States was to designate other roads of lesser importance so Federal-aid funds would be available for their improvement. To resolve these differences and coordinate connections at State lines, BPR met with State highway officials.

The larger, sparsely populated western States posed a different problem. Distances were great, financial resources limited, and in some cases, the amount of mileage that was to be "interstate in character" was insufficient to link all main roads with those in adjoining States. The BPR's annual report for 1922 summed up the problem:

The designation of a system of roads in such States adequate at once to serve local requirements and at the same time correlate satisfactorily with the roads of adjoining States demands very careful adjustments in order to keep the mileage, the resources, and the service value of the roads properly balanced and economically justified. [Report of the Chief of the Bureau of Public Roads, October 15, 1922, page 3]

The conferences with the western States were, at times, highly contentious, but most decisions were more easily settled.

On November 1, 1923, BPR completed designating the initial Federal-aid system. It totaled only 168,881 miles, or 5.9 percent of all U.S. roads. A news release stated:

A detailed study of the system indicates that it is safe to say that 90 per cent of the total population lives within 10 miles of some route on the system.

In designating the routes to be included in the Federal-aid system, the chief aim of the States and the Federal agency has been to select routes which will give the maximum of local service and connect with one another to form a great national system of highways. [*America's Highways 1776-1976*, pages 108-109; "8,820 Miles Federal-Aid Roads Completed Last Fiscal Year," Press Service, U.S. Department of Agriculture, November 17, 1923]

Over the years, the system would expand to the 7-percent statutory limit and beyond because the 1921 Act allowed the States to add mileage to their Federal-aid system when the original 7-percent network within the State had been improved.

Although the Federal-aid system, including its "interstate" component, had been designated, the system did not involve signing or any other means of helping motorists identify the best roads for interstate, or even intrastate, travel. From a motorists' standpoint, the main roads were the named trails, such as the Lincoln Highway, even where these routes were not included in the Federal-aid system. "Navigating" around the country depended on the trail associations. They generally painted symbols of their routes on any surface facing the road—barns, poles, trees, rocks—but as the colors faded, following any of the routes was often a problem. Further, many of the hundreds of trails overlapped, creating more confusion. The fact that many were routed, not based on the best location, but on the basis of which towns were willing to pay dues to the national association compounded the problem.

In 1925, at AASHO's request, Secretary of Agriculture Howard M. Gore designated a Joint Board on Interstate Highways consisting of three BPR officials (MacDonald, consulting engineer August B. Fletcher, formerly of the California State Highway Commission, and James, who would be the guiding spirit of the enterprise) and 23 State highway officials to propose a way to identify and mark the best interstate roads. The Joint Board proposed to designate a network of U.S. numbered highways and suitable signs. In September 1925, the Joint Board confirmed routes totaling 75,884 miles, a numbering plan, and signs that included not only the U.S. route shield, but signs for STOP, CURVE, SLOW, railroad crossings, speed limits, and other directives. They adopted a unique shape for each sign so motorists who could not read would be able to identify their intent.

Because the States owned and operated the roads, the new Secretary of Agriculture, William Jardine, submitted the Joint Board's report to AASHO on October 26, 1925, for adoption.

The Executive Committee was flooded by requests for changes. In cooperation with MacDonald and James, AASHO acted on 142 requests, extending the U.S. numbered system to 96,626 miles. On November 11, 1926, AASHO approved the U.S. numbered highway system and associated signs. The U.S. numbered highway system and the U.S. shield placed along the roadside quickly

became popular. The named trail associations soon disappeared and the U.S. routes became a fixture of motoring and American culture.

The U.S. numbers did carry with them a Federal-aid funding commitment. However, because they were part of the designated Federal-aid system, the new U.S. numbered interstate system was eligible for upgrading through the Federal-State partnership of the Federal-aid highway program.

With approval of the Federal Highway Act of 1921, designation of the Federal-aid system, and adoption of the U.S. numbering highway system, road builders were creating the country's first interstate system.

(For a detailed account of creation of the U.S. numbered highway system, see "From names to Numbers" on this Web site at <http://www.fhwa.dot.gov/infrastructure/numbers.cfm>.)

Visions of Superhighways

A. R. Hirst, State Highway Engineer of Wisconsin, writing in 1920, tried to define the needed highway system at a time when the battle between the forces of long-distance roads and the Federal-aid program had not been resolved:

A national system of highways is a well selected and co-ordinated system of interstate highways, connecting each section of the United States with every other section; which system, when adequately constructed and maintained, will provide adequate and economic facilities for highway transportation between all ports of entry and other principal centers of population in the United States.

He had seen proposals for systems that included a few roads and others up to 150,000 miles. Hirst described the right length:

While the national highways would be generally closer together in the eastern states than in the middle western and southern states, and further apart in the western states than in the middle western states, the ratio of the national highway system to all highways would probably be approximately a constant, so that it may be considered that a national highway system should include at least 2% of the total highway mileage of the United States, or 50,000 miles.

He estimated that the desired system would cost about \$6 billion:

The establishment of a restricted national system to be maintained and built solely at federal expense seems to be an improbability.

Congress should make up its mind soon. The national highway policy should be determined now. Many states are neglecting to construct or maintain their main highways because they think the nation is going to build them.

The adoption of a restricted national system of highways, and a federal promise to build it, unless accompanied by large annual appropriations or provision for adequate bond issues to finance the construction would be a disaster not equaled in our past highway history. [Hirst, A. R., "National Highway Systems," *Highway Engineer & Contractor*, August 1920, pages 19-24]

The Federal Highway Act of 1921 ended serious consideration of Federal construction and operation of an interstate network of highways. The National Highways Association continued to promote construction of a national system of highways, but within the highway community, the organization was increasingly marginalized.

The 1921 strengthening of the Federal-aid highway program did not dampen enthusiasm for a national highway system. In 1923, highway journalist Ernest McGaffney wrote:

With the constantly increasing stream of automobiles which cross the country every year, there has grown up a perfectly reasonable demand that the necessities of these vehicles and their occupants be recognized from a broad and practical standpoint.

He recounted his discussion of the subject with a "man who has made more than a dozen trips back and forth between the Atlantic and Pacific during the past 15 years, over the different trans-continental routes." This unnamed motorist urged:

. . . the formation of a Trans-Continental Highway Commission, selected from the best engineering talent, and composed of five members, to give their undivided attention to the conditions and needs of these important channels of travel, and recommend to Congress such steps as in their judgment are necessary to standardize such highways as far as possible for public use, paying special attention to the questions of excellence and permanency of roadways, the adequate signing of the highways, and the sufficiency of hotel and camping accommodations along the routes, as well as the repairing of motor-cars, and facilities for buying extra parts for automobiles.

The traveler recognized that the Federal Government might not be ready for the idea:

If the Government dodges this proposition now, it will have to take it up later on. The use of motor-cars will compel it. These highways will not bear up under the strain, and they cannot be dispensed with. A stitch in time saves nine, and national matters must be met in a national spirit . . . But the question of the future of the trans-continental [sic] highways affects the entire United States, and the sooner some one of our presidents, or our senators and congressmen grasp the problem and provide for its solution, the sooner the country will rise up and call them blessed. [Gaffney, Ernest, "Transcontinental Highway Needs," *Highway Engineer & Contractor*, April 1923, pages 58-60]

The concept of transcontinental highways inspired grandiose concepts. In the mid-1920s, California began thinking about high-speed motorways, promoted by the California State Automobile Association, for through traffic from Mexico to Canada:

Engineers who have devoted some time to the study of the plan have decided that the speed limit on the trunk-line motorway should be not less than 50 miles an hour, with a minimum speed limit of 30 miles, so as to eliminate the slow driver. The project contemplates a main central highway, running from city to city, 30 feet wide, accommodating one line of traffic each way, with curves eliminated insofar as possible, and with crossings of railroads, electric car lines and other highways passed under the motorway, or, possibly, in the case of railroads in the hills, over it on trestles.

All local traffic will be barred from this trunk-line motorway, and will be cared for on two other highways, one on each side of the main line, and connecting with it at intervals of ten or fifteen miles, so that through traffic may get onto the motorway, and likewise off it onto the local highways. Each of these paralleling highways will be 20 feet wide and carry one way traffic only

The trunk-line highway will be fenced, permitting no access to or exit from the motorway within the towns The motorway will have no projecting buildings, no signs except those of direction and information for the motorist and all danger from obstructions to vision along the line of travel will be eliminated. While curves probably cannot be eliminated entirely, the trunk line will be very nearly straight, and such curves as are unavoidable, will be long, wider than the straightaway, and banked heavily, so as to handle high-speed traffic with the greatest factor of safety. [Dunn, H. H., "Plan High-Speed Motorways in California," *Badger Highways*, April 1925, page 12]

Dunn's article was reprinted in other highway magazines, including *Motor* and *The Highway Magazine*.

William Randolph Hearst, discussed earlier, continued to support a national road network. A Hearst editorial on October 15, 1925, began with the mistaken idea that the goal of the Federal-aid highway program was the construction of "several great transcontinental highways, which would be trunk lines for motor traffic from the Atlantic to the Pacific." After many years, he wrote, "these very necessary transcontinental highways have not been secured." He wanted the Federal Government to adopt a more liberal attitude to ensure their construction:

The attitude of the Federal Government was liberal enough when the transcontinental railroads were being built, and it was only through such a liberal attitude . . . that these railroads were built.

Aside from the economic, patriotic, and military value of such highways, they provide an additional economic benefit by encouraging Americans to vacation in America:

At present thousands upon thousands of our people go abroad every year. They would work with customary American efficiency for 9 months in this country and then take the well-earned reward of their work abroad and spend a large part of it.

He recommended that the Federal Government increase its share in the construction of such highways, possibly assuming all the expense in States with high percentages of untaxed public

land. Congress should, he thought, "approach the problem of their immediate completion." ["Coast-to-Coast Auto Roads Are National Need," *Chicago Evening American*, October 15, 1925, reprinted in *Highway Engineer & Contractor*, November 1924, pages 56-57]

The editor of *Western Highway Builder* was amused by Hearst's enthusiasm. Hearst's newspapers, the editor said, had always considered good roads desirable, "but hardly a national issue worthy of the pothor [sic] generated by its more enthusiastic missionaries." Then Hearst moved from New York City to California, began motoring around the State, "and the inevitable occurred." He became "an impassioned votary of the better highway cause." ["Converted!" *Western Highway Builder*, October 1925, page 17]

Many highway boosters, recognizing the difficulty of paying for the proposed highway networks, thought toll superhighways were inevitable. Walter Parker of Fenner & Beane, Wall Street brokers, issued a circular in 1926 that was widely reprinted in highway magazines. Automobile owners would soon be demanding wide, protected concrete speedways even as the American people are demanding reductions, not increases, in taxes. "Super automobile highways are inevitable, just as 4-track railroads and Twentieth Century, Congressional and Panama Limited trains were inevitable when single track regular train service began to open up the country." Parker estimated that at \$50,000 a mile, 100 miles of superhighway would cost \$5 million, carry 2,500 cars per day, and bring in an annual gross return of \$1,825,000:

Yet 2500 cars one way on some existing less efficient roads is not regarded as heavy traffic. Super highways, strategically located, would accommodate many more cars per day than 2500 each way.

The public, Parker said, was demanding wide, protected concrete speedways, elimination of grade crossings, and reduced Federal, State, and local taxes. Considering the advantages, "super highways . . . would be a good investment from the viewpoint of the automobile owner," by saving time, wear and tear on the automobile, and repair bills. Businesses should take note:

Business enterprise might well enter the field of highway building in such a way as to relieve congestion through the offering to automobile owners of a better and more economical service than the free public highways can hope to offer, and thus solve a problem which even now is pressing on public attention. ["Super Automobile Highways as Toll Roads," *Highway Engineer & Contractor*, October 1926, page 57]

The Flow of Bills

In Congress, the flow of national highway bills continued. H.R. 8769, introduced on February 2, 1926, by Representative William P. Holaday (R-Il.), proposed construction of a "national system of durable hard-surfaced post roads." The Department of Agriculture would undertake the job, to be financed by \$3 billion in bonds. The principal and interest would be paid by the revenue derived from taxes "upon motor vehicles manufactured, sold, or used in the United States, or upon the gasoline or other fuel used by such motor vehicles"

The bill specified the general location of 64 routes. Route No. 1, for example, would begin at Sault Ste. Marie, Michigan, and run westerly to Seattle, while Route No. 64 would begin at Niagara Falls, New York, and run southeasterly to Washington, D.C.

In the *Congressional Record* of May 28, 1928, Representative Holaday inserted a speech into extension of remarks in support of H.R. 6957, his reintroduced bill for a nationwide system of hard-surface highways. He explained that his bill was an extension of the “Vermillion County Illinois Plan” conceived by Arthur R. Hall of Danville, Illinois, known as the “Father of Good Roads” in the State, according to the Congressman. Hall’s plan for building hard-surfaced roads in the county had been expanded to the “Illinois Hard-Surface Road System” and now Representative Holaday proposed to extend the plan to the Nation.

Representative Holaday’s comments introduced a speech that Hall had delivered to the 16th annual convention of the United States Good Roads Association. Hall began by speaking of the great roads of Ancient Rome and modern France. Because of the network launched by Napoleon a century earlier, he said, “motor trucks and transports roaring back and forth over their hard surfaces brought up men and guns so rapidly and in such numbers that the invading German legions were stopped just outside the lines of Paris” during World War I.

He said everyone knew, “down deep in our inner consciousness,” that American cities might be imperiled as Paris was`:

If that time should ever come, the great hard-surfaced highway system provided for in the Holaday bill would return in money value many, many times its cost But we need not seek to justify the building of these roads on the grounds of national safety. From a commercial standpoint, from an economic standpoint, from a social standpoint, such a hard-road system would continue to return valuable and increasing dividends on the original investment.

The Federal-aid highway program should continue to aid the State highway agencies with their work. However, the Federal Government could afford to build, without State help, “the first-class nationwide system of high-type hard-surfaced post roads provided for” in the Holaday bill. By authorizing a bond issue not to exceed \$5 billion, the Holaday plan would allow the United States “to contract for and construct these roads at once,” with the Secretary of Agriculture in “direct charge of the work.” He would be part of an advisory board that included the Secretary of War (to determine the design consistent with the needs of war and peace), the Postmaster General (because mail would be carried over these post roads), the Secretary of Commerce (because the roads would affect the country’s commercial interests), and the Secretary of the Treasury (to look after financial questions).

Hall said the roads would be built “on the straightest lines practicable” to furnish the most direct routes from the Nation’s capital, the State capitals, principal cities, and route termini. The straight line should not be diverted to pass near or through a city named in the Holaday bill; the Secretary of Agriculture should build a spur or secondary route to make the connection.

As for the design, the roads should be “wide enough and strong enough to meet the requirements of the heaviest present general traffic and the reasonably anticipated future traffic thereon.” They should be not less than 20 feet wide, except in “rough, mountainous, or sparsely settled regions.” Hall added:

The bill also provides for superhighways near large cities. The paved roadways shall not have less than four 10-foot traffic lanes, or a width of at least 40 feet, for at least 25 miles out from the corporate limits of all cities of over 200,000 population. From the corporate limits of cities of over 800,000 the paved roadways shall have not less than six such traffic lanes, or a width of at least 60 feet, for a distance of at least 10 miles out from the city limits.

For cities over 200,000 population, the Holaday bill provided “for the construction of belt-line paved highways” so motorists not bound for a city would not have to drive through it. In addition, “airplane fields” would be built along the highways:

Such fields are already needed for the interchange of air mail and post-road mail. Such fields may also become of great value for military, commercial, or other national purposes. No one can prophesy with certainty what the future need may be.

The routes specified in the bill added up to seven main east-west trunkline highways, with five of them truly transcontinental (the others ran from the Pacific Ocean to the Great Lakes). The plan included two diagonal routes, one from Montana to Jacksonville, Florida, and the other from El Paso, Texas, to Lake Ontario. If a State had built a suitable road in a planned corridor, the Federal Government would reimburse its costs.

To retire the bonds issued to pay for construction and maintenance of the roads, the Secretary, with the President’s approval, would levy a “small annual motor vehicle tax” of not less than \$3 for each vehicle that was not used “for hire,” and \$10 for those used for hire. The Secretary also could impose a one-half cent tax on a gallon of motor-vehicle fuel. “All other Federal taxes on motor vehicles,” Hall told his audience, “will be repealed.”

Hall concluded:

I just want to add that by bringing all the States into a closer and more intimate relationship socially, politically, and commercially by means of a splendid nation-wide system of permanent hard-surfaced highways, the Holaday bill will obey the Constitution, both in letter and spirit, and help “to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity.”
[Transcontinental Highways, *Congressional Record-House*, May 28, 1928, pages 10312-10315]

Senator T. Coleman du Pont (R-De.) had introduced a proposal in 1926 to build a great transcontinental highway, instead of a system of highways. Part of the family that controlled the family’s E. I du Pont de Nemours and Company, he had a longstanding interest in good roads. He had served as chairman of the National Highways Association's Board of National

Councillors, but he wanted a more direct role. In 1911, he announced, "I am going to build a monument one hundred miles high and lay it on the ground." It would be "the straightest, widest, and best in the world."

Through Coleman du Pont Road, Inc., he began construction in Delaware at the Maryland State line on a 200-foot wide right-of-way. When the first 20-mile section was completed in 1917, du Pont presented the road to the State. By this time, du Pont had become a member of Delaware's first State highway commission, which supervised the work of the State Highway Department. To avoid a conflict of interest with his corporation, he arranged for the new State Highway Department to take over construction of the du Pont road. He promised to pay up to \$44,000 per mile for the rest of the road (excepting only the cost of bridging the Chesapeake and Delaware Canal, which had opened in 1829). The road, completed in 1924 at a cost to du Pont of \$4 million, was not the visionary roadway he had conceived, but it was an excellent highway for its day. (Today, the Du Pont Road is part of U.S. 13 from Wilmington to Dover and U.S. 113 from Dover to Selbyville at the Maryland State line.)

Du Pont developed political ambitions, fueled by his family's control of the State's Republican Party. He was appointed to the Senate in July 1921, after Senator Josiah O. Wolcott (D-De.) resigned, but lost the election for the seat in 1922. He won election in 1924. "As a senator," according to family biographer William H. A. Carr, "Coleman du Pont was best known for his absenteeism." However, he had only a few years to serve in the Senate. In 1927, his doctors found that he had cancer. They removed his larynx, but the cancer had already spread into his throat. On December 9, 1928, knowing he would never recover, du Pont retired from the Senate. He died in 1930. [Carr, William H. A., *The du Ponts of Delaware*, Dodd, Mead, and Company, 1964. Some information is from Rae, John B., "Coleman du Pont and his Road," *Delaware History*, Spring-Summer 1975.]

On December 9, 1926, Senator du Pont introduced a bill calling for creation of a Federal Highway Corporation to construct "a post road and military highway" across the country. It would be a "four-track highway" that would "permit a two-way fast traffic for tourist and non-truck traffic, and a two-way traffic for trucks and heavy traffic." It would be 500 feet wide, with excess right-of-way leased until needed for highway purposes. Provision would be made for tourist camps, operation of emergency airplane landing fields, and radio and other electrical communication facilities. The bill was referred to the Senate Committee on Post Offices and Post Roads.

Representative Allen J. Furlow (R-Mn.) introduced House Joint Resolution 79 on December 8, 1927, a two-page bill to create a commission to study proposals for establishing a national system of express highways. His measure lent credibility to a proposal by the Union Highway Association of America for a national chain of long-distance motor express highways. The plan called for 42 motorways linking the country's main cities with those of Canada and Mexico "on a scale not even approached in magnitude by the railroads which now traverse the same territory," as *The New York Times* explained. The association anticipated a congressional appropriation for one-third of the cost, with the remainder from bank purchases of bonds. Revenue from tolls would repay the bonds. Advantages of the plan included time savings, reduction in deaths and injuries "under the present almost chaotic conditions of travel," and

savings in maintenance. [“Urges Big Scheme for Motor Roads,” *The New York Times*, January 8, 1928]

The *Times* listed the leaders of the Union Highways movement:

Lester P. Barlow of Detroit ;
 Wendell W. Chase of New York City, Vice President, New York Automobile Club,
 and a member of the City Committee on Plan and Survey, and president of the
 American Home Foundation;
 Ernest P. Goodrich of New York City, consulting engineer on traffic of the
 Regional Plan of New York and its Environs.

The Barlow plan for Union Highways will be discussed in the next section.

The same issue of the *Times* that discussed the Union Highways plan reported that Republican leaders in the House were considering the advisability of Federal involvement in construction of an automobile express highway construction program. The article stated that Representative John Q. Tilson (R-Ct.), the House Majority Leader, had discussed the idea with BPR’s MacDonald. Representative Tilson also had conferred with Representative Furlow about his bill:

“It is proposed to have highways routed around congested centres and connected with them by cut off roads,” said Mr. Tilson. “The highway would bridge all other roads and railroads so there would be no cause for slowing down traffic at any point.

“It is the belief that such highways shortly may be started by private enterprise if the Federal Government does not enter the field and undoubtedly private capital would profit to a large extent if so employed.” [Associated Press, “Congress Leaders Interested,” *The New York Times*, January 8, 1928]

Later that month, AAA reacted to talk of toll superhighways. AAA President Thomas P. Henry said:

We are uncompromisingly opposed to the principle underlying the Furlow Bill, and, while giving Mr. Furlow credit for sincerity, we seriously question the motives and the wisdom of the forces behind it.

Such plans were attempts to “foist toll highways on a gigantic scale on the motorists of the country.” He said AAA’s Board of Directors had concluded unanimously that they would not spare any effort to prevent the “vicious toll principle” from getting a foothold in the United States:

The proposal for the study of this or that plan for toll highways, express or otherwise, by a federal commission is simply a blind—an entering wedge—that cannot fail to play into the hands of the sponsors of privately-owned and privately exploited highways.

If such a study were needed, Henry recommended that BPR undertake the review since it “has more detailed knowledge of the national road situation and needs and more facilities for appraising these needs than any new-fangled commission could command in many years.” He added, “We may need express highways, but when and if we do get them, let them be free highways and not toll roads”:

There is absolutely no room in America for two systems of highways—one toll and one free. I am aware of the fact that there is still a negligible mileage of toll roads. But the nation has built on the free principle and great progress has been made. It would be nothing short of a calamity if the principle should be scrapped or if encroachments on it were permitted at this juncture. [“System of Toll Highways Brings Protest from Automobile Association,” *Good Roads*, February 1928, page 130]

Ernest N. Smith, AAA’s general manager, elaborated on the organization’s concerns in an address to a regional AASHO organization, the Association of State Highway Officials of the North Atlantic States, meeting in Atlantic City, New Jersey. He said the Furlow bill was an entering wedge “to foist a system of privately-constructed toll highways on the car owners of America.” It was part of a “nation-wide agitation by certain interests who are seeking Congressional sanction for new toll highways at strategic points throughout the country.”

These interests had attained their first objective by interesting “certain well-meaning and wholly sincere members of Congress who do not, perhaps, fully realize the implications involved in their own commitments.” The Furlow bill, he pointed out, did not mention tolls, but “its supporters frankly admit that they favor the sympathetic examination of proposals for such highways.”

Like Henry, Smith said that if a study were needed, BPR was “perfectly competent to conduct it.” It had the data, facilities, and knowledge, but “it does not have the propaganda value of a new Commission.” It also “would not be a good selling argument for a toll road lobby in Washington.”

He concluded this portion of his speech: “Billions for free roads, but not a cent for tolls!” [“Highway Officials of North Atlantic States Urged to Fight Privately-Operated Toll Highways,” *Good Roads*, March 1928, page 204]

In early 1928, Senator George H. Moses (R-N.H.), chairman of the Committee on Post Offices and Post Roads, introduced S. 1900, on behalf of the ailing Senator du Pont, for construction of a post road and military highway from the Atlantic to the Pacific. Under Title I, S. 1900 would establish a National Survey Commission for what it called a “central highway,” the precise route to be determined. In addition, the commission would study options for “providing for a system of highways connecting with the central highway.” These additional highways included a route from Maine to Florida; a point near the northern border in Washington State to southern California; from southern California through the southern States to the eastern seaboard; from the central highway at a point near longitude 100 degrees (about 100 miles west of Chicago) to the western seaboard in Washington; and from a point on the central highway near longitude 95 degrees (through Iowa, Missouri, Kansas, Oklahoma, and eastern Texas to Galveston Island) to connect with the highway through the southern States.

Title II and Title III proposed creation of a Federal Highway Corporation to build and operate the superhighways on 500-foot right-of-way. The corporation would issue bonds to pay for construction, then lease unused portions of the right-of-way to pay operation and maintenance expenses. The highways would allow for “two-way fast traffic for tourist and nontruck traffic, and a two-way traffic for trucks and heavy traffic.” The right-of-way of the central highway would include “tourist camps” and room for emergency landing fields, light and other signal structures, radio directional finding facilities, radio and other electrical communication facilities and other structures to accommodate civil airways, subject to the Air Commerce Act of 1926.

On April 23, Chairman Moses convened a hearing on “Construction of a Highway from the Atlantic to the Pacific Coast.” Although the hearing would consider Senator du Pont’s bill, he was unable to participate while suffering from the cancer that would take his life. Warren Martin, representing Senator du Pont, explained that Title I of the bill, establishing a national survey commission, was the primary portion of the bill. Martin said, “The balance of the bill, Title II and Title III, presents practical suggestions to a future Congress, upon whose action will depend whether construction is authorized.”

In explaining the need for the bill, he said:

The motor-driven vehicle has become such an everyday necessity in the lives of practically every citizen, irrespective of class or geographic location, that congressional action for through transcontinental roads is only a question of time.

The commission would provide Congress the information it needed to “legislate on an inevitable approaching situation.” Many bills calling for such highways would be introduced but without the information the commission could provide, “Congress will be at a disadvantage to legislate.”

Asked by Senator Smith W. Brookhart (D-Ia.) about financing, Martin explained that the bill suggested that a future Congress consider building the highways on a 500-foot right-of-way, with only 100 feet needed for the roads described in S. 1900. The remainder would be leased to pay for construction and upkeep. At first, the leases would go to companies serving motorists:

Then, from experience in new boulevards, business takes advantage of traffic facilities offered, and in time a highway of this character would develop into a continuous belt of business of various characters. It will also afford an avenue for power transportation and pipe lines.

One of the great advantages of the road, especially for commercial traffic, was that it would avoid congested cities. Martin illustrated by referring to the du Pont highway in Delaware:

It went through no municipality or town except that he was compelled to go through Dover, which I understand they now regret and are sorry they compelled it. The use of that road has increased in a degree beyond all expectations of the most optimistic.

Senator Brookhart pointed out that he had “a plat drawn of a national system” that included four lines from east to west, instead of one as in S. 1900, and several cross sections. “That would

ultimately develop from this,” he said, implying that his concept was compatible with the du Pont plan.

Neither plan involved construction in cities, but were based on the assumption that connector roads would be built by State and local officials. Martin said that Delaware towns and communities had done just that and are “delighted that it did not go through their community.” The proposed highways would stimulate construction of connecting roads:

There can be no conflict between the commission and the Federal Bureau of Roads [sic], nor encroachment upon their jurisdiction. Instead, the Bureau of Roads will be an important factor in this program.

In response to another question from Senator Brookhart, Martin explained that the roads contemplated in S. 1900 would be “built under the jurisdiction of the Federal Government.” Assured that the States would have nothing to do with it, Senator Brookhart said, “If it is to be built by the Government, I am for it.” Martin added that the road would take “a fair amount of land away from the State.” Despite increasing values elsewhere, that would reduce taxable property. As a result, “they are entitled to a part of the rental income in lieu of taxes.”

Senator Brookhart said he doubted rental of excess right-of-way would provide enough revenue to pay for construction. Martin pointed out that Senator du Pont, while building his road, “tried to get the right of way, and if he could not get it he purchased a farm, and then after the road was built he sold the farm, and the increased value was sufficient to pay the cost of the road that went through.” The Senator accepted that such increases might be possible in the east, but said that “on the western plains where land is worth \$10 an acre and is a thousand miles long, you don’t get much for it.” Martin responded that the increased value east of the Mississippi River would “go far toward taking care of your road and would have to balance the portion through the mountainous district and the places that you mention.”

Finally, Martin pointed out that S. 1900 would not interfere with the Coolidge Administration’s financial program since it merely established a commission at a total cost of \$5 million:

The statement comes to us that it [the plan] was submitted to the proper officials and they said that it was not in harmony with the administration’s financial program. I do not think that is correct, as they will see if they read the bill, because the question comes up for a future administration and a future Congress.

The final witness was sculptor Gutzon Borglum, who was living in San Antonio while working on a monument to cattle trail drivers. In somewhat confused testimony, the sculptor discussed highway routing and traffic in heavily traveled areas. He also talked about the value of roads of the type proposed:

I have traveled over the West a great deal, Senator. I have traveled since last November something like 16,000 miles, and I like to travel fast and in a good car. I like to feel safe, I do not rush around corners; I slow up before I get to them. But I bless a road engineer when I come to a corner that enables me to negotiate the turn smoothly and not have to

jerk around, as we do in traveling the innumerable death traps that are lying in every motorist's way all over our country.

I have traveled a little over 40,000 miles in the last year. My work carries me— [sic] over the country. I do not think America realizes, excepting those of us who are watching it and thinking about it, how much good continuous roads mean to the people at large, or how large a part this whole question of transportation is playing in our success, in our business, in our happiness, in the happiness of the country. . . .

One great trouble with all American roads everywhere, in cities and out of them, is that we are still limited to wagon dimensions. We can not get away from our congestion at all except by enlarging our floor or road space.

The report on the hearing concluded by reprinting supportive letters Senator du Pont had received from State highway officials regarding his original bill, S. 4675. [Construction of a Highway from the Atlantic to the Pacific Coast, Hearing on S. 1900 before the Committee on Post Offices and Post Roads, United States Senate, 70 Congress, 1st Session, April 23, 1928]

On May 4, 1928, the committee released a three-page report on "Atlantic to Pacific Highway." It summarized the bill, which it reported favorably and recommended its passage. It also reprinted a March 26 letter to Chairman Moses stating the views of Secretary of Agriculture W. M. Jardine. Following a lengthy summary of the bill's three titles, Secretary Jardine wrote:

With the exception of the excess right of way and the leasing feature, which in the practical administration of this bill would amount to carrying out a policy of excess condemnation on these particular highways, it appears to me that all the really valuable features of this bill that apply directly to transportation are already amply met by the Federal highway act, and in many respects the Federal highway act appeals to me as serving a much greater population need than a very few superhighways of elaborate construction. A single superhighway would directly serve a single zone or belt of territory. The present Federal-highway system provides for a number of through east and west, and a very much greater number of north and south connections and, while it is true the standards of construction are not of the boulevard type they are nevertheless entirely adequate and each one of these many routes directly serves its respective belt or zone of territory. It seems to me that there is a much wider distribution of benefits from the point of view of the country as a whole under the plan now in force than would be the case under this new plan outlined in S. 1900.

I do not understand that S. 1900 proposes a plan which could be substituted for the present Federal highway policy of the Government, and I can find no particular advantage in setting up this additional road-building organization within the Federal service.

I am in full sympathy, however, with the necessity of providing for the convenient and expeditious passage of traffic across the continent, and would be glad to discuss the matter with you if you desire to do so.

W. M. Jardine, Secretary

Secretary Jardine added a postscript indicating that his letter had been reviewed by the Bureau of the Budget, which returned it on March 23, 1928, “with the advice that the legislation proposed in S. 1900 would be in conflict with the financial program of the President.” [Atlantic to Pacific Highway, Senate, 70th Congress, 1st Session, Report No. 999, Calendar No. 1039, Committee on Post Offices and Post Roads, May 3, 1928.]

(After a long delay largely because of funding, Borglum’s monument to cattle drivers was cast at a reduced size in 1940; it stands in front of the Texas Pioneer and Trail Drivers Memorial Hall. [“Borglum, John Gutzon de la Mothe,” The Texas State Historical Association, <https://www.tshaonline.org/handbook/online/articles/fbo31>] He is better known today for his work on the Mount Rushmore National Monument, which was completed in 1941 shortly after his death.)

Union Highways

In 1925, Lester E. Barlow proposed a network of Union Highways, a system of toll motorways owned and operated by the Federal Government. In a 1925 pamphlet on “Union Highways,” he wrote:

We are bewildered and dazed as we find ourselves bound on all sides by the roar of the nation’s traffic as it rushes here and there or chokes and stops at some narrow way, and when released rushes on like a stampeded herd of wild beasts—twenty-three million automobiles dashing around through a hundred and fifteen million people. This tangle of machinery and human beings has convinced the citizens of this great republic that some effective remedy must be found to untangle the tangled.

Under the subhead “Chaos Versus Centralized Authority,” he said that States have their responsibilities for roads within their borders, but:

National trunkline highways should be controlled by the Federal Government.
Absolutely no state or local jurisdiction should be allowed to interfere with the interstate traffic upon such Federal highways.

At the time, the Joint Board on Interstate Highways was developing a way of identifying the Nation’s main interstate highways and to mark them. Barlow had visited BPR to see this work and was not impressed:

Recently the writer, while at the Federal Road Bureau in Washington, had the privilege of studying a so-called Federal Road System as proposed by a body of representatives from all parts of the nation. No new roads were proposed. The present main state highways

were to be linked up as best they could and improved with Federal aid money, but were to remain under the divided authority of the forty-eight states and the thousands of municipalities within those states. Such a conglomeration of foolish piffle cannot create a Federal highway worthy of being designated as such. Perhaps those who were responsible for the map referred to, which they called "Proposed National Highways," do not know that their plan left intact 251,000 railroad grade crossings upon which thousands of people would lose their lives each year, while touring the width and breadth of the United States.

He summarized the overall problem:

The highways of this nation referred to as automobile highways, with but few exceptions are not automobile highways. They never have been automobile highways and never will be. It will take more than a name to create an automobile highway. The names of Washington, Lincoln and Jefferson contain no magic which will convert trails into motor highways. Many of these so-called automobile highways started as cowpaths or trails Asphalt or concrete or gravel has been to some extent placed upon the surface of these old trails, but they are still narrow, rough and treacherous, and where cities and towns have developed these old trails have become streets, jammed with street-cars, trucks, automobiles and people There is not one long unobstructed adequate national highway in all of this great land.

Barlow proposed "a great system of Federal toll highways owned and controlled by one central authority: the Federal Government." To start, he had prepared a map, dated July 1, 1925, showing the initial network. Like General Stone's 1890's Great Road, the Barlow plan was based on an "H." An East Coast toll road from Boston to Jacksonville, Florida, paralleled a West Coast toll road from Seattle to San Diego. The transcontinental road linked the coastal roads from Philadelphia to San Francisco. In this initial conception, the transcontinental toll road included links to cities such as Cleveland, Detroit, Fort Worth, and Denver. The map of the 8,496-mile system was labeled:

FEDERAL HIGHWAY TOLL SYSTEM

Built To Last The Life Of The Nation – Cost 1,000,000,000 Dollars But Without Taxation
Free Of State And Local Politics – Controlled [sic] By The War Department
Policed By The Army.

The plan would avoid cities and towns, eliminate all at-grade crossings, with steep grades reduced to the minimum to eliminate gear shifting as nearly as possible:

Where traffic warrants, the Federal highways should consist of two freight and slow traffic lanes and two express ways. These four lanes or ways should be parallel and on the same grade and each lane should be separated from the other by a strip of packed gravel ten feet wide available for space for cars in need of repairs while on the highways. Our national highways should be designed with the thought in mind to incorporate beauty as well as efficiency.

When volume did not require this four-track system, a two-track express highway would be built on a 200-foot right-of-way to allow for addition of two tracks when needed. All tracks would be at least 25 feet wide, with all intersecting highways and railroads carried above or below the motorway:

There should be traffic guards stationed wherever the traffic comes on or leaves the Federal highways. Where traffic is heavy guards should be stationed at intervals of a mile. To keep an even flow and never obstruct national traffic of motor vehicles should be the watchword while planning for and operating such a great Federal Highway System. Always we should keep in mind that such a system must endure for thousands of years after the initial cost has been paid and forgotten.

Under another subhead, "Building Highways and National Confidence," Barlow said a Federal highway system should be planned "to meet the major national motor traffic problem," with a transcontinental highway located "to serve the greatest number of motorists." Barlow's plan, however, went beyond the United States to encourage the countries of the Western Hemisphere to build highways linking North and South America. "All the diplomats in America could not promote the friendship that an adequate Western Hemisphere automobile highway could." If linked in trade and commerce, "people from all of the Western Hemisphere nations would meet to shake hands and build unbreakable confidence between the Americans." Linking the nations in a union of highways would be "cheaper than war."

(The idea of a transportation link throughout the Western Hemisphere dates to the 19th century. In 1884, Congress authorized a commission to reach out to other countries about establishing a railroad link. "Subsequently the Pan-American Railroad Committee was created and over a period of years worked diligently but unsuccessfully to develop interest in the project." The Fifth Conference of American States, held in Santiago, Chile, in 1923, recommended a conference on an automobile link of Western Hemisphere countries. The first Pan-American Highway Congress, held in 1925 in Buenos Aires, Argentina, decided that the highway proposal should be a permanent activity of the Pan American Union.

(President Coolidge, addressing the Pan American Conference in Cuba on January 16, 1928, spoke of the importance of closer relations among the Western Hemisphere countries. He described how ships and railroads had brought the countries closer but added:

During very recent years every government of this hemisphere has been giving special attention to the building of highways, partly with a view to establishing feeders to the railway lines, but also to provide great arteries of inter-American communication for motor transport. On the wall of my office hangs a map showing proposed highways connecting the principal points of our two Continents.

I am asking the United States Congress to authorize sending engineering advisers, the same as we send military and naval advisers, when requested by other countries, to assist in road building. These gratifying changes are about to be supplemented by the establishment of aviation routes, primarily for the transportation of mails, which will afford to our republics a channel of interchange which will find its ultimate expression in

closer cultural and commercial ties and in better mutual comprehension. Our Congress also has under consideration proposals for supporting such air routes. Citizens of the United States are considering installing them.

(Today, the Pan-American Highway stretches from Alaska to Argentina, unbroken except for the 100-mile Darien Gap spanning the border of Colombia and Panama. In the United States, the entire Interstate System is the link in the Pan-American Highway. [*America's Highways, 1776-1976*, page 522])

In the final paragraphs of the brochure, Barlow described the broader purposes of the Union Highways:

To commence a Federal highway building plan, such as we propose, would relieve the financial depression periods so familiar to us. That which we would be creating would be, when built, worth more than it costs and would pay handsome dividends to the nation. There would be no excuse for any able-bodied man to be out of work. Work means money in the pocket. Money in the pocket means money to spend. Money-spending means prosperity. Prosperity means a great national confidence in the administration of government, and that means loyalty to government. It means that we could interest those millions of people who drive automobiles but do not now believe voting worthwhile. Such a Federal highway system would convince our great motoring public that the United States is a wonderful country after all, crossed and criss-crossed by great national roads passing through endless and beautiful country.

When we work to create instead of to destroy, then we become nation builders because then we build confidence and that means prosperity. TRANSPORTATION: the more efficient, the more advanced civilization. [Barlow, Lester P., *Union Highways*, 1925, emphasis in original]

Barlow, who listed himself in the brochure as based in Borglum's Studios in Turn-of-River, Stamford, Connecticut, would continue to promote and modify his idea, including creation of the Union Highway Association in Detroit.

As the plan evolved, he proposed that funds for construction would come from loans taken out of a Federal revolving fund consisting of \$1 billion in specially printed dollars, each identified as a "Federal Road Note." A State could use the revolving fund to build a section of motorway by first issuing a State bond for the full amount and placing it with the treasurer of the United States, to be held as collateral. In either case, toll revenue would be used to repay the revolving fund.

The need, Barlow argued, was clear. "The acceptance of the automobile, and its increasing numbers have been so rapid that, due to the handicap of our limited vision, we have not been able to keep ample and adequate highways under the millions and millions of spinning rubber-tired wheels." [Barlow, Lester P., "Government-Owned Toll Motorways," *Highway Engineer & Contractor*, November 1928, pages 34-39; Barlow, Lester P., "Public-Owned Toll Roads," *Highway Engineer & Contractor*, June 1929, pages 38-42]

The Freedom of the Road

In November 1928, Chief MacDonald attended AASHO's annual meeting in Chicago to deliver a speech on "The Freedom of the Road."

He began by expressing his concern about "the palpable trespass upon the freedom of the road, the infringement of the right of the public to use the highways for transit and transport without molestation, without harassment or sensibilities, and without loss or unnecessary financial outlay." Guarding against "those who use the highway for his private gain is a great responsibility":

The imposter seeking alms may be banished from the highway over night. It is said that Mussolini so ordered, and the beggars disappeared from sight in a city overrun with them. It is not so simple to free the public from a hundred interests collecting from those who use the highways, once they gain legal foothold.

Given the rapid growth of highway transportation, "possibilities of rich fields to exploit have been greatly multiplied and extended" and now "come new proposals for fettering the freedom of the road to fill a private purse."

He discussed the success of the Federal-State partnership that was at the heart of the Federal-aid highway program:

. . . [It] may be well worth while to assert in positive terms that the Bureau of Public Roads desires only to work with the States in good faith and with mutual helpfulness. The Bureau recognizes and accepts that we are building a national system of roads by developing outward from each State nucleus. It recognizes that the perfecting of the interstate or transcontinental roads must be reasonably comparable with progress toward adequate State and local traffic service. Thus with demonstrated ability to see these major administrative problems from the same point of view, it is certain that once these new problems are analyzed and the policies for dealing with them determined, the strength of this whole organization, combining both State and Federal officials, can be depended upon to advance the interests of the public

Despite all the progress thus far, only "a very moderate percentage of our improved mileage approaches a standard that may be considered stable for a long period." Faced with "a continuing task," officials must now confront the attacks on the freedom of the road that took a variety of forms:

Among the most important are franchises to build toll bridges granted for private interests, propaganda promoting toll road franchises for private interests, ill advised demands for Federal highway-transport laws and regulations, the lack of desirable uniformity in State regulatory laws, traffic congestion, the lack of well planned programs of road improvement adjusted to the available finances, and the abuse and desecration of our roadsides It must not be said that the highway officials of this day permitted special or unequal privilege to obtain holdings inimical to real freedom of the road.

(By “desecration,” MacDonald was referring to the “thousands of glaring, disfiguring signs along our streets and roadways.”)

Toll bridge franchises were a longstanding concern:

Private toll-bridge interests are becoming bolder and obstructing the public’s business. They are attempting to defeat legislation unfavorable to themselves and are obstructing the efforts of highway departments to carry on State projects. Seventy-five Federal authorizations to build toll bridges have been granted to private interests by the present Congress Private toll bridge interests are becoming bolder and obstructing the public’s business Basically, all bridges on the main highways have become valuable property because of the construction of highways It is a field from which the shoestring promoter should be excluded and he will be if a thorough investigation is made.

BPR had attempted such a study, he said, but did not have authority to examine private records. Nevertheless, MacDonald put the issue in these terms:

The real question is the very simple one of whether it is sound public policy to grant the right to collect a private profit from the user of the highway. The answer ought to be a vigorous and authoritative “no.” There is no place on the public highway today for the privately owned toll bridge.

The success of the private toll bridge franchises had “stimulated visions of another type of gold mine, the privately-owned toll roads.” He continued:

Recently an article in a financial paper described in extravagant terms the growth of private toll roads abroad. As a matter of fact the development of such roads to date is negligible. There are two roads in operation in Italy, - one from Milan to the Lakes, about 50 miles; and one from Milan to Bergamo, about 30 miles.

There are some other projects under way also of limited mileage. The conception of the Italian “autostrada” is primarily a road reserved for motor vehicle traffic, an outgrowth of the prevalence of slow moving animal-drawn traffic and pedestrians. Financing of the first projects at least was made possible through government guarantees. All the conditions are so different from our own, no relativity exists and no conclusions may be consistently drawn.

(Italy’s experience will be discussed later.)

A highway “on a closed right of way takes on the characteristics of a railroad,” no longer providing universal service. In the United States, he said:

The only areas in which toll roads of very high cost in competition with high-standard free roads could possibly pay is in those sections of dense population where distances between large centers are relatively small. Roughly these areas may be indicated by a

strip varying in width from Washington through New York City to Boston, and by another strip along the Great Lakes from Milwaukee through Chicago, Cleveland, Detroit to Buffalo.

In addition there are potentially relatively short spurs or connections to some nearby objective extending from the largest cities in these areas and in other sections of the United States.

He cited the toll Holland Vehicular Tunnel between New Jersey and New York and a toll-free approach road that New Jersey was building to improve access to the vehicular tunnel (the Pulaski Skyway completed in November 1932). “In perfection of design, intelligent conception of the service required, and difficulties to be overcome, this highway surpasses any similar undertaking now underway.” He continued:

Here are two examples of what certainly may be termed superhighways. There is no indicated additional service that might be extended by placing them on a private right of way and both, regardless of existing transportation agencies, were highly necessary public facilities. Wherever such necessity exists, such roads are essentially public undertakings and should be so undertaken whether cost is paid from tolls or not.

In contrast to these examples was “the class of super-roads that can not be classed as necessities but are additional or de-luxe-service roads.” MacDonald said that free public highways could provide all needed service:

If de-luxe-service roadways to a limited extent are needed on private right of ways, their development should be undertaken by the existing railways, not in competition with them. Much harm without compensating benefits will otherwise result. Once let franchises be granted to private interests with the necessary power of eminent domain, and inconceivable harm would result to the financial structure of the railways in that area.

He cited “the book of experience” to illustrate his point by referring to the London traffic area:

A limited area to be sure, but these de-luxe toll-road proposals must necessarily be limited to congested areas of relatively limited extent in which several forms of transport come into the keenest competition. Briefly, a transit commission appointed to work out a scheme of reorganization in a seriously complicated financial and traffic congestion situation, recommended pooling the earnings of all transportation agencies in order to pay a fair rate of return on the invested capital of each. These proposals for toll superhighways on private right of way are not simple or innocuous undertakings. They either lead toward a pooling of interests or a probable severe shrinkage in capital values invested in existing railways in the area.

There is not an inconsistency between this position and the advocacy of adequate public highways and their use free from all but proven necessary restrictions. There is no reasonable substitute for such public highways, and while we are in this transitional stage

of highway perfecting[,] the influence of this association should be exerted against promotional schemes that can do serious harm.

MacDonald discussed other topics, including demands for regulation of motor carriers, lack of uniformity of State regulations of motor vehicle traffic, traffic congestion (“Widening to four lanes, elimination of grade intersections, and by-passing city streets are the most effective methods”), the use of transport surveys and annual budgets to develop programs of improvement, and misuse of the roadsides for billboards that “shriek at the traveler . . . to buy gas and oil, automobiles, grease and tires.”

He concluded:

Through this whole discussion I have had in mind not attempting to present the final or conclusive word on any of these broad questions of public policy, but rather to bring before you these matters in the very earnest hope that the whole force and authority of this association and its individual members will be exerted continuously for their proper solution. We have the duty to preserve the freedom of the public highway as an achievement of self-government.

Italy’s Autostrada

In the mid-1920s, superhighway supporters could point to a model in Italy where the government of Prime Minister Benito Mussolini was developing a toll network of limited-access *autostrada*. Mussolini had taken office in 1922 with a goal of restoring Italy to the glory of ancient Rome, one aspect of which was to build a modern version of the Roman road network that helped it govern its world empire.

In 1923, Percy F. Martin, correspondent for the British *Roads and Road Construction* magazine, commented on Italy’s great Roman heritage:

Unfortunately, those who travel afar within this kingdom soon become disillusioned if ever any such aspiration had entered their minds. It is a little difficult to believe, when traversing some of the country highways, that we are travelling in the land which possessed, and possesses still, the oldest and most famous of roads—the Appian Way, commenced in 312 B.C. . . .

As early as 1921, the Italian government had been alleviating unemployment by providing work on roads and bridges “for which purpose a sum of 61 million lire had been voted, principally in connection with the construction and repair of municipal carriage roads and mountain mule-paths.” When “Signor Benito Mussolini” took office, the government began to focus on “construction of special roadways exclusively for automobiles.” The project had begun earlier in 1923:

This consists of some 83 kms. as to length, and connects Milan with the lakes at Como, Varese and Maggiore. The principal idea, however, is to create special roads avoiding populous centres so as to allow of high speeds begin obtained by mechanically-driven vehicles. In the construction a concrete base is being used, and asphalt, in the laying of

which the Italians are, and always have been, considered *facile princeps* [easily first]. The material employed comprises a substance composed of bitumen and finely-graded mineral matter, mixed by machinery, as well as that found in neighbouring quarries or natural deposits. “Made” asphalt does not contain stone of a size larger than will pass through a hole ¼ in. square, and when artificially compounded it is sometimes termed “mastic” asphalt. The width of the Milan-Lakes road varies from 8 to 12 metres, with a pathway 2 metres wide for cycles

The work is being carried out for the account of a limited liability company, which has been formed for the purpose, and which, until a sinking-fund has been established, is authorized to levy tolls on all automobiles, motor-cycles, and cycles using the roads. When the Milan thoroughfare is completed and finally opened to traffic, two additional and similar highways will be commenced, one from Milan to Venice and the other from Milan to Genoa. [Martin, Percy F., “Road Construction in Italy,” *Roads and Road Construction*, November 1, 1923, pages 355-356]

The first route, between Milan and Varese in the northern lake area and designed by engineer Peiro Puricelli, opened on September 21, 1924.

On September 6-10, 1926, engineers from around the world had an opportunity to see the new highway when the Permanent International Association of Road Congresses, established in 1908, held its Fifth International Road Congress in Milan and Rome. In a session on Special Roads Reserved for Motor Traffic, Italy’s Francesco La Farina and Alberto Depetrini, divisional chiefs in the Ministry of Public Works, presented a paper on the *autostrada*. They explained that the Italian Touring Club had suggested such roads after World War I, but initially, engineers did not think conditions were favorable. The pre-war macadamized intercity roads were worn out by wartime traffic, but the country’s small number of motor vehicles and their limited use for commercial shipments did not appear to warrant roads built exclusively for motor traffic. That view changed as traffic grew, as it did in the United States and elsewhere, from “a few thousand” vehicles before the war to “an enormous quantity,” along with growing use of motor vehicles for freight shipments as the economy rebounded.

While the authorities were trying to restore pre-war macadamized roads, the Italian Touring Club “became the advocate of the bold and happy ideas of the engineer Piero Puricelli and favoured at once the construction of such roads.” It submitted a draft law to establish an Autonomous Authority “to take in hand the construction and working of the first Italian motor road, namely the Milan-Laghi (Lakes) road.” Under this model, the government would award concessions to private companies that would issue bonds to pay for construction and charge tolls to retire the bonds and cover operating and maintenance expenses.

The *Societa Anonima Autostrade*, with “the engineer Puricelli being the soul and director of this concern,” won the Government concession on December 1, 1923, for the Milan-Laghi motor road. To ensure safe, rapid movement, Puricelli designed the road to avoid inhabited centers. He also eliminated at-grade crossings and included curves and gradients designed for speed. Opposing lanes of traffic were not separated by a median, a feature that would be added later.

Concessions had been awarded for several additional *autostrada*. The motor road from Milan to Bergamo was under construction, with additional motor roads planned for Naples-Salerno, Rome-Colli Laziali, Milan-Turin with a branch to Biella, and Genoa-Ventimiglia:

This is the programme which is being developed in Italy to supply our country with a network of motor roads which are urgently required on account of the development of motor traffic and the imperfect condition of the ordinary road arteries, but it is to be hoped that the network of motor roads will be developed still further, so as to form an organic network with large meshes [sic] to provide for and absorb the greater part of the motor traffic which is at present using the ordinary roads for sports, commercial and industrial purposes.

The paper explained why the Italian government decided to build the expressways as toll roads. While the *autostrada* “serve the general interests and the economic and social progress of the whole nation, they do not fulfill all the essential requirements of a public service from which everybody derives advantage, and to which all should therefore contribute.” The roads served only “a certain class,” namely members of the public who own motor vehicles. “Therefore, it would not be fair to require all taxpayers to contribute to the cost of work which only benefits a certain section of the public.” Basically, “the construction of motor roads should therefore be left to private enterprise.”

The government granted a concession to a company, “usually the one which has got out the scheme” for a motor road and provided technical specifications and other contract details. Financial assistance involved bond guarantees. [La Farina, Francesco, and Depetrini, Alberto, “Special Roads Reserved for Motor Traffic,” Vth Congress, 2nd Section, Traffic and Administration, 6th Question, Report 53, Milan, 1926, Permanent International Association of Road Congresses]

On September 9, approximately 1,700 participants in the international congress found places in 100 cars for a trip to see the Milan to the Lakes *autostrada*. After lunch, organized by Puricelli, at the Monza Racing Track, the caravan headed for the *autostrada*:

After leaving Monza it took but a few minutes to reach the main entrance to the Milan-Lakes “*Autostrade*” or motor-way. Here a stay was made to enable the visitors to examine the organization at the head office for the levy of tolls, to see the service in actual working and to study the elaborate telephone system for linking up the various sub-stations.

Their interest in a delightful excursion in the brilliant sunshine having been greatly stimulated by these experiences the visitors proceeded along the far stretching Motor-way which on the way from Milan to Varese passes through a busy industrial district and also affords magnificent views.

To complete a most successful day a garden party was given in the beautiful park of the Villa Morosini at Varese by the “*Autostrade*” Association.

On the return journey the last rays of the setting sun accompanied the excursionists back to Milan where they alighted full of admiration for the great engineering achievements they had been enabled to see and feeling that the memory of so delightful a day would long linger in their minds.

The road eliminated most intersections by passing over or under intersecting roads. Where crossroads provided access to the *autostrada*, a guard was posted to manage a swinging gate. The guard determined when safe entry was permitted.

The photograph accompanying this summary in the proceedings showed a long stretch of the Milan to Varese Special Motor road with a total of two automobiles moving in the same direction alongside each other. Lanes were not marked and narrow unpaved shoulders on either side of the pavement are flanked by earth barriers 2-4 feet high. [Report of the Proceedings of the Congress, Vth International Road Congress, Milan 1926, Permanent International Association of Road Congresses, Paris, 1927, pages 232-233]

The final 3 days of the International Road Congress took place in the National Museum on the Capitoline Hill in Rome. Prime Minister Mussolini delivered the final address to the gathering. He pointed out that closing the congress in Rome was appropriate because Rome “had in antiquity an enormous network of roads.” He said the main issues of the congress—about the best pavement, design of roadways for high speeds, “and how to control the development and systematization of modern cities in the interest of traffic and vice versa”—were “questions indigenous to our age.” He appreciated the contributions of each participating country to the discussion of these subjects.

Turning to his own country, he said:

Italy has a great road problem to solve; new roads necessary to promote her agricultural life, to facilitate her commerce, and finally arteries necessary for international tourism in order to render her beauties accessible. She possesses, moreover, a conspicuous road patrimony formed during many centuries by the work of countless generations

The Fascist Government since 1923 has arranged for a road reform which distinguishes clearly greater from lesser viability, coordinates between them the arteries of great traffic into an organic system and allots to the provinces a greater share of viability under the control of the larger public organisations suitable technically and administratively for this function

The Congress has justly recognized a principle common to all nations and all roads, that of the need of coordinating with the results of road census, the construction of new roads and the methods of maintenance of existing roads. The future action of the Italian State in connection with viability will be carried out on this basis.

Italy’s answer to the discussion of the opportuness [sic] of creating special roads reserved for automobile traffic has been given by accomplished facts. The autoroad from Milan to Laghi has been opened some time ago. Concessions have been granted for those from

Milan to Bergamo and from Naples to Salerno while those from Turin to Milan, Rome to Ostia and San Remo to the French frontier are being studied.

Automobilism has created various problems of systematization of the existing large roads, the necessity of correcting and augmenting the road network to adapt it to its needs.

He closed by saying the congress was “an essential contribution to the progress of all civilized nations.” [Report of the Proceedings of the Congress, Vth International Road Congress, Milan 1926, Permanent International Association of Road Congresses, Paris, 1927, pages 225-227]

Thomas H. MacDonald was one of those who observed the Milan-to-Laghi “*Autostrade*.” During the discussion of special roads, his paper explained that motor vehicle registrations in the United States were increasing at a rate of 2 to 3 million a year, “with no evidence of an early reduction in the annual increase.” With horse-drawn traffic “a negligible percentage of the whole,” the “needs of the motor traffic must be given primary consideration in the design of even the most lightly traveled road.” He emphasized that “it does not follow that all roads are, or have need to be, of the boulevard type.” The primary consideration for now was “maintenance of a smooth and relatively dustless surface” for the loads using it.

Given the need to upgrade the country’s extensive roads of all types, MacDonald believed that “the aim of American highway engineers is to develop a system of highways each part of which will be improved to a degree consistent with the traffic demands.” Adapting road projects to traffic needs, beginning with low traffic volumes but preparing for increased traffic, was the first step:

This practice has crystallized into a well defined policy, known as the stage-construction principle, in accordance with which an unimproved road carrying, initially, a light traffic is improved in the first instance by grading and draining, and subsequently, as traffic grows by the addition, first, of a gravel or other cheap surface, and, subsequently, by the superposition of a pavement to which the original cheap surface serves as a subbase. In each stage full provision is made for the requirements of a subsequent improvement. The grades and drainage structures originally constructed are designed to be adequate for, or readily convertible to the purposes of the ultimate improvement, which, also is contemplated and provided for in the initial surfacing.

In this way each stage in the improvement suffices to meet the demands of a growing traffic at several stages of the growth and each preliminary stage becomes the basis for the subsequent improvement.

With horse-drawn vehicles such a small percentage of traffic, roads of all types were designed with the motor vehicle in mind but not for their exclusive use:

Because of this special attention that is given to the needs of motor traffic in the design of the ordinary highways and the practically negligible inconvenience of the slight

intermixture of horse traffic, there is not the least demand for highways restricted to motor vehicle traffic only.

Few such roads had been built in the United States. The first example MacDonald cited was the Long Island Motor Parkway:

Built in 1904 as the course for the first Vanderbilt Cup Race, this highway, 42 ½ miles in length has since been maintained by a private corporation as an exclusive motor road, the use of which is restricted to those who pay the company's tolls. This road was conceived and built at a time when the public roads were not adequate for motor travel and when the normal traffic consisted largely of vehicles drawn by horses that were still unaccustomed to motor vehicles. Under these conditions the road performed a useful service.

Today, he said, the biggest problem was "the intermixture of fast and slow-moving motor traffic," especially slow-moving trucks and "the motorist whose conception of caution is extremely slow driving."

He explained that most main roads "are two-way roads, eighteen or twenty feet wide." Where traffic volumes were low or moderate, passing of slower moving vehicles was not a problem, but when volumes were higher in both directions, "queues are rapidly formed headed by the slow-moving vehicle," resulting in congestion.

He noted that the highway commissioner of Connecticut, John A. MacDonald (no relation) had suggested three solutions to the problem in his presentation to the session. They were to require trucks to maintain a minimum speed considerably higher than the average speed; restrict truck traffic to parts of the day when passenger car traffic was at a minimum; and build "special motor truck roads . . . or, as an alternate solution, that existing two-lane roads be widened to four lanes." John MacDonald had set aside the first two as restrictions on free operation ("restriction does not solve traffic problems, but only delays the solution"), a conclusion Thomas MacDonald supported.

As for special motor truck roads, Thomas MacDonald said, "There can be no question of the soundness of this proposal." He described the Connecticut concept:

The third he believes to be the best solution, and to be feasible and economical. He limits its application, however, to those highways which have a peak load of at least 2,000 vehicles an hour or to those on which, because of the presence of many slow-moving vehicles, the speed of traffic is greatly reduced. Moreover, he would not advocate such a measure until all obstructions and bottle necks have been eliminated, until all improved roads in the immediate vicinity are receiving their fair share of traffic, and until data are in hand which indicate the absolute necessity of the soundness of the enlargement of highway facilities.

In short, the Connecticut suggestion was consistent with stage construction of highway improvement.

At present, only a few sections of the country were experiencing heavy traffic volumes on intercity roads. Connecticut was building a “36-foot highway” between New York City and New Haven to relieve congestion on the Boston Post Road. The State of New Jersey was working on a 13-mile highway between the Holland Vehicular Tunnel entrance to New York and the cities of Jersey City, Newark, and Elizabeth. This road, MacDonald indicated, would eventually stretch to Philadelphia. Wayne County in Michigan was developing “so called super highway plans” as the beginning of an improvement that would eventually reach Chicago, while California was considering a plan to acquire a 100-foot right-of-way from Los Angeles to San Francisco, with the central 30 feet to be devoted to traffic moving at speeds as high as 50 miles per hour.

MacDonald concluded his presentation by pointing out that cities also were experiencing congestion that required special treatment:

In most instances the main State roads now enter the cities and through traffic must, perforce, pass through the city streets to reach the continuation of the highway at the opposite side of the city. This situation has already become intolerable in a number of places, not only because of the further congestion of the already over-crowded city streets but also because of the difficulty which strangers experience in finding their way to the proper highway exit. The remedy in this case is being found in the construction of belt-line or by pass [sic] highways encircling the cities.

[MacDonald, Thomas H.; MacDonald John A.; and Sloan, William G., “Special Roads Reserved for Motor Traffic,” Vth Congress, 2nd Section, Traffic and Administration, 6th Question, Report 50, Milan, 1926, Permanent International Association of Road Congresses]

During general discussion of Special Roads Reserved for Motor Traffic, delegates from many countries addressed the congress on draft conclusions justifying construction of motorways, the appropriate authorities for their initiation and construction, financial arrangements such as tolls, and traffic and operation regulations. Many delegates expressed their admiration for the Milan-Laghi road and Piero Puricelli’s contributions, but the representatives from Great Britain and the United States were more cautious.

W. Rees Jeffreys of Great Britain expressed “great admiration for the talent of M. Puricelli who has built these roads We take our hats off to M. Puricelli and his collaborators.” However, the Milan-Laghi road had been in operation only 2 years; “we are therefore of opinion that it would be difficult to deduce from so short an experience [any] definite conclusions as regards the economic effects of such roads, the solidity of their foundations and also their social consequences.” Great Britain did not have any such roadways “and our Parliament has hitherto refused to sanction them.” He added that “various road authorities . . . are averse to the idea of roads where tolls are levied by private undertakings.”

Under the circumstances, Great Britain could not agree with the draft conclusions but, pending further experience, did not oppose them. The delegation would abstain from voting. He hoped that by the time of the next congress, “financial and traffic statistics will be available, as well as reports on the general position of road traffic in the districts traveled by the Autostrade.”

Thomas MacDonald, speaking for the United States delegation, agreed with Jeffreys. He felt “somewhat embarrassed” because he thought the report on the conclusions under consideration “deserves the greatest praise.” The problem was the difference between Italy and the United States. With more than 20 million motor cars in use, the United States faced the challenge of improving roads throughout the country to meet an ever growing need:

During a period of 5 or 6 years, we had to spend annually a thousand million dollars on roads and especially on new roads. This was only a beginning; we have to keep going ahead, and never know when we have done enough, for the more roads develop, the more the number of vehicles increases. Your conception of a motorway, in Italy, was a real dream, as it co-ordinated with the fact that the network of your other roads was finished and complete, whereas at that time we were only beginning to construct narrow roads, and widened them subsequently, built tracks for fast traffic, eliminating danger and taking the steps necessary for separating fast and slow traffic.

He did not disagree with the “technical conception” of Italy’s motor roads, but did have to consider the different financial situations. The United States could build similar roads but to do so:

. . . we must now have pecuniary resources appropriate to our situation, and consequently we do not wish to support a conception which might cause the public to say: “We won’t pay any more taxes; we will rely on private enterprise” We want [tax] resources to be spread over the mass of users in the country, especially for the construction of new roads, and we consequently want everyone to have free access to these roads, from all points of view, without creating private roadways. We do not want, in building roads whose special purpose is to serve fairly great distances and are to be reserved for special users, to have the appearance of competing with railroads, for the motor car should help the railway and not supplant it.

The United States, he said, could support the report’s conclusions “provided the technical question be kept apart from the financial one.”

The United States, along with Great Britain, would be the only countries abstaining from voting on the report. [Report of the Proceedings, pages 169-173]

C. M. Isacco, Director General of Italy’s Ministry of Public Works and general reporter for the discussion, said he was not surprised that Great Britain and the United States had abstained:

It depends clearly on the economic conditions of their countries. I had hoped to forestall their abstention by pointing out several times the great interest there may be for all countries in a special regime for motorways. I do not think that the lack of sufficient experience should prevent our adopting principles and guiding lines because, if every initiative had to await results already acquired, they would never come to light and be stillborn

The objecting to levying tolls on motorways does not seem to me to hold water, as it is a question of a tax that drivers would gladly pay, whilst the remainder of the ordinary roads would remain free. The fact of ordinary roads in Great Britain being in good condition is not sufficient lesson for rejecting motorways, for it is the traffic system applied to the latter, and the discipline enforced on it, which constitutes the essential interest in it

I hope that in the near future they will also be supporters of motorways. America and Great Britain, with their great economic possibilities, could also accomplish this idea and go on further. [Report of the Proceedings, page 183]

Frank Schipper, in his book about the evolution of European roads, pointed out that Puricelli's vision went beyond Italy:

Puricelli's ambitions were much broader. His ultimate goal was to go continental. In a conversation with professor [Robert F. E.] Otzen in 1925, he had stated that the real aim of his plans was a European road network. At the end of a booklet published on the occasion of the opening of the *autostrada* from Milan to Bergamo [September 20, 1927] a map showed the contours of the future European motorway network as expected by Puricelli. The core of the future network connected Germany, France, Italy and the Alps, with smaller isolated networks in Belgium and Spain and single motorways from Düsseldorf to Cologne and London to Brighton.

Schipper considered the lines of the map to be "highly fictitious, further underlined by the fact that the map did not take political factors into consideration." Still, Puricelli's vision was comparable to the ideas of the American road advocates who had long favored a network of linking superhighways for the United States. [Schipper, Frank, *Driving Europe: Building Europe on Roads in the Twentieth Century*, Aksant Academic Publishers, Amsterdam, 2008, pages 104-105]

Back in the U.S.A.

Upon his return to the United States, MacDonald discussed the activities of the International Road Congress in an article in *Engineering News-Record*. He described the differences between the United States and the nations of Europe. "Europe is still regarding the motor vehicle as a luxury rather than a general public utility. European engineers believe the motor vehicle will have a big future but the public does not." The new Italian motor road was a perfect illustration of the difference:

Here is a toll road reserved exclusively for motor traffic, built by private capital under state franchise to extend for fifty years. It is laid over an entirely new right-of-way, without intersections at grade, no speed limit, ample width, concrete pavement with bituminous skin coat, easy curves, superelevated. In fact every provision is made for fast traffic between termini.

The two issues raised in Milan that prompted him to abstain on the conclusions, were the policy of granting private franchises for toll roads exclusively for motor vehicles and the engineering concept of the highway:

When this dual aspect was presented . . . both the English and the United States delegations found themselves in a somewhat embarrassing position. All the traditions of English speaking people demand freedom of the highways. They are opposed to any conception of the highway which involves the exclusion of any kind or type of traffic that may demand service. To them the earliest meaning of the highway was not a physical thing but rather a right – the right to pass. The toll feature is not so foreign to our traditions since toll roads have been somewhat widely used during our past history; but the old method of collecting tolls at toll gates has served its purpose, speaking generally, and is no longer favored.

As a result, neither delegation could “accept the public policies suggested for general approval.” Moreover, the Milan-to-Laghi road was so new that MacDonald hoped to see additional financial information in a few years before drawing conclusions.

At the same time, he acknowledged that “the engineering conception of the plan was courageous and highly representative of the best practice in the design of modern motor roads.” Both countries would gladly have endorsed the report if it had been limited to design issues. He added:

This brief discussion does scant justice to a really remarkable development. The conditions are exceptional and while scarcely affording proof of the soundness of the principle of the “Autostrade” for general application, as here worked out the result is one of which the Italian people may well be proud, and they are. The whole project certainly reflects great credit upon those who carried it through. [MacDonald, Thomas H., “Road Congress Reviews World Highway Practices,” *Engineering News-Record*, October 28, 1926]

Pyke Johnson of the National Automobile Chamber of Congress was part of the United States delegation to the Milan congress. In a November 1 interview reported in a *Western Highway Builder* column, Johnson, a close associate of MacDonald’s throughout his tenure in BPR, said:

“Of all the subjects discussed, the one which created the sole controversy was that growing out of the auto strada from Milan to the Italian lakes,” said Mr. Johnson. “These roads have been built by private capital, guaranteed by the government, and travel on them is subject to toll which is in turn subject to recapture in part by the government. The result has been the construction of some 70 kilometers of high type road over which cars move as rapidly as 100 miles per hour. Junction points are guarded by watchmen and by gates.”

He expected that Italians would demand more highways of this type, but the article about the interview summarized Johnson’s concerns:

[The] danger is that the public will demand that roads be built this way rather than through taxes. Such a policy is likely to have two disastrous reactions; first—a public convenience and necessity will be made a matter for private gain; second, in concentrating attention upon a few miles of high-type roads, there will be a tendency to neglect the feeder roads which are essential to local development.

While accepting the engineering practice, the United States delegation felt that the financial policy could not be admitted by our officials [Joyce, B. M., “With Road Builders at the Nation’s Capital,” *Western Highways Builder*, November 1926, page 32]

The magazine’s editor thought that based on observations during the Milan congress, the “time seems to be about prime for the development of express roads in all parts of this country and in all parts of the world where the automobile has made the building of super highways imperative.” In densely populated areas, “we hear talk of overhead roads and subways or of through and express roads where high speeds can be maintained with viaducts at the intersections and no doubt these super roads are on their way but who can tell when they will arrive.” Nevertheless, the editor hoped “we will wait for the development of the super highway until such time as we are a little more ready for it, if one might say that the need does not make us ready now”:

In the first place we are not ready to finance such highways. Italy jumped ‘way ahead of the miles when they constructed the Auto Strada or allowed it to be constructed. Now the Italian people have a taste of modern highways and that without the bitter after effects of taxation and they are going to want the same pleasant smack to all the feeder roads which obviously cannot be built in the way the Auto Strada was built.

We, in this country, will not consider such express roads compatible with the other attributes of a free people if they are built and operated as toll roads or a private enterprise. And when the voice of the people is raised up as it has been recently over other means of financing ordinary highway construction and the completion of essential and imperative State highway systems, how are we going to build the super highways? [“Express Roads,” *Western Highways Builder*, January 1927, page 24]

On September 19, 1928, the World Motor Congress took place in Rome. After the congress, Cortlandt Field Bishop, who chaired AAA’s Foreign Relations Committee, secured an interview with Mussolini, known as Il Duce. Bishop told readers of AAA’s magazine *American Motorist*, that Italy was “to have 40,000 miles of new motor highways, by far the most ambitious road program ever undertaken by any European nation.” Bishop continued:

The Duce has spoken. And in this, as in other things, there is no reason to doubt that he will make his dream come true. For he sees much profit in it as well as glory and he believes that the undying lure of Italy for the tourist will be enhanced as the years and the roads march on.

Bishop, accompanied by Major Stenson Cook of AAA’s British counterpart, met with Mussolini at the Palace:

“As we entered the Palazzo Chiggi,” says Mr. Bishop, “we received the famous Roman salute—the right arm extended at full length. We were ushered into the most impressive room I have ever seen, and into the presence of the Duce, who rose as we entered from behind a huge desk-table in the northeast corner of the room. He greeted us with a cordial handshake and said in very distinct and carefully syllabled English, ‘I am very glad to see you.’

“Mussolini has been studying English for some time and has made very good progress but, as our talk became more animated, we lapsed into a combination of Italian and French, and with occasional assistance from the interpreter, held a most interesting exchange of views.

“The Duce stated his intention to initiate a great road-building plan for Italy that would, within five years, make all parts of the country accessible by car. Fifty thousand men are to be engaged in working out this program—the largest road building project ever undertaken by any government. When complete, Italy will have 40,000 miles of fine, wide, automobile roadways, without grade-crossings, with all curves banked, the surface dust-proof, leading to favorite tourist objectives throughout the length and breadth of that classic country.

“With an eye to the early encouragement of visitors to France, the first route to be completed will be that leading from Nice in the French Riviera to Rome. Work on this has already been started.

“Our interview ended on an American note—Mussolini asking about our highway conditions at home. He expressed amazement at the number of passenger cars owned in America and admiration for the splendid work of the American Automobile Association in attracting to its membership close to a million car owners.

“Mussolini is an ardent motorist himself. He thinks nothing of driving three or four hundred miles alone to visit a relative. This accounts in part for his intense interest in roads.

“One feature of recent Italian road building is the 150 mile stretch of the Auto Strado near Milan. This parkway is a toll road, the curves are all scientifically banked and there are no grade-crossings. No official speed limit has been set, but motorists are requested not to exceed 70 miles per hour.

“The Auto Strado has proven popular and it rather looks as if the express toll highway would become an important feature of the Italian transport system.” [“Mussolini Turns Road Builder,” *American Motorist*, December 1928, page 34]

As the United States concentrated on building a network of two-lane paved roads, road builders and advocates continued to watch the Italian expansion of its *autostrada* with interest. In October 1928, writer E. E. Duffy told readers of *Highway Engineer & Contractor*:

Well paved roads connecting all principal Italian cities, and without road-level intersections, is the highway future assured motorists in Italy. This system of “autostrada,” as they are called, is not a dream to be consummated just before the arrival of the millennium, for a good portion has already been built and other links are under construction.

After describing the origins and evolution of the plan, Duffy continued:

Through this toll system and method of semi-private control Italy is getting highway benefits that could be attained in no other way. The Italian highway requirement is so great, as it is in other countries, that private capital was necessarily called into play.

American motorists who have traveled over the several sections of the autostrada now in service declare that the toll charges are more than vindicated through the comfort and convenience, the safety of driving at high speed and through the lessened strain on the car. [Duffy, E. E., “Fast Highways Built by Private Corporations in Italy,” *Highway Engineer & Contractor*, October 1928, page 32]

As discussed earlier, MacDonald was impressed by the engineering aspects of the *autostrada*, but did not see them as a model for the United States. His views reflected his concerns about the individuals and groups promoting motorway networks or single transcontinental superhighways in the United States. In the mid-1920s, he did not believe such highways or highway networks were justified by traffic volumes or economic returns. His views on Germany’s autobahn highway network would be similar, as will be explained.

Other Visions of a National System

R. A. Carpenter was chief engineer of the West Chicago Park Commission, which was established in 1867 as an independent taxing district to establish, maintain, and improve parks in the western district of the city. In 1928, Carpenter wrote that many people were “thinking seriously and attempting to visualize the needs and requirements of the coming generations with regard to adopting plans for major highways, so that in the future it could be said of the present generation that it had foresight and planned wisely in laying the foundation for great arterial highways across the continent.” He did not agree with those who proposed extensive networks of superhighways that would cost “vast sums of money.” These types of proposals were “getting the horse behind the cart,” in his view.

Instead, Carpenter proposed “two great super-highways across the United States from coast to coast.” The 3,350-mile Northern Transcontinental Highway would begin near Boston and follow a path west via Worcester and Springfield, Massachusetts; Binghamton and Jamestown, New York; Cleveland and Toledo, Ohio; South Bend and Michigan City, Indiana; Joliet and Rock Island, Illinois; Davenport and Des Moines, Iowa; Omaha and North Platte, Nebraska; Cheyenne and Granger, Wyoming; Pocatello and Nampa, Idaho, and Baker City and The Dalles to Portland, Oregon.

The 2,800-mile Southern Transcontinental Highway would begin near Savannah and run west through Helena and Americus, Georgia; Meridian and Vicksburg, Mississippi; Monroe and Shreveport, Louisiana; Marshall, Dallas, and El Paso, Texas; Deming, New Mexico; Tucson and Yuma, Arizona; Imperial, Riverside, and Los Angeles, California.

The beauty of Carpenter's plan was that, "With two great transcontinental highways established, lateral highways leading to and from the great centers of population would logically follow."

The location was subject to change, but the idea was to bisect the country by paralleling railroad trunk lines "which usually traverse the best routes through the mountainous districts." The routes would avoid cities, but as construction began, State and local officials would build feeder roads from the larger cities. "Consequently, with all these main feeders leading on to the main highway, receiving and discharging traffic, business would be brisk from the start."

Carpenter described the superhighways:

A 250-foot (in width) auto highway divided into four roadways (one-way drives). Two outer drives 56 feet in width each, for heavy traffic, busses [sic] and trucks, with a 6½-foot (in width) cement sidewalk on each side, one foot above the grade of the roadways and providing for an ornamental fence 6 feet in height allowing for advertising space, electric lights and room for pedestrians to walk.

The roadways would be separated by a cement curb 1 foot wide and 2 feet high with openings every mile to allow vehicles to move between roadways. Following the same alignments as a railroad, the roadways would have as many tangent (straight) sections as possible to increase sight distance and "a minimum of curvature, the maximum grade not to exceed 10 per cent." Speed limits would be 45 miles per hour, possibly "even 50." These speeds "could be attained with more safety than a rate of 35 miles per hour over our average improved auto highways as at present constructed."

Entrances would be a minimum of 10 miles apart "and in the majority of cases, much more," except that entrances would be permitted for all principal state auto road crossings. Service stations would be included every 10 miles, with "waiting stations for bus passengers every 10 miles, semaphores for halting traffic at this point when found necessary and special arrangements for vehicles desiring service at gas stations, without blocking the balance of traffic."

Carpenter knew that costs could not be accurately stated without engineering data, but he estimated that the Northern Transcontinental Highway would cost \$2.5 billion. The Southern Transcontinental Highway would cost \$2.1 billion. This "gigantic undertaking" was "too large and complex" to be accomplished "by private capital." The two highways could be built "in cooperation with State aid" and under the jurisdiction of the Interstate Commerce Commission, which would issue low-rate long term bonds with government backing.

Because it would be "a special privilege to use a road of this character," motorists "would be willing to pay a toll for a period at least." He thought a reasonable toll would be \$20 from coast to coast for a passenger automobile, with tolls pro-rated for shorter distances. To supplement the

toll revenue, “advertising space along the fence throughout the entire distance of the highway would bring in an enormous amount of money.”

Of course, skeptics would claim that “it is wholly impractical and could not be carried out as the cost would be prohibitive to start with.” He responded:

Let those who take this view look into the past and see some of the things that were accomplished by man power alone, i.e., the erection of the pyramids of Egypt, the great walls of China, and coming down to modern times when modern appliances were used, the construction of the Suez and Panama Canals.

Construction equipment was far superior at present. No project “of imminent necessity” was beyond “the resources at the command of the United States.”

As for north-south routes, Carpenter had an idea about that as well. After the Great Mississippi flood of 1927, one of the most devastating natural disasters in the country’s history, the Federal Government would be expending large sums for flood control in the Mississippi Valley for levees and impoundments:

Logically, if two transcontinental motor highways were constructed across the United States from east to west, a north and south super-highway would be of equal importance, following the Mississippi River from St. Paul to New Orleans. Why not in constructing the levees, where required, make them sufficiently wide, to construct therein a first-class super-highway, provided the proper alignment can be had, and connect up the two transcontinental motor highways as herein outlined, as well as providing a great highway for the Mississippi Valley?

Without detailed engineering data, Carpenter could give only a general idea of the nature of his two great transcontinental superhighways, but he was certain of their success:

If it were possible to construct two auto highways as herein outlined, within a year after their completion or opening, a majority of the people in the United States who indulge in even limited auto tours would go over these highways, going west on one road and returning over the other and vice versa. There would be plenty of cross auto roads connecting these two main highways, and there would be a constantly increasing traffic from the time they were opened to the public. [Carpenter, R. A., “A Plan for Great Northern and Southern Transcontinental Motor Highways,” *Good Roads*, September 1928, pages 503-505; a shorter version appeared in *Highway Engineer & Contractor*, August 1929, pages 67-69, with a sketch of the “super-highways of the future” on page 67]

As the decade neared an end, Carpenter was not the only visionary. On June 4, 1929, Senator Phipps, now chairman of the Post Office and Post Roads Committee, and Representative Robsion introduced a joint resolution to create a United States Motorways Commission to study proposals for a national system of expressway motorways. Senator Phipps’ statement on the resolution explained:

It is time to consider the feasibility of public-owned express highways The question involved is whether the United States should take a hand. The proposed investigation will aid Congress to determine that matter with a view not only toward solving the traffic problems, but also the question of unemployment.

He added, "I believe we are offering a measure which will save years of haphazard investigation as well as hundreds of millions of dollars to the taxpayers of this nation."

Representative Robsion said:

With such a commission in existence, it would be possible for the first time for a great many worthy suggestions for a national system of express motorways to be presented to a federal agency with authority to co-ordinate the interests of all of the federal branches and make a comprehensive and thorough report to Congress

There are many valuable suggestions and plans, and beyond a doubt practical ways and means of working out an express motorways system adequate for the needs of the American people. The plan should be nation-wide, and although the initial projects put into operation should be where traffic conditions most demand, these should be carefully planned as a part of a national backup scheme before construction starts.

He described one reason why the Federal Government might develop an express motorways system:

The encroachment by private corporations upon the highways of the United States through the medium of permanent toll bridges and already short pieces of permanent toll roads, must be met through adequate state and national action for public-owned express highways, or the nation as a whole is bound to face gigantic economic losses which will be taken as profits by private corporations through the toll medium.

A significant delay in determining a Federal role would "permit private groups to obtain the very cream of any such proposed express motorways links or units." He cited two recent attempts to attain highway concessions. In New Jersey, a corporation sought a concession to obtain right-of-way for a road from Philadelphia to Atlantic City, while another corporation wanted to build a private toll road from New York to Boston.

Representative Robsion added that the country should "tackle the problems of unemployment and national express motorways as a joint problem." He concluded:

A long period of prosperity would be guaranteed, and the express motorways would be one of the greatest achievements in our history. [*Phipps-Robsion Joint Resolution Creating a Commission to Study Proposals for a National System of Express Motorways*, Published by Lester P. Barlow]

The Townless Highway

Benton MacKaye was a conservationist, the man who inspired creation of the Appalachian Trail, and a member of the utopian Regional Planning Association of America (RPAA). In thinking about city living in the 1920s, he and his associates concluded that metropolitan areas might have outlived their usefulness. They began to imagine a regional city where residents could live and work, walk to jobs instead of commuting on congested roads, enjoy greenbelts and parks and other recreations without traveling to distant places or being clustered in overcrowded cities. As journalist Earl Swift explained in his history of road development in the United States:

Theirs wasn't a vision of today's suburbia. The greenbelts would be inviolate, giving definite edges to the central city and its satellites, limiting their population and physical growth; aimless, amebic sprawl was precisely what the regional city sought to avoid. And ironically, members of the RPAA believed the auto could help usher in this less frenzied, less congested life; properly harnessed, the car could help decentralize overstuffed cities, could foster the wise and efficient use of the surrounding country, could help relocate workers and industries to new settlements "where," as one member put it, "the human opportunities for living are best." [Swift, Earl, *The Big Roads: The Untold Story of the Engineers, Visionaries, and Trailblazers Who Created the American Superhighways*, Houghton Mifflin Harcourt, 2011, pages 106-107]

This type of thinking was an extension of the more conventional view that the solution to city problems was to spread out the population, even to the suburbs, and to organize businesses, factories, and homes so that residents would not have to go downtown for work or to shop. Professor John B. Rae, in *The Road and the Car in American Life*, pointed out that if a concentration of commercial enterprise in downtown caused traffic congestion and other problems, the solution seemed obvious to contemporary observers: dispersion. Cities embraced this option in an era when ample room remained for development within the city limits – ensuring the city could retain its tax base.

Transportation innovations increased opportunities for dispersion away from congested center cities:

The beginning of the current urban revolution was the appearance of the railway, which for the first time permitted people to live at a substantial distance from their work—those at least who could afford the service. By the end of the nineteenth century every major city in the Western world had its network of commuter rail lines. Rail transport also provided for local travel within cities in the form of street railways, operating horse cars and cable cars at first but going over completely in the early years of the twentieth century to the electric-powered trolley car. The trolley lines frequently expanded into interurban service, competing with the railroads for commuter traffic. Finally, in very large cities there were rapid transit systems, underground or elevated

He added:

There were even those who suggested that it would be advisable to resolve the problems of the cities of that day by “starting on a bold plan on comparatively virgin soil rather than by attempting to adapt our old cities to our newer and higher needs.” This was proposed in 1902.

Rail transport, Professor Rae wrote, “initiated the great outward movement of city dwellers to Suburbia,” but this dispersion to suburbs did not solve the problems. Because suburban residents were dependent on the rail lines, developers built new housing and businesses as close to the lines as possible. Rail operators encouraged these developments because economic viability depended on high-density traffic; they often financed homes to generate the traffic, and profits, they needed to survive. In short, “the transportation system that permitted people to live farther away from the center of the city also intensified concentration on the central business district” without solving congestion because downtown was still the primary destination of the inflexible rails. [Rae, John B., *The Road and the Car in American Life*, The MIT Press, 1971, pages 202-203]

The dispersion pulled people to the suburbs within and without the city limits, but the central business district remained critical. While business interests debated the commercial merits of concentration versus dispersal, residences and related services continued to move away from the central city. In part, the change was a function of economics because property owners could generate more income on the land with businesses than residences. The advantages of having businesses, accountants, lawyers, banks, and service businesses such as restaurants in one area tended to create a central, rather than dispersed, business district.

In addition, transportation innovation accelerated the transformation in the shape of cities as residences moved further from the core. Professor Robert M. Fogelson, in his history of downtowns, explained that, “Of the other things to which Americans attributed the rise of downtowns, the development of the street, steam, and elevated railways was regarded as the most important.” He continued:

As early as the mid nineteenth century Americans had marveled at how the railways had opened up remote residential sections to the middle and upper classes. Well into the early twentieth century Americans were hopeful that the railways would enable the working classes to escape the slums—and the many medical and moral problems commonly associated with them. [Fogelson, Robert M., *Downtown: Its Rise and Fall, 1880-1950*, Yale University Press, 2001, pages 22-24]

The same forces that shifted residences to the suburbs concentrated businesses in downtown. Given the speed of pre-rail transportation, “there was a fair chance that businesses would move uptown in order to be close to their customers and employees.” Fogelson added, “But with the coming of steam and elevated railways, which effectively reduced the distance between the business and residential districts, merchants, bankers, and other businessmen had good reason to remain downtown. Thus, the [New York *Real Estate Record and Builders Guide*] pointed out, the railways accelerated the centripetal tendencies of businesses as well as the centrifugal tendencies of residences.” [Fogelson, page 24]

The concentration of business and the construction of skyscrapers created commercial districts where all business could be transacted. It also brought congestion, which was perceived as a mixed blessing. Fogelson observed that for most Americans, downtown “was supposed to be very crowded.” He illustrated this idea:

Crowds are “just what the city of Boston wants,” said Charles H. Dalton, chairman of the Boston Subway Commission, in 1894. “The larger the crowd, the better they [Bostonians] like it. It is the purpose of the city to have a great many people come here and do business with them. The more, the merrier.” Crowds were a sign of prosperity, as was congestion. If the congestion grew intolerable, the cities should devise ways to relieve it—not discourage people from doing business downtown. [Fogelson, page 27]

Joseph F. C. DiMento and Cliff Ellis summarized contemporary thinking in their book on urban freeways:

New Towns would decant population from the urban core, lessening the need for elaborate freeway networks through the central city. Thus, the garden city ideal could be reconciled with a large radial-concentric regional freeways system, linking a small, restructured central city with both suburbs and satellite communities.

For many city planners, America’s central cities seemed hopelessly resistant to the current array of planning remedies, and it seemed wiser to concentrate on planning new communities properly on the urban fringe. [DiMento, Joseph F. C., and Ellis, Cliff, *Changing Lanes: Visions and Histories of Urban Freeways*, The MIT Press, 2013, page 27]

The RPAA took the idea of dispersion, which had failed to relieve city problems in its conventional implementation, to its apparently logical extension. Their intended object lesson model was Radburn, a community founded in 1929. As Swift explained:

[The RPAA] bought a two-mile-square piece of Bergen County, New Jersey, and set to work building Radburn, the first-ever “town for the motor age”—a regional neighborhood more than a city proper, but incorporating a slew of novel controls on the automobile and its everyday impact. Radburn was built in residential superblocs, at the center of which were open parks. No roads penetrated these superblocs, cars were kept at their periphery on curving streets that branched into short cul-de-sacs, each of which serviced the attached garages of a few homes At those points where a sidewalk crossed a road dividing one superbloc from another, it did so via a bridge or underpass

In April 1929 the first [homes] were ready for occupancy, and plans were afoot to grow the place into a community of twenty-five thousand. The stock market crash [in October 1929] intervened; just two superblocs, room for about a thousand people, were completed. [Swift, page 108]

Raymond Unwin, the contemporary influential British city planner who was president of the International Federation for Housing and Town Planning, said in 1928:

The people who live and work in Radburn will presumably not wish to come to New York for anything but entertainment of a general character, such as a visit to the opera house, to museums and other places which obviously cannot be duplicated in a smaller community. Radburn is going to fulfill a very valuable function because it will show that a city need not grow haphazard, that it can be planned from the very beginning so as to solve the problems of those who are to live and work in it. Such an experiment will make for a better kind of life for the people of New York. [Stark, Louis, "Satellite Towns Urged as Congestion Cure," *The New York Times*, October 7, 1928]

The new city, developed by the City Housing Corporation (CHC), had a promising start, with the American Radiator Company and the Central Supply Company agreeing to build in the area to provide jobs for Radburn residents. In April 1930, after a year of operation, the community included 202 families and, on its second anniversary, 325 families and nearly 1,000 people. ["Second Industry for Radburn," *The New York Times*, September 26, 1928; "One Year of Radburn," *The New York Times*, April 27, 1930; "Town of Radburn is Two Years Old," *The New York Times*, April 19, 1931]

As the Depression took its toll on Radburn, the CHC was looking forward to a boost from the opening of the George Washington Bridge between New Jersey and New York on October 24, 1931, and the upgrading of State Route 4 as a superhighway link to the bridge in Fort Lee. The full express road was opened on July 27, 1932, on 80-foot right-of-way, as described by *The New York Times*:

The new roadway, which has a length of twelve miles, has been elevated above four railroads, passed under twelve streets, and is bridged over an equal number. There are three clover-leaf intersections. ["New Road Aids Radburn," *The New York Times*, November 22, 1931; "Ceremony to Open Road," *The New York Times*, July 27, 1932]

Professor Peter Hall discussed Radburn in his book on urban planning:

Though a Radburn Association controlled and managed the space, the houses were sold, and—despite the hopes of social mix—by 1934 three in five family heads were at least middle executives; there were no blue-collar workers at all. Even worse, the realtors kept out Jews and blacks. From the start, the site was too small to allow for a proper green belt. The Depressions stopped further development, keeping the population pegged at 1500: far too low to support the elaborate range of community programmes and services originally envisaged. Even to maintain the communal part of the development, the Association depended on CHC and Carnegie grants. It proved difficult to attract industry; so, to keep up cash flow, the CHC was forced to abandon all hope of creating a true garden city, advertising it as a pure commuter suburb. Many owners were forced to sell; finally the CHC too, overwhelmed by land-carrying costs, went down in a sea of acrimony and legal actions. [Hall, Peter, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Basil Blackwell, 1990, page 127]

These attempts to solve urban problems are relevant to the Interstate System because in the 1930s, as will be discussed in later sections, they would factor into the thinking not only of urban planners, but BPR officials.

While RPAA was focused on Radburn, MacKaye began thinking about another aspect of the motor age, one that he called the townless highway. *The New Republic* carried his description of the concept in its issue of March 12, 1930. Just as the motor car (as he usually referred to the automobile) was once thought of as a horseless carriage, modern motor roads were “conceived as mere extensions and widenings of the old-fashioned highway designed for horse-drawn vehicles.” He continued:

Actually, the motor road is a new kind of road, as different from the old-fashioned highway as the railroad was; and it demands, accordingly, a new type of plan. The logical development of the modern motor road, from the standpoint of transporting people and goods and guiding the new migration of population, is in the direction of the townless highway . . . namely, a highway completely free of horses, carriages, pedestrians, towns, grade crossings; a highway built for the motorist and kept free from every encroachment, except the filling stations and restaurants necessary for his convenience. Motor traffic and pedestrian “living” do not go together. To insulate each activity is a prime condition for speed and convenience on the one hand, and for safety and peace of mind, to say nothing of freedom from noise and carbon monoxide, on the other.

MacKaye discussed how the evolution of American transportation, from wagon train to railroad, helped populate a continent. “The present migration of population is being conducted by the automobile; and while a *future* one may result from the airplane, there is no reason to think that surface transportation will disappear in any *early* future, although the two may become more closely coordinated.” For now, the road and automobile were dominant:

Today’s migration consists of a drift, more or less automatic and unplanned, from the principal cities, out along the main highways. The modern motor road has accordingly two distinct functions: one is transportation, or the immediate flow of people and goods, and the other is migration, or the relocation of the population on the map of the United States.

The motor car was, MacKaye said, “a deceptive creature.” People still thought of it as they did the buggies of an earlier age when roads and streets “were a fitting frontage for our home lot, instead of regarding it realistically as a causeway, as much to be shunned as a railroad.” The road was, “a new kind of railroad,” but different from that mode in several ways:

For one thing, this new “locomotive” swings into the track at any point along the line; for another, it runs both ways on a one-track road, and safety is based on the technique of remaining solidly in line or becoming an artful dodger.

MacKaye focused on the consequences of the motor vehicle entering the road at any point:

Since the gasoline locomotive can enter at any point, it follows that continuous rows of buildings can flank the highway on either side; and thus arises that continuous haphazard wayside development known as the “motor slum.” As the outcome of this purely automatic and unintelligent adaptation to a new means of transport, we have today an unsafe means of transportation and an uncivic channel of migration.

The motor slum was “as massive a piece of defilement as the worst of the old-fashioned urban industrial slums.” Also as a result, every highway crossing in cities and villages was unsafe for motorists and pedestrians.

To counteract these failures, MacKaye recommended taking “more seriously our new means of transportation . . . to create for it new communal forms that correspond with its new functions.” In particular, “we must take possession of the surrounding right-of-way, keeping it free from haphazard commercial development and obtaining for the benefit of the motorist the pleasant views and aspects of the country, unsullied by the rowdy clamor of billboard advertising.”

He cited Radburn as a “bold start . . . in the direction of adapting the motor car to an effective community life.” He described how the new town was the first attempt to adapt a community to the motor car:

Radburn consists, with respect to its road system, of a skeleton of major avenues and highways connected with the actual residential streets, which are a series of related cul-de-sacs backed by open park land. The home never comes in direct contact with the main motorway: the dwelling fronts on a lane by which the motor car can enter and depart, but which it can never pass through.

This “happy divorce” between home and road could be repeated for the road itself:

The townless highway is a motorway, in which the adjoining towns would be in the same relationship to the road as the residential cul-de-sacs in Radburn are to the main traffic avenue. What Radburn does in the local community, the townless highway would do for the country at large. This is genuine motorway planning—as opposed to the backward and conventional planning in which we now sink millions of dollars of the community’s money. Instead of a single roadtown slum, congealing between our big cities, the townless highway would encourage the building of real communities at definite and favorable points *off* the main road.

The goals of the townless highway included abolishing the motor slum or roadtown by limiting “except at certain points; public ownership, or effective public control through rigorous zoning, of the foreground along the right-of-way.” The land could be purchased through excess condemnation before the road was built, with the surrounding land to be landscaped, including regulation of telephone and electricity lines plus “strict control of highway service-station development,” as well as eating places and other roadside services.

Other goals of the townless highway were to encourage development of compact communities based on the model of old New England villages or Radburn; build roads to bypass larger towns

and cities; and increase safety by abolishing railroad-highway grade crossings, limiting highways to a single purpose, whether passenger or freight traffic; “double-tracking of the highway” with traffic moving in opposite directions “at varying distances apart”; and “safety traps at all approaches to the highway.”

MacKaye recommended using current Federal-aid funds to finance a national highway policy based on these principles. “Such a policy could apply to new lines of road to be constructed and in part to the present lines to be remodeled.”

Although MacKaye was talking about roads, he saw the townless highways as “part of a larger policy of national transportation and migration whose ultimate purpose would involve the relocation and redistribution of the American people.” MacKaye praised MacDonald for proposing “broad-gauged regional and inter-regional planning,” as BPR had developed in consultation with State and local officials in Cleveland and Chicago. In the late 1920s, BPR entered into agreements with several States for cooperative traffic surveys, including 11 western States for a simultaneous program. [*America’s Highways 1776-1976*, page 268]

As MacKaye’s comments suggest, he and his associates had a vision of redistributing people to an ideal location, as if the urban planners were dealing with a blank geographic slate, a willing populace, and a compliant government. He concluded:

Some central body, in close touch with the President and Congress on the one side and with the several states on the other, should have this task in hand. And a critical part of their super-plans, in the present phase of our history and resettlement, would seem to be a national system of federal-aided passenger motor-roads to take the lead in guiding our people, in accordance with some definite policy, into appropriate communities and settings for the furthering the cultural growth, and not merely the industrial expansion, of American civilization. [MacKaye, Benton, “The Townless Highway,” *The New Republic*, March 12, 1930, pages 93-95, italics in original]

MacKaye and his associate, writer and social critic Lewis Mumford, reworked the concept of the townless highway for the August 1931 issue of *Harper’s Magazine*. The new version again put the future of the Nation’s roads in the context of reinventing urban life:

Having achieved thousands of miles of wide, concrete-paved highways, having projected many thousands more on almost exactly the same pattern, we lean back complacently in our chairs and fancy we have solved the problems of motor transportation—although our jammed city streets, our run-down suburbs, our spoiled villages, our devastated tracts of countryside, our country homes that are as quiet and peaceful as boilerworks are all large and ironic commentaries upon our pretensions.

Part of the problem was that “in designing our new roads we have continued to provide for horseless carriages; whereas in actuality we are confronted by a kind of vehicle completely different from the carriage, something much closer to the steam locomotive”:

We have tried to adapt the instruments of one age to the demands of another The loss of efficiency, the loss of life, the destruction of beauty, the dulling of pleasure that attend the spread of motor transportation call for a thorough re-orientation

Once we have grasped the essential notion of the automobile as a private locomotive, the example of the railroad will give us a clue to its proper treatment. It must have a related but independent road system of its own, and this system must be laid down so as to bring into use all the potential advantages of the automobile for both transportation and recreation. This means a kind of road that differs from the original turnpike, from the railroad and, above all, from the greater part of the existing automobile highways. One can perhaps characterize it best by calling it the Townless Highway, to denote its principal feature—the divorce of residence and transport.

The current system of building trunk roads was not working:

All the time that is saved in the country stretches is lost once the car enters the city streets: the bigger and more important the trunk road, the larger and more cluttered the town, the greater amount of time that is lost.

Cities tried to adapt by routing traffic off the main avenues. “But the first principle of the townless highway goes a long step farther: it requires that the highway avoid passing through the town.” The authors described plans underway to relocate several sections of U.S. 1 to bypass the main cities on the inland side. By connecting these bypasses and belt-lines, U.S. 1 would be “turned from an old-fashioned turnpike into what it should have been from the beginning—a townless highway.” This was “a fundamental maxim of sound motorway planning,” that through traffic “should go completely outside a town, be it big or little.”

MacKaye and Mumford recalled horse-and-buggy days when “the high-road served as company,” with passersby providing news and chat:

But once the country road becomes a main highway, filled with fast traffic a good part of the day and even of the night, when the cars themselves are driven mostly by strangers, not neighbors, the whole situation is changed: the road ceases to be a symbol of sociability; it becomes very largely a curse.

More was needed. “Unfortunately, the by-pass is not by itself the solution of the problem of motor transportation.” The usefulness of the bypass “is checkmated by the roadtown—sometimes called the motor town or the motor slum,” which they described:

We refer to the familiar row of frontage development—the peanut stand, the hot-dog kennel, the dewdrop inns, the superfluous filling stations with their cut whisky and applejack and their cut-price gasoline, and smear of badly designed bungalows which make up such a large part of what on Sundays we prayerfully call the great outdoors.

What is the use of a road’s by-passing a town, only to find that the road itself has turned into a town—and a cheap, nasty town at that?

The motor slum suggested the second maxim of modern motorway planning:

Not merely must the motor road make up an independent system which by-passes the existing towns; it must be provided with enough land on both sides of the road to insulate it from the surrounding area, whether rural or urban.

Still, these maxims were not enough. “Both of these measures are working backward to what this revolution demanded in the first place: a roadway located quite apart from the towns with a wayside free from the eyesores of town growth: a townless highway.” Working backwards was better than not at all, but “such hindsight is expensive.”

They praised Radburn as the only project that “recognizes all the implications of the motor revolution”:

By dedicating the wide through avenues to through traffic, by likewise dedicating the narrow local motor lanes to local traffic only, the two different purposes are automatically separated. Result: quiet homes and fast motor travel, not by ignoring the advantages of motor transportation but by boldly facing them and providing for them The insulation of highways from residential neighborhoods and the connection of these two elements by side lanes are a necessary complement in urban planning to our modern system of transportation. It is only by such a bold and radical departure in the planning of new cities or the extension of old ones that the congestion brought by motor transportation can be permanently relieved

The point to remember is this: it is only by a deliberate separation of local and through roads, of traffic and residential functions, that the motor road itself can attain its maximum efficiency in the number of vehicles served at the highest safe speed, and that the community can attain its maximum efficiency as a place for living, recreation, sleep and the care of the young.

One more maxim remained. “To concentrate the roadside services in definite units, instead of letting them dribble inefficiently along its entire length is an important step; the next is to follow the example of the railroad and keep the road itself absolutely free.” A train can enter the track only at switches, but “the basic cause of frontage development on the ordinary motor road is that vehicles can enter and depart at any point.” The fewer the intersections, the safer and faster the traffic:

The only way to dispose once and for all of roadtown is to make it physically impossible to enter or leave the motorway except at properly planned stations. Chairman Edward Bassett, of the National Council on City Planning, has suggested this simple device and given it the name of the freeway. On high-speed arteries, the stations on these freeways would undoubtedly be at considerable distances apart—perhaps as much as ten miles or more—and ordinary traffic would usually cross the express road by the overpass or the underpass.

(Bassett, a New York attorney better known for promoting city zoning, is credited with coining the term "freeway" to describe a controlled access urban parkway open to commercial traffic. Where parkways were dedicated to recreation, the freeway adapted the parkway design concept to serve commercial traffic as well as commuters, shoppers, and motorists on recreational trips. Bassett said the term was "short and good Anglo-Saxon." Motorists could travel the road free from "grade intersections and from private entrance ways, stores and factories." It would not include sidewalks or pedestrians. "In general, it will allow a free flow of vehicular traffic." Further, he said a freeway could be "adapted to the intensive parts of great cities for the uninterrupted passage of vast numbers of vehicles." [Bassett, Edward M., "The Freeway—A New Kind of Thoroughfare," *The American City*, February 1930, page 95])

Some questions remained about the stations, such as:

Should the stations be designed as part of the highway and controlled by some regional authority? Should they be built and owned by the government—or merely planned? How are we to prevent slum towns from springing up around the stations, as they tended to, seventy-five years ago, around the new railroad stations?

MacKaye and Mumford said of these questions that "we cannot go into them here,"

With the article nearing its end, they summarized their points:

The Townless Highway would, like Radburn, recognize the motor revolution and attempt to meet at every point the new situation it has raised. None of the principles embodied in the Townless Highway is altogether new or untried: the main element of uniqueness in the proposal is the putting of all of them into a coherent plan. The Townless Highway would be, like the railway, an institution in itself, a system. It would always be a through highway and not a local road. It must follow its own lines of topography. It must be based upon motor-age principles, not stagecoach methods or even railroad methods, much though we can learn by imitation or avoidance from both of these. It must disregard all previous turnpikes and local roads, unless these by chance should be suited to its special purpose. It will avoid towns big and little, not by dodging around them via by-passes, but by following the less developed territory, the two in each case being connected by side lanes. Between stations the road would constitute a freeway. [MacKaye, Benton, and Mumford, Lewis, "Townless Highways for the Motorist," *Harper's Monthly Magazine*, August 1931, pages 347-356]

These visionary thinkers were influential among the architects, urban planners, academics, and others trying to reshape urban life. However, in proposing a model roadway based on the Radburn concepts, MacKaye and Mumford were describing an early concept of the Interstate System, as Swift pointed out:

What MacKaye was advocating, of course, was a grade-separated, limited-access highway with occasional rest stops, a conceptual quantum leap beyond the so-called superhighways envisioned by most of his contemporaries. It's ironic that the man who

proposed the Appalachian Trail was also among the conceptual fathers of the modern expressway, but there it is. [Swift, page 109]

(Despite having joined MacKaye in outlining the basic concept of Interstate freeways, Mumford would be one of the earliest critics of the Interstate System following passage of the Federal-Aid Highway Act of 1956:

When the American people, through their Congress, voted a little while ago (1957 [sic]) for a twenty-six-billion-dollar highway program, the most charitable thing to assume about this action is that they hadn't the faintest notion of what they were doing. Within the next fifteen years they will doubtless find out; but by that time it will be too late to correct all the damage to our cities and our countryside, not least to the efficient organization of industry and transportation, that this ill-conceived and preposterously unbalanced program will have wrought Perhaps the only thing that could bring Americans to their senses would be a clear demonstration of the fact that their highway program will, eventually, wipe out the very idea of freedom that the private motorcar promised to retain for them. [Mumford, Lewis, *The Highway and the City*, A Mentor Book, May 1964, pages 244-245])

However, the pressure for superhighways was mainly coming from other sources with different motives unrelated to the ideas of visionary urban thinkers such as MacKaye, Mumford, and the RPAA.

The Depression

Just as World War I interrupted the start of the Federal-aid highway program, the Depression of the 1930s affected the second stage of highway improvement. Although economic troubles had bubbled under the surface of the Roaring 20s, particularly in the agriculture sector, the trigger for the Depression was the stock market collapse of October 1929. As John Steele Gordon summarized the problem in a November 1995 article:

World trade collapsed, corporate profits vanished, the incomes of the rich—the only people to feel the personal income tax in those days—steeply declined, and government revenues plunged. [Gordon, John Steele, "The Federal Debt," *American Heritage*, November 1995, page 86]

President Coolidge had left office in March 1929, leaving his successor, former Secretary of Commerce Herbert Hoover, to deal with the Depression that followed. President Hoover had earned a fortune as a mining engineer but had gained worldwide fame as a humanitarian by directing food relief in Europe after World War I, recovery after the devastating Mississippi River floods of 1927, and other relief efforts.

The Depression triggered changes in the Federal-aid highway program and delayed consideration of the next stage for meeting traffic demands. Beginning under President Hoover, road work was seen as a method of "pump priming" to create jobs for the millions of unemployed:

Congress, at the President's request, sought to bolster the sagging economy by authorizing large sums for public works, including highways. The authorization of April 4, 1930 (46 Stat 141) increased the regular Federal aid for fiscal year 1931 by \$50 million, to a total of \$125 million, and authorized \$125 million per year for 1932 and 1933. The Secretary of Agriculture apportioned the new 1931 funds immediately and also made the 1932 apportionments available for use in September 1930, instead of December, as in the past. This action made \$175 million of Federal funds immediately available, which was more than many States were able to match, principally because their legislatures were not in session to make the matching appropriations and would not meet until January 1931, or later.

Congress met this situation by appropriating \$80 million to be apportioned among the States in the same manner as Federal aid and to be used to match the regular Federal-aid apportionments. These funds were really advances to the States, not grants, and were to be repaid by deduction from the regular Federal-aid apportionments over a period of 5 years. Further, Congress required that all of these emergency funds be obligated by September 1, 1931

In a small way, this highway construction helped to stabilize employment, particularly winter employment for farmers who had been hard hit by severe drought in 1930. Chief MacDonald reported that the early authorizations and the emergency loans had boosted employment on Federal-aid highway projects from 30,944 men in January 1931 to 155,466 in July 1931, while the total of all Federal and State highway employment that month was 385,349 men. However, the stimulation was short-lived and by July 1932, total highway employment was only 305,372 persons. [*America's Highways 1776-1976*, page 123]

President Hoover approved the Emergency Relief and Construction Act of July 21, 1932. It appropriated \$120 million for advances to the State to match Federal-aid funds, with the funds to be repaid by deduction from regular Federal-aid apportionments over 10 years. (In 1934, Congress converted the loans to grants, so they would not have to be repaid.) [*America's Highways 1776-1976*, page 124]

Despite the popularity of road work as a way of generating jobs, the Depression nearly brought the Federal-aid highway program—conceived in 1916, revitalized in 1921—to an end. After taking office in 1933, President Franklin D. Roosevelt on March 21, halted the letting of Federal construction contracts, including Federal-aid highway contracts, while his Administration decided on a broad pump-priming program.

The result was the National Industrial Recovery Act of June 16, 1933. Of \$3.2 billion for public works, the Act authorized \$400 million in grants to the States for road construction. The States were not required to match the funds, which could be used on urban streets that were extensions of the Federal-aid highway system to and through municipalities, the first time funds available through BPR could be used in cities, and on "secondary and feeder roads" off the Federal-aid system.

Although the new program contained some elements of the Federal-aid highway program (for example, the reliance on State highway agencies), it differed in that it was not focused on transportation goals, but on job creation:

To spread the work, Congress limited employment to 30 hours per week per worker, prohibited convict labor, and required that hand labor methods be used “whenever consistent with sound economy and public advantages.” The States were required to predetermine fair wage rates and to give employment preference to veterans.

A little over a year later, Congress revived the Federal-aid highway program, largely along lines worked out with MacDonald and AASHO during preparation of the legislation. The Hayden-Cartwright Act of 1934—approved June 18, 1934, and named after Senator Carl Hayden (D-Az.) and Representative Wilburn Cartwright (D-Ok.), who headed the congressional roads committees—resumed the practice of authorizing Federal-aid highway funds every 2 years, restored the State matching requirement, abolished the limit on expenditures per mile, and continued the practice, begun the previous year, of channeling funds to urban extensions of the Federal-aid system and off-system secondary farm-to-market roads. [*America’s Highways 1776-1976*, page 125]

One of the most important innovations of the 1934 Act was a provision, included at MacDonald’s and AASHO’s suggestion, that authorized the States to use 1½ percent of their Federal-aid funds for “surveys, plans, and engineering investigations of projects for future construction.” MacDonald and his congressional allies intentionally avoided the word “planning”:

[The] avoidance of the word “planning” . . . lay in the fact that the word had come into disrepute in many sections of the country, and even in Washington, due no doubt to the increasing centralization of authority in Washington as the country was still struggling to emerge from the Depression. So the words “surveys, plans, and engineering investigations of projects for future construction” were in effect a euphemism for the word “planning.” While some States tried to interpret the wording as authorizing the funds for preliminary surveys and preparation of construction plans, the intent of those supporting the legislation and of the Public Works Committees was clear, and Chief MacDonald yielded at no time to the use of the funds for anything less than the broad planning process envisioned by the Bureau. [*America’s Highways 1776-1976*, page 268]

During the 1920s, MacDonald had concentrated on stage construction of the initial Federal-aid system and had resisted being diverted by those who advocated transcontinental and superhighway plans. The situation changed during the 1930s. The Nation’s highways were increasingly outdated as the number of vehicles continued to expand (to 32.5 million in 1940). The new vehicles were more powerful and, therefore, faster, than the older vehicles. Highway alignment, inherited in many cases from the 19th century, had been satisfactory at lower speeds, but not for the speeds of the 1930s. In addition, some of the highway design concepts of the 1920s, such as inclusion of a third, center lane for passing, had the unintended consequence of increasing the number of highway fatalities and injuries. [*America’s Highways 1776-1976*, pages 390-395]

Urban congestion was an ever-increasing concern, with the problem spreading throughout metropolitan areas. Although Federal-aid highway funds could not be used in cities until the emergency legislation of the 1930s, MacDonald and BPR had worked with several metropolitan areas in the 1920s (Cook County, Illinois, and Cleveland) to develop plans in conjunction with areawide development patterns.

Even as cities spread to and beyond their borders, congestion worsened as transit use declined. Construction of the early "freeways" was underway in the 1930s. The Henry Hudson Parkway in Manhattan opened in 1931 while New Jersey's Pulaski Skyway (as it was later named), providing access to the Holland Tunnel, opened in 1932. Chicago's Lake Shore Drive opened the following year with control of access and reversible lanes.

MacDonald and AASHO saw the 1½ percent fund authorized by the Hayden-Cartwright Act of 1934 as a way to gather data that would provide the basis for planning the next generation of highways.

Depression Superhighways

After October 1929, as the country slipped into the Depression, proposals for visionary transcontinental superhighways continued but the rationales shifted to emphasize job creation. This link was not lost on Members of Congress.

On January 4, 1931, Senator Burton K. Wheeler (D-Mt.) complained that the Holaday bill had not received a hearing or been reported for a vote. Senator Wheeler said the proposal would "work a hardship on no one," "put a prodigious dent in the unemployment situation," and would "save motorists several billions of dollars a year by providing superior roads and shorter routes between the principal cities of the nation." It would employ 2 million workers and result in "circulation and recirculation of a billion dollars a year." He added:

This legislation does not place a burden on income-tax payers, although the circulation of this much money will increase incomes. It does not increase the national debt. It calls for a \$5,000,000,000 bond issue and a five-year program of building 57,000 miles of short-line durable hard-surfaced roads. The principal and interest will be taken care of in thirty years by a \$3 tax on pleasure automobiles and a \$10 tax on trucks, buses and taxicabs annually. ["Wagner to Press Employment Issue," *The New York Times*, January 5, 1931]

After the start of the 72nd Congress on December 7, 1931, Representative Holaday reintroduced his bill on December 16 proposing construction of a nationwide system of durable hard-surfaced post roads. He modified the bill, now H.R. 6022, in some ways. For example, he added a section prohibiting the use of convict labor in the construction work. As in earlier versions, he included a lengthy list of about 57,000 miles of highways.

Representative Albert E. Carter (R-Ca.) introduced House Joint Resolution 124 on December 14 to create a Transcontinental Highway Commission. The commission would consist of the Secretaries of Agriculture, War, Commerce, and the Treasury, and the Postmaster General:

The commission is authorized and directed to conduct an investigation and study for the purpose of determining the most desirable routes over which to establish three hard-surfaced transcontinental highways across the United States, one across the northern portion, one across the central portion, and one across the southern portion, bearing in mind the advantages of utilizing, as far as practicable, existing roads and highways, and for the purpose of determining means by which the construction and maintenance of such transcontinental highways may be accomplished.

The commission, with a funding level of \$100,000, would cease to exist after submitting a report to Congress on its findings on or before 1 year after enactment of the resolution.

Senator Brookhart agreed about the need for such a network. In early 1932, he introduced a bill calling for a \$2 billion construction fund to build 25,000 miles of trunk line highways. He specified several main highways:

1. Great Lakes to State of Washington;
2. Portland, Maine, to Portland, Oregon, via Chicago;
3. Boston to San Francisco;
4. New York to Los Angeles;
5. District of Columbia to Oklahoma;
6. New York to Jacksonville, Florida, to Brownsville, Texas; and
7. Washington State to Los Angeles along coast.

He explained:

Transportation is the lifeblood of the nation. Good roads are as essential, indispensable to the economic health of the nation as the blood veins to the human body.

For all the progress the country had made, “our system today has serious defects.” The “millions of unemployed, shelterless, starving” Americans were evidence that “something is wrong.” The causes were many, but one factor was “our lack of organized national planning.” Senator Brookhart cited the country’s road network as an example:

Nowhere have we been more derelict than in providing for our transportation needs. Especially is this true in our road and highway systems. We have built haphazardly, pouring out millions in Federal and State funds, with precious little to show for our expense and our pains.

We have not a single trunk highway worthy of the name connecting the Atlantic with the Pacific, or the North with the South. [Brookhart, Senator Smith W., “25,000 Miles of Highways is Plan of Senator Brookhart,” *Pacific Constructor*, April 1, 1932]

Representative William L. Tierney (D-Ct.) introduced H.R. 11678 on April 28, 1932, to create a National Defense Highway Corporation to construct several “three-fold” National Defense Highways, as illustrated in “Sketch Showing Lay-out of Baldwin Super-Highway, United States, copyrighted by Arthur S. Baldwin of Stratford, Connecticut (published April 16, 1931 . . .).”

Baldwin had submitted his plan to President Hoover, the Nation's 48 Governors, and Members of Congress in November 1931. Covering his announcement, the Associated Press said:

A man who used to figure out how to kill German airmen now has an idea to restore prosperity A. S. Baldwin, who designed an anti-aircraft gun adopted by Uncle Sam during the World War, believes his plan would set the wheels of industry whirring, resulting in employment "equivalent to putting 3,000,000 men to work at salaries averaging \$2,000 a year for 10 years" Besides being the designer of the Baldwin anti-aircraft gun, the engineer's representatives described him as the inventor of an automatic one-pounder used on Army and Navy planes. He has a long background of experience with ordinance and metal concerns and now is president of an engineering concern here [in New York City]. [Associated Press, "8-Billion Highway Urged in Job Plan," *The Evening Star*, November 10, 1931]

As described in Representative Tierney's bill, the three-fold system consisted of three east-west routes (Boston to Seattle; Washington to San Francisco, and Jacksonville to San Diego) and three north-south routes (Seattle to San Diego, via San Francisco; Duluth, Minnesota, to the Mexican border, via San Antonio; and Portland, Maine, to Miami). The bill specified the design of the three-fold networks:

Said National Defense Highway and connections shall be built as nearly straight and level as practicable, upon a right of way five hundred feet wide (graded and surfaced if practicable), of which two hundred feet in width (if practicable within the total expenditure of \$7,000,000,000 authorized by this Act) and at all points not less than fifty feet in width, shall be a smooth hard-surfaced road of concrete or similar durable material.

The bill authorized the corporation to deviate from Baldwin's plan, but construction and maintenance was to be self-supporting, with the capital invested in the project to be repaid from tolls on a mileage basis, concession revenue from gas and other businesses on the right-of-way, and taxes on abutting property. The right-of-way was also to be "so graded, surfaced, and maintained as to provide at all points emergency landing facilities for airplanes and other aircraft."

The corporation established to build the network would include an advisory board to suggest general policies and prepare an annual report containing recommendations. It also would investigate and report to the President on whether to create a "Bureau or Department of Transportation" to implement the National Defense Highways and recommend whether "a new cabinet post of Secretary of Transportation should be created." The board also would recommend which other "bureaus, departments, commissions, and other activities" should be placed within the new bureau or department.

Interest in such projects, of course, was not confined to Congress. Charles F. Abbott, executive director of the American Institute of Steel Construction, agreed about the need for a "super-transcontinental highway." He acknowledged that similar ideas had been proposed, "but every log-rolling congressman tries each time to have the highway routed through his political

bailiwick.” To eliminate this problem, the highway “should be created as a private undertaking, thereby removing the plans from the blighting influence of politics.” If selected on the basis of the “best engineering advice,” the first-class highway would not only pay for itself but provide immediate employment “for thousands of men and stimulate business for twice as many thousands more.”

Abbott did not think construction would exceed \$75,000 a mile. The Federal Government should “grant a franchise with the power of eminent domain” that would allow private capital to finance construction through a bond issue, with rights reverting to the States after retirement of the bonds. For repaying the bonds, Abbott proposed:

A suitable toll, based on mileage, could be charged for passenger automobiles and other tolls obtained from buses, trucks, etc. Freight charges might be equalized with prevailing railroad rates. Concession rights would result in substantial income. The latter would include restaurants, hotels, garages, service stations, motion picture rights, camping facilities, etc. [Abbott, Charles F., “A Super-Highway,” *Highway Engineer & Contractor*, September 1932, page 15, 17, 41]

German Superhighways

In the 1930s, Adolf Hitler, like Mussolini a decade earlier, was giving American highway engineers an object-lesson in the latest thinking about modern highways.

The idea for the "Reichsautobahnen" (National Auto Roads) can be traced to the 1920s, when Germany's Weimar Republic began planning a motor highway network inspired by Italy's *autostrada*. In November 1926, Willy Hof, chairman of the German Chamber of Commerce, formed the Association for the Planning of the Hanseatic Cities-Frankfurt-Basel Motorway to plan Germany's highway system. Initially, the association followed Italy's example by planning a motor vehicle-only toll network, with rest stops along the right-of-way for motorist services. In a history of the autobahn, Blaine Taylor explained that, “German law subsequently prevented any such tolls being placed on the new motorways.” In 1928, the association first used “autobahn” to describe the proposed highways.

That same year, planning began for the limited-access highway between Aachen and Cologne. Construction started in October 1929, as the Depression began spreading across Europe. “In an effort to create jobs for people, initially very few machines were used in favor of human labor.” The road opened on August 6, 1932:

Cologne Mayor Konrad Adenauer opened the new autobahn on August 6, asserting that, “This is how the roads of the future will look!” Today, this stretch of road is part of the A555 autobahn, validating Mayor Adenauer's 1932 prediction. [Taylor, Blaine, *Hitler's Engineers: Fritz Todt and Albert Speer – Master Builders of the Third Reich*, Casemate Publishers, 2010, pages 26-29]

The association drew plans in 1927 for a 13,670-mile highway network. Faced with a growing economic crisis, the German Reichstag voted the plan down in July 1930. The National Socialist

Party, which dominated the Reichstag, viewed the proposal as “an elitist fantasy, since the nation had so few motorists and cars.” [Taylor, page 30]

After Hitler became Chancellor of the German Reich on January 30, 1933, he reversed that decision. Taylor quoted a 1937 Nazi publication, *German Highways*, as explaining that the reversal stemmed from Hitler’s years before coming to office:

In his 14 years of political struggle for Germany, the Führer used almost exclusively motor vehicles during his travels, and got to know German roads south, east, north, and west as almost no other man did, traveling an estimated 500,000-600,000 km [310,694-372,832 miles], thus having traveled at least a dozen times around.

In his travels, Hitler had the opportunity to learn about road networks, and out of this knowledge came the idea to build a connecting net of roads [Taylor, page 30]

On February 11, at the International Automobile and Motorcycle Show in Berlin two weeks after taking office, Hitler announced, “As in earlier times, when roads had been made for horse and wagon, and tracks laid for railroads, now roads must be built for automobiles.” On May 1, he told the crowd at Berlin Tempelhofer Field, “We are developing a program for the construction of new roads, a gigantic undertaking that will need millions. We will remove any opposition! It will help reduce unemployment.”

The next month, he secured a law creating the Reich Autobahn Agency (RAB). It was headed by Dr. Julius Dorpmüller, but Hitler appointed Dr. Fritz Todt as General Inspector of the German Road System. Dr. Todt would be in charge of planning and construction. [Taylor, pages 30-33]

Dr. Todt had been born in Pforzheim, Baden, Germany, in 1891, and studied at the *Technische Hochschule* (College of Technology) until joining the army after the outbreak of war in August 1914. After the war, he completed his studies in 1920 and worked for an engineering firm, eventually specializing in road surfacing. His doctoral dissertation, completed in 1931, was on *The Causes of Defects of Asphalt (Blacktop) on Roads*. (The paper also is known as *Reasons for Paving Mistakes of Roads Paved with Tar and Asphalt*.) [Taylor, pages 12-13, 16]

He would have the final say on every aspect of the new road system. By September, 30,000 workers were ready to begin work. Hitler initiated the work near Frankfurt am Main on September 23, 1933, turning the first spade of dirt. He told the crowd:

Today we stand at the threshold of a tremendous task. Its significance not only for German transportation, but, in the broadest sense, for the German economy, too, will come to be appreciated in full only in the course of future decades. We are now beginning to build a new artery for traffic!

. . . I know that this gigantic project is only conceivable given the cooperation of many; that this project could never have evolved had the realization of its greatness and the will to turn it into reality not seized hold of so many, all the way from the Cabinet and Reich government, up to the German Reichsbank and the German Reichsbahn

In my view, the most productive way of leading the German people back into the process of work is to once again get German industry going by means of great and monumental projects. In taking on a difficult task today . . . you are ensuring that hundreds of thousands more will receive work in the factories and workshops by virtue of your increased buying power.

It is our goal to slowly increase the buying power of the masses, and thus to provide orders to the centers of production, and get German industry off the ground again.
[Taylor, pages 37-40]

Dr. Todt's mandate from Hitler went beyond the new system:

Dr. Todt's position meant that he was not just creating the autobahns, but improving the entire road system. There were basically three different classes of roads: National Roads, First Class Roads, and Second Class Roads. There were also the small country roads that linked a host of communities across the land. Repair and reconstruction of existing roads was to be undertaken alongside the construction of new roads. [Taylor, page 45]

PIARC Goes to Germany

On September 3, 1934, PIARC opened the 7th International Road Congress in Munich, Germany. The honorary organizing committee included Hitler, Reich Marshal Hermann Göring, and Reichministers Joseph Goebbels and Rudolph Hess, men who at the time were not yet infamous, as they soon would be.

The United States delegates included two BPR officials, Herbert S. Fairbank, Chief of the Division of Information, and Dr. Laurence I. Hewes, Deputy Chief Engineer. Thomas H. MacDonald did not attend the 1934 congress.

The president of the congress, Dr. Todt, greeted the delegates, then introduced Chief Burgomaster Karl Fiehler of the Provincial Capital of Munich. He welcomed the delegates to his city, adding:

The greatest efforts are being made in all countries to adapt streets to the increased demands, and thereby combine great economy with technical perfection. At the instigation of the Leader of the German Reich and nation, Adolf Hitler, the German Government has seized the initiative for a truly transcendental solution of long-distance traffic problems and has, at the same time, by arranging for a Roads and Roads-Building Exhibition in Munich, brought deeper home to the public the many-sided problems forming the basis of their discussions. [Report of the Proceedings of the Congress, VIIth International Road Congress, Munich, Permanent International Association of Road Congresses, Rennes-Paris, Imprimeries Oberthur, 1935, page 51]

The next speaker, Reichminister Hess, pointed out that since the decision to hold the congress in Germany was made long ago, "it is a mere coincidence that this Congress is now being held at a time when you, Gentlemen, are already in a position to get a clear idea as to the road system as well as to the general situation in Germany in the second year of the National Socialist

revolution.” As far as he was concerned, the presence of international road experts in Germany was “a happy coincidence” because they would have an opportunity “to judge things clearly and objectively . . . and to see for themselves what this new Germany has achieved in particular in the field in which they are specially interested.”

They would, he said, receive “a more correct idea of the new Germany than that which exists at present in the world in general.” They would see the positive results when democracy is replaced with “a system under which fully responsible men assisted by the advice of specialists in various branches take quick decisions which are not watered down by lengthy parliamentary discussion.” This change was the reason why “the construction of motor roads has been begun in such an astonishingly short time after Hitler’s taking over of the government”:

German road building is very largely guided by two principles. In the first place modern traffic requires that roads should be kept in the best possible state of repair corresponding to modern technical developments, while secondly the provision of employment is the other idea which finds its expression in the German road building programme. Traffic requirements and, as far as possible, regard to aesthetic considerations, both as regards the effect of the road on the landscape and the effect of the landscape on the road user, are the deciding factors in the laying out of the new roads in Germany. Their technical construction and their technical qualities are adapted to the economic necessities and the traffic requirements of the moment, due account being taken of probable developments.

Hess added:

The planning of our modern German roads is closely connected with the efforts directed towards the consolidation for centuries of the political unity the Reich achieved through National Socialism. The network or [sic] roads which is about to come into existence in Germany fulfills from the traffic point of view also the condition of Reich unity which was the objective of the struggles of two patriots who were not fully understood by their contemporaries, viz. Friedrich Lüdgers with his plan for a network of German roads in 1779 and Friedrich List with his plan for a German railway system in the first half of the nineteenth century. Both of these men realized already at that time what we to-day [sic] are putting into practice, namely, that correctly planned roadways are like firm bands making an indissoluble unity of a people and the territory given to it by Nature and Providence. In our opinion roads have not only material and practical value, they are not only the expression of the standard of development of German technic [sic], science and economy, they have beyond that become again a politic—historical document [sic] of our period on the strength of which future generations will judge us.

Since work on “Hitler’s Roads” began on September 23, 1933, the project had employed 150,000 workers along with 200,000 workers employed by supply firms. He acknowledged criticism from abroad “for investing our money in large internal projects such as the motor roads instead of meeting our debt obligations.” He did not see the two questions, employment and debt, as linked:

Unless we mobilize the millions of our unemployed for practical work, unless we give them wages and bread there will be an amount of labour idle which, economically speaking consumes without [being] able to produce.

Motor road construction, Hess said, “constitutes socialism in the best sense of the word.” He explained:

Over and above the purely material aspects there is one thing which must not be overlooked, namely the inestimable psychological effect which the re-employment of such a large number of unemployed is bound to produce upon the men concerned.

The “comparatively low wages” paid the workers reflected the small amount of public funds available because “if higher wages were paid, the gigantic projet[sic] which is financed out of sums raised from the whole nation could not be carried through at all so that those who have now work would be unemployed and exposed to still worse conditions of life.” He reemphasized his point: “The construction of motor roads is thus socialism in the best sense of the word.” [VIIth International Road Congress, page 52-59]

(The “debt obligations” Hess referred to were reparations stemming from World War I, which Hitler refused to pay.)

Dr. Todt, the next speaker, wanted to talk about “the historical significance of road building” because, first, the highway engineers is “as a rule, as a technician, not especially interested in historical questions. He works for the present, whose problems he has to solve.” Second, the study of highway history “confirms that road building has never been a purely technical task, but that in all times it has been of the greatest importance for the culture of peoples and nations.” He added that, third, “every historical consideration emphasizes . . . the enormous importance which road building has for peace.”

He started with the “oldest paved road,” the road built by King Cheops about 3,000 years before the Christian Era. to transport the limestone blocks for his pyramid. He cited the Persians, Chinese, Carthaginians, Phoenicians and, of course, the roads of the Roman empire—372 roads at the time of Emperor Diocletian (who ruled from 284 to 305 A.D.) totaling about 52,964 miles:

It has often been said that the Roman roads were built for purely strategical [sic] purposes, and without doubt they were of great service to the rapid movement of the legions. It must not be forgotten, however, that this gigantic network of roads was first developed when the empire did not have to be conquered any more but already existed. The Roman roads must have been of at least as great importance from an administrative point of view as from a military point of view. In connection with the marvelous [sic] network of roads a first-class postal service was maintained which had its part in the administration of the roads. The roads were the means to convey the political will of the government to the furthest corners of the empire in the shortest time.

Dr. Todt spoke of the road network built by the Incas of Peru from about 1200 to 1400 A.D. “These roads too served in the first place to keep the kingdom together and were not built with a view to imperialistic conquests.”

Moving into the modern era, he described the development of roads in the United States. “The American development is a clear example that modern road construction is an essential task of the State and of how the solidity of a State is reflected today in its road system.”

Modern Italy, he said, was following in the tradition of the ancient Roman roadbuilders:

But a few years after taking over the power Mussolini set himself the aim of giving Italy a modern road system. He carried out this task in the first ten years of his government. Most of us know the magnificent motor roads from Milan to the upper Italian lakes or from Milan to Turin connecting the two upper Italian economic centres, the motor road from Florence to Viareggio, which leads through the unique beauties of Tuscany, the Rome-Ostia road, which takes one from the heat of the metropolis to the cool waves of the Lido di Roma, the Naples-Pompeii road, and the mighty network which was built by the “Azienda Autonoma Statale della Strada,” the great State Road Company and consists of State roads stretching for ten thousand kilometers and doing full justice to the demands of modern motor traffic.

France, too, had “the grand old tradition” of road building and, next to Italy, “the greatest road building traditions.” Henry IV initiated the tradition in the 16th century by building an extensive road network. The country established the *Ecole des ingenieurs des ponts et chaussée* (School for Engineers of Bridges and Roads) in the 18th century, which not only “became famous throughout the world,” but inspired Napoleon to build roads “worthy of his unique genius.” His roads gave “a special confirmation of the fact that a road which was originally built for military purposes can serve the purpose of peace in a very short time.”

He briefly discussed England, Belgium, Holland and other European countries:

One need only think of the new twenty five mile long motor road from Liverpool to Manchester or the thirty mile long road over the great dyke of the Zuyder Zee which promises to form an important link in the main road Paris-Amsterdam-Groningen-Hamburg. Our eastern neighbors, Austria, Czecho-Slovakia and Poland have shown their interest in modern road building by taking legal measures and have effectively started an extensive road building program. The motor roads will stretch to the Arctic Circle. The national road which the Norwegian people are building stretches from Mosjøen, just outside the Arctic Circle, to Kirkenes, a distance of 800 miles.

Turning to the German road program, he explained:

According to the plans of our Leader and Chancellor Germany is making important and decisive progress in road-building [sic]. She is not contenting herself with the construction of individual motor roads between important traffic centres but is constructing a compact net of motor roads for extensive overland traffic, with a total length of about 7,000 kilometers. The meshes of this network cover the whole of Germany and its roads connect the most distant economic districts. The daily radius of action of private cars and lorries will, with this system of purely motor roads, be at least twice as great as it was on the roads which existed up to now. The Reich motor roads are no longer a mere project. They are being constructed in fifty parts of the Reich. The first sections will be opened to traffic in the course of this year.

He spoke of the lessons of history:

Very often triumphs of culture and especially of road building were bound up with the name of a great historical personality who led the nation. The roads of Napoleon are famous far beyond the frontiers of France; the name of Mussolini is closely connected with road-construction in Italy, and we call our roads, and especially the Reich motor

roads, the roads of Adolf Hitler, for it is to his creative spirit, his initiative and his energy that we owe them and he is taking an active and vital interest in them. The very special interest which the head of the German State is taking in road building can be seen from the fact that our central Reich Office for road-building is the only central authority in Germany which is placed directly under the personal authority of the Chancellor.

He was sensitive about the view in other countries that Hitler's roads were intended for military aggression:

And history teaches us still one more lesson. Road-making is a work of peace even when the roads were originally made for other purposes. (The peaceful mission which the road has to fulfil [sic] always gets the upperhand [sic] in the end as against other purposes for which roads may be used.) [VIIth International Road Congress, pages 62-70]

On September 6, delegates had an opportunity to inspect the Reich motor roads. "The fact that nearly all the Delegates to the Congress took part in the excursion, which entailed the provision of 90 comfortable and speedy motor coaches to convey the guests over 330 kilometres [sic, here and following] of road, was eloquent proof of the keen interest evinced by the Delegates to the Congress in the Führer's work." Buses were divided into four groups leaving at different times.

Because the new roads avoided reconstruction of existing roads, "it was only possible, with such a large party, to inspect such points of special interest on the vast site, covering 120 kilometres, as could be reached from the existing roads." Therefore, each delegate was given a printed itinerary with "all the details of the tour," including descriptive matter, illustrations, and maps. Special attention was directed to the Mangfall Bridge near Dorching and the Bridge over the Inn near Pfraundorf:

The Mangfall Bridge crosses the deep valley of the river and is carried on two gigantic intermediate buttresses, 60 metres high above the bottom of the valley, supporting an iron structure nearly 300 metres in length, with a maximum span of 108 metres. The bridge over the Inn, on the other hand, is built in the wide expanse of the Inn Valley, from which beautiful views of the magnificent alpine scenery farther upstream may be seen, and consists of a low, reinforced concrete structure of tremendous strength, but nevertheless of pleasing lines, with a large number of openings throughout its total length of 265 metres

Continuing the journey from Traunstein via Inzell, the party inspected the work on the first part of the German Alpine Road and which, while utilising [sic] the existing roads, will run in an unbroken line, skirting the Alps from the Eastern frontier of the Reich near Berchtesgaden to Lake Constance on the Western Frontier, so as to connect up with all the branch roads leading into the numerous Alpine valleys and thus open up the German Alps to tourist traffic. This work too enjoys the special patronage of the Führer. [VIIth International Road Congress, page 287-288]

After a day inspecting roads in the vicinity of Munich, delegates took a series of tours ending in Berlin for the closing ceremony. For one group, the tour included:

Roads construction [sic] in general was represented by the roads traversed, whilst a large number of interesting details were also shown, and especially the construction of the

Berlin-Munich section of the Reich Motor Road in the vicinity of Beyreuth

Continuing the tour from Königsberg to Danzig, sections of the Reich Motor Road were inspected near Elbing. [VIIth International Road Congress, page 306]

For a second group:

This tour afforded a special opportunity of studying road construction, since its itinerary included the area in which the construction of the Reich Motor Roads was first started, and where the work has consequently made the greatest progress. Thus, for instance, it was possible to show the work on a large number of sections of the Reich Motor Road near Ulm, Stuttgart, Darmstadt, Frankfort-on-Main, Cologne, in the industrial area and in the vicinity of the ports, and last but not least the spot where the Führer cut the first sod on the site of the Reich Motor Road at “Mainbrücke”. [VIIth International Road Congress, page 307]

A comparatively small third group was “able to see the active constructional [sic] work on the Reich Motor Road, on a section between Dresden and Chemnitz.” Another small group traveling via Ulm inspected one of the first sections of the Reich Motor Road to be built. [VIIth International Road Congress, pages 309, 311]

Dr. Todt invited 50 of “the most highly qualified representatives of the different countries” for a special tour on airship “Graf Zeppelin.” The tour offered “an opportunity during an air trip of studying the ‘Roads of Adolf Hitler’, the Reich Motor Roads, from a bird’s eye view.” The report of the proceedings described the tour:

Owing to the limited accommodation of the airship, the tour was divided into two parts; those taking part in the first tour enjoyed the experience of setting out with the airship in the early hours of the morning while it was still dark, from its hangar at Friedrichshafen, the flight in the growing light over the hills of the Neckar and the sight of the lines of the new Motor Roads standing out clearly on the natural map of the country unfolding beneath the airship as she flew towards Frankfort on Main. The second party flew over the beautiful Rhine Valley from Frankfort on Main to Cologne; during this flight they saw sections of the Motor Road both in the Rhine valley and the Rhenish industrial area, and also during the remainder of the journey eastwards, via Hanover, before the airship again turned southwards towards Frankfort on Main. The Airship [sic] then made a wide detour as far as Darmstadt, during which the passengers were afforded a view of what was so far the most interesting part of the new Motor Roads. [VIIth International Road Congress, page 315]

America Reacts to the Autobahn

The first autobahn segment, a 14-mile stretch connecting Frankfurt and Darmstadt, was opened on May 19, 1935, part of the Hamburg-Frankfurt-Basle highway. *The New York Times* covered the opening:

Today’s ceremonies took the form of a huge outdoor demonstration, with half a million spectators flanking the new road all the way to Darmstadt. Herr Hitler’s car led a procession of motor cars estimated to be nine miles long. The procession included 200

motor lorries carrying 6,000 workers engaged in building the road since September 1933, when Chancellor Hitler cut the first sod on the new completed section.

After speeches by Dr. Todt, Propaganda Minister Goebbels, and Dr. Dorpmüller, the motor procession began:

At the first milestone Herr Hitler's car cut through a ribbon strung across the road and the highway was pronounced open for traffic When Darmstadt was reached Herr Hitler got out of his car and reviewed the parade of lorries carrying the road builders who had a place of honor in the procession. ["Hitler Opens Road, First of Vast Net," *The New York Times*, May 20, 1935]

By the time Germany invaded Poland on September 1, 1939, Dr. Todt had completed 1,864 miles of the autobahn network. He added 497 miles from 1938 to 1941, but with the war underway, road construction diminished. "On December 3, 1941, Dr. Todt stopped all construction, as all building within the confines of the Third Reich proper ceased." [Taylor, pages 51, 59]

As work progressed during the 1930s, every American highway engineer and government official who could arrange to do so visited Germany to see the autobahns. As with the PIARC visitors, dignitaries were given an overview by airship. Author Phil Patton described such a tour:

The keynote of these tours was a trip in one of the regime's huge Zeppelins, where visitors, comfortably seated in the wicker chairs of the passenger lounge, gazed out the windows as the pride of Germany floated majestically along above the track of the new roads, their sleek, concrete ribbons slicing through quiet, flowered meadows, dotted with half-timbered farm houses and barns, or through fairytale fir forests. [Patton, Phil, *Open Road: A Celebration of the American Highway*, Simon and Schuster, 1986, pages 82-83]

Visitors came away impressed. Frederick Albert Gutheim, a city planner, urban historian, architectural critic, and professor, was studying at the University of Chicago when he examined the autobahns. He also was an editor of *The American Magazine of Art*, for which he wrote an article in 1936 about his observations. Many of America's great highways "were until recently the best in the world, for in the last year the Reichsautobahn in Germany has made such strides that in quality of design all American efforts, despite the titanic efforts of the Public Works program, are hopelessly lagging behind, and the new German roads have far surpassed even the Italian *autostrade* equivalents." He described the designs he observed:

The design of the Autobahn is uniform for its entire length. It consists of two roomy single-way concrete highways, so well separated by a planted green strip that there is no possibility of head-on collisions or headlight glare from on-coming cars. To either side considerable strips of land of varying width are preserved as integral parts of the scheme, preventing access to the roadway and possessing definite aesthetic advantages. Entrance to the Autobahn is possible only at designated stations, about twenty miles apart, where toll is paid for the distance to be traveled (the project is self-liquidating). There are no intersecting roads since all crossings are separated by over-and under-passes. The

prohibition of access, save at designated and controlled points, and the permanent wide green strips separating and flanking the roads are a satisfactory guarantee that no ribbon building will be possible—nor will there be any attraction to do so since no advantage to landlords would result without access. Finally, *all* towns are by-passed; and passed not at several hundred yards but often at several miles from their furthest edge.

Gutheim used several photographs to illustrate his article. None of the roads depicted contained more than one automobile. [Gutheim, F. A., “German Highway Design: The Reichautobahn,” *The American Magazine of Art*, April 1936, pages 238-241]

Paul Wooton, the *Engineering News-Record* reporter, visited Germany for Leipzig Fair in 1937. He “took special pains” to travel on the new roads and meet with autobahn officials. Writing in the third person, Wooton said, “He found himself in a large company.” Interest was so great that visiting engineers and others had to make “special arrangements” to tour the office of the Inspector General of Roads in Berlin:

The office records show that practically every country in the world has sent technical advisors to Germany to acquaint themselves with this development. There is outstanding interest in observing what can be accomplished when a far-flung highway program can go forward without any decentralization of control and without delays incident to the acquisition of rights-of-way and under conditions where influence on the selection of route may be disregarded if it hampers the attainment of broad objectives.

Germany undertook its ambitious highway program to provide employment, but also as a way of stimulating the auto industry:

All of this meant that the express roads would make possible much indirect employment. With one-third of the system in use the results have exceeded expectations: The output of the automobile industry has doubled in less than two years and motor car registrations have increased from 661,800 in 1933 to 945,000 in 1936.

The three illustrations accompanying Wooton’s article showed virtually empty stretches of the German highways, [Wooton, Paul, “Impressions of German Express Roads,” *Engineering News-Record*, July 22, 1937, pages 147-148]

Charles M. Upham, ARBA’s Engineer-Director, visited Germany in 1938 and reported his observations in his “Down the Road” column in ARBA’s magazine:

The new roads consist of two double-lane highways, each 25 feet wide, with opposing streams of traffic completely separated. Beyond these traffic lanes are adequate shoulders and a gradual slope to a drainage system. Railroad grade crossings and highway grade crossings have been completely eliminated with a majority of the intersecting roads being carried over the right-of-way of the new system by a most modern type of overpass construction. All curves are super-elevated and the surface finish of the pavement is non-skid . . . Pedestrians, bicyclists and animals are excluded from the highways and no advertisements or billboards can be erected by the roadside.

Efforts are being made to retain and to enhance the beauty of the landscape. There is no speed limit in Germany. The roads are designed for speeds from 80 to 100 miles per hour, according to the topography of the country.

Like most Americans, he was suspicious of Hitler's reason for constructing the highways:

Whether or not it be true that these roads were constructed primarily for military purposes, it is most certainly true that they provide the German people with innumerable peacetime commercial, industrial, social and cultural benefits.

He added that although the roads may someday be used for "the movement of mechanized agents of death and destruction," for now they had reduced traffic crashes by 83 percent.

Conditions in the United States, in his view, "do not demand or justify the immediate construction of a complete superhighway system like that in Germany." Nevertheless, some parts of the country needed such highways:

A system of American super-highways could not be constructed in a few years but could be designed, laid out and some sections constructed in locations where traffic is heavy and congested and a super-road is particularly needed. If this policy is followed, super-highways can be constructed when the need arises and this country will, in the future—possibly ten, twenty or even forty years from now—be provided with a system of highways that will adequately and economically care for the increased traffic demands that are bound to come. [Upham, Charles M., "Down the Road," *Road Builders' News*, August 1938, page 2]

Another convert to the superhighway cause was Chairman Cartwright of the House Committee on Roads. In a December 1938 address to AASHO's annual meeting, he reported that he had been to Germany during the summer and came back with some definite ideas:

[When] I think of super-highways, I think of Germany, for, regardless of what we think of him as a man, we must give Fuhrer Hitler credit for building a system of super-highways in his country which are second to none in the world today The super-highways will become very important assets to that nation in the event of another war in Europe. In the meantime, however, they are providing the German people with innumerable peacetime commercial, industrial, social and cultural benefits.

Cartwright believed the United States "should have a highway system second to none" and he was convinced it was "not an idle boast for us to say that we can do better anything that Germany can do well." He did not think construction should start immediately, but he did want officials to begin designing and laying out this superhighway system. "In this way we will be able to attain, in the next decade or so, the beginnings of a system of highways and super-highways which will be adequate for the needs of our country." [Cartwright, Wilburn, "Future Roads and Federal Road Legislation," *American Highways*, January 1939, page 8]

MacDonald on Germany's Roads

MacDonald and Herbert Fairbank were also among the visitors. MacDonald, after viewing the autobahn with Dr. Todt in 1936, reported in a speech to AAA on November 20, 1936, that, "The highways which have been completed are wonderful examples of the best modern road building." He continued with an example:

The road from Munich to Salzburg in Austria is one of the most delightful drives of the world. It parallels the foothills of the Bavarian Alps and runs through a farming country that has been so well tended that it presents the appearance of a finished landscape as far as the eye can see on either side.

He was particularly impressed that the Germans had been able to build the autobahns on entirely new right-of-way, something that current law in the United States made difficult.

On the other hand, he felt that the roads were being built ahead of demand, a violation of his principle of economic development. Further, the autobahns bypassed the cities, which is where the United States was experiencing its greatest highway problems. In addition, the central government was building the roads, whereas in the United States, the longstanding practice was one of Federal-State cooperation under the Federal-aid highway program.

Although he saw a need for such highways in the United States, he believed that the contrasts between German and American needs meant that a comparable American road network should be developed along different lines. In 1937, he told the American Society of Civil Engineers (ASCE):

The system of German roads is being built in advance of, and to promote the development of, highway transportation. In the United States the situation is just the reverse. Highway builders are proceeding on the principle that the utilization of the highways must produce directly the revenues with which to finance their construction. As long as the United States adheres to this method of financing, the building of super-highways must be limited to areas where the present and prospective traffic will justify it From the developments abroad and in the United States, one can conclude that super-highways will be created, but only in the vicinity of metropolitan areas, for relieving traffic congestion within those areas and for connecting those that are separated by relatively short distances.

MacDonald was reserving judgment. True to his Progressive roots, he wanted the data before drawing conclusions about highway needs. The gathering of the data was underway, made possible by the "survey" provision of the Hayden-Cartwright Act.

(Professor Tom Lewis, in his history of the Interstate System, recounted an anecdote that MacDonald's daughter, Mrs. Margaret Oberlin, related. "With great pride, Dr. Todt arranged to introduce MacDonald to his Führer," while MacDonald was in Europe in 1936. "Ever proper and formal, the Chief said that he was pleased to meet 'Mr. Hitler.'" [Lewis, Tom, *Divided*

Highways: Building the Interstate Highways, Transforming American Life, Cornell Paperbacks, 2013, page 24]

As MacDonald and many other American visitors had observed, the autobahn was built before the country had enough motor vehicles to justify the expense. Only the well off or powerful in Germany could afford automobiles. Hitler had highlighted this problem in a speech at the Berlin Auto Show in early 1933, as quoted by author Phil Patton:

“There can be no triumph of National Socialism without radio, sound films, and motor cars,” he intoned. “Simple, reliable economical transportation is needed. We must have a real car for the German people.”

He emphasized that, “A nation is no longer distinguished by the length of its railroads, but by the length of its highways.”

He returned to the point during the 1934 auto show:

“So long as the motor remains only a means of transportation for especially privileged circles, it is with bitter feelings that we see millions of honest, hard working, and capable fellow men whose opportunities in life are already limited, cut off from the use of a vehicle.” A car, he said, “would be a special source of yet unknown happiness to them, particularly on Sundays and holidays.”

Hitler intended to provide a small affordable "people's car" (Volkswagen) that in time would fill the autobahn with the traffic it was designed to handle.

Dr. Ferdinand Porsche completed design of the vehicle in 1938. That autumn, the Nazi Party Labor Organization completed some construction on an assembly plant at Wolfsburg. In Hitler's full-employment economy, however, construction was delayed by the absence of workers. At Hitler's request, Mussolini immediately provided 1,000 unemployed workers to Wolfsburg, and more as needed.

Over 360,000 Germans paid in full or in installments for the vehicle in advance of its production. However, in August 1939, Hitler ordered Dr. Porsche to switch the Wolfsburg plant to production of military vehicles based on the Volkswagen. With Czechoslovakia and Austria under German domination and troops ready to move into Poland, the military would have to take priority.

In the end, none of the purchasers received a Volkswagen—or refunds as war needs dominated the country. (For information on the history of the Volkswagen before and after World War II, see: Patton, Phil, *Bug: The Strange Mutations of the World's Most Famous Automobile*, Simon & Schuster, 2002, speech excerpts on pages 7-8, 13)

(Dr. Todt died in an airplane crash on February 2, 1942.)

President Roosevelt and the Interstate System Part 3

President Franklin Roosevelt—Road Booster

As MacDonald well knew, his boss, President Roosevelt, did not want to wait for the results of surveys. Roosevelt had long been interested in roads. He loved driving, even though family and friends considered him a terrible driver. As Professor Lewis explained:

Franklin Roosevelt's letters, memoranda, and actions make it clear that he took almost as much enjoyment in planning the construction of roads as he did in driving on them. As president of the Taconic State Park Commission in New York in 1924, he had overseen the planning for the spectacularly beautiful 125-mile parkway that would open to motorists the upstate counties and the Hudson River valley. As governor of New York, he worked to improve farm roads and moved to have the state shift the responsibility for construction and maintenance from the counties to the state, thereby ensuring that roads through poorer counties would equal those in wealthier areas. [Lewis, page 49]

He won election as Governor of New York in 1928. Upon taking office in 1929, Governor Roosevelt retained Colonel Frederick Stuart Greene, former Governor Alfred E. Smith's highway commissioner. Professor Michael R. Fein, in his history of road building in New York, described Superintendent of Public Works Greene as "a Virginia-born engineer who had built his first highways on the Western Front during World War I." Fein summarized Greene's legacy:

During his two decades in office, Greene translated his reputation for professional integrity into a bureaucratic policy regime of lasting duration. Under this regime, the Highway Commission (and later the Department of Public Works) oversaw a remarkable expansion of the state's highway infrastructure while simultaneously enshrining the fraternity of civil engineers as a dominant force in state government. [Fein, Michael R. *Paving The Way: New York Road Building and the American State, 1880-1956*, University of Kansas Press, 2008, pages 80-81]

Greene had a reputation for resisting political patronage, prompting some bipartisan opposition to his retention, but Roosevelt kept him on because he would be able "to sleep comfortably at night with the full assurance that in the Public Works Department 100 cents on the dollar is being honestly and usefully expended." Governor Roosevelt sought political favors from Greene, such as support for small road projects to reward political allies, but remained "a staunch advocate of the state highway program, as he had been since his days as a state senator and as chair of the Taconic State Parkway Commission." Fein added:

When he moved into the governor's office he demanded that Greene send him a large sheet with all the state's construction projects. It was to be hung in his office and updated monthly, providing the governor with "some visible demonstration of how fast each project is going on." Throughout his administration, and indeed throughout his political career, FDR remained devoted to road building. His strong advocacy of public works, centralized planning, and rural assistance—all hallmarks of the later New Deal— influenced the development of New York State's highways in the late 1920s and early 1930s. [Fein, pages 104-105]

In December 1931, *Better Roads* published an article under Governor Roosevelt's byline on "Good Roads in New York State." A visitor to New York, the Governor wrote, would find it possible "to travel swiftly in comfort over hard-surfaced highways from the Lake Erie shore to Long Island, to cross the state by any one of many routes from east to west and from north to south." New York's residents were "rather proud of their highway system with its 14,000 miles of first-class road under the direct care of the state highway department." He continued:

It is a joy to spin along on broad concrete ways, three and four lanes of traffic wide. Travelers are likely to be patient with construction delays, looking forward to other fine stretches for swift and comfortable motoring next year.

These first-class highways constituted only 17 percent of the State's 80,000 miles of roads. The dirt roads linking farms and back-country communities to the main highways "create one of the most important aspects of the good-roads problem." Before the coming of the automobile, roads had been considered a local responsibility. "Years ago we began to understand that some other principle must be recognized in financing arterial highways, the main routes of travel across the state" Roads, the theory now went, were not a benefit only to the localities through which they passed. Wherever the roads may be, their use will be "part of a general public responsibility and are not a private or even an exclusively local concern."

He believed that this principle had to be extended to rural roads under local jurisdiction. Even before taking office after his election in 1928, he appointed an agricultural advisory commission that "recommended several revolutionary steps in road construction and financing which it was my good fortune to be able to induce the legislature to accept." They were:

1. Removal of the burden of construction and maintenance of state roads and bridges from the counties. County participation in the cost of grade-crossing elimination has also virtually been eliminated.
2. Revision of the law governing state aid to township roads, distributing this aid on a mileage basis and limiting taxation for such roads. Aid had formerly been based on abutting values.
3. Adoption of the gasoline tax as a source of highway revenue.
4. Institution of soil surveys and other studies of land use, making it possible to plan roads for maximum future usefulness.

The soil surveys would "chart the future development of the state and seek to anticipate not merely its agricultural growth but the future division of its areas as between agriculture, industry, residence and recreation." Governor Roosevelt added, "It is not a simple task but one urgently worth doing."

Still, farm roads were the responsibility of more than 900 town governments, undoubtedly resulting in "great waste in time and use of machinery which might be removed by a better system of coordination" with State highway officials. This was a job that still must be done, either through "closer integration with the state's work or through consolidation of effort within the counties or by both means."

Governor Roosevelt concluded the article by saying:

It is plain, however, that we must go on building more good roads, through whatever agencies we operate. I have made the statement that I expect to see a trend away from city congestion and a greater appreciation of the advantages that may now be had in country living. I think we need to prepare for that movement as well as to meet the present needs of the farmer and other country-dwellers. [Roosevelt, Franklin, "Good Roads in New York State," *Better Roads*, December 1931, pages 5-7]

By the time President Roosevelt took office on March 4, 1933, the economic situation had worsened. President Roosevelt applied a broad range of measures to address the economic crisis. In a radio address on May 7, he described his efforts thus far as part of a "well-founded and well-rounded plan" and described his next steps, including:

As to the future: we are planning, in a few days, to ask the Congress for legislation to enable the government to undertake public works, thus stimulating directly and indirectly the employment of many others in well-considered projects.

On May 9, 1933, his wife Eleanor's uncle, David Gray, wrote the new President from Maine regarding the speech and enclosed a positive editorial from the *Portland Press Herald*. Gray also discussed "your idea of building toll roads through unimproved country as part of the public works program." He thought that what was most needed and would be quickly self-liquidating "would be certain belt lines around cities." Roosevelt replied on May 19:

I am very keen about the idea of toll roads. The chief problem is to get surveys and land condemnation put through inside of the usual two or three years and get the work started. [Ritter, FDR Library, PPF 454; for discussion of Ritter, see "A Note on Sources" at end of this paper]

This basic idea remained with him throughout his involvement with the future Interstate System, but for now the urgent need was jobs that could not be provided by a plan that was yet to reach even the drawing board. Instead, his call for public works legislation resulted in the National Industrial Recovery Act of June 16, 1933, discussed earlier. Although the new program contained some elements of the Federal-aid highway program, such as the reliance on State highway agencies, it differed in that it was focused more on job creation than transportation goals. [*America's Highways 1776-1976*, page 125]

Nevertheless, ideas for a great transcontinental highway or network of superhighways arrived in the White House and Congress. The White House typically referred correspondence on the subject to BPR. On January 22, 1934, Chief MacDonald told ARBA during its annual meeting in Chicago, that officials in Washington had received "a constant flow of suggestions" that the best way to create jobs "is for the Federal Government to undertake the building of a great highway from coast to coast." MacDonald rejected the idea that such a project was needed for transportation reasons or would take up all surplus labor. Such proposals overlooked "the dimensions of the cumulative series of unemployment problems with which the country has been confronted" as well as the extent of Federal efforts to overcome it.

To illustrate the scope of the effort, MacDonald said:

During a period of less than six months, from July to January, under the Federal Public Works appropriation, construction has been actually undertaken on a road mileage sufficient to build six transcontinental lines. For those who desire a wide highway from coast to coast, construction would now be under way to provide a surfacing upwards of 110 feet wide on a road bed about 200 feet wide, over a right of way 400 feet wide.

Others recommended a highway from Laredo, Texas, to South America. MacDonald said:

The highway work which has been undertaken for the major purpose of relieving unemployment in the past six months . . . would be equal to six highways from the United States border to the Panama Canal. This mileage would extend a road from the United States through Mexico, Central America and connect all the capitals of South America.

In fact, he said, the mileage was equal to a highway around the world, "although I do not assert there will be sufficient bridges included to span the oceans."

Although such a highway or network of transcontinental or intercontinental highways may be desired, MacDonald pointed out that the money was being distributed widely "to reach into nearly every county of every State." With the work extending to secondary or farm roads and municipal streets, the work is taking place where it was "needed to reduce unemployment."

By the fall of 1934, the administration was considering additional stimulus in the \$5-6 billion range. Housing, roads, slum clearance, and other ideas were debated internally.

Secretary of the Interior Harold L. Ickes was one of the Roosevelt Administration officials who took an interest in a transcontinental highway. He mentioned the idea during a speech to the National Conference and American Civic Association in Baltimore on October 9, 1933. The focus of the conference was on the need for planning in slum clearance. Secretary Ickes praised planners and the value of planning in public works. He recommended creating more National Parks and national monuments to increase scenic and recreational opportunities for the "new day" when average citizens had more leisure time. He complimented the National Planning Board, adding according to an account of the speech:

Mr. Ickes envisioned a great transcontinental highway, which the National Planning Board will study, with arterial highways radiating from it. Highways, harbors and other phases of national life, he said, can be studied with profit by the board, which he sees destined to become "a major government activity." ["Permanent Board for National Planning is Promised by Ickes," *The Evening Star*, October 10, 1933]

The Administration remained intrigued by the idea of a transcontinental highway the following year. In a diary entry on October 20, 1934, Secretary Ickes wrote about a White House meeting on October 16:

It seems quite clear that the President is more and more firmly coming to the opinion that we ought to undertake a public works program of approximately \$5 billion the next fiscal year, followed in the next two fiscal years by \$3 billion and \$1 billion, respectively I am glad that the President is in favor of a big slum clearance and housing program. We discussed the possibility of \$2 billion for these purposes alone. For some time I have

been advocating a great highway from the Atlantic to the Pacific, and he thinks well of that also. [Ickes, Harold L., *The Secretary Diary of Harold L. Ickes: The First Thousand Days 1933-1936*, Simon and Schuster, 1954, page 206]

On October 19, Secretary Ickes was in Pittsburgh for a speech in the Chamber of Commerce Auditorium. In discussing national planning, he mentioned his transcontinental highway idea. He also published an article in the November 14 issue of *Today* magazine informing readers of the need for many billions of dollars to create jobs:

Careful studies of the practical nature are now being made of the possibility of still further enlarging the public works program in a renewed drive against the depression, in a continued effort to take men from relief and put them into industry.

For the near term, he described three options. He cited rural electrification, elimination of rail-highway grade crossings, and non-Federal projects that the Public Works Administration (PWA) had approved that were awaiting funding. In the longer term, he listed three “great dreams” of public improvement. In addition to better housing and conservation of soil and water resources, he listed a transcontinental superhighway. [Associated Press, “Ickes Urges Billion for Larger PWA Plan,” *The New York Times*, November 15, 1934]

(Secretary Ickes’ speech prompted the Pittsburgh Chamber of Commerce to study the idea of a superhighway linking the two coasts. The chamber released its proposal in November 1935, as described in *The New York Times*:

Intensive engineering studies have been made of this project since it was first broached and it is now held that a super-highway between the Atlantic and Pacific would meet a national need, result in large direct and indirect employment over a considerable period and prove self-liquidating in a relatively short period.

The road which the Pittsburgh body is advocating would stretch from ocean to ocean without a single intersection at grade. It would have high-speed lanes, separated from low-speed lanes, in each direction. It would provide, in a central curbing, for power, light, telephone and water services. Its cost is placed at not more than \$400,000,000 with \$300,000,000 as the actual cost of construction at the rate of \$100,000 a mile. A study of other road, tunnel and bridge enterprises put into operation in recent years has convinced the advocates of the highway its cost could readily be met by tolls which would be cheerfully paid

The road as planned would consist of two forty-five foot strips—one for each direction—divided by a central curbing. Each strip would again be divided into fast and slow lanes. The fast or inside lane would be twenty-five feet wide, or five feet wider than the normal two-lane highway although it would, of course, be a one-way highway. Such width is held to be ample to justify safe driving at any speed of which the modern automobile is capable.

The outside lanes would be slow lanes, each twenty feet wide and each confined strictly to one-way traffic. Between fast and slow lanes would be safety curbing broken only by gates or portals where traffic could pass from one type of lane to the other only under light control.

Approaches to the road . . . would be roughly ten miles apart. They [sic] would be ramps leading from existing main highways or from feeder lines of the super-highway serving principal cities. As in the case of all modern parkways, such as those on Long Island or in Westchester, the driver approaching the super-highway would be required to come to a full stop before entering it and could then only proceed in the direction of traffic to which that intervening lane was restricted.

In leaving the super-highway the driver would always swing right and at the bottom of the exit ramp would pay whatever toll was fixed for the use he had had of it. These tolls, it is expected, would be based upon car-mile use by pleasure vehicles and on a ton-mile basis for trucks.

(Edward Snodgrass, Jr., the chamber official whose committee developed the concept, explained:

“It would be in every sense a super-highway,” he said. “Its exact route should be left, properly, to determination as affected by many factors but, broadly speaking, it should run from the neighborhood of New York to the neighborhood of San Francisco without touching any major city directly. This would avoid the necessity of condemning any very high-priced land.

The great elevated highway should run through the dense population corridor of the nation, cleaving between major cities on the bypass principle rather than going through them. Running somewhere about midway between Chicago and Indianapolis, for example, it would serve both by means of feeder approaches. At either end there probably would be Y’s; in the East, one running to the vicinity of Buffalo, perhaps, and another to that of Washington. In the West, an arm of a Y would serve Los Angeles.”

(Snodgrass added that room could easily be made in the right-of-way for utilities such as oil and gas pipelines, electric lights, and telephone conduits. The utilities would provide revenue, as would refreshment and service concessions.

(Recognizing the need to create as many jobs as possible, Snodgrass said that construction would be divided into 10-mile segments. Three hundred contractors would be employed, one for each segment. “This would mean wide distribution of new work and result in 300 separate construction crews.”

(The “great road” would be as straight and level as the topography permitted, “an immense concrete ribbon across America affording practically perfect vision as well as the most modern type of surface to make possible the full use of modern automobile engineering.” [Cleveland, Reginald M., “A Super-Highway for America,” *The New York Times*, November 10, 1935])

In looking for new public works to reduce unemployment, the Roosevelt Administration's concept at this point was to substitute work for the dole. In late October 1934, the *Times* reported that PWA was developing ideas:

A five-year public works program involving the expenditure of \$12,000,000,000—\$7,000,000,000 on works not self-liquidating and \$5,000,000,000 on low-cost housing—is being recommended to President Roosevelt by the Public Works Administration.

Whether the report has actually reached the President could not be learned, but it is known that officials were burning the midnight oil for several nights rushing it to completion, under instructions to finish it this past week-end

High administration officials are understood to be unanimously of the opinion that large-scale relief expenditures must be brought to an end as quickly as possible, and that the most feasible method of creating large-scale employment is through construction. Particularly, they feel, is this true in the case of low-cost housing, which would tend to stimulate the heavy industries, with resultant re-employment, as well as the many branches of building. ["PWA Asks \$12,000,000,000 for 5-Year Works Outlay; \$5,000,000,000 for Housing," *The New York Times*, October 30, 1934]

Secretary Ickes, who also served as PWA Administrator, and Harry L. Hopkins, the Federal Emergency Relief Administrator, sent a memorandum to President Roosevelt on November 1, 1934, outlining a national construction program for 1936-1940. They estimated it would employ about 2 million people per month and generate about the same amount of indirect employment in the production, transportation, and merchandising of construction materials.

Ickes and Hopkins included express highways among the proposals:

This project includes the work projected for high speed heavy duty highway travel, involving –

- (1) Sections of highways crossing urban density and difficult terrain. These structures, generally of bridge type, are a part of complete high speed highways.
- (2) Heavy traffic high speed roads with elimination of principal highway and rail intersections, wide turns and low percentage gradients and generally connecting with the facilities provided in (1).
- (3) Secondary highways of the improved type carrying heavy traffic not a part of the general state trunk systems covered in (1) and (2)

The program contemplates the construction of new highways and of the widening and improvement of existing highways.

Ickes and Hopkins estimated total expenditures of \$1.2 billion for the overall program at a rate of \$300 million a year for 4 consecutive years beginning in 1936:

Tolls or other local systems of revenue cannot be depended upon for any large return in this program. Revenue will be produced with an added gas tax of ½ [cents] per gallon

beginning in 1936 continuing for 20 years at that rate, estimated at \$60,000,000 per year or a total of \$1,200,000,000.

Background information explained what an express highway was:

One in which complete grade elimination is accomplished.
 Grades and curves reduced so far as possible by bridge type construction and depressions [sic].
 Speed limited only to that established by the density of traffic and normal safety measures in driving.
 Entrance and egress provided by ramps except where highway is at grade
 Should have at least 4 traffic lanes
 Distance between terminals should be relatively long.
 Contemplating through traffic without regard to intermediate service.

The section also discussed the philosophy of express highways:

The fundamental purpose of express highways is to by-pass through traffic or reduce density of travel by high speed in congested travel sections. They are not indicated where this density falls off in rural areas. Here the heavy duty highway planned to eliminate intersections, is indicated as desirable.

Express highways in metropolitan areas are indicated but such sections would be comparatively short.

Objection to express highways for long distances is due to low traffic density which except on holidays and at special times at particular places which would justify the extremely high investments as compared to a combination of express highway and well laid heavy duty; this combination is termed speed highway.

An example of the possibility to very largely increase the rate of traffic in heavy congestion is shown in the Jersey City Highway where speeding up of the traffic has been remarkable. There even on holidays the distance can be covered in from 15 to 20 minutes where heretofore one or more hours have been necessary.

There is an opportunity for improvement of traffic conditions by express type highways intelligently applied to congested areas.

Plans and specifications for speed highways are available in the Bureau of Public Roads; there, a very complete study for a combination of express and heavy duty highway between Washington and Boston.

A typical speed highway might be indicated between Philadelphia and Atlantic City for toll. Developing this as a combination of true express highway and heavy duty highway, the latter covering the greater part of the mileage, could probably be supported on the

basis of tolls. However, in the whole system contemplated tolls will be considered as incidental revenue.

Financing options included bonds or a small Federal-aid contribution that would encourage larger State and local contributions. Regarding tolls, the memorandum said:

Tolls, because of the expense of collection, would necessitate the complete closing of all but few approaches to such a highway except at collection points. This would mean infrequent approaches and there would probably be no large tendency for the local use of toll units for strictly urban travel. This would restrict greatly the number of vehicles using the highway and would entail a high toll or a very long time, if at all, to get sufficient revenue to repay the extremely high cost of such a project.

The experience with tolls has been such that practically all toll roads and bridges are now absorbed by the State or Local governments with revenues through the usual channels.

I believe the direction of action with respect to an extensive building program of this kind would be possibly a combination of the above mentioned methods. Determine those locations where through traffic is dense or local outlets of little interest, where express highways, as sections of continuous highways, may so control traffic that tolls for those sections may be collected. That some provision be made whereby through tolls be paid covering a long stretch of mixed express and heavy duty highway.

The views of State highway officials were considered:

For an express highway program the State Highway Engineers have unofficially expressed themselves as being unfriendly to the extremely high investment costs in limited sections of highways where there is now great need of large improvements in standard lanes in heavy duty lines. The sentiment was that such construction must necessarily be largely Federal.

Construction of "fast and safe improved highways" was underway in some congested areas that would greatly reduce traffic on "paralleling new construction" financed on the toll concept. For example, construction of a 15-mile toll road around Baltimore would cost an average of \$200,000 a mile, save approximately 10 miles of travel and three-quarters of an hour, and carry about 1,500 vehicles a day paying a toll that would not exceed 5 cents per mile. "Through traffic between Washington and Baltimore approximates a total of 5,000 cars each way. Of these it is estimated that not over 600 would pay toll at any time and that only at hours of high congestion." The section on financing continued:

It is probable from this survey that because of the lack of interest of State Highway Departments and because of the high cost of express roads and the general objection to the application of tolls to highway transportation and of the great improvements in paralleling public roads, that this toll plan cannot be a dependable source of revenue for a program sufficiently large to be of national importance to relief.

Based on these considerations, “it has been deemed advisable to plan for a combination of roads” of three types that would result in “the greatest variety of classified workers being employed.”

One type of construction involved bridges “over densely populated urban centers eliminating all interferences with high speed upon them,” as well as “over marshy or other swamp or water sections where a surface road could not be built.” They also would be needed in mountainous areas to reduce grade variations.

The second type was “heavy duty” highways designed to carry heavy volumes of traffic:

These sections of highway would be generally joining units to the bridge type structures. The radius of curves would be increased as much as possible and sharp gradients changes [sic] corrected. This construction would require much equipment that would not be normally used in this bridge type of structures.

The third type of construction involved the secondary road system, which included “great mileages which would not serve satisfactorily the territory ordinarily covered by the above express trunk highways.” [Ritter, FDR Library, Box 48, Harry L. Hopkins Papers]

On November 6, 1934, the country voted in mid-term elections that commentators considered a referendum on President Roosevelt’s New Deal policies. The result was a resounding victory for the President. Democrats would occupy two-thirds of the House and Senate, while 39 of the 48 States would have a Democratic Governor, a slight increase.

Transcontinental Concepts

As might be expected, the emphasis on public works prompted additional superhighway proposals. One citizen, Dr. Warren E. Jeffrey, D.D.S., of Topeka, Kansas, wrote to the President on September 13, 1933, to suggest construction of the Roosevelt Highway. The U.S. Army would build and control roads from Washington to San Francisco, and another from Chicago to New Orleans. The Roosevelt Highway would “put men to work in a rapid manner” and “would be of fine use in time of peace and war.” Referring to the map of the proposal, Dr. Jeffrey helpfully added, “The road from Washington to San Francisco could be dropped down to the dotted line if desired.” The dotted line ran from an unnamed point on coastal North Carolina to an unnamed point in California, presumably Los Angeles.

Charles Henry Davis also saw an opportunity to revive his concepts. On February 2, 1934, he sent a 10-page letter to Secretary Ickes after hearing Assistant Secretary Oscar L. Chapman’s presentation to ARBA’s annual meeting on January 23, 1934. Chapman, who also was executive secretary of the Special Board for Public Works, told ARBA that the \$3.3 billion appropriated in June for PWA had already been allotted for non-Federal projects and had applications for almost that amount pending. “That figure gives some idea of the demand for public works,” but that did not include pending Federal projects or other needed work. Chapman was concerned about balancing the budget, but only in the long term:

Now and for some time to come, the federal government must continue its aid to the states and subdivisions for public works. In that direction lies the straightest and quickest road to real recovery. ["Federal Aid: Now and Tomorrow," *Better Roads*, February 1934, page 10]

In the letter to Secretary Ickes, Davis stated that he had also said "a few words" to ARBA advocating construction of 50,000 miles of "thru express highways connecting the capitals of our 48 States" and 600,000 miles "of minor roads in our 3078 counties." He estimated the cost to be \$10 billion to be expended at a rate of \$1 billion a year. His letter was forwarded to BPR, which had been rejecting Davis's ideas for 2 decades.

Mr. M. R. Moran of the Southern Lumber and Realty Company in Cincinnati, Ohio, was one of the more persistent writers. On March 16, 1933, he wrote to Alfred P. Sloan, Jr., president of the General Motors Corporation, to propose a national motor highway. Sloan replied on March 21 that "I have long had in mind" such a project. He had visited President Herbert Hoover in an attempt to interest him in the concept during "the early stages of the depression," but "did not get very far." He still thought the idea was a good one:

I can not think of any more constructive way to employ labor—and road building involves a very high percentage of direct labor—than something of this kind. Entirely aside from this question, it is economically sound and will tend to reduce the cost of transportation which takes a very important part of every dollar that we spend. I am in harmony, therefore, with your idea as to the soundness of the project.

That said, Sloan recognized the difficulty of execution:

It requires a tremendous amount of legislative work on the part of every state through which the road might pass and probably on the part of the national government as well. When one stops to consider how almost impossible it is to get through the average legislative body a highly constructive measure, I can not help but realize what one would be up against in trying to promote a thing of that kind. It just seems to be an utter impossibility to overcome all the objections, the criticisms, the propaganda of the railroads, their legislative lobbies and all the other selfish interests that continually stand in the way of constructive legislation in the interest of all the people.

He expected such highways to be built 50 or 100 years in the future, but at this time, he had neither the time nor strength to devote to promoting the idea.

Secretary Ickes's reference in Pittsburgh to his dream of a transcontinental highway prompted a letter from Moran on November 19 and again on November 20, 1934. He outlined the history of his idea:

In 1924, the writer suggested the building of a super-highway across the United States and gave many reasons for it. Again in 1928 at a meeting of business men at the Washington Hotel in Shreveport, I also suggested the building of a super-highway from New York to San Francisco or from New York to Los Angeles.

Moran and other advocates had contacted businessmen and manufacturers to seek their support. He received replies, including Sloan's letter, and wrote to President Roosevelt and others about the concept. He had received a reply from the Office of Public Improvements indicating that "no proposition from outside could be considered until the President's program was completed." Moran explained the concept:

We advocated the building of a four-way elevated road, two running east and two running west forty feet wide and twenty feet high, where necessary to clear any railroad crossing, otherwise ten feet six inches high, so that furniture vans and trucks would clear on the surface road. Please understand, there [sic] are elevated tracks and ground tracks. The structure would be steel and concrete principally.

He estimated that construction would take about 2 years, employ 2 million men in construction and another 2 and a half million in providing materials, and cost "\$1,800,000.00." He added, "I see nothing complicated about this project, it is simply a very long bridge and any corporation capable of building a bridge can build this super-highway."

He agreed that the housing proposition the Roosevelt Administration was considering would be beneficial, but "it will never pay a permanent revenue to compare with the returns from this super-highway when in operation." He added:

The people of today want to travel, want lots of it, and practically every foreign nation will spend money traveling on this super-highway. There is nothing to compare with its magnitude. It will last for ages and the writer thinks it will be an outstanding project of the United States and a monument to the enterprise of American industry.

Locating the lines for the highway and securing the right-of-way would be the principal problems, but, "It should be as straight as possible and should take in all the state roads that are near these lines."

After receiving an acknowledgement indicating that his letters were being referred to BPR, Moran wrote to President Roosevelt on December 10 in the hope that he would "start it in the proper channel for early consideration by the proper officials." He was convinced that the government could not undertake a proposal that would generate more jobs with greater return on the dollar. "The Roosevelt Administration (in construction of this highway) would go down in History as the world's ablest body of men, never equaled by any other nation."

On January 25, 1935, Moran again wrote to Secretary Ickes:

There are times that great statesmen who command vast influence consider suggestions, really consider them, on matters of vital importance to our great nation. I am hoping I have addressed this letter to an official in that class.

He summarized the idea, the value of it, and wrote:

In the name of suffering humanity, I am asking you to use your influence to mold public sentiment in favor of an appropriation sufficient to construct this line There has been nothing so far, nor will there be any project offered that will pay for all time eternal, that will compare with the benefit from this super-highway.

Moran apparently was not aware that on January 22, 1935, BPR's MacDonald made his thoughts on the subject of transcontinental highways clear in his speech to ARBA's annual meeting, the same one where Assistant Secretary Chapman and Charles Henry Davis had appeared. In a speech titled "Broadening the Highway Program," MacDonald acknowledged the broadening of the program caused by the need for jobs, citing projects off the Federal-aid systems, including feeder roads in rural districts and principal thoroughfares in cities and towns, as well as the elimination of rail-highway grade crossings without railroad participation in the cost and the building of footpaths. They were, he said, "worthy additions to the rapidly progressing highway policies."

He added:

Our long distance highways have come as a by-product of the careful planning and coordination of the most important highways within and between the States. This deliberate policy of restriction has established reasonably universal communication over the roads within the minimum possible mileage. No other course would have made it possible, in so short a time, to create the main highway system capable of servicing, if imperfectly, so large a part of the total highway traffic.

The result was a pioneer highway network on which the highways of the future could be built:

The broadened program of the future must provide for the progressive development of the main roads in which we have now a tremendous investment There are many things yet undone on the main road systems, which have been deliberately passed in the doing of the pioneer work that has engaged us up to now. On a very large mileage of these main roads the improvement of today must be regarded as providing only the minimum of service.

He foresaw "the development which it is evident is not far around the corner, of highways conceived primarily upon the interstate or national basis in those sections where the population density and traffic already developed on the inter-city roads, point to the necessity of new highways or parkways outside of the congested areas and the high-priced suburban developments." Confronted with this need to broaden the highway program, MacDonald said that what was needed was "a coherent plan sufficiently broad to encompass the major needs here touched upon"

He did not mention the visionaries who used their imaginations to sketch lines on maps and draw illustrations of broad, multi-lane, transcontinental highways, but he did make clear that studies, not just creativity, were needed to determine needs. Since the State highway agencies did not have the authority to undertake national studies, "Federal highway legislation has already recognized the benefits to be obtained through such studies and provided for Federal cooperation

in them.” He was referring to the highway survey provision of the Hayden-Cartwright Act of 1934:

Studies of this sort cannot be of a perfunctory nature. They must contemplate the formulation of a comprehensive plan for the development of a fully adequate highway transportation system consistent with modern economic and social trends. The facts obtained must be sufficient to indicate the relative importance of both rural and urban roads which for economic or social reasons may be considered eligible for inclusion in the improvement program. The special problem of approaches to cities and the connections through and around them needs the attention necessary to plan such improvements in anticipation of their undertaking.

An inventory of the entire existing highway plan is imperatively needed, and a careful estimate of the financial provision necessary for its preservation, renewal and progressive development

On the basis of such information, intelligently consolidated, there need be no hesitation in undertaking the broadened highway program with faith that the growth of population, the promotion of the safety and economy of highway transportation, and the enlarged social and recreational benefits to be secured, will justify and maintain the cost if the plan is laid with intelligence and faith in the future.

These concepts were at the heart of MacDonald’s resistance to the visionary ideas, whether from the Secretary of the Interior, citizens, groups, and even the President of the United States, as well as the examples in Europe. Until he had the facts, he would not be ready to advance the post-pioneer stage of highway development.

Highway Planning Surveys

Neither the President nor Congress addressed the concept of transcontinental highways or a national interstate road system. However, BPR was taking the first steps to make those concepts a reality.

BPR had been involved in collecting data about transportation service for many years. In 1924, the BPR had cooperated in a study of highway traffic in Cook County, Illinois, in conjunction with a pioneering regional planning initiative for the Chicago area, and in 1927, conducted the first metropolitan area traffic counting, in Cleveland. In the late 1920s, the BPR cooperated with several State highway agencies in statewide traffic surveys. [*America’s Highway 1776, 1976*, page 268; McKay, J. Gordon, “The Cook County Transportation Survey, *Public Roads*, March 1926, pages 1-6]

In the 1930s, MacDonald's assistant, Herbert Fairbank, conceived highway planning surveys to be financed with the ½-percent planning funds authorized by the Hayden-Cartwright Act of 1934. As conceived by Fairbank, the highway planning surveys were of an entirely different order of magnitude than past surveys. The goal was a State-by-State survey that would include road conditions, traffic, and financial and road use:

Conditions covered a wide range of factors, such as width, type, design (curves, grades, and sight distance), and adjacent uses (such as farms, homes, and schools).

Traffic included classification of vehicles, origin-and-destination data, and the cargo and weight of commercial vehicles.

Financial and road use data involved all expenditures for and revenues from highways, with a goal of determining whether the main roads were supported by their users.

Fairbank's conception was grandiose and its execution complex, as *America's Highways 1776-1976* described:

The inventory phase involved driving over every mile of rural highway, recording its width, type, and condition; on the more important routes the geometric features such as curves, grades and sight distances; all farms, residences, businesses, industrial plants, schools, hospitals, and any other cultural feature that the roads must serve. All the information was to be recorded on inch-to-the-mile county maps, and the data tabulated in a variety of ways for analytical use.

The traffic surveys were built on the cooperative traffic surveys described earlier but underwent considerable improvement in method as automatic traffic counting equipment, a better understanding of road design requirements, and improved statistical procedures became available. Basically they involved intensive traffic volume counting on main routes, less intensive counting on secondary roads and spot checks on lightly traveled local roads. At all stations, vehicles were classified as to type, and on the main roads a sampling of commercial vehicles was weighed on portable scales, their cargoes classified, their origins and destinations ascertained, and their tare weights recorded where known. Origins and destinations of passenger cars were also sampled. All these data were to be tabulated in various ways and shown on appropriate maps. They served to show the service highways were providing, the vehicle miles of travel and ton miles of goods and products moved, the lengths and purposes of trips, and average and peak hour volumes for design purposes. When coupled with the road inventory data, they showed the adequacy of the existing roads to provide for the movement of traffic and to serve the needs of rural land use, particularly farms. They permitted estimates of the cost of bringing road conditions up to a standard regarded as suitable for current traffic and, to the extent it could be forecast, future traffic.

The third general area involved the recording of expenditures and revenues for highways and all other purposes from all units of government, including special districts, to ascertain the degree to which user and other taxes were being applied to road purposes by the individual units and, more generally, by the various levels of government. These studies would show the degree to which the main roads were in fact supported by the users as the theorists then thought appropriate, and the local roads by property or general taxes. Today [in the mid-1970s] it is recognized that it is only at the extremes that the theory can fully operate—freeways as a user responsibility and the dead end road or street as a land service or community responsibility—with the great mass of roads in

between deserving some support from each source since all such roads serve both purposes. In 1934, however, there were no facts at all on which even to estimate the propriety of highway finance of the day. In addition, the financial survey included road-use studies which determined from a sample of owners of vehicles in places of various sizes the usage they made of roads in the different systems. This might show, for example, the use of rural roads by urban residents compared to the use of city streets by rural residents, to the end of appraising the propriety of the allocation of funds collected by various levels of government to the several road systems. Also included in the financial surveys were road life studies, which permitted estimates of the physical life of the roads constituting the highway “plant.”

Carrying out this “enormous task” required special training for BPR employees, full cooperation by State highway officials, and thousands of workers:

In Ohio, for example, over 600 men were in the field within 2 months after the work got underway, some occupied for a full year and others a shorter time. There probably never was a tabulation of the total number of people employed in the early work, but it seems safe to say that at the height of the field work at least 15,000 men were given employment, almost all from the relief rolls or the ranks of the unemployed. [*America’s Highways 1776-1976*, pages 269-271]

The first State survey began in Pennsylvania in September 1935. Within a year, 38 other States had begun their surveys.

The Agenda for 1935

In 1934, road building had been largely a Federal activity, as *Engineering News-Record* explained in its year-end summary:

State highway funds, which began to vanish by diversion early in the depression—as soon as it began to be realized that federal dollars could be had to restore the theft—were cut to their lowest volume in 1934.

However, the year had seen progress in superhighway construction, that is, “of a type exceeding the bounds of the ordinary in cost and traffic service”:

These projects varied in character, from belt and bypass roads to reduce traffic congestion and long detours, to service roads connecting recreational areas. Of the latter the 400-mile highway now being surveyed in the Blue Ridge and the Great Smoky mountains is an outstanding example. For the most part the year’s superhighway work has been directed to more practical service of traffic than is the Blue Ridge road. In Connecticut the heavily congested Boston Post Road is being paralleled by a road that will have four 26-ft. pavements and two separating parkways on a 300-ft. right of way; construction began in 1934. Rhode Island is encircling its capital city with a four-lane belt road including a great bridge across Narragansett Bay. Pennsylvania is by-passing Philadelphia with a four-lane road from Delaware to New Jersey. These are but a few of

the projects of superhighway character initiated or placed under construction during the year. ["1934 – Progress and Outlook – 1935," *Engineering News-Record*, February 7, 1935, pages 182-183]

As 1934 was nearing an end, President Roosevelt gathered aides at what was known as the Little White House in Warm Springs, Georgia, to plan the administration's agenda for the coming year. The focus was on the shape of the public works program to replace the dole. The President and his aides debated the balance between housing and other types of aid, as well as the role of industry in the initiatives.

Secretary Ickes, according to *The New York Times*, advocated a construction program on December 3 that would be large enough to "do the trick until private enterprise comes in to take up the slack." He told reporters, "As soon as business picks up we can pull out." Ickes endorsed the plan advocated by Hopkins and the President for Federal slum clearance projects. He also favored a large-scale program to eliminate rail-highway grade crossings on a self-liquidating basis by taxing tickets on passengers, freight, automobiles, or gasoline. The concept of self-liquidation was important because the President wanted to keep the Federal budget within limits. ["Roosevelt Weighs Changes in Relief," *The New York Times*, December 5, 1934]

After returning to Washington by train on December 5, the President continued meeting with aides on his legislative proposals.

On December 9, 1934, the President dictated a memorandum regarding his suggestions for transcontinental toll roads. The memorandum began:

The President dictated to me the following memoranda which were suggestions for transcontinental toll roads. He wants a strip two miles wide starting from Worcester, Mass. to Danbury, Conn., avoiding all towns.

From Danbury south it should connect up with the Westchester County park system.

From Danbury west it should go from Putnam County, connecting with Bear Mountain Bridge. West of the Hudson it should start at the Western border of Bear Mountain Park to the Delaware Water Gap. 20 miles east of the Gap it should branch off into two main highways—one to Florida and one to San Francisco.

The San Francisco highway should run west along the New York Pennsylvania line south of Erie, Pa., south of Cleveland and there in direct line to point half way between Kansas City and Omaha, avoiding all cities. From there west two strip highway to San Francisco.

From northern New Jersey start four strip highway south running east of Harrisburg, west of Baltimore, west of Washington, west of Richmond, west of Charleston and Savannah – from Washington south two or three strip road.

Another road running north and south in the Mississippi Valley on the east side of the valley from somewhere in Illinois roughly to New Orleans.

Another road not to be undertaken yet. From western North Dakota to eastern Montana to El Paso or as a substitute following eastern foothills of the main chain of the Rockies from Billings to Denver and from Denver to Demming, New Mexico.

Road starting half way between Charleston and Savannah running west through Montgomery, Alabama, Baton Rouge and thence roughly to Los Angeles and roughly 100 miles north of the Mexican border.

From north of Chicago to Twin Cities and thence to Seattle running roughly 50 miles south of the Canadian border.

Road from Canadian border to Mexico running roughly 75 to 100 miles inland from the Pacific Ocean.

Order of preference on which these roads should be planned and built.

1. Northeast stretch.
2. New York to Washington.
3. South of Cleveland.
4. A road from Chicago either running northwest or south. [Ritter, FDR Library, PPF 455]

President Roosevelt had drawn a black line on a map from Worcester, Massachusetts, to the Delaware Water Gap on its way to Florida and west to San Francisco. He wanted the Federal Government to build the highway on a 2-mile wide strip of land, with the newly valuable excess land sold to developers to help pay for the road project. [Goddard, Stephen B., *Getting There: The Epic Struggle Between Road and Rail in the American Century*, BasicBooks, A Division of HarperCollins Publishers, 1994, page 159]

On December 13, 1934, the President called a meeting to discuss the idea with Secretary Ickes; Secretary of the Treasury Henry Morgenthau, Jr.; Administrator Hopkins; Rear Admiral Christian J. Peoples, Director of the Treasury Department's Procurement Division; and BPR's MacDonald. Ickes' diary said of the meeting:

I went over to the White House this afternoon at two-thirty to a conference called by the President on the proposed transcontinental highway At intervals during the last year I have suggested the possibility of such a highway to the President. He has always been rather taken with the idea, but it has now really struck his imagination and he is giving very serious thought to it. Recently at one of our conferences to consider a program of public works for next year, the President outlined a route for a transcontinental highway from east to west and routes for two or three north and south highways. The meeting today was to consider these routes as outlined on a map of the United States and to consider costs, etc.

The following day, *The New York Times* reported that real progress had been made toward preparing the President's budget message to the Congress:

Administration leaders have pledged a budget for routine government operation well within the limits of prospective revenues and a "reasonably conservative" program of extraordinary expenditures to meet the requirements of unemployment relief and social rehabilitation.

The dollar amounts were "a guarded secret," and the limits of the relief program depended on "further study of the projected switch in relief operations from the dole to an enlarged public works program embracing housing, slum clearance and possibly grade crossing elimination." The *Times* cited MacDonald's participation in the discussions, but did not explain his role. ["Roosevelt Studies Budget Estimates," *The New York Times*, December 14, 1934]

On January 4, 1935, President Roosevelt appeared before a joint session of Congress in the early afternoon to deliver his annual message. One of his primary themes, of course, was relieving unemployment. Federal, State, and local agencies had provided a measure of relief for those on the dole:

The burden on the Federal Government has grown with great rapidity. We have here a human as well as an economic problem. When humane considerations are concerned, Americans give them precedence. The lessons of history, confirmed by the evidence immediately before me, show conclusively that continued dependence upon relief induces a spiritual and moral disintegration fundamentally destructive to the national fibre. To dole out relief in this way is to administer a narcotic, a subtle destroyer of the human spirit. It is inimical to the dictates of sound policy. It is in violation of the traditions of America. Work must be found for able-bodied but destitute workers.

The Federal Government must and shall quit this business of relief.

I am not willing that the vitality of our people be further sapped by the giving of cash, or market baskets, of a few hours of weekly work cutting grass, raking leaves or picking up papers in the public parks. We must preserve not only the bodies of the unemployed from destitution but also their self-respect, their self-reliance and courage and determination.

He estimated that 3.5 million people were on relief. "This group was the victim of a nation-wide depression caused by conditions which were not local but national," the President told legislators. "The Federal Government is the only governmental agency with sufficient power and credit to meet this situation." He wanted to unite most of the government's building programs into "a single new and greatly enlarged plan" directed by "a coordinated authority which will be charged with the orderly liquidation of our present relief activities and the substitution of a national chart for the giving of work." He continued:

The work itself will cover a wide field including clearance of slums, which for adequate reasons cannot be undertaken by private capital; in rural housing of several kinds, where,

again, private capital is unable to function; in rural electrification; in the reforestation of the great watersheds of the Nation; in an intensified program to prevent soil erosion and to reclaim blighted areas; in improving existing road systems and in constructing national highways designed to handle modern traffic; in the elimination of grade crossings; in the extension and enlargement of the successful work of the Civilian Conservation Corps; in non-Federal works, mostly self-liquidating and highly useful to local divisions of Government; and on many other projects which the Nation needs and cannot afford to neglect.

The Washington Post reported on February 20, 1935, that President Roosevelt had “seriously considered” a network of superhighways as part of his \$4,880,000,000 work program:

The President, it was learned, has discussed with congressional advisers the possibility of using a substantial portion of the works fund, now awaiting Senate passage, to link the country’s international boundaries with smooth, arrowstraight four-lane thoroughfares. Tentative plans call for three of the master roads connecting the Atlantic and Pacific coasts and two others stretching from Canada to Florida and Mexico. Nearly every State would be crossed by one of the roadways in this vast mosaic pattern.

Although rank and file members of Congress were being “kept pretty much in the dark,” the article said that “a dozen or so of the New Deal’s real leaders on Capitol Hill in recent conferences heard Mr. Roosevelt enthusiastically unfold his views on how many jobs could be created through construction of superhighways”:

The president emphasized the self-liquidating phase of the road program. He explained the Government could buy broad tracts flanking the highways and obtain the benefit from the increased property valuation.

The article pointed out that Rear Admiral Peoples had generated controversy during testimony before the Senate Appropriations Committee on January 29. The committee had asked Peoples, who was expected to head the projects unit of the agency created by the legislation, about the types of self-liquidating projects the Administration had in mind:

Observers recalled the storm of protest from Republicans against Federal competition with private business drawn by the guarded testimony last month of Rear Admiral Christian J. Peoples Carefully avoiding mention of superhighways, he at first declared the Government would sell gasoline along roads it built. Later he denied the Government would enter the gasoline business and predicted it, instead, would derive revenue from concessions along its routes.

The clause in the works bill to authorize purchase of land under the power of eminent domain was intended, it was said in informed quarters, to expedite construction of the superhighways. The President indicated he would expect cooperation from States in obtaining the rights-of-way. The roads would be built through back country where land could be acquired at low figures. There was talk of creation of a new Federal corporation to build the highways.

The President had carefully considered the routing of the superhighways:

President Roosevelt displayed what friends described as “uncanny knowledge” of American geography in discussing the new traffic arteries. Outlining a suggested south route, he glanced slyly across his desk at Vice President [John Nance] Garner [of Texas] and quipped: “We’ll have to cut this highway short because Texas is impenetrable.”

The width of the superhighways was unclear, but the article added:

When the plan was in an embryonic stage last fall . . . Secretary Ickes fixed the width at 1,000 feet and suggested the roads should be landscaped until they were the most beautiful in the world . . . So there is evidence that the President had been thinking about Superhighways for some time but there is no evidence that he was thinking about a Federal-aid program to the States. [“Superhighways Are Studied in Work Plan,” *The Washington Post*, February 20, 1935]

In late February, *Engineering News-Record* reported on the President’s superhighway plan:

Construction of a national network of super-highways is tentatively included in the Administration’s announced plans for spending the \$4,000,000,000 work relief appropriation. The ideal visualizes wide, straight trunkline highways extending from Canada to the Gulf and from the Atlantic to the Pacific coast. A highway built on the 39th parallel, for example, would connect both seaboards without touching any large city on the route. In its practical application, however, the project must allow for considerable deviation to include existing highways or projected routes which the states desire to develop in the same general direction.

Surprised by the disclosure of the plan, President Roosevelt, in press conference, stressed the question of whether state plans will permit development of the super type of highway. Slighting the interests of particular states would, of course, arouse opposition to the whole scheme. This was one of the reasons why the President desired to secure the huge appropriation before disclosing his plans. President Roosevelt’s remarks last week revealed, however, that much study has been given to the project.

As other accounts reported, the President said the plan involved acquisition of a right-of-way half a mile wide. As the excess property increased in value, its sale or lease would help defray the cost of construction:

The President explained that the principle of excess condemnation had been suggested to eliminate the element of “pure luck” by which the farmer whose property happens to occupy the right-of-way would reap the profit that, in the President’s opinion, should go to the state or local government which builds the road.

Admiral Peoples’ testimony had been the “first hint of [the] super-highway scheme”:

Since then President Roosevelt has discussed the plan with New Deal leaders in Congress and is reported to be enthusiastic regarding its potentiality for creating employment. When questioned last week, he said that the object in highway construction should be to employ as much manual labor as possible without being wasteful.

Probably the first route to be selected would be from Vermont to the Gulf. This would include the sky line highway already built through Shenandoah National Park and the partially constructed road traversing the Great Smoky region to the south. State highway engineers along the route recently were called into conference by Secretary Ickes. ["Plan For Building Super-Highways Is Works Program Item," *Engineering News-Record*, February 28, 1935, page 331

(During this period, Secretary Ickes was concerned that Roosevelt's reorganization would place the President at the top of the new public works agency with three people reporting to him. Secretary Ickes feared that he would end up working for Admiral Peoples, who was rumored to head the projects unit. According to Secretary Ickes's diary, he intended to resign if the only alternative were to work for Peoples, "a dull, old-ex-admiral [who] has neither imagination nor force of character." [Ickes, page 265] Further, the "smug and self-satisfied" Admiral Peoples "thinks he made a very good showing before the House and Senate committees." Secretary Ickes and member of his staff "were distinctly of the contrary opinion. [Ickes, page 292] In the end, Admiral Peoples remained head of the Treasury Department's procurement office.)

The result was the Emergency Relief Appropriations Act. As far as the President was concerned, it had taken too long, especially in the Senate, but he signed it on April 8, 1935. It allocated an amount not to exceed \$800 million for highways, roads, streets, and grade crossing elimination. This amount included \$200 million for highways and \$200 million for grade-crossing projects. Secretary of Agriculture Henry A. Wallace (the former Secretary Wallace's son) apportioned the funds among the States on June 3, 1935.

BPR, in its annual report on September 1, 1936, said that final regulations had been issued on September 12, 1935:

These regulations followed the general plan of administration employed in the Public Works highway program except that more rigid requirements were made governing the employment of labor and the selection of projects to meet employment needs. Not less than 25 percent of the highway fund was to be expended on secondary roads not included in the State highway systems, not less than 25 percent was to be expended within municipalities, and the remainder was to be expended on the Federal-aid and State systems. The State highway departments were required to prepare highway programs giving preference to projects in those areas where, according to reports of the Emergency Relief Administration, the relief need was greatest. Conferences were to be held with the State relief administration and the State administrator of the Works Progress Administration in an endeavor to select projects for which labor was available from local relief rolls. Programs were required to be submitted to the district engineer of the Bureau of Public Roads, the State director of the National Emergency Council, and the State

administrator of the Works Progress Administration for concurrence before transmission to Washington for final approval.

Each project was to give the equivalent of a man-year of direct employment for each \$1,400 of Federal funds expended, or, under an alternate plan to provide an equivalent total employment in a highway program financed by State and Federal funds. State highway departments were to prescribe minimum wage rates in accordance with standards fixed by the Bureau. With the exception of supervisory, administrative, and skilled workers only labor certified by the United States Employment Service could be employed, and preference was required for those on relief rolls. In general, hours of labor were limited to 130 hours per month. [Report of the Chief, Bureau of Public Roads, September 1, 1936, page 5]

(Grade crossing elimination and protection reached a peak in FY 1937, with 1,149 crossings eliminated, 196 existing grade separation structures reconstructed, and 574 crossings receiving signals or other safety devices. As the year ended, work was underway on 772 crossing elimination projects, reconstruction of 133 elimination structures, and installation of signals or other devices at 922 crossings. [Report of the Chief, Bureau of Public Roads, September 15, 1937, page 15]

Referring to funds authorized by the Hayden-Cartwright Act of 1934 and the Emergency Relief Appropriations Act, *America's Highways 1776-1976* said:

These grants, with the National Industrial Act grant, pumped a billion dollars into highway construction between 1933 and 1938—enough to assure the continuation of highway building at boom levels. Altogether, the emergency funds financed over 54,000 miles of road improvements on the Federal-aid system, urban extensions and secondary feeder roads, plus the elimination of nearly 3,000 railroad grade crossings.

Of equal or greater importance in the reckoning of the Administration, the emergency program provided the equivalent of 162,000 full-time jobs per year at the job site during the depths of the Depression. Indirect employment generated by the program was well over 480,000 full time jobs. [*America's Highways 1776-1976*, page 125]

The Emergency Relief Appropriations Act did not include a provision for planning or building transcontinental superhighways. However, Senator Hayden had discussed the option, unfavorably, during consideration of the bill on March 20, 1935. He introduced an amendment that, as he put it, would “insure that all money appropriated by this joint resolution which may be allocated to the construction of highways and related projects shall be expended in accordance with existing law by the State highway departments.” The amendment would ensure apportionment of funds to the States on an equitable basis. “The principle was first adopted in 1916, and Congress has not departed from it in a single instance for 19 years.” He added, “What a blessing it has been that such a sound principle was adopted!”

Without his amendment, Senator Hayden said, when people found that “some man in Washington had the money to build roads,” constituents would plague 96 Senators and 435

Representatives to secure money for desired projects. With the amendment guaranteeing apportionment to the State highway agencies, “not a Senator and not a Representative would have to consult anybody in Washington about highway funds.” He added that he had spoken with President Roosevelt 2 years earlier, during debate on the National Industrial Recovery Act of 1933, and that the President, based on his experience as Governor, “readily agreed, from his own knowledge, that the regular and customary way was the best” for highway funds.

Senator Hayden was particularly concerned about proposals calling on the Federal Government to build “speedways” across the States. He cited testimony by Admiral Peoples before the Appropriations Committees that construction of such highways under Federal supervision was one of the objects that could be accomplished under the emergency relief bill. Senator Hayden quoted the Admiral:

Consideration has been given to undertaking the construction of what may be termed “national highways” or “express highways”, as illustrated by the form of construction in some highways adjacent to large cities. These highways would be located in broad relation to population distribution, and would be laid out to avoid highly developed areas and to run outside of population centers. It is assumed consideration will be given to the elimination of major grade crossings in connection with these highways.

Senator Hayden was skeptical:

The idea apparently is that a wide right-of-way is to be acquired, and that the Treasury could be reimbursed for the cost of such superhighways by selling or leasing the frontage on either side for gasoline stations or other business enterprises. I am sure that if such a plan were adopted, more than one Senator would be importuned to obtain a lease for a “hot dog” stand desired by some resident of his State.

I have here a proposal to build a magnificent transcontinental express highway from Boston to San Francisco. The right-of-way is to be at least 1,000 feet wide. The total cost of this route with four traffic lanes is estimated at \$12,000,000,000. The idea has met with favor.

I have here a publication called “Highway Topics,” published in Columbus, Ohio, and in it I read a quotation from a statement made by Secretary Ickes:

I have heard plans for the transcontinental highway which would capture the imagination of any believer in the country’s future—a four-lane road stretching across the country, avoiding all congested city areas, uninterrupted by any grade crossing.

A 1,000-foot right-of-way contributed by the States would make it possible to control the landscaping of such a highway to make it the most beautiful as well as the most useful highway in the world.

A public-works program on some such basis as that discussed could absorb the energies of all our people on a self-respecting basis in wide-spread economic activity.

Under no circumstances would Congress ever appropriate the money to build such a highway.

The proposed highway, he said, would go through 12 States and 45 congressional districts:

How can the Senators from the other 36 States make their people believe that such a highway is highly beneficial to them? How can the other 390 Representatives explain to the farmers in their districts that they must still drive through the dust or the mud because the road-making energies of the Nation are to be concentrated on this gigantic project?

The enactment of my amendment will put an end to all such dazzling schemes and will insure the continuance of a policy which is slowly but surely bringing about the construction of a system of serviceable highways which benefits every section of the Union. What we have been doing through the State highway departments may not be magnificent, but it is intensely practical and entirely satisfactory to the great majority of the American people.

The Senate adopted the amendment by voice vote and the concept survived into the final bill. [*Congressional Record-Senate*, March 20, 1935, pages 4052-4057]

According to *The New York Times*, the Hayden amendment and several others adopted on the same day were “considered of minor importance; nevertheless they were undesired by the administration.” [“Four Amendments Put In Relief Bill,” *The New York Times*, March 21, 1935]

Following enactment of the Emergency Relief Act, BPR responded to supporters of grandiose highway plans in the context of the legislation. For example, on June 26, 1935, MacDonald replied to Sebastian W. Knobloch, president of the U.S. Monumental Highway Society based in Los Angeles. The society had been formed to promote three transcontinental highways (New York City to Seattle; Washington, D.C., to Oakland, California; and New York City to Los Angeles). The \$3 billion cost would be raised through a bond issue by banking institutions or the Reconstruction Finance Corporation (RFC). The sale of Memorial Highway Stamps would help retire the debt. In addition, revenue would be raised along the 9,000 miles of highways:

With this investment there will be a revenue bearing plant consisting of three highways, approximately 30 oil, gas and water mains, each 3000 miles long; fully equipped and electrically controlled; nine message tubes, each 3000 miles long; six gondola tubes, each 3000 miles long; 500 gondolas, fully equipped; 10 fully equipped power plants; natural gas wells, carbon dioxide wells, 300 hotels and hospitals well equipped, besides leases on real properties; also leases on mineral, metal and gas properties that may be developed; refrigeration plants and natural gas contracts The revenue will be of such variety and size as to liquidate all bonds or claims.

The gondolas would be air-propelled to carry mail and freight at speeds of 660 to 1,000 miles per hour; they could cross the country in 3 hours.

MacDonald received Knobloch's letter and background material after it had passed through several other agencies:

Under the provisions of the Emergency Relief Appropriation Act of 1935 all sums allocated from the Work Relief appropriation for the construction of public highways, and other related projects, are required to be expended by the State highway departments under the provisions of the Federal Highway Act of November 9, 1921, with certain specific exceptions. As thus limited and otherwise controlled by rules and regulations, the sums allocated for highway construction from the Work Relief appropriation can not be used for a project such as you describe.

By then, BPR was aggressively planning to gather the data needed to conceive the road building program to succeed the two-lane paved interstate network developed under the Federal Highway Act of 1921. MacDonald's vision, as always, was grounded in Progressive reliance on driven data measuring need, not simply visionary projections.

President Roosevelt, Secretary Ickes, and others retained their interest in a toll superhighway network, but their meeting with MacDonald on December 13, 1934, did not result in legislative proposals. A newspaper column in 1938 appears to have revealed the outcome of that meeting. The idea "had been studied and found impractical three years ago by Secretary Morgenthau and a parkway expert borrowed from New York City's Robert Moses." The account added that, "The study was undertaken at the President's request . . ." [Alsop, Joseph, and Kintner, Robert, "Roosevelt Sticks by Budget Balance Advisers Despite Pressure for Aid Spending," *The Capital Parade* column, *The Evening Star*, March 4, 1938]

T. E. Steiner's Transcontinental Super Highway

Senator Hayden did not name the transcontinental plan he was referring to during the debate on his amendment, but it may have been a proposal by a businessman named T. E. Steiner that was widely publicized at the time.

With the Roosevelt Administration discussing work-relief projects early on, Steiner wrote to the President on May 8, 1933, following his second Fireside Chat, the same one that had prompted the inquiry from David Gray. On the letterhead of The Victory Coal Company of Preston County, West Virginia, Steiner wrote, "the most reasonable and logical way to spend money is in building roads." He described his plan:

The Government should buy a right-of-way across the country at the most logical location of the road and I think it should be from Boston to the Pacific coast. It should be at least three hundred (300) feet in width and in the center of the right-of-way, the road should be built at least 100 feet wide, with at least 45 feet for automobiles and at least 55 feet for trucks, making it wide enough for 4 autos and 5 trucks, two of each kind each way. The automobile part should be concrete and the truck should be brick . . .

The road should be approximately four thousand (4000) miles in length and if sold in five mile sections, it would require eight hundred contractors It should be as straight as possible and miss all large centers. Where possible, it should span the valleys when going over mountains and hills.

Motorists, who would save two days on a transcontinental trip, should pay tolls of \$5 or \$10 “as we would save two nights lodging and two days meals.” Trucks “could pay large tolls, as it would make them all kinds of money.” He wrote that even “railroads could use it and could, with large motors, haul a train of rubber tired railroad cars, loaded with merchandise.”

He urged the President to seek authority to issue \$12 billion in bonds to build the highway. He was confident the bonds could be sold. “This would be a matter of asking all of us to buy bonds, in lieu of subscribing to feed the poor and unemployed.”

Eventually, Steiner’s May 8 letter and a second one on August 10 to the Federal Emergency Administration of Public Works were forwarded to BPR. MacDonald replied on September 13, 1933:

I regret that I can not agree with your estimate of the value of such a project. Numerous similar suggestions for the construction of elaborate transcontinental roads have been received, and the feasibility of the plan has been carefully considered. It is our conclusion that the large expenditure necessary for such a transcontinental highway can not be justified by any present or predictable future traffic, and that, as an employment measure, the plan has less merit than the expenditure of an equal sum of money upon immediately necessary improvements of the more important roads in all States. The latter plan is the basis of the expenditure of the appropriation made specifically for road construction by the National Industrial Recovery Act.

Steiner was not discouraged. He continued, with considerable success, to publicize his idea as president of the Super-Highway Research and Investigation Board, Inc. The board was located on East Liberty Street in Wooster. A profile in Steiner’s hometown newspaper told readers that he was president of The Bauer Manufacturing Company of Wooster and president of Victory Coal Company of Tunnellton, West Virginia. He succeeded in business “through the adoption of improved methods, in keeping the employes [sic] of his mines busy during the depths of the depression.” He told the reporter how he came up with his idea:

“As I drove back and forth over the hills from Wooster to my mining properties, I thought of what a fine thing it would be if some project could be conceived and developed that would be of nation-wide value in providing useful employment. Since I was driving over roads that showed they needed improvement, my thoughts turned to road building, and gradually the picture of a great super-highway developed in my mind.”

Mr. Steiner has spent many weeks in Washington, convincing lawmakers of the feasibility of his plan, and in New York City, where he explained his plan to a number of great industrialists. He has interested engineers who have built other great highways, and has poured his story into the ears of automobile manufacturers and others.

In August 1936, he formed his Super-Highway organization. Steiner then sent a letter to 5,000 organizations inviting them to help in his work. Construction of superhighways, the letter stated, was of vital interest “in order that the scourge of death that daily haunts our highways may be driven to cover, the millions of unemployed put to work, relief agencies abolished and that the budgets of governments might be balanced.” He had gained support from newspapers, leading industrialists, bankers, manufacturers, and “people from all walks of life.” He explained why:

Many express the thought that the need for adequate transportation in America is so great that no stone should be left unturned in getting the necessary data and information before the agencies of government at Washington.

The article explained the concept:

For the coast-to-coast highway, which would start somewhere near Boston, go north of New York City, south of Buffalo, Cleveland and Chicago, and onward to the coast, dodging all large cities, it is proposed to acquire a right of way 400 feet wide. At intervals of 12 miles this right of way would be widened out to 3,000 feet, and this road side space would be occupied by tourist camps, gasoline stations, hotels, cottages, recreation centers, in fact, any kind of business that would cater to the traveler.

In the center of the proposed right of way, two roads would be built: 45 feet of four lane automobile road, and 55 feet of four lane road for trucks and buses, this to be built at least four times as heavy as the automobile road. Twenty feet between the two roads would be graded and graveled, and have a barrier fence in the middle. This would provide 10 feet on each side for parking, and on the outside of each road would be ten feet for a similar purpose. Thirty feet on the side of each road would be for ditches, fills, cuts and roadbed protection. One hundred and twenty-five feet on each side would be landscaped and beautified, the landscaped section to prevent building along the side of the road and marring the scenery. It would also provide space for future expansion of the traffic lanes.

The road would be financed through a \$12,000,000,000 bond issue, guaranteed by the government, but the bonds would actually be redeemed through earnings of the highway.

Toll of one-fourth of a cent a mile would be charged for passenger cars and a higher rate for trucks and buses. It would cost \$6.25 to drive a car from New York to San Francisco, but the trip could be made in half the time now required, and a better roadway and shorter route would make the cost sufficiently less than the present cost to more than save the toll charges.

“I am confident,” Mr. Steiner said, “that highways of this kind would never cost the government a cent.”

C. E. Prosser of New York City, a housewares distributor and vice president of the Super-Highway company, said the project would have a tremendous impact on unemployment, as summarized by the article:

It would require not only a great army of road builders, but the cement, steel, and other building materials would be in such demand for its construction and the building of service buildings at recreation centers as to be almost inconceivable.

In addition, the plan would revolutionize trucking. The separated truck lanes “could create a demand for 50 ton trucks instead of ten ton trucks, and enable one truck driver to transport five times as much merchandise as he can haul over present roads, and do it with much more rapidity and with less wear on his tires and motor.”

The article concluded:

Recent visitors to Germany report that Hitler is building “townless roads,” great highways that dodge towns much as this one would do. In Germany they are wanted for military purposes, for the German army is being entirely motorized.

A system of super-highways in this country could also be used for military purposes, although its sponsors see its greatest benefits to the drivers of motor cars who would find greatly improved travel conditions for touring and business, and for truck transportation; while their construction would, they feel sure, employ a great many of the idle millions of today.

Construction of the coast-to-coast super-highway would be a five year program, according to tentative estimates. [“Super Highway Story is Told to the Nation,” *The Wooster Daily Record*, September 25, 1936]

(The reporter misunderstood the “townless highway” concept as advocated by MacKaye and Mumford.)

Among those interested in the Steiner proposal was Representative Jennings Randolph (D-WV). He had won election to the House in the Roosevelt election of 1932 and was a member of the House Committee on Roads. On March 24, 1936, he introduced House Joint Resolution 542 on “Creating a Superhighways Commission.” It would create a Superhighways Commission to consider Steiner’s idea for a single transcontinental highway on 450-foot right-of-way from Boston to San Francisco and “if the way be clear for two superhighways from a suitable point or points on the transcontinental route, one extending to Laredo, Texas, to connect with the Pan-American Highway and the other to Miami, Florida.”

The proposed superhighway, according to the resolution, would make possible “the use of separate pavements by privately and publicly owned and operated vehicles and giving to railway companies the right to first priority in the granting of franchises for both passenger and freight-motor service.” The resolution proposed a non-profit, self-liquidating corporation to channel private funds into the project.

The commission, which was to report its findings by December 1, 1936, would be composed of the Chairman, Federal Reserve Board; the Secretaries of Agriculture, War, and the Interior; and two Senators, one from each party, and two from the House, again one from each party.

Representative Randolph explained that he had received the plan from Steiner:

This is the first time that such a plan that would link air, highway, water and railroad transportation has been brought out to my knowledge. It seemed fantastic to me at first but after study I think it is feasible.

He added that at least 20 major corporations favored the plan:

Of course tolls would have to be charged at the beginning, but the cost to the average motorist would be so small as to be negligible. Most of the expenses would be defrayed thru franchises to the railroads and airplane transportation companies, which would have connecting landing fields with the roads. [United Press International, "Nation-Wide Net of New Roads Proposed," March 25, 1936]

The House Committee on Roads held a hearing on the bill on April 19, 1936. The committee appears not to have printed a report on the hearing, but Steiner characterized it this way:

At the hearing before the House Committee on Highways, Mr. Steiner, on invitation, outlined the full plan, its purposes and possibilities, which resulted in favorable attitude and reception by members of the Committee and the public. [Steiner, T. E., Foreward, *Proposed Transcontinental Super Highways in the United States*, 1936]

When Congress did not approve the commission bill, Representative Randolph introduced House Joint Resolution 204 on February 8, 1937, again citing Steiner as the inspiration. The 1937 version called for a Superhighways Commission to study "a system of transcontinental superhighways" consisting of the main highway from Boston to San Francisco but with branches from New York City to Miami; Cleveland to northern Florida; and from Duluth to Laredo, Texas. Each city was cited as "near" because it would be bypassed. As the resolution stated, Steiner had by then incorporated the Transcontinental Stream Lined Super Highway Corporation "for the purpose of engaging in the business of building, constructing, maintaining, and operating such superhighways."

House Joint Resolution 204 was more detailed than its 1936 predecessor. It called for a 450-foot right-of-way, with separate lanes for different types of traffic, but with provision to extend the right-of-way to 3,000 feet "at regular intervals to provide for service centers, for the establishment of parks, service stations, restaurants, hotels, tourist homes and camps, repair shops, airports, and all other enterprises necessary and incidental to the comfort and convenience of the public traveling over such superhighways." The corporation would charge tolls according to the benefits derived. It would have another source of revenue:

. . . rentals from railroad companies and common carriers, including air lines, for franchises to operate streamlined trains and air lines over and in connection with such superhighways and rentals from businesses operated at service centers along and in connection with such superhighways.

The Superhighways Commission would recommend the appropriate tolls and franchise fees.

A few days later, on February 16, Randolph introduced House Joint Resolution 227 on “Creating a Transcontinental Superhighways Commission” to study a proposal for “a transcontinental superhighway from coast to coast and from the Great Lakes to the Gulf of Mexico, with connecting links.” Representative Randolph had received the proposal from R. M. Davis, a bituminous coal operator from Morgantown, West Virginia.

Representative Randolph was not alone in support for transcontinental superhighways. On January 5, 1937, Representative J. Buell Snyder (D-Pa.) introduced H. R. 159 calling on BPR to locate and survey “a system of three transcontinental and six north-south highways.” The goal was to give the United States:

. . . as near as possible equal facilities for transportation of commodities, and to economize in the building of national highways and provide modern and adequate national-defense equipment

The proposed study included “a system of airports in connection with such highways, one such airport to be located at each of the intersections of such highways one with the other.” BPR would cooperate with the U.S. Army Corps of Engineers and the State highway agencies with jurisdiction in the States the highway passed through.

The bill specified the transcontinental highways:

- Boston and Seattle, by way of Albany; Erie; Cleveland; Chicago; St. Paul, Minnesota; and Yellowstone National Park.
- Baltimore and San Francisco via Cumberland, Maryland; Uniontown, Pennsylvania; Columbus, Ohio; St. Louis; Denver; and Salt Lake City.
- Jacksonville, Florida, and Los Angeles, by way of Atlanta; New Orleans; and San Antonio and El Paso, Texas.

The bill also identified north-south routes linking:

- Buffalo and Atlanta.
- Chicago and Memphis.
- Fargo, North Dakota, and San Antonio.
- Butte, Montana, and Denver.
- Seattle and San Diego.

Snyder’s bill specified that the highways “shall be not less than sixty feet nor more than eighty feet wide,” on a total right-of-way exceeding 200 feet wide. They would constitute “the most modern, durable, high-type, hard-surfaced highways; shall be lighted at night; and shall not, except at their termini, pass through any city, town, or village.” Airports “shall be not less than eight thousand feet square; shall be of the most modern construction, suitably lighted and equipped; and shall be so located that the intersection at which such airport is placed will be as nearly as possible at the center of such airport.”

On February 2, 1937, Representative Snyder discussed his bill under special order. The Nation faced several problems that he defined as transportation, unemployment, and national defense:

It is believed by many of our best engineers and staunchest nation-builders that we can, in a large measure, solve the three problems mentioned above, or at least do our constructive part in initiating the solving of these problems, by building a national system of highways.

He explained the history of highway development starting with a discussion of the National Road approved by President Jefferson. He referred to the long period from about 1850 to 1903 when “Congress did not take any constructive part in the building of national highways.” He cited Representative Brownlow’s Federal-aid bill, the evolution of road policy since then, and Germany’s experience developing its system of highways.

He explained the benefits of the plan, including the benefits to national defense and the navigation of airplanes:

In other words, gentlemen of the House, this program would give us adequate means of transportation for many years to come. At the end of half a century, I assume, if they were completed now, they would point back to our time and wonder why in the world we did not build bigger and wider highways in 1937. [National Highways, *Congressional Record-House*, February 2, 1937, pages 708-711]

Representative Snyder introduced a second bill, H.R. 4198, for a similar purpose, but this time authorizing the Department of the Interior to undertake the study. It was similar to the earlier bill, but specified several contracting requirements. Contracts were to be awarded “to the lowest bidder per mile and no contract to be less than ten miles.” Further, each contract was to stipulate that the contractor, in hiring workers, would give first priority to “the unemployed men of the region where his unit of highways is being built (between the ages of fifty and sixty-five)” [sic].

Hearings on Transcontinental Highways

By 1937, talk of express highways, freeways, superhighways, transcontinental routes was growing. Individual States were developing plans for metropolitan and statewide freeways, as *Engineering News-Record* pointed out in an editorial in its April 1 issue:

Definite plans are beginning to emerge from highway department thinking on express highways. Early last month Commissioner John A. Macdonald of Connecticut sounded the boldest note in highway progress that this provident New England state has yet heard, by asking [for] enabling legislation for a \$100,000,000 express road extending diagonally across-state from New York to Massachusetts. In a report to the New York legislature Frederick Stuart Greene, superintendent of public works, now urges a system of half-a-score of new highways traversing the state, to cost \$300,000,000.

Both of these projects have been subjects of department consideration for some time, but only now do the demands of transport make the authorities bold enough to announce them and ask for legislative approval.

The plans would “probably stir up sharp discussion,” so approval may be delayed. “The plain fact is that growing transportation needs have at last brought express-highway plans openly before the public.” Despite the evident need for arterial highways, “the public, slow to change from traditional attitudes, still has to be educated.” Officials would have to encourage a change of attitude, particularly regarding “the strongest popular prejudice” that express highways were “extravagant speedways, designed to serve the luxurious few. No *autostrade* are wanted in America, it is asserted.”

No one, the editorial asserted, was thinking of developing highways to provide exclusive service for certain types of motorists:

The new roads are proposed for general traffic, with restriction only on local traffic. Multiple lanes are to provide for fast and slow traffic, while local traffic will have use of improved existing roads plus access to the express routes for its through service.

Express highways were a “logical forward step in main-road development.” Their construction might be years off but “system planning should be begun at once.” The editorial concluded:

The opportunity before the highway engineer to make real progress is great; it should not be neglected for other hands to grasp. [“Toward New Road Systems,” *Engineering News-Record*, April 1, 1937, page 493]

A few weeks later, Rhode Island enacted a law calling for freeway construction, with “freeway” defined as:

A way especially designed for through traffic over which abutters have no easement or right of light, air, or access by reason of the fact that their property abuts upon such ways.

The law allowed the State highway director to restrict access to a freeway. [“Rhode Island Law Provides for Freeway Construction,” *Engineering News-Record*, May 13, 1937, page 720]

An editorial applauded the law, calling it the “first specific legislation for freeways” in the country:

Its essential value is that it empowers the department to protect its through travel. In no state has this been completely practicable heretofore; no sooner have through roads been built than sales stands, inns, service stations and other businesses have sprung up to hinder through traffic with turnouts, parking and across-road travel.

An argument for commercial activity could be made, “but it is absolutely certain that through roadbuilding becomes an absurdity if it is not denied.” Where commerce was desired, the through-traffic freeway must be accompanied by service roads for abutting businesses and

residences because “the perfect freeway is not everywhere a single road.” [“Freeways by Law,” *Engineering News-Record*, May 27, 1937, page 790]

On March 17, 1937, Senator Matthew M. Neely (D-WV) introduced Senate Joint Resolution 106. It was the Senate version of Representative Randolph’s House Joint Resolution 227.

On April 13, 1937, the Senate Committee on Post Offices and Post Roads held a hearing on Senator Neely’s bill. Committee Chairman Kenneth McKellar (D-Tn.) presided. The main witness was R. M. Davis, who testified that he had drafted the Neely bill. As background, he submitted a brochure titled *Proposed Transcontinental Highways* consisting of information Davis had submitted to President Roosevelt on April 23, 1933. Davis said that he had submitted his information to the President twice, but all he had received was an acknowledgement.

His goal, he said, was to relieve unemployment. He estimated his proposal would cost approximately \$7 or \$8 billion and would employ 5 to 7 million people. “The thought behind all of this is to help industries and help employ labor, and it would be a self-liquidating proposition whereby we could put these men to work and the Government get this money back through the revenues.” He predicted that paying for the roads would take about 50 years

Asked if people would pay tolls on the road “when there are so many free roads all over the country,” Davis replied:

Yes; the roads we have are so crooked and so secondary in character that they will not last 10 years. They must be rebuilt for heavy trucks

This is a long-range proposition. If we had this road, the saving in gasoline alone would more than pay for the time you would lose in taking these other routes because you would take less gasoline and you would use this road even though it incurred the expense of a small toll.

He acknowledged that, “This may be a little fantastical; and it is, unless you study it a little bit.” He said, “these roads have to come some time or another.”

Senator H. Styles Bridges (R-NH) pointed out that the trend was “toward free roads and free schools and free service rather than setting up barriers, financial and economic barriers, in the way of toll bridges and such like.” Senator McKellar agreed that in view of the trend “to make these public carriers free to the largest extent possible . . . I think you would find great difficulty in making the road pay.” Davis disagreed:

You would not [have great difficulty] from the freight-transportation end of it, because this road would be so durable that, for instance, you could take a 50-ton truck out of New York City and overnight it could be in Pittsburgh, and that means with a 50-ton truck load. It would take five or six trucks to transport that same freight load on our present highways.

As a result, freight transportation would provide the income. He did not think “pleasure cars” would have to pay a toll.

Senator Bridges pointed out that the road “would be built without any regard to where the chief labor relief load would be.” Some States would receive no relief at all. Davis replied, “As I say, when you first read the proposition you think it is fantastical but the more you get into it—“

The only other witness was Charles A Goodwin, an attorney from Morgantown. In a brief statement at the end of the 90-minute hearing, he pointed out that the bill called for a commission to study the proposal. “Certainly, the scope of the problem is important enough to warrant that investigation.” All the details were tentative, “but after this commission has been appointed and after, with the aid of proper expert advice and investigation, it has made a report, then the matter which have been brought out by the chairman will boil down to some concrete definite things.” [Transcontinental Highway Commission, Hearing before the Committee on Post Offices and Post Roads, on S. J. Res. 106, United States Senate, 75th Congress, 1st Session, April 13, 1937]

Representative Randolph Tries Again

On May 17, 1937, Representative Snyder introduced H. R. 7079, calling on the Department of the Interior to study his proposed system of highways.

The following day, Chairman Cartwright opened a hearing on “Roads” to consider the Snyder bill and Randolph’s bills in support of Steiner’s and Davis’s proposals. Representative Randolph, Cartwright said after introducing the bills into the record, “will largely conduct the hearing.”

Representative Snyder was the first witness. He began by referring to the Nation’s unemployment problem and said that road construction was one avenue of relief. He pointed out the Federal Government’s long history in road building, claiming that congressional action authorizing construction of the National Road was the “first act of Congress relative to the building of national roads.” He summarized his bill, pointing out that one of the routes, Baltimore to San Francisco, would follow, in part, the National Road.

Representative Karl Stefan (R-Ne.), a member of the committee, pointed out that one of the roads in the bill followed the Meridian Highway (roughly U.S. 81), a road from Mexico to Canada that had been promoted by interests in his State for decades. “Would you take that into your program or just forget it?”

Representative Snyder explained that, “Ordinarily where such a highway would come anywhere near parallel to this particular type of highway, you would take that and perhaps widen it and take it in as a part of this road.” If the road were satisfactory, “We could enlarge it or widen it and combine it with this.” Representative Stefan appreciated the clarification because he had shown the Snyder bill to Meridian Highway supporters in Nebraska and “they became frightened” because they fear “they were going to lose all this road.”

Returning to unemployment, Representative Snyder explained that older unemployed workers had a particularly tough time. Businesses generally sought younger workers, leaving this older group out of work. He envisioned establishing camps for these older able-bodied workers “out of the slums and dives and gambling places and dens around the different cities, where they loaf day after day and get discouraged with life,” and give them a decent wage to build the proposed roads.

The highway network would have significant value for national defense. The country was not planning foreign wars. “All that we are doing is to have a defense so that if anybody takes it into their head, any nation or group of nations, that they can crawl on our shores, we can say, ‘Halt’; and they will take a look at our equipment and will say, ‘I guess we had better not try it, because they are sufficiently equipped that we would be the loser.’” He continued:

With these highways we could use antiaircraft equipment more effectively. I am very strong for that and a lot of it on our coasts. Stationary equipment of that kind, just like anything else, is still valuable; but not like it used to be when forces could come in just through the ordinary channels and not come in through the air.

So if we build these highways, we would motorize and mechanize much of our national-defense equipment and, for instance, zone it some place in the middle of the United States.

The national network would increase mobility for all military defense movements.

The transportation of commodities was another major factor in the conception of his proposal:

You and I know that they couldn’t have told us 30 years ago—I live close to route 40—that there would be as many trucks and automobiles pass over route 40 as there are now . . . We just might as well reconcile ourselves to the fact that 20 years from now there will be two or three or four times as many as we have now, that there will be two or three or four times as much commodities being transported over the road east and west and north and south, from year to year, as we have now. We might just as well accept that and prepare for it now instead of doing patch work.

He concluded his statement:

God forbid, I don’t want to find fault with any of our predecessors or any of those in the States or any other place who did the road work, because they have done a good job, whatever it may be. We can look back now and say that they didn’t have the foresight to build it from here to here so that it would dovetail with this State or that State or this county or that county. They have done a good job, and we commend them for it.

But it is up to us to do a better job than they did. If we don’t we are failures. My observation is that if you and I don’t do a better job in our generation and hand down a better inheritance to our children than we had, we are failures.

Chairman Cartwright asked Representative Randolph to make a statement, then take the chair.

Representative Randolph explained that throughout his three terms in the House, he had advocated for the rural road program. “But I do believe that we can justly give a certain amount of serious consideration to studying the problem of building for the future so-called superhighways across the United States”:

During the Seventy-fourth congress in the first session I became intensely interested in the subject of national highways. I had had a type of interest prior to that time; but through contacts with certain individuals, at least two of whom are at the hearing today, I became a closer student of the problem.

One of those individuals was Steiner, whose company operated coal mines in Representative Randolph’s district. The other was Davis, a friend from Representative Randolph’s district who also operated mines. Their interest, he said, prompted him to introduce a bill in the previous Congress to create a Superhighway Commission to study the idea, leading to the committee’s hearing on April 29, 1936.

In the present Congress, he had introduced House Joint Resolution 204 reflecting Steiner’s ideas and House Joint Resolution 227 reflecting Davis’s proposal.

Representative Randolph continued with quotations from a variety of sources. From the Bible he quoted the prophet Isaiah who more than 3,000 years ago said, “A highway shall be there for the redemption of his people.” Those words were true when the prophet said them, but “they have proven to be doubly true in the history of the United States, because I know that in American progress the road systems which have brought our peoples closer together have certainly been of value in ironing out jealousies, difficulties, and misunderstandings, and in making all of those who perhaps may have been enemies, who did not understand one another, neighbors in the finest sense of the word.”

He quoted a *Washington Post* article published on November 7, 1936:

Henry Ford, 73-year old automobile manufacturer, leaning across a luncheon table predicted Thursday that the continued expansion of the motor industry would result eventually in six-lane highways spanning the Nation.

“It is bound to come”, he said, while carving a thick tenderloin steak. “Not only that, but at some future date I believe interstate trucking and trailer traffic will be routed over separate highways.”

Ford based this prediction, he said, on the fact that traffic conditions were growing more hazardous daily and would necessitate the building of great wide ribbons of macadam and concrete from the Atlantic to the Pacific.

“The only thing holding us back is finances”, he explained.

Representative Randolph also quoted an editorial in *The New York Times* reacting to an August 1936 *Fortune* magazine article highlighting the deficiencies of the Nation's roads. The article argued that \$2.5 billion in Federal-aid highway funds resulted in:

. . . a patchwork of roads having little or no continuity, leaping without rhyme or reason from dirt to macadam and concrete; from two-lane to three-lane and four-, five- and six-lane breadth; from well-calculated curves to slithering turns that have not the slightest respect for centrifugal force. Just about 97 per cent of the surface mileage is made up of two-lane, two-way, twenty-foot roads, which were standard fifteen years ago. So conservative an insider as the U.S. Bureau's Chief of the Division of Design, R. E. Toms, pronounced a quarter, perhaps as much as half of all roads built in the past twenty years unfit for present day high speed traffic.

The magazine summed up the safety problem on modern roads. "The cold fact is: traffic today is a combination of an eighty-mile-an-hour car in the hands of a twenty-mile-an-hour driver struggling to adjust itself to a thirty-mile-an-hour road."

The solution, according to *Fortune*, was construction of limited access highways:

The limited way . . . is a road that utilizes the principles of traffic hydraulics by delivering traffic as in a sealed conduit past all conflicting eddies and crosscurrents. Four broad structural elements identify it. One: a dividing island or median strip, ten to thirty feet broad, down the middle of the road. That ends medial friction. Two: grade separations, or over- and underpasses, which liberate through traffic from the impact of cross traffic, and clover-leaf detours for making turns. That disposes of intersectional friction. Three: the closing off of abutting property by denying it direct access to the road. That offsets marginal friction. Four: accelerating and decelerating lanes for fast and slow traffic. That lessens internal-stream friction. Just by the interposition of physical barriers, drivers who haven't the wits to stay apart are forcibly kept apart.

The article pointed out that the idea was already in use, citing the West Side elevated highway in Manhattan and other brief stretches such as "the Du Pont Highway in Delaware, the Blue Mound Road running out of Milwaukee, the super-highways that Detroit is spinning through its metropolitan area, the Pulaski Skyway soaring over Jersey City from the Holland Tunnel, the Mount Vernon Memorial Highway, St. Louis's depressed highway, which cradles traffic in a deep trench below street level, the super-highway Connecticut is building on a parkway-insulated 300-foot right-of-way, and the Worcester Turnpike." The 1.7-mile Holland Tunnel, although not a highway, was "the most spectacular example of true limited way." It had been opened 9 years, with only five fatalities in all those years.

Based on this experience, the article explained:

Indisputable is the efficiency of limited way. Better than any other known road structure, it approaches the ideal of automatically compensating for the drivers' mistakes. The question is: how readily can it be fitted into the existing highway pattern? The breadth of the problem can be grasped from the fact that only a few hundred miles of U.S.

highway, even with the most generous allowances, can be called limited way. Germany, whose highway program is the most advanced in the world, is building 4,500 miles of such roads—even better roads, since they are “townless highways”—and will have 725 miles completed by the end of the year. According to highway experts, the U.S. needs approximately 12,000 miles of similar construction to take the strain off the main highways, especially in the approaches to metropolitan areas. [“Unfit for Modern Motor Traffic, *Fortune*, August 1936]

Representative Randolph quoted the summary in the *Times* of the *Fortune* article and the editorial’s conclusion that, “Undoubtedly new and safer roads are necessary.” The editorial also stressed the need for better educated drivers and reduced speeds to improve safety. In this regard, the editorial quoted a recent book: “if the entire driving population of the United States were conceivably willing for a single month to reduce its speed to twenty miles an hour . . . it is a safe prediction that during that month our traffic fatalities would be reduced from 3,000 (the present monthly average) to less than 100.” [The quote is from Stoeckel, Robbins B., May, Mark A., and Kirby, Richard S., *Sense and Safety on the Road*, Student’s Edition, D. Appleton-Century Company, 1936, page 224]

Representative Randolph also quoted a *New York Times* article of February 14, 1937, describing Germany’s Reichsautobahn as “the railroad man’s idea of the way highways should be built Any concreted stretch of Reichsautobahn is essentially a broadened and paved double-track railway line.” [Ross, Albion, “Super-Highways for the Reich,” *The New York Times*, February 14, 1937]

He next quoted a November 1936 article in *Collier’s* magazine on “Roads Into The Future”: “The next big job we have to do—certainly one of the next big jobs—is to get ourselves some roads. Roads!” At present, the author said, “We’ve got roads running from here to there and everywhere.” They weren’t finished. “And so, apparently, we are in for a tremendous program of highway construction and improvement.” The era of paying for roads with bonds was at an end – leaving a debt of “something over 3 billion dollars for the road building we have already accomplished.” The funds, the article informed readers, have to come from road users as the roads are built. [Flynn, John T., “Roads Into the Future,” *Collier’s*, November 21, 1936, pages 12-13, 69-72]

Representative Randolph concluded by saying he had put his bills “in the hopper, as it were,” to get them a hearing before the Committee on Roads. He concluded by introducing Steiner.

Steiner recalled that he had conceived his idea about 5 years earlier as a response to the Nation’s unemployment problem. He had written to President Roosevelt and received several courtesy replies. He also referred to the reply he had received from BPR’s MacDonald “pouring cold water on the proposition and stating that there was no need of superhighways in this country and that we had better spend our money on present highways.” Steiner added, “we received no further consideration from that source.”

The hearing on April 29, 1936, “resulted in publicity in practically all the newspapers in the United States; and the reaction from this publicity convinced us all the more of the need for such a project in order to catch up with the streamline age in which we are living.”

He discussed the direct employment benefits for construction crews and the indirect benefits for the road industry. “We believe this will be the panacea for restless people without work and the missing link of everlasting prosperity.”

Steiner pointed out that the government helped the railroad revolution in the 19th century through land grants and other means, resulting not only in the country’s railroad network but “watered stock,” multimillionaire railroad magnates, and “looting of the public.” By contrast, he said:

Our proposal is not asking the Government to give any 130 million acres of land, any \$50,000,000 in cash, nor rights to sell watered stock in order that we make men rich. In fact, all we are asking for and the reason for creating this superhighways commission is to study and formulate a plan which we have fully outlined, and . . . wherein the Government will in reality be furnishing their good will in that it will be necessary for them to grant proper franchises as far as constitutional rights will allow and subject to the approval of the various States affected and the guaranteeing of a bond issue which we estimate at \$12,000,000,000 payable in 30 years at a small rate of interest. We will be able to set up a program to the commission wherein these bonds can very easily be retired out of income at least by the time or before they are due.

The toll would be one-fourth of 1 cent per mile, 25 cents per 100 miles “for the privilege of driving 100 miles on a safe and sound superhighway.” The time savings alone would encourage motorists to leave toll-free roads to use the new network. For example, a trip from the Atlantic to the Pacific would be 558 miles shorter on the streamlined superhighway than on the current road network.

In addition, the truck lanes would be commercialized. Steiner said it would be so useful to trucking companies that they would be charged “in proportion to the benefits they will derive.”

He also anticipated a “very large revenue” from toll bridges. “The Mississippi River bridge will likely pay for itself in less than 5 years’ time and all other bridges accordingly.”

Representative Stefan pointed out that the present Congress was on record as opposing private toll bridges. Steiner agreed, but only for ordinary local roads. “This is a road that is solely for long-distance trips in order to utilize the speed and safety that are in the automobiles for long trips.”

The final source of revenue would be the service centers, spaced about 12 miles apart, where motorists can stop for gasoline, food, and other needs.

Steiner summarized the purpose of the commission:

This Commission will be asked to study the plans, purposes, possibilities and so forth of the Transcontinental Streamlined Super-Highway Corporation of the United States of America, which corporation can be granted the franchises and can issue the bonds with the Government's guarantee and can make any kind of arrangements wherein the superhighways and service centers may be taken over by the Government and operated as a government institution or they can arrange to allow the corporation to continue the operation through entire supervision and control by the Government wherein all the net income derived from the operation will be used to defray expenses of operation, taxes, interest, and provide the sinking fund. They can also formulate in their contract a plan wherein after the bonds are once retired the Government, if it desires, can use the income for governmental expenses, thereby reducing taxes.

The commission would include the Secretary of Agriculture because BPR comes under that department. "However, we might say that this project may and should be separated and independent of the Bureau of Roads [sic], as we do not expect to use any of the funds, or expect any changes to be made in any shape or form."

Representative Randolph recalled that shortly after taking office, Secretary Ickes "made quite a speech in behalf of a national highway and the part that it might play in placing men to work." Steiner recalled the speech but pointed out that nothing had come out of it.

Steiner concluded his statement saying, "May I say in conclusion that this Commission will be clothed with powers to investigate, study and formulate any kind of plans, including engineering adaptations."

Representative Orville Zimmerman (D-Mo.) asked how the proposed highway network would affect the transcontinental railroads. Steiner replied that, "I am very frank to say that my belief is that this will put the railroads on their feet." The railroad companies were already "losing out today to the ordinary truck and the ordinary bus." He explained:

We are going to save the railroads from the slough of business. The railroads will be able to put streamline trains . . . on this road. We are going to give them a right, give them perhaps a priority right, through franchises to operate these streamline trains over the road The railroads will make such a saving . . . that they will be able to come back, and they will take you out there just as cheaply as you can ride the ordinary bus.

Representative Zimmerman asked how trucks would move between the transcontinental highways and warehouses, depots, and other terminals. Steiner replied:

This has nothing to do with our present roads I am glad to see the good work that the Bureau of Roads [sic] is doing here in distributing and locating money to the States and then following up the work of the States. We don't want to discourage that. We want to encourage it.

Representative Stefan expressed his support, but asked about the speed limit. "No speed limit whatever," Steiner replied. The Congressman asked, "You can drive 100 miles an hour just as

you wish?" Steiner assured him, "Absolutely." He described a recent trip from Washington to Johnson City, Tennessee, a distance of 420 miles. Using Lee Highway, "one of the best long-distance highways in America," the trip took 16 hours. (The trip would have been mainly on U.S. 11.) "I had the handicaps of one-way traffic, bad roads, trucks ahead of me on curves so that I couldn't get by them." Going through Roanoke, Virginia, he said, "I made nine turns; lost my way two times and had to go to gasoline stations to find out where I was, and they sent me back to find this road so that I could get back on my route again." If the type of road he proposed had been in existence, the trip would have taken only 7 hours. He would have saved on gasoline, on lodging overnight at the Robert Lee Hotel in Lexington, Virginia, and \$1.50 for breakfast.

Representative Stefan admitted he was "a little too old-fashioned on this speed business," but he was concerned about safety. He had traveled the roads of 22 counties in his election campaign, and many of them were good highways:

Many of them are marked with crosses at certain points where people have been killed because of this speed mania that is held up in this country. But you say you would have absolutely no speed limit whatever on this main highways?

Steiner replied, "We would have no reason for it."

Representative Stefan referred to a bill that would prohibit auto manufacturers from including speedometers that showed speeds above 50 miles per hour. His constituents, he said, "say that it is asinine to put a speedometer in your automobile that reads 100 miles an hour today because it induces your coco cola [sic] drinkers to see whether that car will do that or not."

Representative Randolph said that on a superhighway, the problem wasn't speed. Citing the widened highway between Baltimore and Washington, he said, "We find that accidents do not occur except where cars are coming in opposite directions." He then brought the discussion of safety to an end because for timing reasons, he wanted to get to the next witness.

Mr. Davis began his testimony by summarizing his inconclusive correspondence with the Federal Government on his proposal. For example, Louis M. Howe, secretary to the President, had replied on May 8, 1936, to a letter to the President. The President had asked Howe to forward the Davis plan to "the officials who are working out the details of the administration's program." The letter concluded, "The President wants you to know how grateful he is for the interest which prompted you to write him."

He also had received a reply, dated December 21, 1936, from the Office of Education in the Department of the Interior. The brief letter thanked Davis for the proposal and expressed the hope "that it will receive careful consideration from authorities competent to pass judgment on its practicality." Davis did not introduce other letters.

He explained the benefits of his plan:

The construction of such a highway as proposed would have the result of alleviating large expenditures by the Government for relief, and the money so expended in the construction of the proposed highway would be of such a nature that the income from said highway would pay for said construction.

If this road was constructed, the income tax paid on profits that industries make on account of material that would go into the construction would amount to several million dollars.

In my opinion there will be a let-down in business from the present level, in about 3 years, barring unforeseen developments, if such be the case; then the construction of this highway would be a stimulus and avoid, to a great degree, another depression.

Thousands of new homes would be constructed along the highway, which would put more taxable improved property on the tax books, which means that a greater revenue would be derived from this taxable property.

He introduced the *Washington Post* article from February 20, 1935, cited earlier, on "Superhighways Are Studied in Work Plan." He added that his plan would satisfy all the recommendations in the article, such as a network of superhighways on wide right-of-way to be financed on a self-liquidating basis by a corporation established for that purpose.

Davis said the right-of-way would be 1,000 feet wide "in order that none could build in close to it." The roadway portion of the right-of-way would be 150 feet wide:

In making these lanes, which would be four or five or six, which is something for the commission to say, we would have lanes on this highway for a speed of 125 miles an hour; and we would have lanes for 25 miles and [sic] hour and 50 miles an hour.

Two lanes would be reserved for railroads, passenger and freight. They would run on rubber tires. An unnamed professor at the University of Morgantown "thought that the rails would welcome, if they could have the privilege of these highways, . . . a highway like this where they could go ahead and transport on rubber tires, the transportation to include passengers, where they now have to compete with trucks."

He added a few other details:

Now, there is no limit to this. I am proposing here that we build this 5 feet thick, to last 2,000 years.

I am also proposing, although it is not in this plan, but I have since gotten it out, that in the frigid zone we should put steam pipes under this road to get away from the snow and the ice.

While it is not in this plan, I have thought out that we should build a tube beside this road 6 feet high, and lease that tube to the telephone and telegraph people, because the road

that I propose here will touch within 200 miles on each side of this road 65 millions of people

If you will note, I am proposing in this plan that it should be lighted from one end to the other—should be a lighted highway

My thought was that this highway should not go within a distance, some of them, of maybe 40 or 50 miles of any big city.

The 5-foot thick pavement of “untold material,” he said, “would just simply revolutionize the big industries as well as the small industries in this country.”

To increase employment on the roads, he “proposed in here—which is possibly a little old-fashioned—that wherever possible we should use horses and mules and plows. That takes more men.”

He disagreed with Steiner on one point:

Possibly we should go ahead and spend a lot of money, because the revenue that we are going to derive from this road—and I cannot agree with Mr. Steiner that we should have any toll bridges. Whenever we build a road, it is a road regardless of whether you are traveling over a bridge or whether it is on the ground. That transportation charge, that one charge, should take care of all of it.

Representative Stefan was supportive, he told Davis, but disagreed on one point:

I think that the immediate need, the important need, is really to build the farm-to-market roads before you build your superhighways. This is the immediate need in the country today Now if we had good highways today, we would not kick about this superhighway; but we want you to continue to improve these roads and let us reach the highway. Then we will help along with this great dream that you have.

With the House about to convene, several committee members had to leave. As a result, Davis did not have an opportunity to respond to Representative Stefan.

Later in the hearing, Chester H. Gray, Washington representative of the American Farm Bureau Federation, made the same point as Representative Stefan. Speaking also for the National Grange, Gray said that “we think in our Farm Bureau that our primary-road system and our farm-to-market system should be expanded far beyond where they are now before we go into other methods of road construction.” He pointed out that the farm federation had worked hard to secure additional funds in the public works bill for farm-to-market roads:

You will note that we do not definitely go on record against transcontinental roads, but we do say that until the things that we are working on now have gone far beyond their present stage of development, these other things like the lighting of highways and like tree planning and like boulevards, transcontinental in charter, shall be postponed. That is

the word that we use—“postponed.” Now, whether that will be a 10-year postponement or a 100-year postponement time will tell.

Representative Randolph told Gray:

I want to say this for the record: It is that I have always believed that if any subject is worth studying, a highway on a national scope is worth studying. I cannot see why there should be opposition by your organization or any other organization to the simple proposition of a most careful and diligent search as to the feasibility of a transcontinental highway, so that the program could take definite form 10 years from now or a 100 years from now.

Gray said his organization was in favor of the study, but that present authorities, namely BPR, were working with State highway officials on “a very extensive highway study” that would lead “toward conclusions and information which will show us what roads we need in future years.”

He was referring to the State highway planning surveys.

Davis asked if he could comment on this point. He pointed out that the resolution called only for a study by an independent commission. BPR and State highway agencies, he said, “have so much to do now that they cannot give this the proper study, because this is the biggest thing that ever will be undertaken by the United States if it is built.”

ARBA Engineer-Director Upham was the final witness, and his testimony was brief. The United States, he said, had “a wonderful road system . . . and a wonderful organization that is continuing the construction of those roads.” However, the country was “not keeping in pace in the construction of roads with the demands of traffic.” He was confident that transcontinental highways would eventually be constructed, but thought “this whole thing needs a study in order to bring out just what would be a practical method, “if it is practical,” for the construction of such roads. He mentioned BPR’s highway surveys being conducted with the State highway agencies. “But I think it is always well to have new life in such a large and difficult undertaking. I think that those agencies should be augmented.”

ASCE Debates Superhighways

On July 21 through 24, 1937, the ASCE held its annual meeting in Detroit. On the opening day, MacDonald addressed the engineers on “The Trend of Modern Highways.” The evolution of the automobile had caused a “a change in highway utilization and improvements.” Automakers change their product gradually to protect the value of their industrial plants, but looked at over a long period, the changes were “definitely pronounced.” This private investment affected public works:

Thus, the most serious loss in the highway investment over the past decade is the obsolescence resulting from changes in the number and speed of motor vehicles operating on the highways.

On the positive side, revenue from taxes on motor vehicles and highway use were increasing to levels that “should permit highway officials to build more adequate and consequently more costly roads.” Unfortunately, “there have been large diversions of this income to other purposes, and because these funds have been spread over an ever increasing mileage, many States are faced with a constantly growing financial dilemma.” At the same time, he said, “the necessity for greater street and highway safety has become a national emergency.

These were among the important factors that would “determine the trend of modern highway development.”

The statewide highway planning surveys were designed to provide “a factual basis upon which to plan the complete administration of all the highways based upon sound principles and factual data.” One of the important areas of study was “the relation of the highways to other types of transportation and communication and to population distribution.” Water and rail transportation had concentrated large populations in small areas. “Highway transportation by motor vehicle is the first great decentralizing transportation agency.” The result was an expansion of suburban belts surrounding the cities:

The automobile in conjunction with rail suburban service has attracted city workers to make their homes in rural districts for distances easily up to 50 miles from the city.

Industrial units were already following the trend, often breaking into smaller units “free of many of the undesirable characteristics of over concentration, yet of sufficient size to retain the economies of mass production.” He emphasized that these observations involved neither conjecture nor uncertainty. They were “simply a recognition of existing facts.” He added:

The implications are clear that the scientific planning of highways and highway systems of State-wide and Nation-wide dimensions will be the most characteristic trend in highway development.

The trend, he said, “must be to provide in the congested area traffic flow arteries that will permit continuous flow of traffic from downtown areas well into the suburban areas.” These roads would be costly, but “it is only through such arteries that capital invested now in land and buildings in the hearts of the business districts, can be even reasonably preserved.”

In the past, construction of the “pioneer roadway” had been the “single important objective.” Now, with the recognition of the need for highway transportation to go “beyond the bare utility, the roadway design has come to embrace the whole right-of-way.” The trend was to “provide landscaping of the roadsides, side walks, foot paths, bridle paths and to stop and protect against soil erosion.” This trend was “paying large dividends through greater durability and through the recreational values inherent in attractive waysides.”

Regarding “super highways,” he said the term was often used without an adequate definition. “Perhaps, it is more frequently used in connection with a very limited number of transcontinental highways designed for high speed and with multiple lane roadways to carry traffic from coast to

coast.” He cited the German autobahn system as an embodiment of the idea. After describing its design features, he said:

No detail that comes within the purview of highway engineering that will make a more safe or efficient highway has been left out. The most advanced highway design technique has been embodied in this development. The economic utilization is not so clear.

Germany was building its roads “in advance of, and to promote the development of, highway transportation.” The situation in the United States was “just the reverse.” The United States was “proceeding on the principle that the utilization of the highways must directly produce the revenues with which to finance their construction.” Based on this principle, “the building of super-highways must be limited to those areas where the present and prospective traffic will justify” the expense:

As a trend of highway development, it is apparent from the important beginnings already made here that a considerable mileage of motor super-highways will be developed, that their location will be carefully integrated with the population centers and that the layout will not be on the transcontinental basis.

He cited the example of France “where a system of national roads has been developed over a long period.” The current concern was “to take care of the traffic around the metropolitan districts, particularly in the vicinity of Paris by a system of circumferential and radial roads in combination.” Experience told him that “super-highways will be developed but only in the vicinity of our metropolitan areas for relieving traffic congestion within these areas and for connecting metropolitan areas which are separated by relatively short distances.” However, he expected construction of additional parkways, such as the Blue Ridge Parkway then under construction, because they recognized “the large use of motor vehicles for recreational purposes.”

He concluded by telling ASCE:

Finally, the power of highway improvement to accelerate the shift of population from areas of low productive potentials to areas more favorably conditioned will be consciously used in the national policies developed for the long-term attack upon land use problems. A definite start is already being made in this direction and will become more apparent in the layout of the system of secondary or feeder roads. This thought definitely emphasizes that we have completed the pioneer stage of road development and every trend of highway development of the future must be intelligent meeting of the particular service to be rendered.

Others, however, debated the need for express highways. Professor John S. Crandell of the University of Illinois discussed the superhighways of Detroit as a model for other cities. The Detroit superhighways, he said, provided for motor vehicles, rapid transit, and pedestrians. He warned the engineers to guard against encroachments of access for gas stations, hot dog stands,

and other roadside services. In addition to urban superhighways, he favored express highways “across and up and down our land,” and outlined where the roads should be located.

In discussing encroachments, Professor Crandell endorsed the views of Arthur W. Dean, Chief Engineer of the Massachusetts Planning Board in Boston (formerly Chief Engineer of the State highway department). Dean’s article in *Engineering News-Record* a month earlier had advocated bypass roads for cities to replace the through roads that carried motorists through central cities that they did not want to visit, causing congestion and loss of business:

Looking ahead, still another problem in this connection seems sure to arise, in fact, it has already occurred to some extent where important city bypasses have been built: How can these bypasses on the outskirts of the city be kept free from interference? No sooner is the road constructed than quick-lunch stands, filling stations and other attractions immediately spring upon the roadside, causing a rather serious hazard by reason of cars parked close to the road area and because of the traffic which leaves and enters the highway at such points.

Some authorities have suggested that the so-called freeway may be a solution and this may be true in certain instances, especially in more thickly settled localities. Where the bypass or any part of a route highway [sic] runs through sparsely settled country, however, it is a serious question whether the opportunity for developing roadside business should be too much restricted. Possibly a system of zoning by the local communities might be good, so that the stands would have to be located some distance apart. [Dean, Arthur W., “Bypass Roads and City Access,” *Engineering News-Record*, June 24, 1937, pages 946-947]

In responding to Professor Crandell, Robert B. Brooks, a consulting engineer from St. Louis, disagreed about the need for an express highway network. He saw no economic need for the type of system the professor described. Express highways, Brooks said, should be built only to meet current needs, not as in Germany to meet future traffic needs.

S. Johannesson of Trenton, New Jersey, said that planning for express highways should take into account not only the existing traffic that will be shifted to the express highway, but the additional traffic that will develop because of the express highway.

Professor John S. Worley of Ann Arbor, Michigan, argued that the most important factor in express highway construction was careful study of need. He questioned the values used in calculating savings from new road and bridge projects. For example, he cited attempts to calculate the monetary value of time saved by all passengers in a motor vehicle, including babies, as a result of a project.

Professor R. L. Morrison, also of Ann Arbor, was concerned about the cost. If Michigan, he pointed out, devoted 10 percent of its highway funds to construction of express highways, it would be able to complete only about 4 miles a year. [“Civil Engineers Hold Summer Meetings,” *Engineering News-Record*, August 5, 1937, pages 237-240]

(In 1922, Acting Mayor John C. Lodge appointed the Detroit Rapid Transit Commission to develop a master plan to address the city’s growing traffic congestion. For president, Lodge selected Sidney D. Waldon, a retired auto industry executive. The commission released

Proposed Super-Highway Plan for Greater Detroit in April 1924. A contemporary discussion of the plan in a highway magazine said the city was “being strangled for lack of sufficient circulating facilities for its people; for lack of a system of streets of adequate width to accommodate its enormous amount of traffic” Part of the problem was “the streets once intended to serve 2 and 3-story buildings are now required to accommodate the massed office workers of 20, 30 and even 40-story skyscrapers.”

(Under the Grand Boulevard Plan of 1877-83, as well as the Governor and Judges Plan of 1896, “provision was made for 120, 150 and 200-ft. wide streets for Detroit.” Without these wider streets, “Detroit’s transportation system [would] not be able to function today.” Now, however, with “vision and courage,” the commission had proposed a network of 204-foot wide superhighways for Detroit and Macomb, Oakland, and Wayne Counties to be built gradually as traffic needs dictated. The key was to acquire the right-of-way now when land was “undeveloped and therefore of low value.”

(The plan was sufficiently novel that readers needed a detailed explanation of how it would work:

After this super-highways system has been accomplished it will provide for express motor traffic as well as local motor traffic, thus permitting on the main motor highways of the future a safe speed of 35 miles or more an hour instead of 6, and securing a capacity nearly 10 times greater per traffic lane than along Woodward Avenue, which is now throttled down by the “stop-and-go” method

By reason of separating the high-speed motor traffic from other traffic interferences, it will secure the safest, most efficient and most economical operation and thus restore the automobile to its maximum usefulness as a transportation factor.

(The plan also accommodated Detroit’s mass transit facilities:

A surface rapid transit structure will cost only about one-fifth of an underground structure per mile, and it will provide a permanent way for a surface transit facility to be furnished for three-quarters of the area of Greater Detroit at the rate of 5 miles for 1 inside the city.

Again, this system will fix the location of the major rail and motor transit facilities that are to serve the future city and determine the zones where the greatest future developments must occur. It will also form the skeleton upon which the future circulating system must be built up. This will permit all the elements of the city plan to be co-ordinated into a unified whole and developed in conformity with its main traffic arteries

(The commission concluded that within the city, underground rapid transit lines were preferable to elevated facilities. Outside the city, surface rapid transit lines were preferable.

The perspective drawing admirably pictures all of the features of the super-highway. All the services—local and express motor traffic, local and express rapid transit trains—will operate on one level on the surface between stations. But the various travel lanes will be properly defined and related so that vehicles can travel through the local roadways into

the express lane for rapid distance movement, and out again through the local roadway when approaching their destination.

The operation in the express lane will be continuous. Vehicles will merge into and flow along with the stream and finally leave, but never cross it. Wheel traffic cannot cross the rapid transit line at grade, but may pass under at the half-mile intersections, and likewise pedestrians may cross by means of overhead or underground passages where conditions warrant such crossings. At stations located every one-half mile apart, more or less, both express motor traffic lanes and rapid transit tracks will be raised sufficiently to pass over the cross streets. Local motor traffic lanes will meet the intersecting street at grade so that if they wish they may cross under the rapid transit and express motor traffic lanes at such points. [“Greater Detroit’s Proposed Super-Highway Plan,” *The Highway Engineer & Contractor*, October 1924, pages 41-42, 51]

(The commission proposed superhighways for Fort Street, Michigan Avenue, Grand River Avenue, Northwestern Highway, Woodward Avenue, and Gratiot Avenue.

(The plan attracted widespread attention throughout the highway community, with urban planners from around the country visiting Detroit to review the plan, as Professor Mark S. Foster summarized:

Enthusiasts believed the design provided the safest, fastest rapid transit system in the world. In theory at least, both public transit and automobiles were permitted to travel for several miles in a rapid, uninterrupted flow Yet it was clear even then that most of the enthusiasm centered on the superhighway rather than on the fixed-rail elements of the design. Waldon himself suggested as early as 1923 that rail lines would play a secondary role: “Adequate highway capacity for the movement of motor vehicles may stave off the requirement of mass transportation on rails for many years, but if the right-of-way is sufficient, and the capacity on the road surface again becomes inadequate, part of the right-of-way *can* be given over to rail transportation of rapid transit trains that will relieve the pressure upon the highway paralleling its line.” [Foster, Mark S., *From Streetcar to Superhighway: American City Planners and Urban Transportation, 1900-1940*, Temple University Press, 1981, pages 81-82, italics in original]

(Foster added that as visionary as the commission’s plan was, it had to be implemented in a world of financial limits and political reality:

Local politicians sought cheaper, more immediate solutions. Late in 1925 two transportation engineers had presented what appeared to be the politician’s dream: an inexpensive solution that could be installed during their terms in office. Henry Miller and Nicholas Schorn proposed a cut-rate express system for surface cars, which they claimed could double their speed. Streetcars would stop only once each half-mile, and they would pick up and deposit passengers at specially designed safety isles in the center of the street, which could be reached only via pedestrian subways. At an estimated cost of but \$250,000 to \$200,000 per mile, the system was clearly intended as a substitute for the subway. Miller and Schorn argued that “only time could tell” whether Detroit would *ever* need comprehensive rapid transit. [Foster, page 84, italics in original]

(The Miller-Schorn concept was a *bête noire* for Waldon and the commission. They predicted it would provide only short-term relief, not the long-term improvements of the commission proposal. Others suggested a trial of the Miller-Schorn plan:

Late in 1927 the system was installed on a limited trial basis on Jefferson Avenue. After several months, results were mixed; the Rapid Transit Commission labeled it a flat failure, while Miller-Schorn proponents lauded its time savings and insisted it would prove even more beneficial if installed citywide.

(Regardless of how the experiment was judged, by the end of the decade “rapid transit attracted less and less support in Detroit.” In 1929, voters rejected a \$54 million bond proposal to pay for subways. [Foster, pages 84-85]

(Counties in the Detroit area had approved the Rapid Transit Commission’s plan in early 1925. That same year, State legislation authorized the counties to establish superhighway commissions to acquire right-of-way for the intercounty roads. By early 1930, the resulting Oakland-Wayne and Macomb-Wayne superhighway commissions had acquired about two-thirds of the right-of-way of varying widths for the proposed superhighways. However, the Depression halted most progress through the 1930s, with much of the highway widening work completed to that point outside the city limits without the transit component. [Hyde, Charles K., “Planning a Transportation System for Metropolitan Detroit in the Age of the Automobile: The Triumph of the Expressway,” *Michigan Historical Review*, Spring 2006, pages 69-71])

The Highway of Tomorrow

Frank T. Sheets had been involved in many important developments during the 20th century highway revolution. He had worked for the Illinois highway agency as a clerk when he was 17, and had returned to the agency after receiving his degree from the University of Illinois at Urbana-Champaign in 1914. He served as Chief Highway Engineer and Superintendent of Highways from 1920 to 1932, helping to pave the State’s main roads. In 1925, he had been a member of the Joint Board on Interstate Highways that created the U.S. numbered highway plan and the standard highway signs that would appear on the Nation’s roads. He had been on the subcommittee of the Joint Board that applied numbers to the U.S. highway map, including “60” for a continuous route from Chicago to Los Angeles. Because it cut across most of the U.S. numbered transcontinental routes, it would be one of the major designated routes. It is better known by the revised number selected in 1926, U.S. Route 66. He was president of AASHO during the 1927-1928 term.

After leaving his Illinois post in 1932, he became a consulting engineer for the Portland Cement Association (PCA). In that position, he delivered an address to the Greater New York Safety Council at the Hotel Astor in New York City on April 14, 1937. His topic: “The Highway of Tomorrow.” After receiving numerous requests for a copy, PCA published the address as a pamphlet. Sheets began:

The highway of tomorrow, or more properly the highway system of tomorrow, must meet the ever-growing transportation needs of all the people, whether they reside in

metropolitan centers, in cities, small urban settlements or on the farm. Each class of thoroughfare from the heavy duty, high speed super-highway to the little used trail leading to the individual farmer's gate, must be scientifically planned, adequately improved, and properly correlated to form a unified, safe and economical transportation system. This requires planning—and lots of it.

BPR's highway planning surveys, he said, were a first "fact-finding" step. Analysis of the results would help determine the priority and cost of the highways "demanded by the traffic of tomorrow." Sheets continued:

The blindest can see that tomorrow's highway system must include many classes of facilities. Neglect of one class will cripple the efficiency of all others All must grasp the whole highway picture. Narrowness of vision, selfishness of concept, suspicion, intolerance and misunderstanding are the most formidable barriers to the realization of adequate highway transportation

Tomorrow's highway system will be composed of many classes of facilities, each correlated with all others in accordance with a basic plan, the integrated whole serving adequately, safely and economically trans-continental, inter-sectional, inter-state, inter-city, inter-county and local travel. To avoid obsolescence, each year's highway program must be planned and executed in harmony with future requirements.

Sheets described the types of facilities that would constitute the highway system of tomorrow. First, he described terminal facilities in metropolitan centers where "elevated or depressed limited ways" must be provided "to pick up traffic delivered at the edges of these congested areas and from other thoroughfares within the areas themselves and move this traffic with safety and dispatch to the focal points.

Second, Sheets described the "Main Super-Highways" that were needed:

Transcontinental and intersectional travel will demand the development of a limited mileage of super-highways, permitting high speed, safe travel between important population centers and between major sections of the United States. These highways will ultimately provide from four to eight traffic lanes, each 12 feet wide, will have no grade crossings with highways or railroads, will eliminate all pedestrian and horse-drawn traffic, and will provide for egress and ingress of vehicular traffic at only fixed points several miles apart. Speed will be limited only by the capacity of driver and vehicle. Trucks and slower moving vehicles will be separated into special lanes. Opposing traffic lanes will be separated. Alignment, grade, sight distance and super-elevation should be predicated on top speeds of 100 miles per hour. Free movement and discharge capacity should be encouraged rather than discouraged by arbitrary speed limitations and unwise policing. These highways will avoid all cities and towns.

Third, a "large system of main trunk highways" would supplement the superhighways to "feed traffic into the main super-highways and will serve other inter-city, inter-state, and inter-sectional traffic." Primary main trunk highways would be "improved to high standards of

surface, grade, alignment, sight distance and super-elevation.” Secondary main trunk highways would supplement the primary main trunks with “high standards of design and operation . . . modified from the ‘primary’ standards as conditions may warrant.”

Fourth, intermediate highways would “serve mainly the traffic between local communities but carry also some inter-state and inter-sectional travel.” They would include main farm-to-market roads and would not require the high standards of design and load capacity of the first three systems.

Fifth, land service roads, including “the vast mileage of low traffic rural roads,” provided access to land. “They will never require high standards of surface, alignment, grade or sight distance.”

Sixth, Sheets listed bypasses and belt lines:

Included in tomorrow’s highway system will be by-passes or belt lines around all sizable urban communities on main trunk highways. These facilities will be absolutely essential to the proper and safe use of main trunk highways. Likewise, by keeping through traffic out of congested urban centers they will offer the most reasonable insurance of convenience, peace of mind and efficiency in conducting normal business and social affairs within these communities.

Seventh, Sheets explained that regardless of belt lines and bypasses, arterial streets would have to be improved to carry traffic into and through cities and towns.

Sheets classified the eighth and final type of highway as land service streets that gave access to urban property. “Their improvement and maintenance cannot be dodged.”

He estimated that providing the needed highways of tomorrow would cost the “stupendous figure of 57 billion dollars.” Such a large figure might seem “absolutely overwhelming,” so Sheets, in the PCA pamphlet, applied italics to his calming words:

We are not outlining immediate needs. The investment need not be made within any specified period of years. The facilities may be provided as demand becomes pressing and as funds can be raised. Each specific project must be subjected to the acid test of its economic justification.

As for whether such expenditures could be justified, he used BPR figures to demonstrate that “enough can be saved in only a few years to offset the heavy investment in main trunk and intermediate highways.”

He estimated that all jurisdictions collected about \$1 billion a year in highway user tax revenues. He supported the principle that “motor vehicle owners should pay through motor imposts the entire cost of highways of general motor use and a part of the cost of other highway facilities, depending upon the extent to which they are in general use.” He added, “There is general acceptance of the soundness of this principle.”

These funds could support the first six classifications of roads he had described. Instead of using the funds for that purpose, officials were:

1. Diverting from highway use \$147,000,000 per year.
2. Handing back to political subdivisions \$144,000,000 per year to be expended without any supervision by the states and without any definite plan.
3. Spending large sums for maintenance resulting from trying to carry traffic over inadequate and unstable roads.
4. Loading state highway departments with the improvement and maintenance of large mileages of little used, land service roads without transferring additional revenues and with consequent neglect of generally used main trunk highways.

It was, in Sheets's view, "high time for the motorist to set his house in order" to ensure highway user revenue is used "in accordance with a definite plan and to get some real tracks on which to run his car."

Sheets estimated that as traffic on improved roads increased, present highway user tax rates would yield \$1.5 billion a year. With a half-billion dollars reserved for maintenance, operation, administration, and other fixed charges, the remaining \$1 billion should be used for improvements. To this \$1 billion, the Federal Government should add \$250 million since it benefits in such areas as increased commerce, potential military use, and postal service. "Hence we may reasonably anticipate that in about 37 years we could raise all the needed funds without increased taxation."

Highway safety was a critical factor. It depended on the driver, the vehicle, and the road. Drivers and vehicles could be improved, but "full realization can only come as safety is built into highways." The property damage and loss of life on the Nation's roads cost more than an estimated \$1.5 billion each year. "The elimination of physical hazards, annihilation of congestion and freeing of traffic flow which would be accomplished by the program outlined would yield enormous dividends in highway safety."

He was convinced that the American engineer had the know-how to design and build the highways of tomorrow. "What he needs is a free rein and a chance to show the American public what really can be done when legal and administrative fetters are removed." He continued:

Look at what the German engineers are doing. After generations of ineffective localized highway development, a national plan was conceived. The engineers were turned loose with adequate funds. In a few years Germany will have the world's outstanding system of super-highways.

Sheets concluded by acknowledging that his proposal "may at first seem radical. Some may class the writer as visionary, impractical and devoid of common sense." He did not think that was the case. "The broad picture of the future, herein painted, is no more visionary than would be today's highway network viewed from twenty-five years ago." Having headed a highway agency for 12 years, he understood "the practical problems and obstacles to be met." Still, he said:

It will be interesting to compare this paper's predictions with the realization of thirty years hence. The prophet of today is vindicated by the reality of tomorrow. We must dream dreams, we must see visions.

He closed his paper by quoting Chicago's famed architect and city planner, Daniel H. Burnham:

Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be Order and your beacon Beauty.

(This quote is considered "attributed" to Burnham, but has been widely circulated.)

Engineering News-Record reprinted a condensed version of the Sheets address under the title "A Master Plan for Highways" in the issue of June 17, 1937. An editor's note placed the key phrase of Burnham's statement first. "Make no little plans; they have no magic to stir men's blood." A one paragraph editorial accompanied the article:

Plans for national highways usually get little consideration, and rightly so. The lack of logic in their conception and engineering amply justifies legislatures and public-road officials in ignoring them. But the master plan for a highway system development in the United States set forth in this issue by a well known and eminently practical highway engineer is of quite different kind. It is founded on logic and has reasonable claim to practicability. Though the statement and argument as published are necessarily of utmost brevity, they contain little that can be questioned. The roads designated are all needed now, or else their future need is beyond doubt. The claim of earnings is justified by past experience, and road users are now paying in taxes enough to build the roads in a reasonable time. The plan is practicable, and can be carried out if all who are concerned in road transport will work for it with sure purpose. ["A Master Plan," *Engineering News-Record*, June 17, 1937, page 898; the Sheets article is on pages 909-911]

Balancing the Budget-1937

On November 3, 1936, President Roosevelt defeated Kansas Governor Alfred M. "Alf" Landon to win a second term by a landslide. The President won nearly 70 percent of the popular vote and the Electoral College votes of every State except Maine and Vermont (for a total of 523 to 8). He also secured even higher Democratic majorities in Congress. In the Senate, the Democrats controlled 75 seats, compared with 16 seats for Republicans (3 Senators were not members of either party). Democrats controlled 334 seats in the House, with only 88 Republicans (13 unaffiliated members). Congress appeared poised to give the reelected President even greater support than during his first term.

By January 1937, he had embarked on two initiatives that historians have cited as among his worst decisions. First, he decided to address his frustration with the Supreme Court, which had found several New Deal initiatives unconstitutional. President Roosevelt decided to use his new

strength in Congress to “pack” the court by increasing the number of Justices so he could appoint new members who would be sympathetic to the New Deal. He found little support in Congress for this idea, and earned the eternal scorn of historians.

Second, he decided that the time had come to balance the budget. In 1932, he campaigned as a budget balancer, but once in office launched work relief efforts and other initiatives that increased government expenditures and the budget deficit. Now, finally, he was ready to make good on his original campaign promise. His annual budget message of January 8, 1937, began:

The programs inaugurated during the last four years to combat the depression and to initiate many needed reforms have cost large sums of money, but the benefits obtained from them are far outweighing all their costs. We shall soon be reaping the full benefits of those programs and shall have at the same time a balanced Budget that will also include provision for reduction of the public debt.

With business activity increasing, industrial production on the upswing, and unemployment declining, he said, “These gains make it possible to reduce for the fiscal year 1938 [beginning July 1, 1937] many expenditures of the Federal Government which the general depression made necessary.” He predicted a “layman’s balance” in FY 1938, with income and outgo even, not counting debt reduction of \$401.5 million, and an actual balance in FY 1939.

The President’s announcement was greeted with skepticism, as reflected in a *New York Times* editorial titled “A Balanced Budget?” The message, the editorial began, “far and away the most cheering report on the nation’s finances . . . since the Roosevelt Administration entered office.” It came with, however, “a number of important ‘if’s,” including an increase in receipts while appropriations must remain within the President’s budget estimates. “There must be no boosting of expenditures, no congressional joy-riding, no yielding to ‘pressure groups,’ unless Congress itself is prepared to provide, at every point where its appropriations go beyond the budget figures, new means to defray the cost.”

By April 1937, the President’s revenue assumptions were proving to be false. In a message to Congress on April 20, 1937, he acknowledged that since his January budget message, “new factors have so altered the fiscal situation as to make it necessary to present revised estimates of receipts and expenditures. The principal factor, he said, was “the decline in tax receipts below our previous expectations.” He had called on the heads of government agencies to examine and reduce expenditures during the final months of FY 1937. Now, he called on Congress to help “offset this loss as far as possible by a reduction in expenditures.”

A reduction in public works expenditures would be part of his strategy for balancing the budget. At the time, \$2 billion had been authorized, but Congress had bills under consideration for more than \$5 billion. General public works, he said, could now be kept to \$500 million a year. “An annual program of this size should meet normal needs for highway, flood control, rivers and harbors, reclamation, Federal buildings, and other public works.” He used highways as an example:

Bills involving additional authorizations of more than \$500,000,000 for highways have been introduced despite the fact that expenditures for this purpose during the last 4 years

have exceeded \$1,000,000,000 and that there are existing authorizations for expenditures during the next 2 years of nearly \$450,000,000.

The initial congressional reaction to the President's message was positive. Turner Catledge, writing in *The New York Times*, reported:

The message set in motion on Capitol Hill an economy drive which has been gathering force for several weeks. Some leaders now think it may result in a substantial reduction of the 1938 relief item as recommended today. Senators and Representatives whose pet projects seemed to have been stopped by the President's retrenchment demands joined with such advocates of economy as Senator [Harry Flood] Byrd to pledge themselves for the largest possible savings.

Leaving a meeting with the President, congressional leaders were considering a proposal for "a horizontal cut at the end of this session of all regular appropriations voted between now and adjournment." One bill called for a 15-percent cut. [Catledge, Turner, "Roosevelt Asks Economy; Spurs Congress to Action; Taxes Deferred Until 1938," *The New York Times*, April 21, 1937]

By the end of the fiscal year, the Federal Government had spent \$8,105,000,000, but taken in only \$5,294,000,000. The imbalance of \$2,811,000,000 was the Nation's seventh consecutive deficit. As the *Times* reported on July 7, 1937:

Last April an economy drive had a brief existence in Congress. When it came to voting the appropriation bills, both Houses showed little actual inclination to pare expenses

With the new fiscal year underway, the President once again called on Federal Agencies to cut their expenditures in FY 1938. On June 23, he had written to the heads of executive agencies calling on them to set a reserve amounting "in the aggregate to not less than 10 per cent of the total amount of all funds that are properly susceptible to the establishment of reserves for that fiscal year." He predicted that savings would amount to \$400 million during FY 1938. Reductions in certain categories were beyond his authority:

Mr. Roosevelt pointed out that, lacking legislative authority . . . the 10 per cent goal could be achieved only by viewing the problems of each government agency in its own light, and trusting its executive to find the means of having on hand, at the end of the fiscal year, 10 percent of the allowance Congress had voted for that period

Experience has shown the difficulty of effecting percentage cuts by relying on the goodwill of executive officials. Each one believes that his department is the most essential branch of the government and that its operations cannot possibly be curtailed. ["Save \$400,000,000, President Orders," *The New York Times*, July 7, 1937]

The President followed up on this initiative by meeting with the heads of 28 independent agencies to discuss the 10-percent reserve:

The men who saw Mr. Roosevelt were the heads of the independent agencies which are supported by direct appropriation

“The President was gentle but firm, in asking that all possible funds be saved,” said Jesse H. Jones, chairman of the Reconstruction Finance Corporation, after the conference. [“President Confers on Bureau Savings,” *The New York Times*, July 9, 1937]

On July 9, President Roosevelt clarified that he would save \$400 million in operating expenses by slowing down Federal programs, not by discarding part of them. A *Times* report on the clarification said:

The President wanted it made clear that no present employes [sic] of the government would be furloughed or dismissed as part of the economy drive. He felt that needless apprehension had been aroused among them. He explained that the only personnel economies that are contemplated would be accomplished by not filling vacancies that may arise, as far as possible.

He had in mind savings from such activities as long-distance telephone calls, printing expenses, and travel:

The effect of these and similar steps, the President said, would be to slow down the activities of the various agencies in many cases. A project or undertaking which would have been completed this year, under original plans, would be carried over into next year, he explains.

Results of a similar cooperative effort by bureau heads in the last fiscal year were very close to the maximum that had been hoped for, Mr. Roosevelt added, referring to a similar campaign he undertook last Spring in an effort to save some \$295,000,000 before the end of the fiscal year. He did not recall the exact figures, but said that the experience gave hope for the success of the current year’s venture. [“Roosevelt Economy Drive Spares Workers; He Will Slow Down Activities, Not Halt Them,” *The New York Times*, July 10, 1937]

The economic outlook at this point was deceptive, as journalist Michael Hiltzik explained in his book on President Roosevelt’s New Deal:

The economy was continuing to improve. Recovery seemed to pick up steam through the summer, with production rising in major industries. Department store sales had gained by 11 percent in 1936 over 1935, more than twice the growth rate of a year earlier. Over the first nine months of 1937, the Federal Reserve’s index of industrial production finally exceeded the mark set in 1929; national income in the same period was running at an annualized rate that seemed sure to bring it to nearly double that of 1932. The government appeared to be within striking distance of its goal of restoring the overall economy to the level of 1929—indeed, the torrid pace of recovery raised concerns about overheating, to the point that Roosevelt in his March 9 Fireside Chat momentarily digressed from his discussion of the Court scheme to warn: “Recovery is speeding up to a point where the dangers of 1929 are again becoming possible, not this week or month perhaps, but within a year or two.

Then, as Hiltzik put it, “the economy cracked”:

In truth, the recovery of late 1936 and the first part of 1937 had been built upon a foundation of sand. The government had pumped the economy full of billions of dollars of one-time stimulus in 1936, including the payment of \$1.7 billion in World War I soldiers' bonuses (mandated by Congress over Roosevelt's veto) and the implementation of the undistributed business profits tax, which fulfilled its goal of coercing corporations to step up dividend distributions to shareholders before the end of the year. These cash inflows produced a sharp pickup of growth across the board, showing up in purchases of consumer goods, autos and other durable goods, industrial equipment, and housing.

But all this activity was transitory. Unemployment remained stuck at more than 5 million persons—a vast improvement over 1932, when the figure was 11.5 million, but at 10 percent of the labor force far from full employment. The spike in economic stimulus from the bonus payments had evaporated entirely by late 1936; and once corporations had paid out their dividends, the industrial sector's cash surplus turned into a capital shortage. Starting on January 1, 1937, a new tax appeared—the Social Security payroll tax of 2 percent, half of it paid by employers, which would remove nearly \$1 billion a year from workers' purchasing power without counterbalancing the drain with retirement benefits, which would not begin to be paid until 1940. Three years of government economic pump priming, an unprecedented infusion of cash raised by deficit spending, suddenly reversed. [Hiltzik, Michael, *The New Deal: A Modern History*, Free Press, 2011, pages 376-378]

Historian James MacGregor Burns explained that “tremors of recession began spreading through the economy” by midsummer 1937:

The stock market slid and then a jarring series of sell orders tumbled prices to new lows.

Suddenly it seemed like 1929 all over again. People talked of “Black Tuesday”—October 19, 1937—when prices cascaded, in Henry Morgenthau's words, “amid an hysteria resembling a mob in a theater fire.” And for a time the Roosevelt Administration reacted much in the manner of the Hoover government eight years before The President, suspecting that big business was trying to drive the market down to hurt the Administration, was cautiously hopeful. He did not yet realize that it was his sharp cutbacks in federal spending that, far more than any business action, had precipitated the slump. A flurry of White House meetings resulted in little action. Then began a series of sickening drops that continued through the fall and winter as the “Roosevelt recession” deepened, with unemployment, which had been cut from 12.8 million in 1933 to 7.7 million in 1937, rising to 10.4 million in 1938.

Unsure what caused the slump, President Roosevelt listened to conflicting advice from all sides, but did not immediately understand how to reverse it. Some advisers advocated increased spending. Some, including Secretary Morgenthau, advocated more rigorous efforts to balance the budget. [Burns, James MacGregor, *The Crosswinds of Freedom: From Roosevelt to Reagan—America in the Last Half Century*, Vintage Books, 1990, page 101]

Still unclear on whether to favor budget balancing or pump priming, the President approved a speech that Secretary Morgenthau delivered on November 10 calling for a balanced budget. The Secretary delivered the speech at the Hotel Astor in New York City during the annual meeting of

the Academy of Political Science. After serious consideration, he had concluded that “the domestic problems which face us today are essentially different from those which faced us four years ago.” He summarized the first year of the Roosevelt Administration:

We deliberately used an unbalanced Federal budget during the past four years to meet a great emergency. That policy has succeeded. The emergency that we faced in 1933 no longer exists But the underlying conditions that made deliberate deficit spending the wisest kind of policy during the depression have been altered during the progress of recovery.

He explained that many measures were needed to address the current recession. “One of these measures, but only one, in the present juncture is a determined movement toward a balanced budget.” He estimated that to achieve a balanced budget in FY 1938, cuts totaling \$700 million were needed. How to achieve the cuts was the question. Everything was being done “to keep a tight rein on the regular operating expenses” of government agencies but, he said, “I do not believe that we can find large savings in this field.” Instead, he favored “focusing attention on the several classes of expenditures that have been mainly responsible for our past deficits—namely public highways, public works, unemployment relief and agriculture—it is apparent that great savings can be made.” He cited highways as an example of the possible savings:

First, take the item of highway expenditures. Prior to the depression, the Federal grants to the States for public highway construction generally ran under one hundred million dollars annually. This year the total Federal outlays for highways, inclusive of emergency expenditures, are estimated at two hundred fifty-three millions; and, in addition, the existing highway programs call for new appropriations totaling more than four hundred million dollars for the next two years. I believe it is now time to return to the average annual level of highway expenditures that existed prior to the depression, especially because during the past few years many other millions of dollars have been spent for highways out of relief appropriations.

After discussing cuts in other public works programs, he added that, “Obviously, however, one reaches a point in reducing government expenditures at which no further reductions can be made, unless it is decided to cripple many essential governmental activities—in other words, unless it is decided to make drastic changes in national policy.” He continued:

We are definitely in a transition period between unbalanced and balanced Federal budgets; but I firmly believe there is just as much danger to our economy as a whole in moving too rapidly in this direction as there would be in not moving at all.

As the Federal Government pulled back, he said:

The basic need today is to foster the full application of the driving force of private capital. We want to see private business expand. We believe that much of the remaining unemployment will disappear as private capital funds are increasingly employed in productive enterprises. We believe that one of the most important ways of achieving these ends at this time is to continue progress toward a balance of the Federal budget.

He concluded:

We are confident that, with the full cooperation of the business world, our present difficulties will be overcome; and that the aims that I have set forth above, which are properly those of private business as well as those of the national government, will be achieved. [“Text of Morgenthau’s Address Here on Budget,” *The New York Times*, November 11, 1937]

The audience of more than 1,000 people consisted mainly of economists, college professors, and businessmen. According to the *Times*:

Mr. Morgenthau was applauded when he expressed himself for the expansion of private business, against additional taxation, against “excessive demands upon the Federal Treasury” by farmers, for reduction in Federal expenditures, for a widening of the tax base, for changes in taxes that prove unfair and for a continuance of the New Deal program for a wider distribution of the national income.

The audience laughed when Mr. Morgenthau said the government was in a “transition” period between unbalanced and balanced budgets and that the Treasury always tried to make the collection of taxes as “little burdensome to the taxpayer as possible.”

That same day, President Roosevelt met with business leaders and economic advisors to promote a two-point program for stimulating the economy through private investment in residential housing and industrial construction. [“Morgenthau Asks Business to Help Balance Budget; Roosevelt in Housing Drive,” *The New York Times*, November 11, 1937]

FDR Targets Highways

In September 1937, AASHO held its annual meeting in Boston. Senator Hayden, who had been involved with Federal-aid highway legislation since 1916 when he was in the House of Representatives, was unable to attend, as he explained in a letter to AASHO’s executive secretary, William C. Markham, on August 27. Senator Hayden also recalled that, “I have long striven to secure adequate appropriations for the construction of hard surfaced roads throughout our United States and I most strongly feel we should do all we can to see that the program launched under the Hayden-Cartwright Acts of 1934 and 1936 is carried on to a successful conclusion.” He appreciated the work of the State highway agencies:

Just so long as the State Highway Departments of our Nation continue, as they have in the past, to plan in cooperation with one another for a national system of highways will it be possible for the Federal Government fully to cooperate with them.

Senator Hayden saw problems on the horizon. He urged AASHO’s help in fighting off threats to the Federal-aid highway program:

It has not always been an easy task to secure for roads all of the money we might like to have expended, but the best argument for increased appropriations I have been able to find lies in the fact that highway construction pays its own way. The Federal Government receives in taxes on motor vehicles and fuels just about the same amount of money as is annually expended from the Federal Treasury in the construction of Federal aid highways. So long as this is true the task of securing adequate appropriations is made easier, and so long as this is true the driving public cannot complain of the heavy taxes

with which they are burdened, but whenever the motorist's tax dollar is diverted, either by the Federal Governor or by the several States, to uses other than for the construction of highways, he has a just and proper complaint. I should most strongly urge the American Association of State Highway Officials to take a definite and unequivocal stand against diversion of highway funds to other than highway uses. [*American Highways*, October 1937, page 9]

The problem he foresaw affect funds for the Federal-aid highway program was right around the corner.

On October 12, President Roosevelt issued a proclamation declaring that an "extraordinary occasion" required the return of Congress, which had adjourned on August 21, for a special session on November 15. He did not specify an agenda until November 5 when he sent a message that a House clerk read to a joint session of Congress on November 15. He explained that since the recess, "there has been a marked recession in industrial production and industrial purchases following a fairly steady advance for more than 4 years." The decline had "not reached serious proportions," but by decreasing national income, it was "a matter of definite concern."

He had consulted owners of businesses, large and small, and representatives of agriculture and labor, as well as members of the Executive branch. Some of the recommendations he had received were "consistent with each other; some are at complete variance." What was clear, however, was that "we have enough wisdom in the country today not only to check the present recession but to lay the ground work for a more permanent recovery." He added, "Despite some maladjustments, which can be corrected, underlying conditions are not unfavorable." Moreover, the "situation is not to be compared with the far different conditions of 1929."

He would, he said, submit proposals for engaging private capital in housing on a large scale and he noted that Congress already was studying ways to eliminate any injustices in business tax laws. Moreover, the problems of the railroad industry and public utilities required "renewed examination," but "because of thoroughly unsound financing extending over many past years, solutions will frankly be difficult." Further, he would soon submit his proposed Federal Budget for FY 1939, "a budget which I expect can be brought within a definite balance."

Although the country faced many concerns, he had called the special session to address four objectives, each of which Congress already had considered:

- Agriculture: He called for a National Farm Act "which will not only prevent new farm surpluses from causing new collapse in farm prices but which will also safeguard farmers and consumers against the hazard of crop failure."
- Labor: Immediate congressional action was needed "to maintain wage income and the purchasing power of the Nation against recessive factors in the general industrial situation." First, he said, "banish child labor and protect workers unable to protect themselves from excessively low wages and excessively long hours." Second, action was needed to counter "the unsound practice of some communities" that sought industrial investment by "offering as the principal attraction labor more plentiful and much cheaper than may be found in competing communities."

- Reorganization: In January, he had asked Congress to improve the administrative management of the Executive branch by creating additional departments; establishing a budget and efficiency agency, a personnel agency, and a planning agency; increasing the White House staff; creating a genuine independent audit office that would be solely responsible to the Congress; and extending the merit system upward, outward, and downward to all nonpolicy determining posts.
- Planning: President Roosevelt wanted to modify “methods of spending national funds for the conservation and development of those natural resources which are the foundation of a virile national life.” A definite portion of the national budget should be set aside for this work. However, he explained, “To avoid waste and to give the Nation its money’s worth from the national funds we expend, we must, like any business corporation, have a definite building and operating plan worked out ahead of time” He sought legislation that would divide the country into “seven great regions into which Nature divided those resources,” with each region arranging projects “into some kind of comprehensive and continuing plan for the entire region.”

He concluded:

What these four subjects promise in continued and increased purchasing power—what they promise in greater efficiency in the use of Government funds—are intelligent foundations for the other plans for encouragement of industrial expansion with Government help. What they promise in social contentment is an almost necessary basis for greater security of profits and property. [Message from the President (H. Doc. No. 370), *Congressional Record-House*, November 15, 1937, pages 9-12]

The *Times* attempted to convey the mood as the session began:

Congress in beginning its second special session of the New Deal Administration was in a mood more cautious, more conservative and more independent than at any other time since President Roosevelt addressed his first Congress nearly five years ago.

In contrast to the uproarious applause and frenzied activity that have followed personal appearances of the President before joint sessions of House and Senate on several occasions since March, 1933, the reading of his message in both bodies today brought a polite but unenthusiastic reception

On both sides of the Capitol the slump of recent weeks in business and industrial activity all but eclipsed interest in the special session’s legislative program outlined again in the President’s message.

The article provided additional evidence of the mood of independence:

Nothing like the atmosphere that surrounded private comments and conversations in the legislative cloakrooms today had been heard since President Roosevelt took office. The closest approach to it prevailed near the end of the last session, when some members of both bodies went so far as to charge the President with trying to wreck the Democratic party.

There was none of that attitude among members today. There was no belligerence. But in the House, particularly, members seemed to feel that they could now afford to act independently of the President as long as they avoided the appearance of defiance or disloyalty. [“Congress in Mood of Independence,” *The New York Times*, November 16, 1937]

On November 20, AAA re-elected Thomas P. Henry as president of the organization. Among the resolutions adopted during a business meeting prior to adjournment of AAA’s annual meeting was one disapproving the “development of a series of transcontinental toll super-highways by use of public funds or public credit or any units of government.” [“Henry Re-Elected as Head of A.A.A.,” *The New York Times*, November 21, 1937]

On November 27, President Roosevelt followed up on Secretary Morgenthau’s call for a reduction in highway spending. The President sent a message to Congress on Highways and Roads:

By the Act of June 16, 1936, the Congress authorized appropriations totaling \$216,500,000, for each of the fiscal years 1938 and 1939, for Federal-aid highways, secondary or feeder roads, elimination of grade crossings, forest highways, roads and trails, and highways across public lands, to be administered by the Department of Agriculture. This Act also authorized appropriations totaling \$21,500,000, for each of the fiscal years 1938 and 1939, for roads and trails within national parks, for parkways to give access to national parks and form connected sections of a national parkway plan, and for Indian reservation roads, to be administered by the Department of the Interior. Under the first category there has been appropriated to date on account of the authorizations for the fiscal year 1938 a total of \$25,500,000 and under the second category a total of \$13,500,000, or a grand total of \$38,000,000 leaving \$200,000,000 still to be appropriated for that fiscal year. To meet obligations under this \$200,000,000 of outstanding authorizations, I proposed to include an estimate of appropriation of approximately \$100,000,000 in the Budget for the fiscal year 1939, with the balance to be provided for 1940. This takes care of the authorizations for the fiscal year 1938 and leaves for consideration the authorizations of \$238,000,000 for the fiscal year 1939.

In view of the large amounts which have been contributed by the Federal Government, particularly during the past five years, for the construction of public roads, and because of the necessity for taking definite steps to reduce expenditures for the purpose of securing a balanced Budget, I recommend that the Congress adopt the following policies:

1. Provide for the cancellation of the 1939 authorizations prior to January 1, 1938, by which date the Secretary of Agriculture is required to apportion to the various States \$214,000,000 of such authorizations.
2. Limit to not more than \$125,000,000 per annum all public roads authorizations for the fiscal year of 1940 and for each of the next few succeeding years.

Since the enactment of the first Federal-Aid Highway Act in 1916, there has been appropriated for public highways, including allotments from emergency appropriations, more than \$3,100,000,000, of which amount \$1,490,000,000 has been made available during the last five years. This annual average for the past five years of \$298,000,000

contrasts with an annual average of less than \$100,000,000 for the five year period preceding the depression.

There is another provision of the existing law relating to public roads which should receive consideration in this connection. The Secretary of Agriculture is required to apportion to the States the annual amount authorized for appropriation, and to approve projects of proposed State expenditures thereunder which shall constitute contractual obligations of the Federal Government regardless of the availability of appropriations for their payment and of the fiscal outlook of the Treasury. This mandatory provision completely ties the hands of the Executive as to the amount of road funds to be included in the Budget for any fiscal year. While I do not object to the apportionment among the States of such amounts as may be authorized for appropriation, I do most strenuously object to the mandatory incurrence of obligations by the Federal Government under such apportionments without regard to its ability to finance them from its revenues. I, therefore, recommend that the Congress take the necessary action permanently to eliminate this provision of our public roads law.

The final paragraph of the President's letter was referring to "contract authority," which allows the full authorized amount to be obligated (committed) to projects before an appropriation act covering the funds is approved. Congress had authorized contract authority in the Post Office Appropriation Act for 1923, approved on June 19, 1922. It continued the highway program through FYs 1923, 1924, and 1925, but instead of providing appropriations for the 3 years, it stated "there is hereby authorized to be appropriated . . . the following sums." *America's Highways 1776-1976* explained:

This language meant that it was still necessary to go through the appropriation process by further legislation. The actual funding of the authorization then became a matter for consideration later by the appropriations committee.

Since projects sometimes took more than 1 year, contract authority provided assurances to State highway officials that they would be reimbursed for the Federal share of projects where the funds were obligated but would not be needed until the following fiscal year. [*America's Highways 1776-1976*, page 206]

As a result, contract authority limited the President's ability to adjust funding levels to the economic or budgetary situation.

President Roosevelt had talked about the proposed highway cutback during a press conference on Friday, November 26. The conferences were held with the understanding that the reporters would not quote the President directly unless he gave permission for a direct quote. The *Times* summarized his comments:

The President said he would submit his recommendations relative to curtailment of road-building programs on Tuesday. They would deal with highway appropriations of all kinds, he said

The President said the highway grants were a type of Federal expenditure which should now be cut down. The main arteries have been completed in most States, he added, and

farm-to-market roads have been extended all over the country through the program of the Works Progress Administration.

A correspondent informed the President that some State authorities have said they wanted no more Federal road building because of the heavy burden of maintenance cost on those already completed. The President replied that he had heard of no specific instances of that kind, but that he could imagine they were true. [Catledge, Turner, "To Cut Road Funds," *The New York Times*, November 27, 1937]

The message was read in the Senate on November 30. The congressional reaction was one of "revolt," as conveyed in Turner Catledge's article:

The independent spirit in Congress, which has smoldered ever since the special session began, flared out today with the presentation of President Roosevelt's message demanding curtailment of the highway building program as a step toward balancing the budget Capitol Hill forces, particularly those dealing directly with the road problem, were quick to defend Congress's road program, especially the right to appropriate in whatever manner it desired.

Most Democrats "were reluctant to express themselves openly, but all seemed to regard the President's plan as virtually certain to be denied or substantially modified." [Catledge, Turner, "Call for Cut in Road Funds Starts Revolt in Congress," *The New York Times*, December 1, 1937]

Although most Democrats may have been reluctant to speak out, the chairmen of the Senate and House authorizing committees were not. Senator Hayden, stating that he had been one of the sponsors of the Federal Aid Road Act of 1916, expressed surprise that the President's advisors had not adequately informed him on the issues. As the President said, Federal law required the Secretary of Agriculture to apportion funds to the State highway agencies on January 1 for the fiscal year immediately following. Federal law also required that the Secretary's project approvals "shall be deemed a contractual obligation of the Federal Government." He explained:

The reason for this legislation is both simple and sound. The reason is so obvious that I cannot believe that the President was made to understand by his advisors that it would [not] have the effect of breaking what in truth is a contract. A majority of the State legislatures—more than 40 of them—meet but once in 2 years. The Federal funds authorized to be expended are to match moneys raised by State taxation. In order that the legislatures may know what taxes to levy to meet Federal aid they are given at least 6 months' notice; that is, Congress since 1922 has passed bills covering 2-year periods in ample time so that when the legislatures meet they may know exactly what to expect.

That is what was done by the act of June 16, 1936. Forty-four State legislatures met in the present year, 1937, and had the assurance that in accordance with the Federal Highway Act, as set up originally in 1916, certain sums of money would be available to them during a 2-year period ending on June 30, 1939. It seems perfectly clear that, having established a contractual obligation between the Federal Government and the States, we cannot, between now and the 31st of December, consistently carry out the

recommendations contained in the message by enacting what amounts to a repealer of the authorization during this special session of Congress

Let us consider what would happen if the action recommended should be taken. There would be a withdrawal of a large part of the \$200,000,000 upon which the States have been led to believe, by this contractual obligation, they could depend. The legislatures have adjourned after having made complete provision to comply with their part of the contract. The State legislatures will not meet again in regular session until 1939. Each State would thus be collecting taxes which could not be expended for the purposes for which the taxes were levied.

We are, therefore, forced to the conclusion that Congress must abide by the contract.

Regarding contract authority, Senator Alben W. Barkley (D-Ky.), the Majority Leader, pointed out that while Congress tied the hands of the Agriculture Secretary, "it tied its own hands" as well because "Congress must automatically make the appropriation to fulfill that contract." Senator Hayden replied, "There has been no thought at any time of a failure by Congress to appropriate as much money as was needed to meet such contractual obligations."

Senator Barkley asked if that meant Congress would never have any discretion on appropriation of highway funds. "That is correct," Senator Hayden replied:

[And] let me point out one other thing that most persons do not realize. The State is required to, first, do all the work. It is required to pay the contractors. After the work is done and after the contractors are paid, the Federal Government then reimburses the State for such work as has been accomplished.

In view of the reimbursement nature of the program, "it would violate good faith" to withhold funds the State highway agencies expected to be available for repayment. [Federal-Aid Highways (H. Doc. No. 407), *Congressional Record-Senate*, November 30, 1937, pages 501-503]

Chairman Cartwright also made his views clear in extended remarks following the reading of the President's letter on the House floor. He was hesitant to reply to the President's message, "but as chairman of the House Committee on Roads I feel that it is my humble duty." The President, he said, is to be commended for wanting to balance the budget, but he clearly "has been made to believe that large appropriations which have been made for highways could be greatly reduced as one of the elements to bring about the desired result." However, the funds Congress "knowingly" authorized over the past 6 years had "not only given large employment to men who needed the work but the expenditures along this line have added to the wealth of the country to an extent not excelled by any other method of public expenditure."

Moreover, the President says that authorizations aside, the law should be changed to eliminate contract authority. "That, of course, would be like going back to the 'horse and buggy' days when road building was an unstable business." He explained the advance planning nature of highway building and the value of contract authority.

He also pointed out the “greatly improved conditions of the highway industry,” which he said were based on confidence that the Federal Government would not abruptly withdraw from a responsibility it voluntarily assumed 20 years earlier:

On the strength of the orderly program authorized in the first Hayden-Cartwright Act in 1934 there was an immediate business pick-up in the industries connected with road building If Congress and the President now back up and Federal aid funds are now withheld, it is obvious that the reverse will be true; expansion will cease and there will be a general lay-off of employees throughout the industry, even before the program is actually curtailed It is the psychological effect of this proposal that I fear fully as much as the loss to the Nation of vitally needed roads.

The final section of Cartwright’s remarks was headed: “Why Make Roads the Goat?” Given the vast increase in automobiles totaling almost 29 million and the peoples’ reliance on them for transportation, properly constructed roads were a necessity:

Our citizens are not going to sit supinely by and permit the funds for expenditure for highways to be reduced while we are increasing our expenditures for other governmental activities. The matter of Federal cooperation in building roads covers a long period of time. It is so well established that many people have taken it for granted, but any proposition to make road construction the “goat” in plans for economy will, in my opinion, receive critical examination on the part of the public, and in that attitude we who have given time and energy toward the legislation on this subject cannot help but agree.

He concluded that the current program should continue “until our present Federal highways are out of the mud and dust.” If the President were to motor over the highways in Chairman Cartwright’s Oklahoma district, “I feel sure he would agree with me on that point.” [Message from the President—Disposition of Road Funds (H. Doc. No. 407), *Congressional Record-House*, November 30, 1937, pages 537-538]

Catledge summarized the congressional reaction:

The Congressional resentment was heightened by views, expressed privately in the cloakrooms and corridors, that the President was thus trying to put Congress “on the spot” in the budget-balancing drive by recommending reduction of one of the few spending programs over which it had retained any measure of direct control.

He quoted a comment by Cartwright that apparently was removed from the record: “I don’t know what others say about it, but as for me, I do not propose to take it lying down.” [“Call for Cut in Road Funds Starts Revolt in Congress,” *The New York Times*, December 1, 1937]

The stock market was down, with trading the lowest it had been since early October. The *Times*, in analyzing the reasons for the decline, pointed out that one factor in the “dullness in the stock market” was the fact that the special session was focusing on the Farm Bill and wages-and-hours, not tax relief for business:

The fact also that considerable resentment was voiced by individual Congressmen with respect to President Roosevelt’s demand that Federal aid in road building be curtailed in the interests of budget balancing served to give the market pause. The years of “pump

priming” have made the task of curtailing expenditures difficult. [“Financial Markets,” *The New York Times*, December 2, 1937]

The National Safety Council and AAA came out against the cuts on December 2. The council’s managing director, W. H. Cameron, called the President’s message “a distinct menace” to highway safety in a year when approximately 40,000 people would be killed and 1 million injured on the Nation’s roads. The President had “aimed a blow” at highway safety programs that already were “woefully inadequate.” Highway engineers had made “tremendous strides” in improved safety, but their efforts were held back “due solely to lack of funds.”

AAA’s Henry also denounced the proposal:

The President’s recommendation to Congress calling for wholesale slashes in road funds is, to say the least, ill-advised. This proposal comes at a time when motor deaths are at an all-time peak, in large part due to inadequate highways, and at a time when progress was just beginning in the task of building these highways up to the standards demanded by present-day traffic. [“Cut in Road Funds Fought as Menace,” *The New York Times*, December 3, 1937]

The editor of *Better Roads* asked, “What is to be said of the effect of a hit-or-miss year-to-year appropriation policy on advance highway planning?” The Roosevelt Administration had “repeatedly affirmed its allegiance to a policy of long-range planners in matters affecting the welfare of the nation. Is highway planning to be sacrificed to the exigencies of the moment?” His requests were even more puzzling, the editor said, since road construction provided jobs, as demonstrated throughout the Depression:

In the same way, federal highway aid can be thought of as a permanent instrument for the attainment of further objectives that have appeared to have the whole-hearted approval of the administration. Thus it is a means of leveling the inequalities between states and regions that are a matter of national—not merely state or regional—concern. Again, it is a means of leveling inequalities between urban and rural areas. A start has barely been made in this direction. Likewise, by means of intelligent planning, it is an instrument that can aid in the solution of the problems of land use that we are facing, as the chief of the Bureau of Public Roads has pointed out. Acknowledgment of these objectives would seem to imply the advocacy of federal grants on a larger, not a smaller, scale.

Instead, the President had said Federal-aid for highways “should be elastic—that its size in any year should be regulated by circumstances that have nothing to do with highway needs or with objectives related to highway extension.” The editorial concluded:

That is what he told congress. It may help balance the budget, but it upsets our ideas about the president’s beliefs, just as it upsets the highway program. It doesn’t fit with some of the other things he has told the country he is working for. [“Less Federal Road Aid?” *Better Roads*, December 1937, page 16]

Columnists Joseph Alsop and Robert Kintner, no friends of the White House, discussed the President’s message on December 3:

In the inner circle of White House advisers, the message is something of a joke. As one distinguished brain truster remarked, it was written “with the tongue half in the cheek.”

That is not to say that the President doesn't consider the present road appropriations ridiculously high. He does. But his message also had a secondary purpose.

Senators and Representatives love road money better than life. A violent revolt against the proposed cut in road appropriations is already in progress. Many of the conservative, budget-balancing Democrats are squalling against the cuts like so many pigs under a gate.

If the cuts go through, well and good. If they are defeated, the message will have performed the useful tactical function of putting the conservative budget-balancers on record as opposed to economy. And thus, if the President suddenly decides to stop economizing, he will have a cruel weapon in his armory for use against the budget-balancers. [Alsop, Joseph, and Kintner, Robert, “President's Highway Message Designed to Catch Conservative Budget-Balancers Under the Gate,” The Capital Parade column, *The Evening Star*, December 3, 1937, italics in original]

On December 10, Cartwright was reported to have said he would not ask the Committee on Roads to consider the President's recommendations. As the *Times* put it, “The threatened revolt in Congress against President Roosevelt's economy program broke partially into the open today” with Cartwright's announcement. Since legislation would have to be enacted by January 1 to prevent apportionment of the FY 1939 apportionment, Cartwright's decision put an end to the President's initial recommendation.

Cartwright said he would convene the committee in January to begin work on a bill extending the Federal-aid highway program through FY 1941:

When this bill gets on the floor, it will then be time to discuss the economy in road building appropriations. If we are asked to go along in reductions to balance the Federal budget, then, of course, we will accept in good grace such cuts as are proportionate. But we are not going to sit idly by and see road building stopped when there are increases in other items, or, at any rate, no reduction for other activities of the government.

By contrast, Republican Representative Robert Low Bacon of New York, the second ranking Republican on the Appropriations Committee, responded that he would introduce legislation to relieve the Secretary from the requirement to apportion the funds on January 1:

“We will go along with the President in all attempts at economy. If the Democratic leadership is not willing to follow the President's recommendations, we propose to help him out whenever such recommendations involve reduced governmental expenditures.” [“Roosevelt Road-Cut Plan Defied by House Chairman,” *The New York Times*, December 11, 1937]

Bacon introduced the bill on December 15, once again criticizing the Democratic leaders for not making any moves to carry out the President's recommendation. Not only had Democratic leaders not taken up the measure, he said, the Administration had not followed up on the request

“although White House pressures have been felt in Congress on several other matters of a far less urgent nature.” He added, that “we are bound to accept the President’s recommendations at their face value.”

He introduced his bill as an emergency measure and he “earnestly” urged the Democratic leaders to support the bill. “It will give every member of the House an opportunity to support the President and at the same time to move in the direction of a balanced budget.” Further, failure to consider the bill or its rejection “would be a signal to the entire country that the Democratic leadership in Congress repudiates the President in his demand for economy.” [“Tests Democrats on Road Fund Cut,” *The New York Times*, December 16, 1937]

On December 14, Secretary Wallace had written to Speaker of the House William B. Bankhead forwarding a draft bill canceling the 1939 apportionment of Federal-aid highway funds. By December 16, congressional leaders had abandoned any effort to adopt the President’s recommendations, primarily because of Chairman Cartwright’s opposition. With the special session lasting only another week, time would not allow any maneuvers to get around his refusal to consider the bill.

(Speaker Bankhead’s father, Senator John H. Bankhead, had been the primary sponsor of the Federal Aid Road Act of 1916.)

The *Times* summed up the situation:

Despite a letter to Speaker Bankhead from Secretary Wallace . . . it was said that the parliamentary situation and the stand of the roads committee were insurmountable obstacles

House leaders said there was a possibility that the Appropriations Committee would bring in the Agriculture Supply Bill with the road item trimmed to suit the White House. If so, it would be fought on the floor, members of the Roads Committee said

After reading the suggested bill, several members privately expressed their resentment at the recommendation for elimination of all road items for 1939. They felt, some of them said, that the Administration was attempting to place road allotments under its own thumb, like relief and a number of other appropriations, and they declared they would fight any such attempt.

With only a week to go in the special session, leaders said they felt it futile to attempt to force out the recommended bill. A discharge petition is not in order since the bill has been in committee only a day. [“Move by Wallace on Road Cut Fails,” *The New York Times*, December 17, 1937]

On December 16, Chairman Cartwright sent a letter to the President saying he regretted “the apparent disposition of certain newspapers to twist and distort every informal statement of a member of Congress into an ‘open revolt’ against the President.” He had told reporters he had not scheduled a meeting on the President’s request, not that he would not hold such a meeting. He would do so if the members of the committee wanted a hearing on the subject. However, he had asked each member for their opinion:

Up to now not one member of the committee has requested a meeting for immediate consideration of recommendations for cancelation of authorizations, but a majority of members of both parties have expressed the opinion that nothing would be accomplished by a meeting at this time.

He added that, informally, he had heard the same response from the committee's Senate counterpart. Moreover, the committee had received many comments from individuals and groups around the country urging hearings on the President's request before a decision is made:

Under these circumstances, I have not called a meeting of the Roads Committee I have not believed, and do not now believe, that the committee would favorably report a proposal to cancel authorizations for next year, and my thought has been that the anti-New Deal press would paint a stronger "revolt" picture out of formal action by the committee than of apparent or alleged inaction by the chairman.

He emphasized his loyal support of New Deal policies and said that "my feeling has been and is one of sincere regret that I cannot support this recommendation":

While I was surprised and disappointed at this message, I assure you that I am willing and anxious to cooperate with you and the Secretary of Agriculture, and with legislative leaders in the House and Senate, in an effort to work out our highway problems in the most harmonious and constructive way possible. [Federal Aid Highway Act, Hearings Before the Committee on Roads, House of Representatives, 75th Congress, 3rd Session, on H.S. 8838, January 25 through February 9, 1938, pages 7-9]

President Roosevelt replied on December 20 with what the *Times* called "a sharply worded letter":

My dear Mr. Cartwright:

Thank you for your letter of December sixteenth. I have understood fully your problems as Chairman of the Committee on Roads, and, frankly, having served in a legislative body myself, I appreciate the pulling and hauling when it comes to getting a slice of the Government's expenditures for one's own projects.

Also may I tell you that if we had all the money in the world to spend I would gladly go ahead with road building in every county in the United States on an even greater scale than we are doing at the present time.

But there are two factors which I know you will consider:

1. The Administration is making an honest effort to cut the budget down to a figure which will closely approximate the estimated tax receipts. That means that we ought to cut off appropriations which may be desirable but which are not essential.
2. That brings me to the second problem—the problem of what Einstein would call "relativity." Where can we cut? This is a matter, first, for the President to make recommendations, and, secondly, for the Congress to decide whether the recommendations for cuts should be carried out or changed by substituting different cuts.

As you know, up to 1929, the average amount of Federal aid to road building in the United States was less than \$100,000,000 a year and now under authorizations and appropriations it will run to between \$200,000,000 and \$300,000,000 a year.

Also, as you doubtless know, money spent on Federal aid highways takes very few people directly off the relief rolls. It is true that many of the contractors' regular forces are kept at work and some people are put to work making cement, steel binder and other materials. Nevertheless, the fact remains that Federal aid highways give relatively little help to the several million Americans who are actually in pressing need. Local farm-to-market roads give a far higher percentage of relief employment than the Federal aid roads.

Therefore, speaking again of "relativity," if I have to get the budget down to a certain figure, obviously I must eliminate the proposed expenditures which provide the least work and favor those expenditures which give the most work.

The Congress has a perfect right constitutionally to exceed the budget, but, if the budget is exceeded, obviously the Congress must accept full responsibility, and obviously the Democratic members, which have such a large majority in the Congress, must equally accept the full responsibility.

If the Congress decides to keep on spending between two and three hundred million dollars a year on Federal aid highways, the Congress can, in its wisdom, reduce other appropriations to make up the difference.

The above facts may be unpalatable but, as you know, they are perfectly true. More than three thousand counties in the United States are glad to get every possible expenditure of Federal funds within their counties, but I know you will agree with me that if we legislated with that as the principal objective in mind, there would not be any Democratic Party and there would not be any solvent Government after a few years. ["Roosevelt Warns Congress to Help to Balance Budget," *The New York Times*, December 23, 1937]

The following day, December 21, the special session came to an end without approving any of the measures President Roosevelt had requested. By then, only eight Senators and 135 Representatives remained in Washington. They had considered the President's agenda, and the pending bills would remain active when the regular session of the 75th Congress convened in January. However, the special session resulted in only five approved bills:

1. Appropriation of \$225,000 for mileage expenses of Senators and Representatives between Washington and their homes.
2. Appropriation of \$12,000 for pay of House and Senate pages.
3. Authorization for the loan of certain portraits housed in the Capitol to the Corcoran Art Gallery in connection with the constitutional sesquicentennial celebration.
4. Amendment of the Federal Credit Union Act.
5. Extension of the time for beginning construction of a bridge across the Tennessee River in Alabama. ["Congress Closes; Not One Major Bill Gets Final Action," *The New York Times*, December 22, 1937]

On December 31, 1937, Secretary Wallace wrote to the Nation's Governors to inform them of their share of the FY 1939 apportionment in accordance with the requirements of the Federal Highway Act. He cautioned them:

I am directed by the President, however, to invite your attention to the recommendations regarding highway authorizations which he made in a special message to the Congress under date of Nov. 27, 1937, in which message he recommended the cancellation of the 1939 authorizations.

While no action was taken on this recommendation during the special session of Congress, the President desires that Congress be afforded, prior to the approval of any projects under the 1939 apportionment, a further opportunity to give consideration to his recommendation for the cancellation of the 1939 authorizations. He will appreciate, therefore, your cooperation and that of your State Highway Department in deferring the submission of projects under the 1939 apportionment until this matter has received the further consideration of Congress. ["Wallace Allots State Road Funds," *The New York Times*, January 1, 1938]

President Roosevelt's annual message to Congress and his annual message on the budget, both dated January 3, 1938, reiterated the need to balance the budget. His annual message pointed out:

We have heard much about a balanced budget, and it is interesting to note that many of those who have pleaded for a balanced budget as the sole need now come to me to plead for additional government expenditures at the expense of unbalancing the budget. As the Congress is fully aware, the annual deficit, large for several years, has been declining the last fiscal year and this. The proposed budget for 1939, which I shall shortly send to the Congress, will exhibit a further decrease in the deficit, though not a balance between income and outgo.

To many who have pleaded with me for an immediate balancing of the budget, by a sharp curtailment or even elimination of government functions, I have asked the question: "What present expenditures would you reduce or eliminate?" And the invariable answer has been "that is not my business—I know nothing of the details, but I am sure that it could be done." That is not what you or I would call helpful citizenship.

He did not mention the Federal-aid highway program. However, his budget message did again raise the subject. Among the areas of government where cuts were possible, he included public expenditures for capital improvements, including new highways:

This year I recommend that such items be curtailed. First, because expected Government income will be less, and second, because it has been amply demonstrated that they do not provide as much work as do other methods of taking care of the unemployed.

For example, we have appropriated as Federal aid to new permanent State highways almost \$1,500,000,000 during the past five years; and an equal sum has been spent during the same period for constructing, repairing, and improving roads and streets by Federal agencies administering unemployment relief. These vast expenditures have put our highway systems far in advance of what would have been normal expansion. I do not

propose eliminating Federal aid to highways, but I do ask that such aid be restored to approximately the pre-depression figures.

We have a great accumulation of unliquidated "matching" authorizations for aid to States running into the year 1940—but the States also should be encouraged to bring their highway budgets back to a more normal figure. Therefore I hope that the Congress will start at this session to cut down the actual appropriations used to match State funds.

On January 6, 1938, Chairman Cartwright made clear that he had no intention of considering the President's recommendation in the regular session. He introduced a bill to continue the Federal-aid highway program in FYs 1940 and 1941 at the same level as in recent years. "This is about equal to the cost of two battleships," he said:

I am a strong advocate of economy, but believe reductions should be made in all agencies of the Government and not just make roads the goat . . . Highway development still lags far behind the steadily increasing demands of traffic. The number of motor vehicles operating on our highways has increased from about 3,500,000 20 years ago to about 29,000,000 today. It is necessary that new authorizations be made by this Congress if an orderly program of highway development is to be maintained and sufficient time allowed for adequate preparation and careful planning of work. State highway budgets must be prepared in advance of the sessions of the State legislatures, and the States must have definite knowledge of Federal-aid authorizations in order to make provision for their participation.

Users of the highways pay special taxes, in proportion to their use of the roads, which brings more than \$300,000,000 a year into the Federal Treasury. The Federal Government can considerably increase its expenditures for roads and still not draw on its general tax funds, as the motoring public pays the entire bill in special taxes. The Congress has declared that such taxes are unfair and unjust unless used for the improvement of roads [by State highway agencies]. If road expenditures are reduced the special taxes on road users should likewise be reduced. Are we going to let the motorists down? [Federal-Aid Highways, *Congressional Record-House*, January 6, 1938, page 100]

Visiting Germany

The day after President Roosevelt's letter urging a cutback in highway funding, *The New York Times* published a travel feature by Mildred Adams about her visit to Germany. She quoted a travel poster: "Visit Germany this year! A modern people in a medieval setting!" Writing from Berlin, Adams said, "The mind turns nouns and adjectives over and over like pieces in a picture puzzle, trying to fit them into their true pattern."

For example, she cited the new roads. They were "six lanes wide . . . [but] the great highways are almost empty":

Put 65,000,000 Americans in an area two-thirds the size of Texas and their automobiles would fill the highways as New York crowds its crosstown streets. In Germany, on the contrary, the one place where an American can draw a breath and feel free from the press of people is on those great highways known as autobahns.

They were “as modern as any New York parkway, and much better than Mussolini’s boasted autostrades.” They were express highways that, when completed, would “tie all Germany together, with the bowknot at Berlin”:

They avoid towns and have comparatively few entrances and exits. They are free from signs, except those indicating feeder roads, and those that carry the outline of a stag in glass to warn night travelers of the danger of deers straying out from the forest. They are open to trucks and motor cycles as well as to pleasure cars, and, unlike Mussolini’s autostrades, they charge no toll They should be extremely useful for the rapid transport of troops and military supplies.

The first one completed, Adams said, connected Munich with Hitler’s retreat at Berchtesgaden “and, incidentally, with the Austrian frontier”:

This road is very convenient for Americans spending the Summer at Innsbruck or Salzburg, and many of them speak with envy and admiration of a country which builds such wide, straight highways and places no limit on speed. “You can go ninety miles an hour. Hitler always does,” they say.

(According to Phil Patton, Hitler never learned to drive. In his chauffeur-driven car, he enjoyed speeding by other vehicles, especially American cars. [Patton, *Bug*, page 9])

Motorists could enjoy the absence of a speed limit if their car could go that fast:

There are not many cars like that in Germany, and most of those that are big enough for any such speed carry foreign licenses or are filled with officers in uniform. German civilians who can afford to travel in such style affect a pomp and ceremony reminiscent of the early Nineteen Hundreds, when touring required a wardrobe all its own.

The most popular car in Germany is rather like a baby carriage with an engine the size of a roast beef tucked under its neat hood. It has four speeds, and it will run thirty miles to the gallon of gasoline, but it will not climb hills in high, and you are warned that it will not go more than seventy kilometers an hour without danger of burning out bearings. Neither in this nor on the even more popular and less expensive motor bicycles does the average man race up and down the autobahn at ninety miles an hours.

As a matter of fact, the autobahns seem astonishingly empty. Even in the crowded Rhine Valley, with moving produce cluttering all the little roads, there will be stretch after stretch of highway where the long white ribbons run out to an empty horizon with no car in sight.

Adams speculated that the absence of vehicles may have been because “Germany has not yet acquired the habit of long-distance road travel” or that villages “live on what they raise, and any surplus customarily goes to the city by train.” Germany, with a population of 65 million, “has less than a million automobiles,” and they were expensive.

The article included several illustrations, including one showing a few widely separated cars on a German autobahn. [Adams, Mildred, “Town and Country Life Under the Swastika,” *The New York Times*, November 28, 1937]

Turning Point – 1938

As the economy deteriorated in the second half of 1937, President Roosevelt appeared uncertain how to reverse the decline. Secretary Morgenthau's speech assuring the country that the economy was fundamentally sound and that a balanced budget was the key to recovery recalled President Hoover's futile tactics early in the Depression. Calling on the business community, which had long opposed President Roosevelt's New Deal programs, appeared unlikely to succeed, especially in view of the President's approval of renewed rhetorical attacks on big business. On December 30, for example, Secretary Ickes delivered a radio address spotlighting economic elites and monopolies:

It is the old struggle between the power of money and the power of the democratic instinct. In the last few months this irreconcilable conflict . . . has come into the open as never before, has taken on a form and an intensity which makes it clear that it must be found through to a finish—until plutocracy or democracy—until America's sixty families or America's 120,000,000 people—win.

Within the Administration, the battle between budget balancers and pump primers continued into the spring. When the stock market suffered another collapse on March 25, falling to its lowest level since 1932, the President finally made up his mind, as Hiltzik explained:

Roosevelt, who had retreated to Warm Springs, received a string of aides sensing that the time was finally ripe to goad him into action. Hopkins carried a new plea for pump priming from [WPA economist] Leon Henderson and a request for new appropriations for the WPA. Separately, Henry Wallace and [RFC chairman] Jesse Jones showed up with plans for new spending on housing, flood control, and loans to industry.

At last the logjam broke. Roosevelt was "rarin' to go," Wallace informed Morgenthau by telephone from Georgia. Morgenthau, clutching at straws, drafted a memorandum calling instead for a war on waste and inefficiency in government. But he was about to get squelched. On April 10 he handed in his memo at the White House, only to receive from Roosevelt in return a blueprint for stepped-up public works spending; a doubling of loan capacity for the U.S. Housing Authority, which lent to low-income borrowers; and a \$500 million construction appropriation for the Federal Housing Administration. There was also a proposal for a transcontinental highway, a pet project for which Roosevelt had been penciling out possible routes for months on scraps of paper.

Morgenthau quailed. "What you have outlined not only frightens me but will frighten the country," he told the President. [Hiltzik, page 388-389]

On April 14, he sent a message to Congress on stimulating recovery. He described the current economic downturn and its effects on the Nation. "All the energies of Government and business must be directed to increasing the national income; to putting more people into private jobs; to giving security and the feeling of security to all people in all walks of life." Since part of the problem was a lack of consumer demand, "the problems call for action both by the government and by the people." As citizen income increased through work, government revenue increased and expenditures could decline.

For now, however, he outlined his plan for how “the Government [can] help to start an upward spiral.” He grouped his recovery effort into three measures. First, he requested an additional \$1,250,000,000 for the Works Progress Administration, as well as increased funds for the Farm Security Administration, National Youth Administration, and the Civilian Conservation Corps. “I call your attention to the fact that these appropriations will avert the laying off of people now receiving assistance from the Federal Government.”

Second, he described steps the Administration and the Federal Reserve Board could take without congressional action “to make additional bank resources available for the credit needs of the country.”

Those steps, he said, might be sufficient, but “I cannot afford to equip ourselves with two rounds of ammunition where three rounds are necessary.” The third set of measures related “solely to definite additions to the purchasing power of the Nation by providing new work.” He outlined increases of \$450 million in authorizations for public works and authority to loan up to \$1 billion to States and subdivisions for “well thought out, needed and permanent public improvements” that could get underway in the summer and autumn. He also recommended increased funding for housing, flood control and reclamation works, Federal buildings, and:

I recommend the appropriation of \$100,000,000 to the Bureau of Public Roads for highways in excess of the amount I have previously recommended in the budget for the fiscal year 1939, but I request that this additional amount be used only for projects which can be definitely started this calendar year.

He provided the rationale for increasing public works spending even if it meant deficit financing:

Let us unanimously recognize the fact that the Federal debt, whether it be twenty-five or forty billions, can only be paid if the Nation obtains a vastly increased citizen income. I repeat that if this citizen income can be raised to eight billion dollars a year the national government and the overwhelming majority of state and local governments will be “out of the red.” The higher the national income goes the faster shall we be able to reduce the total of Federal and state and local debts. Viewed from every angle, today’s purchasing power—the citizens’ income of today—is not sufficient to drive the economic system at higher speed. Responsibility of government requires us at this time to supplement the normal processes and in so supplementing them to make sure that the addition is adequate. We must start again on a long steady incline in national income.

In a fireside chat on the radio that evening, President Roosevelt defended his call for a \$3.75 billion relief program. After describing the problem and his recommendations, he said, “It is a big program” that would result in deficit financing. The additional debt, however, “need not give concern to any citizen, for it will return to the people of the United States many times over in increased buying power and eventually in much greater government tax receipts because of the increase in the citizen income.”

He addressed a standard criticism:

No doubt you will be told that the Government spending program of the past five years did not cause the increase in our national income. They will tell you that business revived because of private spending and investment. That is true in part, for the

Government spent only a small part of the total. But Government spending acted as a trigger to set off private activity. That is why the total addition to our national production and national income has been so much greater than the contribution of the Government itself.

In pursuance of that thought I said to the Congress today: "I want to make it clear that we do not believe that we can get an adequate rise in national income merely by investing, lending or spending public funds. It is essential in our economy that private funds be put to work and all of us recognize that such funds are entitled to a fair program.

He added that in return for the increased debt, the country would receive "many billion dollars of permanent public improvements—schools, roads, bridges, tunnels, public buildings, parks and a host of other things."

Hiltzik summarized the program:

It was as though he had examined Morgenthau's November list of programs to cut to balance the budget, and decided to expand every one of them instead. [Hiltzik, page, 390]

According to Burns:

Morgenthau threatened to resign when he saw his last chance at budget-balancing go glimmering. His boss was tough, warning him that he would go down through history as having quit under fire. Morgenthau stayed, reflecting that the ties that bound him and the President together transcended even this issue. [Burns, page 104]

The economic slide and President Roosevelt's deft handling of his April reversal gained support in Congress for measures that had been tepidly received in 1937. Congress passed the recovery measure in June and a weakened wages-and-hours bill at the same time as it rushed to adjourn to resume campaigning for the November mid-term election. The reorganization bill, which the House rejected on April 8 by eight votes, would have to wait until 1939.

President Roosevelt signed the \$3.7 billion Recovery-Spending bill on June 21, 1938, in his Hyde Park office. *The New York Times* reported, "Shirt-sleeved and apparently in excellent spirits as he received correspondents in the tiny office of his Hyde Park home," the President predicted that the bill would unleash a business upswing. He removed the ban on direct quotes when he told the reporters, "As somebody remarked to me that other day, a few rain drops have been coming from the heavens and probably will be followed by a much needed shower." The *Times* continued:

Evidencing a change of attitude as to the efficacy of public works projects as a factor toward recovery since he abruptly closed the PWA program more than a year ago, President Roosevelt said that since the beginning of that experiment in 1933 the Federal Government had been metering its merits.

Today he said with some emphasis that for every man employed on a public works project two and a half other workers received private employment in mines, mills, forests, transportation, etc. In addition, out of every PWA dollar, 36 cents went to defray the

construction payroll and 64 cents went for producing and fabricating materials at points far distant from the project

It is generally recognized today that economic and social welfare ought to go hand in hand, the President said, a principle on which the recovery measure has been based throughout.

He said he had spent the past 3 weeks identifying PWA projects that could be ready to go as soon as he signed the bill:

Rocking back in his swivel chair and reflecting obvious satisfaction at the status of the preliminary spadework the President said it was quite a record. A good deal of the uncommitted part of the money earmarked for the PWA would be similarly allocated during the next two weeks before his departure for the West Coast and a Pacific cruise, and the balance would be entirely used up in the coming two or three months, he said. [Belair, Jr., Frank, "Roosevelt Signs \$3,753,000,000 Bill to Speed Recovery," *The New York Times*, June 22, 1938]

Hiltzik summarized the result:

The new spending, along with the monetary expansion produced by Roosevelt's agreement to sterilize the Treasury's gold hoard, marked the bottom of the Roosevelt recession. Robust growth resumed in the third quarter of 1938. The economy recorded a spectacular increase of 49 percent in real gross national product from 1938 to 1942, at which point economic output finally returned to its "normal" level—that is, the point it would have reached had its pre-1929 growth rate continued over the following thirteen years—signifying full recovery from the Great Depression.

How much of the recovery was due to the stimulus of 1938, and how much to the spurt of deficit spending that accompanied the buildup to war, is impossible to determine. [Hiltzik, page 392]

(The Reorganization Act of 1939, which President Roosevelt approved on April 3, 1939, gave him the authority to reorganize the Executive branch for 2 years subject to legislative veto. On April 25, 1939, he sent Reorganization Plan No. 1 to Congress, which approved the plan by a Joint Resolution adopted on June 7, 1939. It went into effect on July 1, 1939. Under the reorganization, BPR was shifted to the new Federal Works Agency (FWA) and was renamed the Public Roads Administration (PRA). The FWA also included the Public Buildings Administration, U.S. Housing Authority, Public Works Administration, and the Work Projects Administration. [Report of the Chief of the Bureau of Public Roads, 1939, September 1, 1939, page 2])

February 1938: FDR Stokes the Flames

Neither the President nor Congress had forgotten the vision of a transcontinental highway network.

Throughout the 1930s, private citizens such as T. E. Steiner had proposed variations on the concept of a network of transcontinental and north-south toll superhighways. In early 1938,

Steiner published a new edition of his brochure. The color cover depicted a section of his Coast to Coast Transcontinental Super Highway carrying moderate traffic over sparsely traveled cross roads. *A Dream – A Reality*, the cover proclaimed in red.

Members of Congress had promoted these ideas by introducing bills and even held hearings on them. Progress, however, had been limited, as *Engineering News-Record* pointed out in a February 1938 summary of news events in 1937:

Express Roads

If the metropolitan parkway and the city-access superhighway are taken out of the express-road classification, it must be said that the United States has no express roads. The building of freeways for express transport along main shipping routes is so far only a matter of talk, which talk was more plentiful in 1937. City-access superhighways, however, increased substantially, Boston is outstanding with several new entrances. New York is completing its costly West Side express road, the Long island parkways have been extended, and Detroit, Chicago, St. Louis and other cities have added to their ease of approach and bypassing by wide access and belt roads.

The magazine added that, “Decline in roadbuilding during 1937 from the emergency appropriation figures of 1935-6 signaled the inevitable leveling out from the peak of expenditure undertaken to relieve unemployment.” During the year, about 30,000 miles of State roads had been improved “to standards ranging from grading and drainage to full paving,” a decline of about 11 percent over 1936.

At the same time, design practices had changed:

New Design Trends

Road design and construction was stepped up to much higher plane in 1937 [sic]. Common practice accepted the principle of road design for 60- to 100-mile speeds, including longer curves, greater sight distances, wider traffic lanes and shoulders, wider and shallower ditches, and flatter side slopes. For four-lane roads, separation of opposing traffic lanes by barrier zones became accepted doctrine. Construction had the aid of better surfacing materials developed by research and increased experience. Of particular value in this field was the accumulating knowledge of soil mechanics as it relates to soil stabilization and the solidification of fills. The year saw fills and subgrade being prepared by methods developed for the highway types of water-holding embankment as well as by the use of cementing admixtures of various types. Drainage was advanced by new studies in subdrainage, and surfacing processes showed progress in control of quality and precision of workmanship. [“News Events of 1937 in Summary,” *Engineering News-Record*, February 10, 1938, pages 207-208]

Although President Roosevelt had proposed in late 1937 to de-fund the Federal-aid highway program for FY 1939, Congress remained interested in national express highways. On January 5, 1938, for example, Senator McKellar introduced a bill, S. 3211, to establish a Highway

Planning Commission to study, investigate, and determine the feasibility of a “through highway” from the District of Columbia to New York City, that would “provide an adequate and speedy route of not less than four automobile lanes . . . and will avoid congested areas and intersections with other highways and railroads.” In addition:

The Commission shall also investigate and make recommendations with respect to like highways, not exceeding three, running from the eastern to the western part of the United States, one through the northerly States, a second through the central States, and a third through the southern States; and not exceeding three running from the northern to the southern part of the United States, one east of the Mississippi River, a second between the Mississippi River and the Rocky Mountains, and third between the Rocky Mountains and the Pacific Ocean.

Around the same time, Senator Robert J. Bulkley (D-Oh.) introduced one of the most prominent proposals. He proposed a United States Highway Corporation to build three transcontinental and seven north-south superhighways, linked by spurs and connectors. The key feature of Senator Bulkley's plan was that it would be self-liquidating. First, the corporation would issue \$2 billion in bonds to get the work started (eventually, it was to issue between \$6 and \$8 billion in bonds). Bonds would be retired with revenue from two sources. First, tolls would be charged. Second, the corporation would build the superhighways on a 600-foot wide strip of land, with the excess land leased or sold to concessionaires as a source of revenue. The "New York State method" of condemnation, employed by the great road builder, Robert Moses, would be used to acquire the land. Under this method, the corporation would first condemn the land, take it over, and begin work immediately. Payment for the land would be agreed to later through negotiation or recourse to the courts.

An article in *The Christian Science Monitor* on February 14, 1938, described the concept:

Sites would be leased [on the excess right-of-way] for hotels, for eating establishments, great and humble, for gasoline and service stations and garages, and for many other purposes which would be rendered desirable by the proximity of such a highway Every effort would be made to keep the highways attractive and interesting, with a generous park strip separating traffic into two-way streets. Each direction would have six traffic lanes, according to the plan

Of course, much of the land would be under cultivation, or in forests or pasture. Prices would be graded according to the use of the land, on an entirely business basis. [“Super-Highways: Help for Jobless Seen in Projects,” *The Christian Science Monitor*, February 14, 1938]

In an interview for ARBA, Senator Bulkley explained that the tolls would not be in the nature of a tax. “They will be in the nature of payment for value received.” For example, he cited savings in gas and oil from reduced travel time and less stop-and-start driving. As illustrated by the autobahn network, Senator Bulkley anticipated savings by cutting down the number of accidents. National defense was another consideration, because the Bulkley superhighways would facilitate transportation of men and materials and be particularly important if it became necessary to

evacuate certain areas. Of course, the project would increase employment—at first, directly on the roads, then among suppliers, and finally in the general economy. [“Super-Highways, An Interview with Senator Robert J. Bulkley,” *ARBA Digest*, March 1938, page 11]

President Roosevelt, despite his effort to curtail the highway program, had not lost his interest in superhighways. From his first months in office, he had understood the value of superhighways, but he especially liked the “self-liquidating” nature of toll roads built on excess right-of-way. They could be built in a way that would create jobs without requiring large amounts of money from the general Treasury. Nevertheless, his interest had never been translated into a formal proposal to Congress.

What made the Bulkley plan stand out was the President’s support for it. Senator Bulkley had supported the President in his unsuccessful effort to “pack” the Supreme Court by expanding the number of justices. Now, the President wanted to help him win reelection. Bulkley, who had served in the House of Representatives from 1911 to 1915, had won a special election in 1930 to fill out the term of the late Senator Theodore E. Burton. He won a full term in 1932, but now faced a primary battle against former Ohio Governor George White.

On February 2, Senator Bulkley visited President Roosevelt in the White House to outline his plan. According to *The New York Times*:

The President was reported to have told the Senator that he had been thinking of a similar plan for some time, and to have told him to draft a bill. This the Senator from Ohio is now doing with the help of engineering and financial experts.

Later in the week one of the committees of “little business men” endorsed the idea of a transcontinental highway as an aid to recovery, calling attention to its value as a controllable project on which work could be concentrated in times of business recession, and relaxed in more prosperous periods.

The growing ranks of the unemployed were one reason for Senator Bulkley’s proposal. “This is a way to use many of the WPA workers which would be more valuable to the nation than some of the projects on which they have been working.”

A few days later, the *Times* reported that:

The movement for such legislation is gaining popularity among members of Congress, some of whom are searching for an appropriate form of government construction to benefit their constituents in an election year, and the plan is said to have support in the War Department, the Bureau of Public Roads, and from at least one member of the Board of Governors of the Federal Reserve System.

The *Times* added that the President’s encouragement of Senator Bulkley’s plan gave “special significance” to the superhighway talk. Senator Bulkley was confident, “after discussing the proposal with Federal highway officials,” that details of financing could be worked out for the express highways “guaranteeing the government against loss, assuring investors a fair return, and at the same time providing a ‘fill-in’ program of road building during curtailment of regular

Federal highway aid appropriations,” as the President had proposed. [Crider, John H., “\$8,000,000,000 Highway Project Wins Encouragement of Roosevelt,” *The New York Times*, February 7, 1938]

The Bulkley plan was not greeted with uniform support within the highway community. An editorial in *Engineering News-Record* stated:

A gridiron of superhighways up and down and across the United States is not an impossible thought. Highway transportation has gone a long way in its thinking in a few years, and the idea has been taken out of the hands of impractical dreamers and advanced toward sound planning by practical engineers. From this real advance it is not encouraging to turn to the flamboyant promotion exhibited in the fantastic superhighway legislation being promoted by Senator Bulkley and allegedly favored by President Roosevelt. Three east-and-west and seven north-and-south roads, twelve traffic lanes and mile-wide rights of way, a cost baldly [sic] placed at six billions, and tolls or roadside concessions to pay the cost of these are the stuff that dreams are made of. They are not the reasoned thought of engineers or transportation managers. The scheme has even less substance when considered as a means of providing immediate construction employment. Favorably as a plan for a system of future national express highways deserves to be regarded, the way of approach is not that conceived by the legislation being talked about in Washington. [Untitled editorial, *Engineering New-Record*, February 17, 1938, page 256]

Also on February 2, 1938, President Roosevelt met with BPR’s MacDonald at 4:00 p.m. During the meeting, President Roosevelt handed MacDonald a large 1935 *United States System of Highways* map showing the AASHO-approved U.S. numbered highways as red lines. The map, at approximately 50 inches by 32 inches, was the type of map that was often mounted and framed for display in BPR offices. On the map, the President drew or had drawn lines in blue showing three east-west transcontinental routes and five north-south routes. The east-west routes linked:

- New York City and Seattle;
- Washington, D.C., and San Francisco; and
- Savannah, Georgia, and Los Angeles.

The north-south routes connected:

- Boston and a point in north central Florida corresponding with Lake City;
- A point on the northern transcontinental route east of Cleveland, with Mobile, Alabama;
- Minneapolis and New Orleans;
- Great Falls, Montana, and El Paso, Texas; and
- Seattle and San Diego through the central portion of the three western States.

Because the President envisioned intercity routes that did not go into the cities, his blue lines ended before the terminal points. For example, the line to Boston ended near Springfield,

Massachusetts, the line to New Orleans ended near Port Allen, Louisiana, and the line approaching Washington ended in a junction with the north-south route in Virginia.

The President asked MacDonald to study the feasibility of constructing direct route highways in these corridors with toll financing. The study should evaluate the feasibility of excess condemnation as employed on the London-Brighton highway. The White House did not announce that the President had requested the study.

According to *America's Highways 1776-1976*:

Returning from the White House, Chief MacDonald handed the map to Mr. Fairbank and asked him to get on with the study. Thus, began the first assembly of detailed information on traffic flow on a national basis, possible only because of the rapid progress by the States on the highway planning surveys. [*America's Highways*, page 271]

[BPR eventually provided the map to the National Archives and Records Administration. The map is included among the Cartographic Records of the National Archives in College Park, Maryland (Record Group 30, Series 10, filed as "Roosevelt Map").]

(Sources vary on when President Roosevelt handed the map to MacDonald. According to the Day by Day calendar on the Web site of the Franklin D. Roosevelt Presidential Library and Museum, the President met with Senator Bulkley for 15 minutes at 11:45 a.m. on February 2, 1938, and with MacDonald that same day at 4 p.m. for an unknown amount of time (the President's next appointment was at 4:45 p.m.). The calendar does not show any other meetings between Roosevelt and MacDonald during 1937 or 1938.

<http://www.fdrlibrary.marist.edu/daybyday/>)

The idea was on the President's mind on February 7 when he met with liberal members of the House of Representatives who presented "a ten-point program calculated to offset recent business demands for repeal or modification of some Administration measures and the rejection of others now pending." The Representatives told reporters that the President had mixed reactions to the 10 points, but was responsive to the proposal to create "on a sound, permanent basis a public works program capable of absorbing all able-bodied unemployed workers in periods of business recession or depression." He wanted, they said, to work out a spending program that would include construction projects of a self-liquidating nature. The *Times* summarized their comments:

Specifically mentioned by Mr. Roosevelt as meritorious projects were toll bridges and highways, rural electrification and other potential revenue producers. In the category of projects which he is said to have regarded as falling outside his objective, were school houses and other public buildings and battleships. The latter, particularly, should not be undertaken as re-employment objectives, he said.

The President is understood to have spoken favorably of a plan sponsored by Senator Bulkley of Ohio, calling for an \$8,000,000,000 transcontinental highway which could be

worked upon during times of business depression and stopped during normal employment. The Senator's idea is that such a project should be financed by the Federal Government, but liquidated by toll charges.

In connection with his discussion of a program of capital improvements, Mr. Roosevelt mentioned a government-constructed six-lane highway outside London. He told how the British Government had condemned a right-of-way half a mile wide, had sold highway frontage for business purposes and small trade tracts behind at \$500 an acre. In seven years, according to the story, the project had returned to the government two-thirds of the initial expenditure.

Nearly all sound projects offering employment possibilities had been exhausted, the President was reported as saying. [Belair, Felix, Jr., "Roosevelt Favors Only Public Works That Pay Own Way," *The New York Times*, February 8, 1938]

On February 8, President Roosevelt met with Mayors Edward J. Kelly of Chicago, Richard W. Reading of Detroit, Harold H. Burton of Cleveland, and B. F. Dickman of St. Louis and Paul Better of the U.S. Conference of Mayors. They urged him to seek an additional \$400 million to continue aid for those employed by the WPA. After the meeting, the Mayors told reporters the President discussed "the desirability of working out a long-range program of self-liquidating public works . . ." The *Times* reported:

The President was reported after today's conference to have spoken enthusiastically of a transcontinental highway project calling for the construction over many years of two East-West highways and another traversing the country from North to South. Workers on the projects might be required to send home a certain amount of their earnings, as required under the CCC [Civilian Conservation Corps] program.

Mr. Roosevelt is understood to have explained to the Mayors the technicalities of the "excess condemnation" method, which he outlined to the members of Congress. In this way the government might condemn a half-mile wide right of way on either side of the proposed highways with the privilege of selling frontage to business enterprises and the lots in the rear to home owners or farmers.

In his regular Tuesday press conference that afternoon, the President suggested that States and municipalities pay more attention to the possibilities offered by self-liquidating projects. "It was apparent, however, that in discussing a long-range program of self-liquidating public works, the President has no intention of taking care of the immediate problem of relief in that manner." [Belair, Jr., Felix, "President to Ask More Relief Funds before Week Ends," *The New York Times*, February 9, 1938]

With the President again endorsing self-liquidating public works projects, Senator Bulkley, according to *The Washington Post*, "rushed drafts of his superhighway bill for early introduction." Senator F. Ryan Duffy (D-Wi.) endorsed the plan even before it was submitted. The plan was "not only of practical value from the standpoints of progress and national defense, but of inestimable worth in increasing employment and in giving much needed support to the

capital goods industries.” [“Bulkley Rushes Superhighway Plan’s Drafts,” *The Washington Post*, February 9, 1938]

Senator Bulkley introduced his bill, S. 3428, on February 9, 1938. The bill, he said, would help relieve unemployment, aid national defense, stimulate business recovery, and promote public safety. The bill provided for four to twelve lanes within the 300-foot right-of-way:

In constructing each such highway[,] appropriate provision shall be made for neutral strips wherever necessary to separate vehicles traveling in one direction from those traveling in the opposite direction; for the separation of buses and other passenger-carrying vehicles from trucks and other commercial vehicles; for the elimination of curves wherever practicable; for the elimination of all level grade crossings and the construction of an over-pass or underpass at each point of intersection of such highway with any other highway or line of communication.

The bill was referred to the Senate Committee on Banking and Currency.

Representative Henry B. Steagall (D-Al.), chairman of the House Committee on Banking and Currency, introduced H.R. 9478 on February 14. The bill would set up a subsidiary of the RFC to sell \$2 billion in bonds annually for 4 years to construct three transcontinental and several north-south connecting superhighways, each with a 300-foot right-of-way.

Senator Augustine Lonergan (D-Ct.) also endorsed superhighways on February 14. He was a longtime supporter who was particularly interested in highway safety. According to *The Times*, he had submitted a plan to BPR’s MacDonald in late 1937 for construction of a system of superhighways, financed by bonds, with the debt to be retired by toll collection:

In answer Mr. MacDonald said that the problem was pressing, that the plan in some measure was in agreement with the views of the bureau and that between thickly congested areas where existing highways were already crowded, such a plan might be feasible.

MacDonald also informed the Senator about the highway surveys underway. He quoted from BPR’s latest annual report, dated September 15, 1937, explaining that the data already collected made clear that:

The large volumes of traffic that now flow between densely populated localities have created a demand for wide multiple-lane highways, built according to the highest standard of grade and alignment; with opposing traffic separated by a center parkway, by-passing all cities, with structures separating streams of traffic at all highway and rail crossings, and with access to side roads permitted only at carefully selected points. Such highways offer great savings in time and in vehicle-operating costs to commercial vehicles, and to drivers of private vehicles they offer freedom from dangers of the highway and from other vehicles as nearly complete as it is possible to attain.

The report added that “it is not readily apparent how any large mileage of such highways might be financed.” It continued:

Since the benefits will accrue to the motor user it may be said that the cost should be paid by further motor-vehicle imposts. However motor-vehicle users are already heavily taxed and there are many motorists who would find little opportunity to use such highways. It may be that the most practicable way to obtain such improvements is through a form of payment that will be directly proportional to the amount of use—that is, through the payment of tolls.

Large volumes of traffic such as flow between thickly populated regions would be required to support the high cost; consequently the field of such special development will be definitely limited by the presence of a sufficient traffic volume. [“Wide System of Toll Highways Urged,” *The New York Times*, December 12, 1937; Report of the Chief of the Bureau of Public Roads, U.S. Department of Agriculture, September 15, 1937, page 4]

Now, on February 14, Senator Lonergan said the plan to undertake a nationwide superhighway program was a “dream” project. Many short toll roads were needed, he said, to take traffic around cities and grade crossings. These short toll roads would link to public roads of boulevard width that comply with safety requirements. In about 20 years, the country would have a superhighway system. He referred to his proposal to BPR. The planning surveys, he pointed out, were nearly complete:

The Bureau of Public Roads survey has convinced me that we can lay out a system of roads which, by improved direction, by avoiding cities and by avoiding grade crossings, will give us all the superhighway accommodations we will need at a time when they are needed.

At present there is definite indication that a directional highway from Boston to Washington, absorbing the Merritt Parkway in Connecticut, avoiding New York, Philadelphia and Baltimore, and absorbing parts of Route 1, with tolls applicable only to certain units, would be economically justified.

The bill he intended to introduce would establish an office in BPR to build the transcontinental “safety super-highways.” [Griffin, Gerard, “Super-Road Idea Called ‘A Dream,’” *The Baltimore Sun*, February 15, 1938; “‘Safety Super Highways’ to Cross Country Will be Asked by Sen. Lonergan in Bill,” *The Washington Post*, February 15, 1938]

At the same time, Representative Snyder drew attention to his 1937 bill calling for a system of superhighways. He said that his previous bills grew out of his study of the growth of nations, concluding:

The transportation facilities that were satisfactory 50 years ago for the transportation of our commodities at that time surely cannot be considered adequate today.

He referred to the hearing on his bill and to the many letters of support he had received as a result. He also discussed the benefits derived from the job creation potential of his plan:

Mr. Speaker, this would not only be a Nation-building program but it would be a citizenship-building program. Taking these millions of men away from the cities where under present conditions they will never be reemployed, would surely be a worth-while step toward adjusting our social and economic problems.

Mr. Speaker, as long as we have hundreds of thousands of able-bodied men loafing around our street corners and in our bowling alleys, poolrooms, barrooms, and gambling joints, just so long will we be slowly but surely building a citizenship that will eventually be too flabby and weak to perpetuate our form of government.

Several Representatives examined the map on display and wondered why his routes skipped their district. Asked, for example, why the route skipped U.S. 40's route through Illinois and Indiana, Representative Snyder explained "that my bill calls for a road that does not go through a city, if it can be avoided.

Representative Cartwright referred to Representative Snyder and Representative Randolph as "pioneers in advocating consideration of the desirability of building superhighways":

Unquestionably, there is a growing interest in superhighways. In the beginning more people considered any proposal of this kind as just a beautiful dream. But the sentiment for superhighways has been steadily increasing, and I think will continue to increase. Those who have been giving the most thought to our highway problems believe that not only are the so-called superhighways definitely in the picture for the future but that the time is here when we should begin to plan them, especially between the large metropolitan centers where there are large intercity movements of traffic.

He was glad to cooperate with Representatives Snyder and Randolph, adding, "Today I had lunch with the distinguished Senator from Ohio [Mr. Bulkley], who is the author of a bill recently introduced in the Senate proposing to build a national system of superhighways." He thought it "not unlikely" the House Committee on Roads would soon report a bill "providing for some definite study and preliminary planning along this line." [*Congressional Record-House*, February 14, 1938, page 1906-1911]

The Baltimore Sun reported:

Mr. Snyder illustrated his remarks to the House with a large map showing the proposed routes of the highways. Many Congressmen who inspected the map lost interest, however, when they saw the routes did not go through their home districts. They also observed that Uniontown, Pa., which is in Mr. Snyder's district, is an intersection point of two routes. [Griffin, Gerard, "Super-Road Idea Called 'A Dream,'" *The Baltimore Sun*, February 15, 1938]

The *Times* reported that during his Tuesday press conference on February 15, the President again “gave enthusiastic endorsement today [to] the method of excess condemnation as a means of making possible large-scale self-liquidating public works projects, such as transcontinental highways” He explained to the reporters that beyond the land needed for the roadway, officials could sell the frontage to businesses, the land beyond for farming or residential purposes. The system, he said, had been used in England for years. Further:

The arrangement which Mr. Roosevelt said he was considering reminded him of some of the equities he said had been brought about by chance and by engineers in Columbia County north of his Hyde Park estate. To illustrate, he cited the experience of State engineers in relocating a section of road in the county to eliminate some of the turns.

To carry out their project it was necessary to cut a 100-foot strip through a farm which, until then, had one frontage on a dirt country road, the President explained. The owner of the farm had purchased it for \$4,000, but, according to the story, he charged the State \$2,000 for the 100-foot strip.

Then, when a new highway divided the farm into three separate pieces of land, the farmer sold each strip for \$2,000, each now having a frontage on a road and two strips having frontage on a new State concrete highway. The result was that the owner had disposed of his entire property for \$8,000, when his investment was only \$4,000.

Instead of allowing such undue enrichment, excess condemnation ensured the State or Federal Government would buy property for exactly what it was worth, then use the increased value to pay the bond issue and pocket the remainder.

The President declined to comment on any of the pending bills. [“Roosevelt Favors Self-Paying Roads,” *The New York Times*, February 16, 1938]

According to the Associated Press, the President’s interest prompted a Senate Committee on Banking and Currency to order hearings, to begin on February 23, on the bill by Senator Bulkley, who was a member of the committee. “The Chief Executive disclosed at his press conference yesterday that he wants to find out whether the roads, partly through toll charges, could pay for themselves.” In particular, he wanted to know if “constructing a national system of super-highways [could] put men to work without creating further heavy relief expenditures.” [Associated Press, “President Scans Super-Road Plan,” *The Evening Star*, February 16, 1938]

Pressure for superhighways continued to grow. When the Association of Highway Officials of the North Atlantic States met at the Hotel Ambassador in Atlantic City on February 17, the chief engineer of the Massachusetts Department of Public Works, G. H. Delano, discussed “Super-Highways and Primary Roads.” He began with what he called the commonly accepted definition of “super-highway,” namely: “any highway having a physical separation between opposing streams of traffic, constructed to modern standards and with highway grade separations at least at the more important intersections.” He expected the definition to change in a few years “and that no road which is not a freeway or at least that has some restrictions on access by abutters will be considered a super-highway.”

The primary purpose of the superhighway was “to carry safely and with a minimum of delay large volumes of traffic from one place to another.” The need most often arises on heavily overloaded roads between cities. The “self-evident solution” is building an adequate highway between them “with a dumping point at each end where the traffic is turned into existing city streets.” This was not the “proper solution,” however, because “improvement in an existing highway creates its own traffic in addition to the traffic using former roads.” As a result, it would simply transfer the problem of congestion “from the open country to the urban point at which the super-highway ends,” leaving behind “a far more serious problem.”

Geography would determine the solution, “but the proper solution will be in accord with the principle that a super-highway is not complete if it terminates at a population center.” He added:

It must go through or around that center and out the other side so there will be no one place where traffic is dumped into facilities unable to handle it.

Planners also must keep in mind “long-time change in the distribution of population and location of industry that may be due to the construction of the highway.” Engineers considered additional traffic, “but do we always think of the development that will come, either for good or ill, from the fact of the new highway?” As happened during the era of railroad expansion, “one area may be adversely affected by the construction of an adequate highway in another area.” For example, engineers should consider how new highways will affect outlying areas, decentralization of population, and shifts in industrial plants:

The railroads and rapid transit lines have greatly expanded and accelerated the growth of suburbs within reach of cities and served by those facilities. In some cases the cities themselves have remained stationary or have even lost population while the suburbs have been growing. Super-highways through these areas leading into and through the cities will certainly accelerate further the suburban growth and may cause it to proceed along different lines.

Delano added that building freeways on existing roads “seems out of the question . . . because of the rights of access already held by the abutting property.” Building freeway lanes within local lanes might address the problem, but this “adds considerably to both the cost of construction and the cost of property damages.” In general, he said, “The cost of a freeway as compared with the cost of the more usual super-highway type we have been discussing is undoubtedly much more.”

In acquiring land for a highway on new location, the enhanced value of the access is an “offsetting factor” in the market value of the land:

If a freeway is built there is no such offsetting factor and, unless the location is such that the road follows property lines, the freeway will destroy all access to any public highway [for] much of the land through which it passes, unless parallel service roads or farm underpasses are constructed.

In spite of the increased cost, “we are jeopardizing the investment . . . in super-highways unless where possible they are laid out and constructed as freeways.” Delano hoped to secure

legislation in Massachusetts needed to secure restricted-access right-of-way for freeway construction. [*Proceedings of the Fourteenth Annual Convention, Association of Highway Officials of the North Atlantic States, Hotel Ambassador, February 16, 17, 19, 1938, pages 69-73*]

The approximately 1,500 delegates adopted a resolution stating that since “construction of arterial trans-continental highways is to be immediately considered by the Congress,” the association believed that the first link should be located between Boston and Washington, D.C., “through the area of greatest traffic concentration in the Nation, which includes twenty-nine percent of the population of the United States, and which pays a proportional percentage of the national taxes and which suffers a proportional part of the national unemployment.” The resolution recommended that BPR supervise the planning and construction of this and other such highways. [Proceedings, page 259]

John H. Crider, writing in the *Times* about “Tomorrow’s Roads,” began his article:

Plans for a national superhighway system, reaching into every part of the country and connecting with the proposed Pan-American Highway penetrating the Latin-American countries, have received such impetus in recent weeks that national planners are now focusing their attention on the project.

Based on the President’s numerous recent comments in support of superhighways, Crider wrote that “speculative minds turned immediately to visualizing what the scheme proposed by the Ohio Senator would mean to the country.” He described the Bulkley plan:

The routes would be as nearly straight as modern engineering can achieve. All crossings at grade would be eliminated.

From the standpoint of the modern high-powered automobile, which has been under fire in recent years by critics who say the motor industry has built more speed into cars than our antiquated highway system will justify from the safety point of view, the superhighways will give practicality to the fast-riding qualities of the modern automobile.

The plan, he explained, also called for a Federal police force patrolling the roads to enforce nationwide traffic rules of operation. Toll collection would have an additional benefit beyond helping pay for the facilities:

Intoxicated persons could be barred upon entering. So could motorists who had faulty license credentials or bad driving records. Again, by keeping track of each driver using the highways the national police authorities would be on the way to establishing the first set of national statistics on driving ability.

The primary purpose of the Bulkley plan, Crider said, was economic recovery. It “would stimulate production in the heavy industries, give the railroads a large volume of additional freight to carry, and give the unemployed more useful work, from a national standpoint, than

some of the things they have been doing under WPA.” [Crider, John H., “Tomorrow’s Roads,” *The New York Times*, February 20, 1938]

On February 20, 1938, *The Sunday Star*, in Washington, also covered the burst of interest in superhighways. Accompanied by an illustration of Representative Snyder’s map of superhighways, the article began:

Congress has become suddenly super-highway conscious.

For a number of years sporadic attempts have been made in House or Senate to start a network of transcontinental boulevards, separated from all grade crossings, avoiding city congestion and, in most cases, to be self-liquidating through toll charges. Until recently, however, these proposals were like many other bills that are introduced, considered and then filed away for future reference.

When business began to slip backward several months ago lawmakers and economists began to look about for new ways to prime the pump, and, along with other proposals, the first month of the present session brought forth a crop of new super-highway bills.

The article summarized President Roosevelt’s unsuccessful effort to halt further Federal-aid authorizations:

Nevertheless, the President’s appeal for curtailment of direct grants stimulated interest in the idea of building self-liquidating highways from ocean to ocean and from the northern boundary to the Gulf ports. More recently the super-highway movement gained impetus on the Hill when the President, while not definitely committing himself, indicated an interest in its possibility, especially the excess-condemnation method of development.

After summarizing the Bulkley, Longergan, Snyder, and other bills, the article concluded:

It is too early to tell whether the super-highway idea will win approval of this Congress. The result is likely to depend on how much backing administration supporters give it and whether any concerted opposition develops when hearings are held on the various plans. But whatever happens to the superhighway proposals, there are strong indications Congress will not adjourn without providing both current appropriations and future authorizations to keep the regular Federal-aid-to-the-States highway program going. [O’Leary, J. A., “Pursuing Recovery Along Highways,” *The Sunday Star*, February 20, 1938]

On February 24, MacDonald testified before the subcommittee of the Senate Banking and Currency Committee considering the Bulkley bill. He agreed that the time had come to study construction of a superhighway system, although he doubted that tolls would be sufficient to pay for the network. He indicated that experience with tolls in other countries had been unsatisfactory. He said Italy had abandoned the idea. In the United States, modern experience with tolls was limited. “All I can say is that people dislike to pay toll charges anywhere.”

He saw right-of-way acquisition as a “tremendous problem It is a business in itself and should not be left to the State highway departments or the Bureau of Public Roads.” He thought a separate agency should be created to handle acquisition. [Associated Press, “Time Believed Ripe for Superhighway,” *The Baltimore Sun*, February 25, 1938; a transcript of the hearing could not be located]

On February 26, the *Times* carried a letter to the editor from Frank Parker Stockbridge of Ponte Vedra Beach, Florida, about excess condemnation as suggested by the President. Stockbridge pointed out that it is “in general use in Europe. That it has not become a general practice here can be attributed to the political influence of private landowners.” He recalled:

The most notable example of the usefulness of the excess condemnation system of which I have knowledge was when the London County Council undertook, about 1910, to build a broad highway connecting the Strand with High Holborn, cutting through a thickly built section of old London. My figures may not be precise, but as I recall it, the authorities condemned a strip 1,000 feet wide to build a roadway 100 feet wide. The new frontage on both sides of the new road, Kingsway, was so greatly enhanced in value that its resale produced enough revenue to pay the entire cost of the improvement.

He added that Mussolini had employed the same method in carrying out his plan for revitalizing Rome.

He did not consider excess condemnation to be an infringement on the rights of property owners:

It simply takes over for the State the unearned increment resulting from the State’s own activities, an increment which would not have accrued but for the work done by the State. If the value of back lots is honestly appraised at their real worth at the time of condemnation, the method provides a way of making a great variety of physical improvements at literally no cost to the taxpayers.

However, he understood that the concept was not easily adopted:

I appreciate the fact that in a political system such as ours, based largely on cash returns to the politicians in power in consideration of their approval of public works to be paid out of taxes, it is not easy to visualize an honest administration of the excess condemnation

I have lived too long to expect the millennium to arrive in my time, hence I have no real expectation that, even if the excess condemnation plan is adopted for the grandiose super-highway scheme, ways will not be found by the politicians who will control the job to saddle the cost on the taxpayers. [Stockbridge, Frank Parker, “As to Excess Condemnation,” Letters to the Times, *The New York Times*, February 26, 1938]

(On December 15, 1936, the Highway Committee of the London County Council released a report on the results of excess condemnation on the Kingsway project that resulted in the thoroughfares of Kingsway and Aldwyck. The thoroughfares were 100 feet on a right-of-way of

about three-quarters of a mile. About 600 properties of slum land, including 51 public-houses and beer-houses, were acquired totaling about 28 acres. The roadway took up about 12¼ acres, leaving about 15¾ acres of excess land. As of March 1938, annual rent on the excess right-of-way amounted to about £143,000, with outstanding debts of £8,418,170. Subtracting the value of the leased sites of £6,009,931, the difference of £2,408,239 represented the net cost to “ratepayers” (taxpayers). The Highway Committee estimated that by 1987-1988, with rental income increasing to £146,000, the debt would finally be retired.

(Based on the cost of the Kingsway project, including land acquisition, the report found that excess condemnation had resulted in useful transportation facilities but the project was not self-liquidating:

Taking the figures as they stand, they show that a considerable charge has been and will continue to be imposed annually upon two generations of ratepayers, for the ultimate financial benefit of their successors, but that this benefit will not commence to accrue until twenty years’ time from now. If interest on deficits were allowed for, there would always be an annual deficit, unless the rents ultimately greatly exceeded £146,000.

This report deals only with the financial aspect of the improvement, but, in assessing its value to the community, regard must also be had to the great increases in ratable value and in the value of property which have accrued and to the advantages to traffic from the improvement. [“London’s Kingsway Improvement,” *The American City*, June 1937, page 92]

(According to Professor Peter Hall’s history of urban planning, Mussolini saw planning as essential to restoring the glory of Rome:

Mussolini gave his instructions to the 1929 Congress of the Housing and Town Planning Federation in Rome:

My ideas are clear. My orders are precise. Within five years, Rome must appear marvelous to all the people of the world – vast, orderly, powerful, as in the time of the empire of Augustus . . . you will create vast spaces around the Theater of Marcellus, the Capitoline Hill, and the Pantheon. All that has grown around them in the centuries of decadence must disappear.

In fact, the new plan—promulgated in 1931—was internally contradictory: the street widenings, the focus on the Piazza Venezia as ceremonial square, would have covered up or destroyed imperial Rome rather than revealing it. But it did not matter; despite sweeping powers, despite generous injections of money, despite the *imprimatur* of Il Duce himself, life in Rome continued in the old sweet way. When the sweeping lines of the Master Plan were finally translated into detailed plans, broad boulevards and panoramic squares had mysteriously turned into building lots; old fashioned chaos, compromise, and corruption saved Rome from the depredations of the master builder. [Hall, Peter, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Basil Blackwell, 1990, page 197])

February 1938 ended with the release of a letter from Under Secretary of Agriculture M. L. Wilson to Senator McKellar objecting to the Bulkley bill. Wilson stated that a transcontinental system would undo the present system of roads. He did not see a need for a commission to study the idea in view of the highway surveys BPR and the State highway agencies had conducted:

If there is need for special transcontinental highways, such as proposed by S. 3211, for special highways in any particular section of the country, or for a higher type of highway facility along the northeastern seaboard, which appears to us most likely to be needed, such need will be clearly indicated by the traffic and other data which these surveys will provide without the additional expenses which would be incurred by setting up a new commission which could only duplicate the work already being done.

Further, Wilson said, the Acting Director of the Bureau of the Budget had informed the Agriculture Department, on February 19, 1938, that, "The legislation proposed by S. 3211 would not be in accord with the program of the President."

The President's uncertainty was reflected in a newspaper column, quoted earlier, by Joseph Alsop, a Washington insider, and Robert Kintner, a former White House correspondent. As the President tried to determine how best to revive the economy, the columnists reported that the internal debate came to a crisis point between February 10 and 17:

During those seven days in the White House and at a long series of meetings of New Deal fiscal experts and economists, the argument raged higher and higher between the budget balancers and spenders.

The spenders were confident that with the President finally convinced of the depression's depth, triumph would be theirs. Chairman [Marriner Stoddard] Eccles [of the Board of Governors of the Federal Reserve] hammered eternally for the \$1,000,000,000 sweetening of the economic pot which he advocates. Others pleaded for still more extreme steps. There was even serious talk, by responsible members of the administration, of such wild schemes as that of Senator Robert J. Bulkley of Ohio for an \$8,000,000,000 "self-liquidating" system of transcontinental highways.

The most discussed expedient was the \$1,000,000,000 W.P.A. housing program, already reported here as the favorite of the spenders.

The columnists added that "the budget balancers thought themselves lucky that the transcontinental highway plan had been studied and found impractical three years ago" Further, "the flaws found in the idea were easily recalled."

The columnists added, "It is not generally understood how completely the President's mind was made up last fall to balance the budget, however unpleasant budget balancing might prove." His approval of the Secretary's November 1937 speech in New York City demonstrated the commitment. "The ground, of course, was cut from under the President by the collapse of the New Deal business boom":

As one close adviser described his feelings, such a reversion reminds him too much of a man who has got his car almost to the brow of a steep hill and then, just because the engine stalls for a moment, lets go [of] the brakes, slips back to the bottom, and starts all the way up again.

Because of the presidential distaste for spending, the budget balancers won. And all the meetings, all the talk and advice of the time of crisis produced only four minor steps—the supplementary relief appropriation, the abandonment of gold sterilization, the final signature of the farm bill, and the White House lecture on prices.

For the present, such budget balancers as Secretary Morgenthau must, one suspects, have their fingers crossed. The minor steps are expected to provide the stimulus to business which the spenders would have offered in a more lavish fashion. They may do so.

In the fall, however, another policy crisis is sure to come. At present, the President is determined to wait and see until the spring is over. He has been promised that there will be a spring upturn. He has been convinced that, with the extra stimuli already mentioned, the spring upturn will become a healthy recovery. But if a spring upturn should fail to materialize, the whole problem will have to be reconsidered. And then the betting will be 100 to 1 on the spenders. [Alsop, Joseph, and Kintner, Robert, "Roosevelt Sticks by Budget Balance Advisers Despite Pressure for Aid Spending," *The Capital Parade* column, *The Evening Star*, March 4, 1938, italics in original]

Backlash

On March 2, Senator McKellar took to the Senate floor to discuss referral of the Bulkley bill to the Committee on Banking and Currency instead of the Committee on Post Offices and Post Roads:

Every year innumerable road bills have been introduced, every one of which has been referred to the Committee on Post Offices and Post Roads. So far as I have been able to ascertain, not one of them has been referred to the Committee on Banking and Currency, or to any other committee than the Committee on Post Offices and Post Roads.

He referred to his own bill, introduced on January 10, on formulation of a plan for construction of certain highways:

I did not ask that the bill introduced by me should be referred to the Committee on Post Offices and Post Roads. It was not necessary for me to do so. The bill went to that committee as a matter of course.

He read from Under Secretary Wilson's letter, highlighting the point about undermining the present system of roads. Senator McKellar observed, "Those were the very questions which arose in my mind before introducing the bill which I introduced. Therefore, it seemed to me that a commission ought to be established to determine whether or not these superroads should be built."

Senator William E. Borah (R-Id.) pointed out that if the roads were to be built, “the question of national finance in connection with them will become a very vital matter.” Senator McKellar agreed, but said that he was sure Senator Borah “would not want first to authorize the building of the roads as toll roads, and afterward have the Government finish them as free roads.” He pointed out Italy’s experience of beginning construction of toll roads, then turning them into toll-free roads. Similarly, the only other country building superhighways, Germany, was building them without tolls:

As every Senator knows, I think without a single exception, if we were to build a system of toll roads, innumerable bills would be immediately introduced to declare them free roads. Not only that, but it seems to me that whatever we do ought to be done upon careful examination by men learned in the art of road building, by engineers, and that a report should be made by them before we undertake to embark upon an \$8,000,000,000 appropriation, or authorize an appropriation of \$8,000,000,000 for roads

What in the world the Committee on Banking and Currency has to do with such a project I cannot imagine, except to finance it. That would be quite an undertaking.

Whatever the merits of the bills, Senator McKellar said, “I can see no possible reason for referring the bill to the Banking and Currency Committee.” He added that if the bill were to be referred to a committee other than the Committee on Post Offices and Post Roads, it should go to the Committee on Finance. “I do not know what the Committee on Banking and Currency would have to do with it.”

Senator Bulkley, who chaired the subcommittee considering his bill, defended the referral, saying of his bill:

Senate bill 3428 is in no sense primarily a road bill; it is a bill for financing public works. It is not the purpose of the bill to authorize the vast expenditure of sums which would not otherwise be spent. It is rather to relieve unemployment, to create spending in a way to reduce the charges on the W.P.A., and provide that public works shall be done in a manner that will give the Government and the people in the country a real value for the money that is spent.

Senator Charles L. McNary (R-Or.) asked whether the bill proposed that the Federal Government advance the money for construction of the superhighway network. Senator Bulkley replied:

That is a very important point in the structure of the bill, and that is the very point which makes it necessary under the precedents to refer the bill to the Committee on Banking and Currency.

The bill provides for the set-up of a corporation, the entire stock to be owned by the United States Government, and the corporation is to be authorized to proceed with the construction of roads, to sell its bonds, and to charge tolls and deal in excess property to finance the operation. The Government would guarantee the bonds.

He added that his bill did not interfere with the work of the Committee on Post Offices and Post Roads or the Federal-aid highway program:

My bill is not intended to be a substitute for any part of that program, or in any way to interfere with it. My bill provides for a superhighway system financed by a Government corporation, created under the same jurisdiction and in the same general outline as provided in bills which the Banking and Currency Committee has reported several times before, which no other committee has ever had or claimed jurisdiction.

The detailed debate among several Senators continued, but other Senators on the floor (76 Senators answered a quorum call) became impatient with the repetitive and tedious arguments. “Vote!” several said. The presiding officer put Senator McKellar’s motion to a vote and it was approved, 38 yeas and 36 nays. [Construction of Superhighways—Reference of Bill, *Congressional Record-Senate*, March 2, 1938, pages 2675-2682]

The Committee on Post Offices and Post Roads now had jurisdiction over the Bulkley bill. A contemporary source reported that following the transfer of jurisdiction, the Bulkley bill “was apparently removed from any possibility of immediate action.” [Wooton, Paul, “Washington Highlights,” *Engineering News-Record*, March 10, 1938] Professor Seely put it this way: the Committee on Post Offices and Post Roads “promptly buried it by unanimous vote.” [Seely, page 163]

The March issue of *Better Roads* began a dialogue on superhighways. It contained an editorial on “Transcontinental Superhighways: Traffic Need or Fairy Tale?” The attention focused on the Bulkley bill, the editorial stated, would be worthwhile if such plans were subjected “to the kind of scrutiny that will determine whether they have some relation to actual highway needs or, instead, belong in a kind of super-roadbuilder’s after-dinner dreamland. The need for continued expansion of the highway network was “unquestioned.” However, the statewide highway planning surveys demonstrated that most highway movements were very short, with “the great majority of all trips on rural highways . . . within a limit of 30 miles.” Transcontinental traffic is not so much a stream as “a trickle”:

Consideration of this evidence suggests that plans for the creation of elaborate transcontinental superhighways should also incorporate supplementary plans for the creation of traffic to use them.

If, as advocates claimed, the primary purpose was to create jobs, “it can better be sought in a public-works enterprise for which there is a demonstrated need.” [“Transcontinental Superhighways: Traffic Need or Fairy Tale?” *Better Roads*, March 1938, page 16]

AAA’s Thomas P. Henry continued the *Better Roads* assault in a May 1938 contributed editorial that proclaimed in its title: “Toll Superhighways Are Incompatible with Sound Road Policy.” It began:

It is to the credit of congressional road leaders that proposals for a national system of toll superhighways are not being given serious attention.

Proposals to “gridiron the country with toll roads—not justified by traffic needs—are at variance with all sound highway-building policies.” Having proceeded to develop the highway network in an orderly fashion, the country should not “turn back to the toll-gates of stagecoach days.”

Sponsors claimed benefits such as jobs, industrial recovery, relief of congestion, and aid to national defense. “But they do not take account of the fact that years would be required to acquire right-of-way and plan such highways.” Such roads are “beyond the ability of motorists to finance” and they are contrary to “the American principle of free highways.”

In justifying this proposed “fantastical system of multiple-lane highways, even heated to prevent freezing,” advocates often referred to the superhighways in Europe. They were, Henry conceded, “among the finest highways in the world, but the toll idea has proved unsound, despite the fact that there is not the great system of competing free roads we have in the United States.” Italy, for example, had “a mediocre success” with its toll *autostrade* at first, “but the moment Italy undertook the construction of a system of national free roads, the *autostrade* immediately went into decline and were converted to toll-free operation. Similarly, Germany considered toll financing “but this was abandoned as impractical.”

Henry quoted BPR at length on objections to toll superhighways:

The disadvantages of toll roads are: antagonistic public opinion, which traditionally regards the roads as free means of communication; additional expense of financing immediate huge expenditures; additional expense of collecting tolls (a “non-productive” activity, which in the case of toll bridges has been estimated to absorb from 15 to 27 per cent of the total amount of tolls collected); impossibility of giving monopolistic guarantees, since paralleling free roads must be maintained for use by the general public, and consequent uncertainty of traffic volume; finally, the inherent dilemma in enterprises of this kind that presents on the one hand the necessity of building at heavy expense a superhighway capable of attracting large volumes of traffic from the free thoroughfares, and on the other the prime requirement of a low toll rate.

Henry concluded that highway development would “make the best progress by adherence to sound established policies, guided by the comprehensive data for advance planning now at our disposal.” [Henry, Thomas P., “Toll Superhighways Are Incompatible With Sound Road Policy,” *Better Roads*, May 1938]

The May issue also contained a letter from Steiner responding to the editorial in the previous issue. He appreciated, he said, constructive criticism:

All great enterprises have had to go through the same ordeals and have invariably been considered nightmares and called fantastic; but when the public learned and realized the need of the so-called fantastic ideas, they became realities, just as our superhighway plans will soon outride and overcome all the visionary and unsound objections.

His brochure, he said, on “The Highway of Tomorrow Made Possible by the Ideal of Today” answered all the objections. But he emphasized several points. His proposal “has nothing to do

with present road plans.” It would be “built, operated and maintained by a private corporation, entirely independent of the states and their highway systems.” Even with the toll charges, long-distance travel could “be made with considerably less expense than on ordinary roads.” In fact, the value would encourage more such travel with reductions in time, expense, and fatalities and injuries. His financing plan meant that the plan would be accomplished “without the investment of a single penny by the government.” Motorists will continue paying highway user taxes, and the superhighway corporation will pay taxes to the States and counties:

This can all be done, we believe, without any of the gasoline tax, which can all go to the states to improve their ordinary roads and build farm-to-market roads, and also build feeders into our superhighway system.

The editor responded in a short paragraph:

We do not believe that a proposed system of toll superhighways can be discussed except in relation to the future of our existing highway system. We feel that the toll principle will not have widespread approval; and that where elaborate express highways are required—and there are places where that need appears to have been demonstrated—they must grow out of our existing state primary systems in a logical manner.—The Editor. [Steiner, T. E., “Toll Superhighways,” Letters to the Editor, *Better Roads*, May 1938, page 33]

On March 20, 1938, *The Washington Post* carried an article by Dr. George Gallup, Director, American Institute of Public Opinion. The headline stretched across the top of page B4:

U.S. Motorists Express Their Views on Toll Highways in Survey

The article, dated March 19, began:

If the Administration turns to pump-priming again in an effort to encourage business, the proposal to build a network of high-speed toll highways across the United States is certain to receive much consideration.

President Roosevelt gave the idea a boost last month, and sponsors of specific legislation, like Senator Robert J. Bulkley, of Ohio, say that it would relieve unemployment, stimulate business recovery and increase highway safety at the same time. Best of all, sponsors contend, toll highways would go a long way toward paying for themselves eventually.

These are potent arguments at a time when unemployment is still increasing and when business continues in a slump.

One question that nobody in Congress can answer, however, is this one: How many motorists would be likely to use the proposed highways if they had to pay tolls of from half a cent to a cent a mile?

The Gallup Poll found:

1. The typical United States motorist estimates that he drove his car 9,000 miles in 1937 and that his longest round-trip journey was one of 500 miles.
2. About one car owner in four says he would have paid a toll of a cent a mile for the use of an express highway on his long-distance trip, if the highway had been available. Since there are about 20,000,000 passenger car owners in the United States, this figure means that about 5,000,000 owners would be favorably disposed toward toll highways.
3. If tolls were set at one-half cent a mile, instead of a cent, about two motorists in five say they would have used the special highways.

Dr. Gallup claimed that his poll was the first attempt to gauge public attitudes on toll roads. However, “the study involves no assurance that car owners would actually do as they say.” He added that, “many motorists who would be willing to pay tolls happen to live far off the probable lanes.” He continued:

All that can be safely estimated about the public attitude today is that about a third of all motorists in reach of the toll roads think they would use them on occasion.

Dr. Gallup summarized:

Today’s survey shows that the greatest justification for highway building, from a traffic point of view, would be between Boston and Washington on a North-South axis and between New York and Chicago on an East-West axis. These lanes would draw from ten States which account for about half of the passenger cars in the United States—New York, Illinois, Michigan, Pennsylvania, Ohio, Indiana, Massachusetts, Connecticut, New Jersey, and Maryland, including the District of Columbia. Car owners in these States prove to be slightly more willing to pay tolls, furthermore, than the average U.S. motorist.

(Beginning with the Pennsylvania Turnpike, the first segment of which opened in October 1940, each of those States would open turnpikes in coming decades, with the exception of Michigan and the District of Columbia.)

Further, Dr. Gallup found that increased safety was the most common argument for a superhighway network:

The largest number of car owners voting “yes” in today’s survey say that safety considerations alone would make them use toll highways.

Other comments, in the order of their frequency, are:

“They would save time.”

“They would take the strain out of long trips.”

“They would make night driving safer.”

Dr. Gallup mentioned that the motorists' point of view was not necessarily reflected in Congress. Senator Bulkley's bill, the article pointed out, was "now at a standstill." He added, "In the end the decision rests with Administration policy." [Gallup, George, "U.S. Motorists Express Their Views on Toll Highways in Survey," *The Washington Post*, March 20, 1938]

(A companion article reported that:

Across the United States today there is widespread sentiment for restricting the use of highways by large freight trucks Although the 48 States now regulate the use of their highways by trucks, many proposals have been discussed in the State Legislatures to further limit the size of trucks and the use of State highways in general. Nobody knows how far these proposals will get, but today's Institute survey shows that car owners are two to one in favor of rigid restrictions.

Some of the major objections to the present handling of truck traffic, the survey shows, are impediment of passenger traffic, the damage to road surfaces and the use of over-size vehicles, trailers and "double hook-ups."

(Among car owners, 66 percent favored restrictions, while 63 percent of those who did not own cars also favored restrictions. ["66% Would Restrict Highway Freighters," *The Washington Post*, March 20, 1938])

Mr. MacDonald's Views

Through the 1930s, Thomas H. MacDonald's views were consistent with the stage philosophy adopted at the start of his national career. Early in the decade, he was dismissive of proposals for one transcontinental superhighway and networks of such roads. By the end of the decade, his resistance was declining, as reflected in his February 24 testimony.

On February 13, 1937, Congressman James F. O'Connor (D-Mt.) wrote WPA Administrator Hopkins to suggest Federal construction of two toll transcontinental highways, 100 feet wide, with a wall in the center to separate traffic moving in opposite directions. One would start "somewhere near New York City, touching Chicago, then on to Portland and San Francisco." The other would connect Washington and Los Angeles via St. Louis. Once these roads were underway, at least four north-south routes should be developed:

By charging toll enough revenue should be raised to pay not only for the construction, but for the maintenance as well. It is suggested putting a toll-gate at every state line, or at shorter intervals so that any car using this highway for fifty miles or more would have to pay a toll, the charge being higher for freight trucks and passenger busses [sic] than for passenger cars.

He indicated that "a man by the name of Whittaker of the Yellowstone National Park" had suggested the plan, but Congressman O'Connor would sponsor the plan "if you deem it worthy."

Hopkins referred the letter to MacDonald, who replied on March 6, 1937. “This Bureau,” MacDonald began, “has given a great deal of careful thought to the further development of main highways which has brought us to conclusions differing in some respects from those that you have apparently reached.”

The highway surveys still underway had already convinced him that while motorists travel 192 billion miles a year, most of this traffic moves less than 200 miles per trip. “Only a very small percentage of the traffic could be concentrated on a limited system of ten or twelve routes.” Improved service on the main traffic arteries “must necessarily be done progressively by giving first attention to those places where congestion and danger are the worst.”

As for toll financing, MacDonald wrote that through highways built to high standards “would undoubtedly produce large revenues if there were no free competing routes offering comparable facilities.” The success of the toll highways “would be a measure of the extent to which funds might be withdrawn from the general network of highways.” Since State revenue for roads came primarily from registration fees, gasoline taxes, and other imposts of motorists, MacDonald suspected that motorists making considerable use of toll roads “would possibly demand that they be exempted from taxes on gasoline used on toll roads and a decrease in general highway revenues would result.”

At present, Federal-aid and State highways were “far from adequately improved.” The need for widening, resurfacing, and elimination of grade crossings and other dangerous situations were “urgent and justify a demand for all taxes or tolls that may fairly be imposed on the highway users.” He added, “Our present State gasoline taxes are nothing more than tolls collected for highway use.” If additional funds can be collected from highway users by any means, they “should be applied in considerable part” to improve highway safety.

On September 27, 1937, MacDonald addressed AASHO’s annual meeting in Boston on “What is Expected of Our Highways?” He began:

Such a simple question would appear to have an easy, almost obvious, answer. But place this question before ten individuals and it is likely there will be ten different answers. Extend the inquiry further and the answers will continue to vary widely and to be limited only by the number of groups approached. Each of these reactions may be different, may be even antagonistic and yet be wholly sincere and logical taken singly as related to the individual or to one group. Not only is this wide variation existing now, but the greatly desired highway services of the moment are quite different than those of five or ten years ago and much different than we must believe they will be in the future.

Is there any wonder the highway official and highway engineer ask in bewilderment, what is expected of our highways?

The problem of expectations was complicated by a simple fact:

The United States has been passing through a period of highway transportation development that has no parallel in any country and that can not possibly be paralleled here by a similar experience in the future.

He did not discuss superhighways or visionary transcontinental proposals, but he made clear how he believed the future would be shaped. In the early years of highway development in the 20th century, highway agencies had to “build surfaces with the greatest possible economy to permit stretching the dollars over the maximum mileage of main routes as yet impossible for motor traffic in wet weather.” He continued:

No matter how far visioned, the highway designer was dealing not with the future but with pioneer necessities. To criticize what has been done only displays ignorance of the conditions that were controlling.

He discussed how thinking about future highway development must be based on the facts:

There should be no need for uncertainty if the facts available are properly evaluated. It will be most helpful to highway administrators when the public makes up its mind that highway transport is not fitted to invade the fields of mass transportation and heavy hauling over long distances which belong to rail and water transport, or to emulate the speed characteristics of air transport.

There is too much hazy thinking. There has been too much of the spirit of controversy and too little hard study and analysis of the transportation services required or desired by the public for the purpose of adjusting these to the best transportation method or combination of methods.

The highway surveys that BPR was conducting with State highway officials were the sound research that would provide answers for the future of highway development. Gathering the data was only the first critical stage:

[The] second stage, — the analysis, assembly and study of the survey data, — is more important than what has been done. [sic] A vigorous attack upon the mass of accumulated data is required to bring the several kinds of factual information to understandable and usable form. This will not be accomplished easily or quickly. It will require the most intelligent effort of which each department is capable

But from this effort intelligently and painstakingly carried to completion will emerge a true pattern of the present use, of the indicated needs, of the strength and weakness of our highways, State by State. It will be possible for the first time to bring the income and the demand for expenditure into parallel columns. Likewise it will be possible to correct legislation that is now out-moded and to formulate new legislative policies based on factual information.

As 1937 ended, MacDonald sent a memorandum to Paul H. Appleby, Assistant to Secretary Wallace, on toll roads. MacDonald referenced the comments in his annual report on meeting

“the demand now existing for the building of a moderate mileage of special service highways within and between localities of dense population.” He told Appleby:

This subject received some attention from the President at the time projects were being formulated for the public works program. The length of time necessary to start projects of this character disqualified them from more serious consideration at that time.

Growing congestion of highways was “handicapping the free use of this form of transportation in the metropolitan areas,” resulting in the need for special service highways:

Special service highways in metropolitan areas should be carefully distinguished from variously proposed transcontinental highways. The facilities for fast travel, for example, from the Mississippi River to the West Coast over several different routes are more adequate today for the limited amount of transcontinental traffic than are the principal highway routes into the hearts of our metropolitan areas.

He cited several recent examples of metropolitan special service highways “such as the West Side Improvement in New York City, the Triborough Bridge connecting Manhattan and Long Island and continued by the Grand Central Parkway and the Lake Shore Parkway in Chicago.” These facilities were “not long, but the cost, particularly in the right of way, involves large sums.”

Right-of-way acquisition and the settlement of claims for property damages were the “greatest obstacle in beginning such projects.” After citing a few examples, he said, “These few facts indicate the impossibility of purchasing the land necessary and undertaking the construction of special service highways where needed from current revenues.” He continued:

There is no question that land acquisition has been the greatest obstructing force in delaying the President’s program of important public improvements since its inception and this item will continue to obstruct the development of such improvements as here indicated It is my judgment that careful consideration should be given to some form of land acquisition financing to be repaid over a long period of years. Certainly no investment could be more sound or enduring than acquisition of land in the metropolitan areas

The initial investment for land acquisition and the time required under present methods will defeat any private financing of such highways, so in considering the establishment of such highways, it is essential that provision be made for acquiring the land through public financing. Eventually the capital investment in land might be retired after the cost of the facilities themselves is amortized. This problem of land acquisition extends far beyond its relationship to the highways and streets as it is fundamental in the stimulation of important construction projects for the service of the public in all areas of dense population.

By February 2, when President Roosevelt handed MacDonald the map showing possible routes for a toll superhighway network and requested a report on their feasibility, MacDonald’s ideas

were largely fixed. Transcontinental traffic was too limited to justify the superhighway networks envisioned by Steiner and others. Most traffic was local or regional. The biggest problems were in metropolitan areas. Tolls could not finance a national highway network and were feasible only in heavily traveled corridors. Right-of-way acquisition would be a major obstacle because of cost and the lack of adequate Federal, State, and local laws.

No report on MacDonald's conversation with President Roosevelt on February 2 has been found. However, whatever MacDonald said, he did not dampen the President's enthusiasm for superhighways or self-liquidation through toll revenue and excess condemnation.

The Traditional 2-Year Federal-Aid Bill

Despite President Roosevelt's call for Congress to cancel the FY 1939 authorization of Federal-aid highway funds, the House and Senate authorizing committees began considering bills to continue the Federal-aid highway program through FY 1941.

Chairman Cartwright's Committee on Roads held hearings beginning January 25 through February 9, 1938. H.R. 8838 authorized Federal-aid highway funds for the States and the District of Columbia; for elimination of hazards at railroad grade crossings; for forest highways, roads, and trails; roads on Indian reservations; roads and bridges in National Parks, monuments, and other areas administered by the National Park Service; for parkways; and 1½ percent of Federal-aid highway funds available for surveys, plans, engineering, and economic investigation of projects for future construction.

The final section of the bill prohibited the Secretary from approving Federal-aid highway projects 2 years after enactment unless he finds that in the interest of safety, the State "has enacted and is enforcing the major requirements of what, in the judgment of the Secretary, constitutes an adequate uniform code for safety in the operation of motor vehicles, particularly with respect to the licensing of drivers and the operation of such vehicles." [Federal-Aid Highway Act, Hearings before the Committee on Roads, U.S. House of Representatives, 75th congress, 3d Session, on H.R. 8838, 1938, pages 1-3]

H.R. 8838 did not contain any provisions on superhighways, transcontinental roads, or a network of expressways.

The chairman began the hearing by outlining President Roosevelt's effort to curtail Federal-aid highway expenditures. He introduced into the record the President's letter of November 27, 1937, Secretary Wallace's December 31 letter to the Governors, and his own exchange with the President. He included a letter from Secretary Ickes asking Congress to cancel the FY 1939 authorization of appropriations for the Interior Department's portion of the funds. [Federal-Aid Highway Act, pages 3-10]

Witnesses discussed the President's call for curtailment as well as aspects of the Federal-aid highway program, including limited discussion of superhighways. On the first day, MacDonald appeared only to interrupt testimony for an announcement:

Mr. Chairman, Dr. Max Clauss, of Germany, a journalist, newspaperman, and lecturer, who is in this country making an extensive tour and a series of lectures at some of the universities, is going to present a motion-picture talk at the auditorium in the Commerce Building at 3:30. He will show the new roads that are being built in Germany, the Autobahnen, and also some of the new roads in the German Alps. It should be a very interesting picture and lecture to all those who are interested in roads, and you are cordially invited to attend that meeting at 3:30 in the Commerce Auditorium. [Federal-Aid Highway Act, page 169]

(Dr. Clauss, of the University of Heidelberg and editor of *Dienst aus Deutschland*, was on a tour to explain German policies and the nation's peaceful intentions. On January 22, 1938, he participated in a debate before the Foreign Policy Association at the Hotel Astor in New York City on: "The Church and State in Germany." He assured the audience, "One thing can certainly be asserted today, and that is the unwillingness of the State to interfere with problems of doctrines and faith National socialism is a political movement, not a religious one." According to an account in the *Times*, "In response to a question Dr. Clauss declared that pastors were free to preach that all people, including the Jews, were brothers."

(On January 25, he addressed the Woman's Club of Chevy Chase, Maryland, on "The Political Situation in Europe in 1938." Dr. Clauss said that, "Viewed from the European as well as from the American standpoint, 1938 is a year of peace." In eastern Europe, he said, Poland, Rumania, and Yugoslavia did not want Germany or Italy to interpret their friendship with France as hostility to them. Czechoslovakia, which he said was providing better treatment to residents of German origin, did not consider itself any longer in danger of German invasion. As for France and England, and Germany and Italy, he said:

These four countries must reckon with one another whenever a European problem arises and whether they like it or not, they must be unitedly responsible for the peace of Europe. It is, therefore, particularly important to understand that the two international friendships are not military alliances and that they do not constitute two hostile fronts. On the 28th of September the axis Berlin-Rome was given its formal confirmation when Mussolini came to Berlin and, together with Hitler, addressed an open-air mass meeting which was attended by 2,000,000 people. On that occasion these two men, Germany's Fuehrer and Italy's Duce, openly declared that they wished to live in peace with their neighbors.

As *The Washington Post* put it, "A silver lining [sic] was disclosed in the clouds of war on the international horizon by Dr. Max Clauss." ["Church Policies of Nazis Debated," *The New York Times*, January 23, 1938; "1938 Visioned as Peace Year by Noted Editor," *The Washington Post*, January 26, 1938])

When MacDonald returned on February 3 for formal testimony, he discussed the usual range of Federal-aid subjects such as funding, highway design, and jobs. Under the heading "Planning the Future of Highway Improvements," he discussed the statewide highway planning surveys:

We are attempting to reach the fundamental relationship between the highways and the use of land on a permanent basis and we will use this information to develop our road

systems. We want to plan on the basis of the information which is being gathered by the staff of the Bureau in cooperation with other Federal bureaus and the State highway departments and we hope to plan the most efficient secondary and feeder-road systems possible. Our purpose is to serve the greatest number of people with the least mileage of roads. This is the purpose.

MacDonald did not discuss superhighways in his prepared testimony, but Representative Dowell asked about the subject following a discussion of how the proposed curtailment of FY 1939 funds would affect highway development. He asked about MacDonald's program for handling traffic growth. MacDonald replied:

We have two approaches. The first is what we term the emergency approach. Under the transport surveys that are being made in the States, we are identifying all sections that are dangerous, such as sharp curves and blind turns, with the expectation of developing an emergency program to better these conditions. The second is the long-time program which is being conceived on the basis of these traffic surveys to provide for the future traffic.

Representative Dowell asked if the second approach meant broadening highways, opening wider traffic lanes, and increasing the width from two to four lanes:

Mr. MacDonald. We have quite a development of four-lane highways already amounting to about 3,000 miles.

Mr. Dowell. So we are getting to the point of thinking of superhighways?

Mr. MacDonald. Yes; we are; very definitely.

Mr. Dowell. When are we going to reach that?

Mr. MacDonald. I think we have reached it. I would like to see provision made for a study by the Bureau and State highway departments. We have studied the development of highways of a more adequate character than we have as yet built to any extent, particularly around the metropolitan areas. The flow of traffic between the large cities in the area between Washington and Boston averages at all points between five and six thousand through vehicles per day.

Mr. Dowell. Do you suggest a toll road to be paid for by traffic users?

Mr. MacDonald. Toll roads have not been successful in other countries where they have been established. Italy started toll roads and abandoned them. Germany talked about toll roads, but abandoned the idea. Looking at the problem in the United States from the standpoint of experimental development of a few miles of roads of this type, I should say that we should regard the land and the construction as two separate undertakings. This now [indicating photograph] is of one of the German roads between Munich and Salzburg, Austria. There are lanes of concrete with bituminous-covered edges and center dividing strip of sod. There is no cross traffic permitted by pedestrians or motor vehicles. All cross traffic is carried over or under the highway. They are very expensive compared to the cost of our normal highways. The great difficulty we face in this country is the acquisition of rights-of-way. We do not seem to have quite as complete control as they have been able to exert in Germany.

Mr. Dowell. You do not suggest the same force be used in this country as may have been used in Germany? [Laughter.]

Mr. MacDonald. No, sir. I think we could very well consider the setting up of a corporation that would purchase the land and perhaps purchase excess widths of land to develop. Such a corporation would engage in the business of buying and selling or leasing the excess land. The construction of highways should be carried on through cooperation with the State highway departments. A toll charge could be made. The construction expense for a very limited mileage could possibly be liquidated, but the two [acquiring right-of-way and constructing the highway] can not be liquidated from tolls at one and the same time. The land would be too expensive to liquidate from tolls. Any undertaking of this character would have to be regarded as highly experimental in nature.

Mr. Dowell. The toll roads have not been successful in this country, have they?

Mr. MacDonald. I do not know of any toll roads having been built in this country recently. There was one built on Long Island as a speedway, but I do not know of any other example. [Federal-Aid Highway Act, pages 367-368]

(MacDonald was referring to William K. Vanderbilt II's Long Island Motor Parkway, built in 1908 to hold the annual Vanderbilt Cup automobile races on a safe, high-speed, access-controlled road. The parkway, an express highway before the term "freeway" had been coined, operated as a toll road when the races were not underway. The races ended after 1910 when several spectators were killed or injured; the State restricted racing to tracks. The toll parkway went out of business in April 1938, its assets distributed to the counties in payment of tax liens.

(*Engineering News-Record* offered the assessment of the Long Island Motor Parkway as its end neared:

First express highway to be conceived and built, the Long Island Motor Parkway has reached its end and is offered to the public authorities. While it probably never paid (it was a private venture for profit) it occupies an important place in the records of highway development as marking the birth of an idea that seems destined to dominate much of the highway planning of the future. The initial conception may have been due to road races of early automobile days, which emphasized sensationally the fact that travel speed and safety require an unbroken roadway, easy curves and uniform surfacing. Whatever its origin, it made a fundamental innovation. A decade passed before the first parkways appeared, and two decades more before the rise of express highway planning began. If only for its historic importance, therefore, the Motor Parkway should be saved—modernized for continuing efficient service, perhaps, but saved in the main as a historic relic. ["Vanderbilt Parkway Offered to Public," *Engineering News-Record*, June 24, 1937; "It Made History," *Engineering News-Record*, July 1, 1937])

The House Committee on Roads released its approved bill, H. R. 10140, on April 5, 1938. It did not contain any provision regarding superhighways, such as the call for a study MacDonald had suggested.

By then, Secretary Wallace had written to the country's governors on March 18 following up on his December letter asking them to delay seeking FY 1939 project approvals. "The President

now feels that you should not be asked to further delay the submission of the road-building projects in your state, and accordingly I suggest that such projects be now submitted in the order of their priority.” [“Road Cut Plan is Abandoned,” *Engineering News-Record*, March 24, 1938; “New Federal-Aid Bill Continues President’s Authorizations,” *Better Roads*, April 1938, page 46]

The House considered the bill on May 5 and 6, with debate only occasionally touching on superhighways. On May 5, Representative Thomas B. Fletcher (D-Oh.) took time to discuss T. E. Steiner, “Father of the Superhighway Idea.” In what were probably extended, rather than delivered remarks, he said:

Since this superhighway dream may eventually become a reality, I think it is appropriate at this time, when we are considering highway legislation, to remind ourselves that the pioneer originator of the superhighway idea, who has devoted much time, energy, and effort to winning recognition for what he called “the highway of tomorrow, made possible by the ideal of today,” is Mr. T. E. Steiner.

When Steiner first requested support for a superhighway construction bill, Representative Fletcher said, “I endeavored to persuade him that his idea was impractical. I told him he was many, many years ahead of his time.” Steiner suggested instead a bill creating a transcontinental highway commission. Representative Fletcher suggested he approach Representative Randolph, who was on the Committee on Roads and represented the district where Steiner operated coal mines.

On April 29, 1936, the committee had held a hearing on House Joint Resolution 542:

Mr. Cartwright, chairman of the Committee on Roads, advises me that Mr. Steiner’s superhighway plan was the first plan of its kind ever to be considered by the Roads Committee at a hearing, and the resolution introduced by Mr. Randolph, at my request, was the first resolution on the subject of superhighways to be offered.

Saying “there seems to be so much confusion and misunderstanding as to the originator of the superhighway idea and the legislation with reference to it,” Representative Fletcher wanted to set the record straight. He went through many aspects of the plan, noting that one of Steiner’s most popular radio broadcasts had been recorded and the recording was in the keeping of Ohio State University.

Representative Fletcher admitted he did not agree with Steiner’s prediction that the superhighway network would be self-liquidating, but otherwise endorsed the concept. He also considered some objections:

We have been hearing some opposition to the superhighway idea on the theory that we do not want toll roads in this country, and therefore Mr. Steiner has explained and shown to me that this small toll he proposes, consisting of 25 cents for the privilege of driving 100 miles on a superhighway with the absence of all the handicaps and inconveniences

enumerated before, should not, and, he believes, will not be objectionable because of its saving features.

It has also been argued that superhighways in Italy and Germany have not been successful. The public failed to patronize them. This, he thinks, is very inconsistent because of the fact that our country has millions of automobiles as compared with only thousands in Italy and Germany.

Furthermore, especially in Germany and Italy, the people as a rule do not have money to spend for luxuries, and they do not have the distances such as we have in our country.

Later, Representative Fletcher said:

In making this speech here today I do not want to be understood as either advocating or opposing the idea of the superhighway.

My only purpose at this time is to keep the official record straight as to the identity of the originator and the pioneer whose highway program was the first to be recognized by the Congress of the United States in the way of hearings before the Roads Committee of the House.

He added that Steiner referred to his idea “as a dream which he honestly and sincerely believes will eventually become a reality.” In years past, the Congressman recalled, the steamboat was considered “Fulton’s Folly,” Alexander Graham Bell’s telephone was ridiculed, the idea of an airplane was thought of as “the wildest kind of a dream,” and radio “was considered a dream so ridiculous as to be impossible of realization.” He continued:

Mr. Steiner takes his superhighway seriously, but he does not take himself seriously. In his kindly, good-natured way, he joins in the laughter with those who laugh at his idea.

The Congressman recalled the words of Herbert Kauffman, an American writer and journalist who had written of dreamers who “never see the mirages of fact but peer beyond the veils and mists of doubt and pierce the walls of unborn time.” Kauffman added:

Dreamers are the chosen few, the blazers of the way, who never wear doubt’s bandage on their eyes, who starve and chill and hurt, but hold to courage and to hope, because they know that always there is proof of truth for them who try.

Dreamers are the eternal conquerors.

If Kauffman were a Member of Congress, Representative Fletcher concluded, he “might find inspiration in the future possibilities of Mr. Steiner’s superhighway dream—a dream that some day may come true; who knows?” [Amendment of Federal Aid Road Act, *Congressional Record-House*, May 5, 1938, pages 6337-6339]

On May 6, the House passed the bill without a recorded vote, but without dissent, and transmitted it to the Senate.

The Senate Committee on Post Office and Post Roads had held a hearing on January 26 on S. 3309. Chairman McKellar introduced S. 3309 and pending amendments at the start of the January 26 hearing. Neither the bill nor the amendments mentioned superhighways. During testimony on this date, the need for a network of such highways was not raised.

On May 13, Chairman McKellar convened a hearing on the House bill, now designated H.R. 10140. The House bill he put forward included several committee amendments, including the addition of:

Sec. 15. The Chief of the Bureau of Public Roads is hereby directed to investigate and make a report of his findings and recommend to the Congress not later than February 1, 1939, with respect to the feasibility of building, and cost of, superhighways not exceeding three in number, running in a general direction from the eastern to the western portion of the United States, and not exceeding three in number, running in a general direction from the northern to the southern portion of the United States, including the feasibility of a toll system on such roads. [To Amend the Federal Aid Highway Act, Hearings before the Committee on Post Offices and Post Roads, United States Senate, 75th Congress, 3rd Session, on S. 3309 and H.R. 10140, January 26 and May 13, 1938. Section 15 appears on page 76]

MacDonald was the main witness on May 13, but no one asked him about Section 15. The few other witnesses were concerned about other aspects of the bill.

As Congress advanced the 2-year Federal-aid bill, the Roosevelt Administration was concerned about funding levels. Appleby, Secretary Wallace's assistant, wrote to Acting Director Daniel W. Bell of the Bureau of the Budget about the concern on May 10:

Monday morning [May 9] I discussed with Mr. James Roosevelt [the President's son] the situation with regard to highway appropriations and authorizations, and he asked me to send on to you the information I had and to suggest to you that you take up this matter with the President at your early convenience.

Appleby enclosed a tabulation of BPR appropriations, authorizations, and expenditures for FYs 1936 through 1939, "showing an unbudgeted authorization being carried over of \$207,000,000." The House bill, he said, would authorize \$238 million for FY 1939:

Mr. MacDonald, Chief of the Bureau of Public Roads, informs me that members of the Senate Committee have expressed a willingness to cut this \$238,000,000 authorization perhaps 40%. Senators McKellar and Hayden have indicated that they will talk with the President before proceeding with this legislation.

The immediate concern was that S. 3309 left authorization sums blank and continued contract authority. "The President expressed himself adversely with regard to this procedure in his message of November 30, 1937."

The Senate committee completed work on its bill, including Section 15, on May 14. About Section 15, the committee's report explained:

SUPERHIGHWAYS

In view of the widespread interest in the development of a system of superhighways to expedite freight and passenger traffic between large centers of population[,] your committee recommends the adoption of an amendment which is designed to make available the basic facts upon which legislation by Congress may be predicated. It is believed that the Chief of the Bureau of Public Roads, in cooperation with the State highway departments, can assemble by February 1, 1939, much valuable information upon this important subject. [Federal Aid for Highways, Report of the Committee on Post Offices and Post Roads, on H.R. 10140, United States Senate, 75th Congress, 3d Session, Report No. 1794, May 14, 1938, page 5]

Also on May 14, Acting Director Bell prepared a memo to the President. Bell explained that the House of Representatives had approved H.R. 10140 on May 6 authorizing \$238 million for FYs 1940 and 1941, and that Senator Hayden had introduced a similar bill with the amounts left blank:

I am advised that Senator Hayden has discussed the matter with you and an agreement [was] reached as to the total amounts to be authorized for the fiscal years 1940 and 1941. The Senate Committee on Post Offices and Post Roads (of which Senator McKellar is chairman) has called upon the Secretary of Agriculture for a written report relative to the authorization of public roads appropriations for the fiscal years 1940 and 1941 and a proposed report by the Secretary is now before me for advice as to its relation to your program.

Recalling the President's message of November 19, 1939, calling for FY 1940 and succeeding years to be limited to \$125 million in Federal-aid highway funds, Bell also commented on contract authority:

This mandatory provision completely ties the hands of the Executive as to the amount of roads funds to be included in the Budget for any fiscal year. While I do not object to the apportionment among the States of such amounts as may be authorized for appropriation, I do most strenuously object to the mandatory incurrence of obligations by the Federal Government under such apportionments without regard to its ability to finance them from its revenues.

No action has as yet been taken by the Congress to give effect to your recommendation, and hence the new roads authorization bill, if enacted, will operate in accordance with the existing law.

He asked the President for guidance on how to advise Secretary Wallace.

Bell and Treasury Secretary Morgenthau met with the President on May 16. The President had prepared a memorandum for Bell:

1. I think the House amendment can and will be drastically reduced in the Senate if you talk with McKellar and Hayden. Use every effort to get the total as low as possible.
2. My statement of November 27, 1937 in regard to eliminating contractual [sic] obligations by the Secretary of Agriculture still stands. Push for its enactment.

As for encouraging the Senators to reduce authorizations or eliminate contract authority, historian Mark H. Rose has pointed out, “Neither effort, finally, proved successful.” [Rose, Mark H., *Interstate Express Highway Politics 1939-1989*, Revised Edition, The University of Tennessee Press, pages 10-11]

That same day, the Senate debated H.R. 10140. The amendment to H.R. 10140 incorporating Section 15 into the Federal-Aid Highway Act of 1938 was approved without debate. The Senate approved the bill with minimal debate and without a recorded vote. The bill reduced funding levels in the House bill, as *Engineering News-Record* explained:

Whereas the House bill provides \$125,000,000 for federal aid to the states in each of the two years, 1940 and 1941, the Senate bill provides \$75,000,000 the first year and \$115,000,000 the second. The total authorizations in the bill are reduced from the House figure of \$238,000,000 in each year to \$128,500,000 the first year and \$186,000,000 the second.

The Committee on Post Offices and Post Roads justified the reduction in Federal aid on the ground that carry-over funds amounting to \$150,000,000 would be available. [“Federal Highway Aid Reduced by Senate,” *Engineering News-Record*, May 19, 1938, page 697]

That explanation was not satisfactory for the magazine’s editor, who explained that the reduced funds meant that “haphazard roadbuilding is given preference over planned construction.” The reduction was “evidence of yielding to pressure from those in the Administration who are chiefly concerned with financing of relief operations.” They had no interest in long-range highway planning. “What they want is money that has no strings to it, money which can be used when and where they please.”

A pending relief bill, the editorial continued, approved in the House provided \$425,000,000 to the WPA for road and street work. Local politicians liked relief funds because they came without restrictions or BPR oversight, and did not have to be matched. “This expansion of WPA road work accounts for the failure of some States to take up their federal-aid money, a failure that is used by the Senate post roads committee as justification for its cut in federal aid for 1940 and 1941:

The plan is truly the start of a vicious circle. The construction industry should make itself heard in opposition. The country needs to maintain its system of planned and carefully supervised highway building. ["Road Planning Discarded," *Engineering News-Record*," May 19, 1938, page 707]

The House-Senate conference to reconcile differences between the bills compromised on funding levels:

While the original House version provided \$125,000,000 for federal-aid to the states in each of the years 1940 and 1941, the Senate version would have provided \$75,000,000 in 1940 and \$115,000,000 in 1941. The conference report retains the Senate figure for 1941 but increases the 1940 figure to \$100,000,000.

The authorization for secondary roads, reduced from the House figure of \$25,000,000 by the Senate to \$10,000,000 in each year, was increased in conference to \$15,000,000 each year. Grade crossing elimination, for which the House would have provided \$50,000,000 each year, was held by the conference committee at the Senate figures of \$20,000,000 and \$30,000,000. All other items in the bill likewise following the lower Senate figures. ["Senate Road Aid Fund Upped in Conference," *Engineering News-Record*, June 2, 1938, page 762]

The conferees retained the superhighway provision, renumbered as Section 13 in the final bill.

Both Houses of Congress approved the Federal-Aid Highway Act of 1938 on June 1. *Engineering News-Record's* article about passage commented:

The final bill is a compromise between the economy recommendations of President Roosevelt and the desire of many congressmen, particularly in the House, to continue road expenditures at an undiminished rate. It was accepted only after assurances by the Bureau of Public Roads that on Jan. 1, 1939 (when the Secretary of Agriculture will apportion the new funds to the various states) there will be available a carryover from previous apportionments . . . to supplement the reduced amounts authorized. In addition, a large part of the new relief appropriation will be used in road and street construction. ["Federal Road Bill Passes Congress," *Engineering News-Record*, June 9, 1938, page 796]

President Roosevelt signed the Federal-Aid Highway Act of 1938 on June 8, 1938.

As for Section 13, the editor of *Better Roads* said:

Light from this source will be welcome. Although the investigation is to be concerned specifically with a transcontinental system of three north-to-south and three east-to-west arteries, much information will undoubtedly be assembled that will be valuable in analyzing long-distance toll-highway proposals of all kinds. ["Light on Toll Superhighways," *Better Roads*, July 1938, page 13]

(Despite the publicity surrounding the Bulkley highway plan, the Senator lost his bid for reelection in November 1938 to the Republican challenger, Robert A. Taft. The conservative incoming Senator was the son of former President William Howard Taft and a former State legislator who would play a leading role in fighting the New Deal and other liberal initiatives until his death in 1953. In 1952, he was General Eisenhower's chief rival for the Republican Party's presidential nomination. Bulkley returned to Cleveland to resume his law practice.)

Direct Route Highways

By the time the 1938 Act became law, MacDonald had submitted his response to President Roosevelt's inquiry on the feasibility of the toll superhighways shown on the U.S. Highway System map.

At the time of the President's request on February 2, 1938, MacDonald and Fairbank were still reviewing data from the State highway planning surveys. As discussed earlier, MacDonald handed the map to Herbert Fairbank, who now had a focus for using the survey results. He had enough data to draw preliminary conclusions that were confirmed by the final compilation of information.

He began by preparing a map showing travel on all main roads. This map clearly showed what became one of the tenets of MacDonald's and Fairbank's initial studies of the Interstate System: transcontinental traffic was negligible—on any given day, perhaps 250 vehicles were on transcontinental trips. This was an insufficient number to support financing of a transcontinental toll road, and certainly not the visionary superhighways proposed by Steiner and others. The map also suggested that some sections in heavily populated areas might be self-liquidating. [*America's Highways 1776-1976*, page 271]

MacDonald wanted the report to discuss excess condemnation, but the President's example puzzled him. On February 14, MacDonald wrote to the President's secretary, Marvin H. McIntyre:

The other day when the President was talking with me about highways, he mentioned that excess condemnation had been used in England. While I inspected the work in progress on the London-Brighton road, the road authorities did not mention any excess condemnation. I wired Major Frederick C. Cook, Chief Engineer of the British Ministry of Transport, asking if they were using excess condemnation, and he replied that it had not been used on the London-Brighton highway. I know that excess condemnation was used on two streets in London.

Will you be good enough to ascertain from the President what leads I may pursue to find out more about the use of this policy? [Ritter, FDR Library, OF 1e, Box 11]

The President replied with a "MEMO FOR MAC" on February 16. "Tell him I cannot give him any more leads but anyway it is a sound policy."

MacDonald sent a letter to Colonel James Roosevelt on April 17, 1938, transmitting the report on *Proposed Direct Route Highways*. The report, the letter explained, included a summary based

on “the factual data submitted” and the discussion was “condensed to the extent possible and supported by the accompanying charts and tables.” MacDonald added:

In our consideration of this whole subject the question of land acquisition has assumed the most important aspect. This probably applies with equal force to many of the other national projects in which the President has so often evidenced his interest.

The data sustained three items:

1. The desirability of establishing a Federal Land Authority with powers of excess condemnation. The lack of an expeditious procedure to acquire necessary lands and to adjust claims for property damages continually stands in the path of important public undertakings. Without a national policy of acquiring lands for right of way plus sufficient excess holding to control contiguous developments, no national highway plan can reach its full possibilities. Excess condemnation on a long-term basis would, under proper management, help to liquidate the original investment through resale and rental income.
2. The probable traffic is not sufficient to liquidate through direct tolls the cost of high standard improvement for an extensive mileage of continuous routes, but there are short sections within metropolitan areas and special facilities such as tunnels and bridges which as part of major routes would be partially or wholly self-liquidating. Such sections would necessarily be determined by detailed studies.
3. The problem of providing a whole adequate national system of highways is to provide a considerable number of new routes to relieve the congestion in the metropolitan areas and to modernize the standards of existing highways in rural districts.

Highway Traffic and Intensities and Characteristics

The highway planning surveys revealed that transcontinental traffic from coast to coast averaged 250 vehicles a day. This was not an estimate or projection, as in the case of the Gallup Poll, but was based on an “actual count and determination of the origins and destinations of traffic.”

For example, the report categorized long distance travel from the coasts. From the West Coast to nearby States such as Idaho, Nevada, and Arizona:

The total number of passenger cars passing the points of observation on such long-distance trips averaged 2,532 daily—a number which is well within the free-flowing capacity of a 2-lane highway. All of these vehicles were bound to or from the three West Coast States. Only about one-third (862) of this number were bound to or from States east of the Mississippi River and, as above stated, only 250 were bound to or from the Atlantic Coast States.

Another measure of interstate traffic was the number of vehicles that crossed the Florida State line each day. Only 23 vehicles traveling to or from the West Coast States did so. Cars with Florida registration bound to or from the West Coast States added only 3 to the total, for a daily total of 26.

Data from throughout the country revealed:

It is apparent that the country's heaviest total traffic and also the heaviest movement of interstate traffic occur on the route between Richmond, Virginia and Boston, Massachusetts. No other traffic elsewhere approaches this traffic in volume. Nowhere else in the country is there a present traffic that approaches so closely the volume necessary for support by reasonable tolls of a special high-type, limited-access, express highway.

Between the District of Columbia and Boston, "where . . . existing traffic most nearly warrants the construction of a toll express highway, there is the nearest approach to continuous 4-lane free highway." However, a toll express highway in this corridor would face a simple problem:

The existing high type free facility, which by further State construction will shortly become continuous between Washington and Boston, would undoubtedly retain, against the attraction induced by the relatively slight advantages of an express highway, a considerable part of the whole highway movement between the cities on this route.

State Participation and Cooperation

The State highway agencies cooperated in the highway planning surveys:

These detailed studies could be carried on most efficiently and quickly by the existing organizations which now have available the experienced personnel who are most familiar with the conditions existing within each State.

The report did not say so, but this point was in response to the bills calling for a special commission to study and build transcontinental superhighways. Again without saying so directly, the report also rejected the idea of establishing a special corporation to build the roads:

The participation of the States in the actual construction of these highways is unquestionably desirable, for the Highway Departments have the necessary organizations for such an undertaking and the experienced personnel familiar with the construction problems in the various States. Those States in which the construction of direct route highways is of immediate importance have already made creditable beginnings on such routes. It is desirable that these efforts be continued and that they be coordinated in a uniform plan.

Paying for a system of direct route highways would depend mainly on general revenues "for the major part of the mileage will of necessity consist of the present free road system, modified and improved by the introduction of additional or higher type facilities." In locations where a toll facility might secure a partial return of construction costs, "the extensions of State roads to form approaches and a policy on the part of the States of refraining from building free competing facilities are essential requirements."

New Right of Ways – the Determining Factor

Existing interstate roads were often “built in large part on right of ways inherited from the old wagon roads.” This situation resulted from the limited funds available, the need to improve interstate travel quickly, and the fact that for most of the first 30 years of highway development, “the volume and speed of highway traffic were not so great as to force better alignment, and the volume of the long-distance movement was so small as to place no particular emphasis upon directness of through routing.”

Because of altered conditions, with increased traffic volumes and more powerful vehicles, “the existing main highways are quite generally in need of radical improvement in alignment.” The report explained what was needed:

This improvement is greatly needed in the interest of safety, and involves, principally, a general reduction of curvature, increase of sight distance, and flattening of grades. In all cases, as existing surface improvements on the main highways reach the end of their economic life—and each year henceforth there will be a definite and probably increasing mileage that will reach this stage—the renewed investment must be placed on revised alignment that will not shortly become obsolete.

Failure to so locate the further improvements will involve serious waste that must be prevented, if possible.

Although some deficiencies could be corrected on the existing roadway, “construction of new facilities on entirely new alignment . . . is generally preferable.” Doing so would avoid the “property that clusters thickly along the borders of the existing routes,” allowing right-of-way acquisition at lower prices “since generally it does not take the ‘front’ of properties traversed.” It also leaves the existing road for local service while adding a facility “for a cost not greatly in excess of that of revising the old alignment.” A new route on “relatively undeveloped lands” meant that “future ‘ribbon’ development can be properly controlled to prevent ‘choking’ of the new facility.” Further, passage of the new route through cities and towns could be avoided.

The new right-of-way would be expensive and would cost more than currently available funds would permit. Attempting to stay within the limits of available funds would mean that “the reconstructions that will be imperatively required will unavoidably be carried out on alignments known to be unsatisfactory, resulting in high and early obsolescence.” However, acquisition of right-of-way for proper alignment would “represent permanent investments and may properly be financed with money borrowed on long terms.”

Land Acquisition and Excess Condemnation

The State governments were not equipped to borrow the needed funds “without great delay,” leaving a long period of “unwise reinvestment of reconstruction funds . . . in the existing improper alignments.” State constitutions and laws posed obstacles to right-of-way acquisition. Some States required the counties to provide the right-of-way, a factor that would interfere with construction of direct express highways because “the counties are too numerous and it is known

that the highway departments in these States are frequently delayed because of failure or refusal of the counties to act.”

In other States, the highway agencies could acquire right-of-way by purchase, gift, or eminent domain, “but it is believed in all of these it would be necessary to have additional State legislation.” Even then, the report doubted that States or their subdivisions would be able “to acquire property for the United States through the power of eminent domain.” Nevertheless, the examples of the Blue Ridge Parkway and the Natchez Trace Parkway suggested such a policy might work because the Federal laws authorizing them required the States to provide the right-of-way.

With respect to excess right-of-way, the extent of land taking was very important. In many States, laws “provide that only an easement can be acquired for any public purpose,” with the property reverting to the original owner if the public purpose is abandoned. In general, the taking was limited to the land needed for the public purpose and “no greater estate can be appropriated.” Only about 10 States allowed condemnation “of a greater area of lands than is actually necessary for the public purpose for which it is acquired.” These States had “definite restrictions on the exercise of this power, it being limited to municipalities or to counties, or to both, except as to California, Massachusetts, Rhode Island, and Wisconsin.” The report continued:

States that provide for excess condemnation generally authorize the disposition of any of the excess found not to be needed for the public improvements. Such disposition in some States may be by sale or lease, in some only by sale, and in some it may be improved prior to such disposition. It is also provided in some States that the original owner shall have the first right to acquire such excess land when its disposal is decided upon.

Some State laws on condemnation allowed for immediate acquisition of land for public purposes “after filing the petition of condemnation and posting notice as required by law.” But in most States, “the process for gaining possession of lands under condemnation is more tedious and long-drawn out.”

These considerations lead to a conclusion:

It is doubtful if any successful plan of procedure could be evolved for the Federal Government alone to undertake the construction of a national system of highways. On the other hand, it is doubtful if a national system of highways can be secured by any means unless the Federal Government acquires the lands necessary.

The report speculated that “the Federal Government could doubtless exercise the right of eminent domain within the States to acquire the lands,” but this authority “may be contested.” As support for this authority, the report said, “This subject is treated to some extent, supported by cases cited, in Senate Document No. 154, 68th Congress, 1st Session, ‘The Constitution of the United States of America, Revised and Annotated, 1924,’ from which” it cited several paragraphs. One stated:

“Whenever it becomes necessary for the accomplishment of any object within the authority of Congress, to exercise the right of eminent domain and take private lands, Congress may do this, with or without a concurrent act of the State in which the land lies.” p. 92

The report did not cite the requirement of State consent for construction of the National Road authorized in 1806 between Cumberland and Wheeling at a time when the central government’s constitutional authority for internal improvements was unclear.

A Federal Land and Financing Authority

Given those considerations, a Federal Land and Financing Authority “should be established as an agency directly responsible to the President, or as an agency of the RFC, or as an agency under the Treasury Department.” The Authority would use the right of eminent domain to acquire “lands in excess of those actually required for the construction of the projects involved” in varying amounts with safety and future expansion in mind. The land should be “extensive enough at all points to prohibit undesirable development adjacent to the highway.” Where access to the highway was permitted, “the Authority could exercise its power of excess condemnation in the taking of even larger tracts of lands, for it would be at these points that major development would be possible.” The report added:

Subsequent sale or lease of such property would enable the public to profit from the increased values accruing from improvements made possible by the expenditure of public funds.

Federal funds could provide working capital for the Authority, but “since only a limited dependence can be placed on tolls, every other possible source of income must be made to contribute to the support of the operations of the Authority.” The financing of the cost of land acquisition, which can be amortized over a long period, should be separated from the cost of construction of the highways. Unlike the construction components, the Authority could issue 50-year bonds to acquire the land for the direct routes, allowing “sufficient time to realize upon the potential returns, through lease or re-sale of the excess lands acquired, or from other sources such as concessions.” This financing plan had other advantages:

The possibilities of such a policy to control incipient “ribbon” development, to provide for better living conditions, to facilitate slum clearance, and to offer socially desirable relief contiguous to crowded cities are apparent, taken in conjunction with rapid public transportation facilities readily made available.

The benefits of such an Authority “justify a sharing of the residual annual land costs with the States from the proceeds of either general or special taxation.” In addition, the Authority could help finance construction of the routes or sections of the routes in a variety of ways:

These would include the proceeds from tolls, the advancement of funds by the States from current revenues, the use of cooperative Federal and State current funds, the utilization of relief labor, and combinations of these.

Limitations of Self-Liquidation

In part, President Roosevelt had been drawn to toll superhighways on excess right-of-way because their proponents, such as Senator Bulkley, expected the projects to be self-liquidating. They could be completed without Federal funds, or at least a greatly reduced Federal contribution. The report concluded otherwise. In metropolitan areas, the income from tolls on the Hudson River Tunnels and Bridges and the San Francisco Bay Bridge illustrated how large amounts of revenue could be collected when “traffic flow is concentrated by a restricted outlet, usually a geographic situation.” Relying on toll revenue for roads “beyond a point not more than 20 miles distant from such metropolitan areas” was not possible:

The possibility of toll collections over long distances depends upon the volume of through traffic, which is only a minor part of the dense traffic found around metropolitan areas, as is made evident by the traffic surveys.

The report illustrated this point with a map of the United States highway system showing average daily traffic on “a free system of limited access transcontinental highways totaling 14,237 miles.” The estimates were based on the surveys of the existing highways most closely coinciding with the assumed routes as well as “an optimistic estimate of the traffic that would be drawn from other existing highways.” The report summarized the map:

The traffic thus estimated for the assumed system operated as a free facility averages 1,039 vehicles per 24-hour day on each mile of the system, making a total of 14,786,960 vehicle-miles per day or 5,397,240,400 vehicle-miles per year. This estimate is based upon the known actual traffic movements in 1937 on the numbered United States Highways. Accepting the forecast recently made by Mr. Chas. F. Kettering of the General Motors Corporation, that motor vehicle usage will increase 50 percent by 1960, the estimated total traffic on this system in the year 1960 would not exceed 8,100,000,000 vehicle-miles, assuming that use of the roads is free.

(In calendar year 1960, motorists totaled 718,845,000,000 total vehicle miles. [*Highway Statistics 1960*, Bureau of Public Roads, U.S. Government Printing Office, 1962, page 80])

If tolls were charged on the limited access highway, traffic “would be greatly reduced, probably not exceeding one-third of the usage estimated for the free facilities, or not more than 2,700,000,000 vehicle-miles per year.” Several factors accounted for this conclusion. Many road users “are people of relatively low income.” Most motorists planning long road trips “do so in the hope of traveling as cheaply as possible.” Existing toll-free highways in many locations offer “excellent, congestion-free accommodation for present traffic, lacking generally the important elements of separated grades at highway intersections and by-pass facilities around municipalities.” In addition, if the alternate toll facility drew even one-third of the traffic off the existing road, “such congestion as now exists would be relieved and their relative attraction would be increased to parity with that of the toll facilities.”

As mentioned earlier, the most promising toll location was between Washington and Boston. The report examined two alternatives for a toll highway that bypassed Baltimore and Philadelphia (454.7 miles) or went through the two cities either above or below the intersecting streets (439.5 miles). If operated as toll facilities, the route through the cities would have carried up to 837,300 vehicles per day in 1937, while the estimated traffic on the bypass route would have been 775,327 vehicles per day.

To pay for the facilities through bond/toll financing, the toll would have to be 4.5 cents per mile for the route through the cities or 3.9 cents for the bypass route. "These are obviously prohibitive toll charges." The report considered the possibility of charging a toll equal to the cost per vehicle-mile on free facilities (1.2 cents per mile for the bypass, 1.4 cents for the through route):

Even these rates, charged as direct tolls, are so large as to discourage use of the facilities. As costs of the services that would be rendered by the facilities in relation to the value of the services, they do not appear excessive.

Employment of Labor

Limited access highways were needed mainly adjacent to larger cities and metropolitan centers, which also was where the "maximum relief load" existed. To make use of this labor source, "the securing of necessary lands is fundamental." Because acquisition and construction were "inherently different operations, the desirability of separating the two functions of land acquisition and of actual construction of the highways is evident."

For the construction element, the report suggested how the labor force might be used:

The latter function might be performed in part with unemployed labor now on relief, including the clearing, grading, draining and other preparatory work which can be made to employ more common labor; and in part under contracts of the ordinary character, including such items as the building of important structures, the laying of pavement which requires more materials and equipment. In connection with the use of relief labor it may be necessary to establish labor camps.

These suggestions are made with full recognition of the difficulties and the higher costs of the operation as compared to a strictly contract procedure using the maximum of mechanical power and modern equipment.

The section on labor concluded by pointing out that in Germany, "the policy of using unemployed labor in the building of a system of national highways was adopted, and part of the cost of the monumental and expensive highways which are being built is frankly written off as a national necessity to provide employment." The result is that if Germany actually completes the planned network, it would "have the most elaborate system of national highways existing in any nation."

Reichsautobahnen

The final section of the report consisted of one paragraph:

Germany is building in advance of the development of its highway traffic while the United States must build to meet existing and acute problems. Furthermore, Germany is not to be compared with the United States because of difference in area. Germany is roughly equal to about four times the area of Pennsylvania. In the United States the policy is considered important that the highways shall be able to earn their own way—that is, the taxes derived from highway use shall bring sufficient funds to build and maintain at least the major traffic routes. In Germany the elaborate design and consequent costs of the Reichsautobahnen are out of any immediate relationship to the amount of traffic. Under all the circumstances it is well within the possibilities that these roads, however, may become the important factor in Germany's economic domination of central Europe. [Ritter, FDR Library, OF 129, Box 2]

The BPR report confirmed the need for a limited access express highway network, but not the other elements that made it most attractive to President Roosevelt, namely toll operation and self-liquidation. It mentioned “a free system of limited access transcontinental highways totaling 14,237 miles,” but did not discuss the feasibility of the specific routes President Roosevelt had drawn on the map he had handed to MacDonald on February 2. In some respects, the report addressed the President's enthusiasm while, gently, redirecting him along the paths supported by the data gathered during the state planning surveys.

The report was not intended for the public, but it outlined the initial vision of what became the Interstate System. Future reports on the subject elaborated on the concepts, but remained true to the initial vision reflected in MacDonald's April 1938 report to President Roosevelt. Neither the White House nor BPR released the report. Whether President Roosevelt read the report is unknown.

Dr. Drew's Superhighway

The consensus was that the best location for the first national superhighway should be between Boston and Washington, D.C., the most heavily populated and congested part of the country. On May 12, 1938, Representative Ira W. Drew (D-Pa.) introduced legislation to initiate work on that link. House Joint Resolution 684 proposed creation of a joint congressional committee, composed of seven Senators and seven Representatives to investigate the feasibility and desirability of “establishing and maintaining a national highway between Jersey City, New Jersey, and the city of Washington.” The joint committee was to report its findings to the Congress at the start of the 76th Congress. The bill was referred to the Committee on Rules, which had jurisdiction over the establishment of committees.

Representative Drew was a doctor of osteopathy from Philadelphia. Shortly after he released the resolution, a friend of his, Joseph Marian, wrote a newspaper article about the proposal. In the summer of 1930, Dr. Drew “envisioned a plan which, if carried out, would prevent our highways

and city streets from becoming the scene of the greatest traffic snarl in history.” The highway would connect cities of large population and would be built through undeveloped sections:

Each highway would consist of two four-lane concrete strips, separated by a central parkway, and all roadbeds would be at a minimum grade and so constructed as to carry any predictable weight without damage to the right of way.

Under his “dream” plan, traffic on all lanes of these super-highways would be strictly regulated. Probably the outer two lanes would be for slow traffic, meaning from 30 to 35 miles an hour. On the third lane from 35 to 50 miles would be allowed, while on the inner lane, vehicles would be required to keep moving between 50 and 70 miles an hour . . . There would be no grade crossings, and entrance would be by toll-gates established at appropriate points along the way.

At the time, Marian said, they thought it was “a beautiful dream that would never come true.”

Now, 7 years later, Dr. Drew had been elected in November 1936 to the House and had introduced his resolution:

But it is no longer a dream. It is a necessity which must be realized if we are to enjoy any semblance of peace and comfort on our highways in the years to come. Already it has found widespread favor and support both in governmental circles and among the leaders of American business and finance.

Marian described the route of the entire highway project:

The Boston-to-Washington highway would by-pass Hartford, Waterbury, New York City, North Jersey cities, Philadelphia and Baltimore. It would cross the Hudson on the existing Bear Mountain Bridge.

The super-road would cross the Delaware River near Lumberville, above New Hope, on a new bridge. Another new bridge would be required over the Schuylkill River near Valley Forge. The Susquehanna would be crossed at Conowingo by use of the roadway on top of the dam.

The roadway would connect with Philadelphia via a spur running from the vicinity of West Chester.

The second step would be a trunk route from New York to Pittsburgh. It would start just north of New Brunswick, N. J., and would connect with the Boston-to-Washington route south of Somerville, N. J. It would leave this route near Doylestown and run west, skirting Reading and Harrisburg.

Representative Drew expected that the superhighway would be financed through private capital, without public funds, as a toll road. “Ultimately the system would be extended, looking toward the eventual construction of several East-West highways from the Atlantic to the Pacific, with

North-South cross connecting lines from Canada to the Mexican border to be built as traffic warranted.”

As a doctor, Representative Drew had driven extensively around the Philadelphia area and had been “prominent” in the State’s good roads movement for the past 10 years. He said:

The basic trouble with our road system is that it just grew, like Topsy. We inherited it from England. Counties and States did the road construction. This was very fine as long as horse-drawn local traffic was all that had to be served. But when the automobile appeared upon the scene in large numbers our roads got into difficulties, and they have been in chronic difficulties ever since.

In the past 15 years, traffic of all types had grown, but especially private automobiles and pleasure cars with trailers were making long trips. They were now mixing in growing numbers with long-haul truckers. “These people are certainly entitled to use the road, too.” He said:

I visualize main trunk highways that will be just as important to commerce and pleasure as the four-track main line of the Pennsylvania Railroad between Washington and New York.

At this time, public studies were needed, along with “a partnership between private and public capital”:

Such highways are coming; they are in the air now. If we do not study and guide them, we will have a costly and unfortunate hodge podge

I have had a preliminary survey made by construction and highway engineers which leads me to believe that a feasible program can be developed. Certainly now is the proper time to do it. [Marian, Joseph, “Motorists Could Speed Safely on a Super-Highway,” *The Sunday Star*, July 18, 1937]

Engineering News-Record pointed out:

Although the proposal to build a network of super-highways [the Bulkley bill] over the country has been shelved by Congress, considerable support is being rallied among Eastern Congressmen for a bill by Dr. Ira Drew of Pennsylvania for the construction of such a road between New York City and Washington. [Wooton, Paul, Washington Highlights, *Engineering News-Record*, May 9, 1938, page 793]

On May 10, Representative Drew discussed his proposal with President Roosevelt in the White House at 11:30. According to *The New York Times*, “the President is very much interested, not only because of the highway idea itself but because the plan, if successful, can be expanded to include resettlement, increase employment all along the line, and because it is essentially in line with national defense policy.” Resettlement was a variation on excess condemnation. Sufficient right-of-way would be acquired to build the highway and have enough land left over to develop

privately with low-cost homes for people who would move from congested cities. Representative Drew explained:

It is somewhat like Mr. Ford's idea of decentralizing manufacturing as he is doing now in Michigan. We feel that such projects could be financed through long-term mortgages on somewhat the plans now being followed in the activities of the Federal Housing Administration.

He estimated the proposed highway would cost \$150 million.

He believed the Interstate Commerce Commission would require the major trucking companies to use the toll road to free more congested roads for private motorists. Further, he thought construction could get underway quickly. The *Times* reported:

Speed would be the big drawing card. The plans would require grade-crossing eliminations for both railroads and crossing highways, and Dr. Drew and his advisers feel that the pressing need for new motor roads in the area to be served will alone assure the success of his plan.

So great is his confidence in it and so enthusiastically has his plan been received that he feels that work will be started soon on various links. "I should not be surprised to see the dirt begin to fly by September," he said.

Representatives Drew, John B. Daly (D-Pa.), and Patrick J. Boland (D-Pa., the House Majority Whip) convened a meeting of House members from the five States involved (Delaware, Maryland, New Jersey, New York, and Pennsylvania) to discuss a new resolution on the proposal. They particularly wanted to decide if the commission should be a House committee, in which case it would have to report before the end of the current Congress on January 3, 1939, or a joint committee that could continue working beyond that date.

In talking with reporters, Representative Drew described the self-liquidating concept behind his plan, the small toll that would be charged until costs were amortized, and the overall idea:

Much of the right of way, it was explained by Dr. Drew, could be along abandoned railroad rights of way. The right of way would be obtained by condemnation proceedings which would permit large areas on both sides of the proposed highway to be acquired and resold as rural homes and small farms with quick access to markets along the new highway.

These small farms and rural homes would be sold on easy terms, arranged by cooperation of Federal and State authorities. Through the resale of these properties it is hoped to finance the entire proposition, so the initial toll charge could soon be abandoned.

The superhighway would be a test case to see if other similar highways could be built in the same way to create "a network of such high-speed highways . . . all over the country in an

interlocking and connecting system.” The first section, from Jersey City to Washington, would be built “entirely through rural sections, but cutting close to the principal shipping points.” It would have no at-grade cross roads and would include entrances every 5 miles. It would include separate lanes for buses and trucks. In addition, the road would bury telegraph and telephone wires in conduits along the right-of-way. [Kennedy, Will P., “High-Speed Road to D.C. Discussed,” *The Evening Star*, May 12, 1938]

On May 26, Representative Drew convened a meeting in Washington of highway officials from Delaware, Maryland, New Jersey, and Pennsylvania to discuss his plan. Herbert Fairbank represented BPR during the meeting, which included representatives of the WPA and the Rural Electrification Administration. Representative Drew, who had met with Aubrey Williams, WPA’s Deputy Administrator, told reporters he had the President’s support and was “extremely hopeful” of a WPA grant to get the work started.

Representative Drew said that each State would build its own segment of the highway. Initial funding would be raised by State bond issues and Federal work relief funds. He cited the Pennsylvania Turnpike as a model; the other States, like Pennsylvania, could enact a law authorizing a toll authority to build it. The bonds could through condemnation and resale of land along the route, making the project self-liquidating. The State officials agreed to check with their Attorney General about the feasibility of a similar law in their State. [“Urge Express Road, Here to Washington,” *The New York Times*, May 27, 1938; “Parley Tomorrow on Speed Highway,” *The Evening Star*, May 25, 1938; “Support Express Highway Proposal,” *The Evening Star*, May 26, 1938; Lyman, Lauren D., “Super-Highway Planned,” *The New York Times*, June 5, 1938]

By early June, Representative Drew had abandoned plans to pass legislation establishing a superhighway commission. Instead, he appointed a six-member committee to coordinate the work of the States involved in the Jersey City-to-Washington superhighway. For example, the committee would review State-to-State connections. The members included the three Representatives from Pennsylvania (Drew, chairman, Daly, and Boland), and Representatives Edward L. O’Neill (D-Pa.), Ambrose J. Kennedy (D-Md.), and William F. Allen (D-De.). Representative Drew said PWA had unofficially expressed willingness to help finance the project. [“Six Names to Plan Super-Road From D.C.,” *The Evening Star*, June 9, 1938]

The committee, which established headquarters in Representative Boland’s office, was making progress. A newspaper report on July 9 stated that “Speaker Bankhead . . . is directing preliminary engineering studies, surveys and various legal matters.” Governor Robert C. McMullen of Delaware “has approved the project and will recommend it to the incoming session of the State Legislature.” Pennsylvania also was moving forward:

Pennsylvania can operate under the existing laws. The Philadelphia Planning Commission yesterday approved the proposal for a connecting link made by Representative Drew from Philadelphia to the Delaware line, which would connect into a low-lying truck highway into Delaware. It is intended that that link will become part of the road from the new S. Davis Wilson Airport, which has been approved by the State Highway Department, and work will begin in a few weeks.

(S. Davis Wilson Airport was named for the current Mayor of Philadelphia. It also was known as Municipal Airport, which evolved into today's Philadelphia International Airport.)

Representative Drew, who left on July 8 for an automobile tour of the proposed route, remained optimistic:

Representative Drew, after conferences at the White House and with the Bureau of Public Roads of the Federal Government and with the highway commissions of a number of States, said the initial link from New York to Washington will be promptly constructed and that the cross-continent speed highway will be opened up within 10 years, with off-shoots to all important centers of population. [Kennedy, Will P., "Speed Highway Plans Made by House Backers," *The Evening Sun*, July 9, 1938]

By mid-July, Representative Drew's idea and other superhighway plans were eclipsed by Section 13 of the Federal-Aid Highway Act of 1938, as *Better Roads* magazine explained:

Judgment on this and similar projects is best reserved until we are in possession of the information on toll superhighways that is promised by the early part of next year Light from this source [BPR] will be welcome. Although the investigation is to be concerned specifically with a transcontinental system of three north-to-south and three east-west arteries, much information will undoubtedly be assembled that will be valuable in analyzing long-distance toll-highway proposals of all kinds. ["Light on Toll Superhighways," *Better Roads*, July 1938, page 13]

In November, Representative Drew lost his reelection bid. His single term in the House of Representatives ended on January 3, 1939. He returned to Philadelphia to resume his practice of osteopathy.

Framework for the Future

MacDonald's report to President Roosevelt was unknown to the public, but it provided the framework for BPR's response to Section 13 of the Federal-Aid Highway Act of 1938.

With the report nearing completion, MacDonald wrote to Secretary Wallace on January 30, 1939:

On several occasions President Roosevelt has requested the Bureau of Public Roads to give attention to the general subject of special motor roads of the superhighway character. To illustrate the type of information he desired, the President sketched on a map of the United States a system of east-west and north-south lines of potential development for major national highways, and directed that studies be made of the probable traffic, cost and other considerations of importance. The conception outlined by the President went far beyond any previously suggested national highway system. While the Bureau did bring together as rapidly as possible the available facts and did submit in April, 1938, an informal report, it was necessarily tentative in nature because of the far reaching factual data needed and not then available upon which to base a sound adequate report.

The 1938 Act called on the BPR Chief to submit a report on a similar concept:

The Bureau found that a report on this subject alone would give a false impression of national highway problems unless as a part of a comprehensive report dealing with these problems as whole. This comprehensive report will be finally completed this week . . .

Since the President's original request set in motion the preparation of the report, which now turns out to be so far-reaching in its relationship to other social and economic matters in which the President is interested, it is my judgment that the Secretary and the President should consider the manner in which the report should be submitted to the Congress.

On February 13, 1939, Secretary Wallace wrote to President Roosevelt to place "a circumstance" before him. The Secretary summarized the report, including the conclusion that the toll network was not feasible. He added, "Incidentally, you will be interested to know that the transcontinental lines which you indicated for study have proved to correspond closely with the lines of heaviest flow of long distance travel." Congress asked Chief MacDonald to submit the report, but the report "involves many of the things with which you have been concerned, and upon which you have already made pronouncements . . ." He concluded:

[Because] of the large amount of factual data which it contains with their great social and economic implications, it is certain to have considerable discussion, press comment, and quotation, it appears to us appropriate that you should transmit it to the Congress with any comments which you desire to make. [Ritter, FDR Library, OF 129, Box 3]

The President left Union Station in Washington on February 16 by train and traveled to Key West. From there, he boarded the U.S.S. Houston to participate in elaborate war games, called Fleet Problem 20, to test the U.S. Navy's ability to protect the Panama Canal. His secretary, Marguerite "Missy" LeHand, sent word to Wallace and MacDonald on February 18 that they must not do anything about "the transcontinental road report until the President gets back." She also asked if they could send a copy of the report to the President on board ship, but that proved to be impossible. President Roosevelt returned to Washington on March 3. [Ritter, FDR Library, OF 129, Box 3]

On March 22, the President held a "no black tie-very informal" stag dinner that included Senators McKellar and Hayden, Representatives Cartwright and Edward T. Taylor (D-Co.), chairman of the Appropriations Committee, and Norman Bel Geddes, a designer who was then completing work on the "Futurama" exhibit for the General Motors building at the 1939 World's Fair in New York. The fair was due to open on April 30. One historian of the fair, Alice Goldfarb Marquis, described Geddes as, "Short, chunky, wild-haired, voluble, temperamental, and eccentric" and quoted a friend who said of Geddes that "his head is in the clouds, but his feet are certainly not on the ground."

Nevertheless, he created the fair's most popular exhibit. Futurama was a 7-acre model of what Geddes projected to be the world of 1960. His concepts of a city, circa 1960, were interesting, but it was his interstate superhighways that captured the popular imagination. Visitors were

seated in armchairs that moved around the exhibit for "a magic Aladdin-like flight through time and space." Marquis described the highway portion of the exhibit:

Seductive fourteen-lane ribbons, they swooped and curved through the diorama's 35,000 square feet. Some 10,000 scale model cars moved nimbly at three prescribed speeds, using transition lanes to reach grass-bordered lanes dedicated to speeds of 75 or even 100 miles per hours. Radio beams at the front and back of each car regulated the spacing between them, and at dusk light strips embedded in the edge of the road winked on as each car approached and off after it passed, obviating the need for headlights.

Professor Rose described the White House dinner:

The West Hall was set aside, on Roosevelt's instructions, for a model of Geddes' exhibit, and guests discussed creation of a Federal Land Authority empowered to take extra wide rights-of-way for roads and other public works. Both the president and congressional leaders sought a data and legal base on which to launch their authority. [Rose, Mark, page 11]

Author Phil Patton also discussed the event:

With his promotional eye, Bel Geddes brought along a model of a streamlined yacht he had designed, a toy sure to catch the fancy of the nautically minded former Assistant Secretary of the Navy, and a devoted sailor. Bel Geddes's highway idea also made an impression. Bel Geddes correctly diagnosed the conflicts, among federal, state, and local authorities as a major part of the highway problem. He argued for a national highway planning authority and a fifty-year construction plan. FDR, however, never allowed himself to be publicly associated with such a dreamer as Bel Geddes. His magic motorways were good publicity, but still a bit farfetched. [Patton, Phil, *Open Road*, page 73]

The day the President was to meet with Geddes, MacDonald forwarded a 12-page digest of "A Master Plan for Free Highway Development" for the President's review. The President's administrative assistant, James H. Rowe, Jr., forwarded the digest to Miss LeHand with a note:

The President asked for this when he was on his cruise but it was not ready in time The Bureau understands that the President is to see Norman Bel Geddes today or this evening. Since Bel Geddes is familiar with the general tenor of this report and since he has some "bizarre ideas" on highways, McDonald [sic] thought the President might wish to see the digest at least. [Ritter, FDR Library, OF 129, Box 3]

Swift wrote that MacDonald "thought Bel Geddes a crackpot; the last thing the country needed was fourteen lane bands of concrete crisscrossing the hinterlands." However, MacDonald could not deny the popularity of the exhibit:

And the exhibit's timing couldn't have been much better, coinciding as it did with the release of the bureau's opus. Still, the Chief avoided acknowledging Bel Geddes. When he was called on to speak at a dinner with GM officials in November 1939, he chose a

narrow path for his praise: Futurama had been good publicity for the highway industry. "Those of us who are in the highway field, as public officials, have lacked a public relations department to sell that idea to the public on the scale that you are selling it here," he said. "On behalf of the Public Roads in the Government, and my associates in the highway field, we express our profound thanks to General Motors for doing this public relations job for us, and for doing it so well." [Swift, pages 131-132]

Whatever Roosevelt thought about Geddes's ideas, his comments on the draft of *Toll Roads and Free Roads* bore no relationship to the designer's ideas.

At a March 28 Cabinet meeting, Roosevelt expressed his views to Secretary Wallace, as described in this abstract of the exchange:

Wrote Mr. Kannee that Secretary Wallace has directed Thomas H. MacDonald, Director of the Bureau of Public Roads, to revise report along lines dictated by the Secretary to Miss Batchelder, to the effect that it is his (Sec. Wallace's) understanding from the Cabinet Meeting Mar. 28th that the President would like Mr. MacDonald's report revised so as to make it less probable that the Cities will be able to get from Congress Federal funds for doing work for which the Cities should pay, and that the President wants the report revised so as to lay more emphasis on through highways as a mechanism for National Defense. Secretary Wallace also said his people will contact the War Department and he will submit a revised report with an accompanying letter, wigned [sic] by himself and the Secretary of War. Miss Huss [Secretary Wilson's secretary] asks if this is satisfactory with the President. – The President, by memo to Mr. Kannee April 4th, asked him to advise Miss Huss that he approves and that he will talk with Secretary Wallace upon his [the President's] return. Attached is Mr. Kannee's office memo of April 4th, re same. – Mrs. Poulton wrote Miss Huss April 6th that Mr. Kannee asked her to advise her that the President has OK'd the report incorporated in her letter of Mar. 29 and that the President will talk to Secretary Wallace when he returns. [Ritter, FDR Library, OF 1e, Box 11]

(President Roosevelt had left Washington by train for a stay in Warm Springs. He returned to Washington on April 9.)

Finally, on April 11, Secretary Wallace and, in keeping with the President's desire for a stronger defense angle, Secretary of War Harry H. Woodring transmitted the report to the President. Their transmittal letter summarized the finding that financing construction of the proposed roads through toll collection would not be possible. The letter also stressed the need for a system of direct interregional highways to meet national defense needs and the travel of motorists in their own vehicles, "a travel which, in addition to its immediate recreational benefits, is a powerful force for national unity."

The President asked Senator McKellar to review the report. McKellar responded on April 15 that he "thinks it splendid and should go to Congress." [Ritter, FDR Library, 1e, Box 11]

Roosevelt was still reviewing the report on April 24, when he wrote to Colonel E. M. Watson, secretary to the President:

Will you find out from MacDonald of Highways where in this report I can find anything about the excess condemnation principle, i.e., buying a wide strip and selling off the surplus land and renting gasoline concessions and if this is analyzed is it given approval and put in the summary? If it is not in at all—why not?

The answer came back that day from Rowe, the president's assistant:

With reference to the President's memorandum to you of today:

The report itself discusses "The excess-taking principle", beginning page 166 with the heading: "Nature of the Right of Way Problem". This chapter concludes on page 181 with the suggestion that Congress consider creating a federal land agency to have authority to make lands available for rights of way and for development for recreational and other facilities on a partly or wholly self-liquidating basis.

On page 182 under the heading "Federal Action Desirable", is a summary discussing the purposes of the proposed federal land authority. Note particularly the last paragraph on page 183.

On page 198, appendix "C" discusses the legal problems involved and previous experience in England and elsewhere abroad.

Pursuant to the President's suggestion, in the summary itself, Mr. MacDonald added this morning a specific recommendation on page 9 which reads as follows: "5. The creation of a federal land authority empowered to acquire, hold, sell and lease lands needed for public purposes and to acquire and sell excess land for the purpose of recoupment."

McDonald [sic] points out such a land authority would be concerned with all governmental land problems, as well as highway problems. [Ritter, FDR Library, OF 129, Box 3, underlining in original]

Toll Roads and Free Roads

Finally, on April 27, the President transmitted the report to Congress. The first four paragraphs of his 10-paragraph letter summarized the report's support for "a special system of direct interregional highways, with all necessary connections through and around cities, designed to meet the requirements of the national defense and the needs of a growing peacetime traffic of longer range." He noted, too, the importance of improved facilities "in the general replanning of the cities."

The next four paragraphs discussed right-of-way acquisition, and explained why he placed "great emphasis" on "excess-taking." This practice would reduce the cost in the long run, but it was also a matter of fairness to the Nation's taxpayers.

[The] man who, by good fortune, sells a narrow right-of-way for a new highway makes, in most cases, a handsome profit through the increase in value of all of the rest of his land. That represents an unearned increment of profit—a profit which comes to a mere handful of lucky citizens and which is denied to the vast majority.

In the final two paragraphs, be concluded:

In its full discussion of the whole highway problem and the wealth of exact data it supplies, the report indicates the broad outlines of what might be regarded as a master plan for the development of all of the highway and street facilities of the Nation.

I recommend the report for the consideration of the Congress as a basis for needed action to solve our highway problems. [Letter of Transmittal, Message from the President of the United States, *Toll Roads and Free Roads*, House Document No. 272, 76th Congress, 1st Session, April 27, 1939, pages vii-viii]

In *Toll Roads and Free Roads*, BPR fleshed out its earlier report with a more sophisticated interpretation of the state highway survey data. Part I, “The Feasibility of a System of Transcontinental Toll Roads,” identified and numbered the routes selected for study:

1. The Canadian border at Fort Kent, Maine, to Miami;
2. From Route 1 west of Boston to Seattle;
3. Port Huron, Michigan, to Laredo, Texas;
4. Philadelphia to San Francisco;
5. Canadian border north of Seattle to San Diego;
6. Charleston to Los Angeles

The routes included what the report called diagonals:

- 4A Washington, D.C. to Route 4 at Harrisburg, Pennsylvania;
- 4N Portland, Oregon, to Salt Lake City; and
- 4S Salt Lake City to San Diego.

The routes selected for study were similar, but not identical, to the lines on the Roosevelt map. As in the earlier review, the first part of the report explained that the proposed toll superhighway network was impractical. Aside from the light volumes of interstate traffic, the report added that most motorists have low incomes. According to a survey by the Bureau of Foreign and Domestic Commerce, “more than half of all family cars are owned by families that have an annual income of \$1,500 or less.” Fewer than 5 percent of all family cars are owned by families that earn more than \$5,000 a year, with less than a third owned by families with annual incomes over \$2,000:

In estimating the probable volume of toll-paying traffic on the selected superhighways, it is necessary to give due consideration to these facts. Persons of low income who own and operate passenger automobiles are influenced in the uses they make of their cars to a greater extent by the immediate operating expense, such as gasoline and oil, than by the

actual total costs, including tires, depreciation, and so forth. The cost of the gasoline consumed on a trip may amount to little more than a cent a mile. To the motorcar owner with an income of less than \$1,500 a year, a toll of 1 cent per mile is likely to appear as a 100-percent increase in his cost of operation; and so viewed it is an additional cost that he is not likely to pay. [*Toll Roads and Free Roads*, pages 13-15, selected routes identified on pages 18-19]

Moreover, the availability of a toll-free option parallel to the toll road meant that “the toll roads must offer advantages that loom larger than the tolls charged.” Toll roads would have to be built to accommodate volumes of traffic they might not achieve for 20 years. [*Toll Roads and Free Roads*, page 35]

Rather than submit a purely negative report, BPR added part II, not requested, describing “A Master Plan for Free Highway Development,” written primarily by Fairbank. The master plan was only 33 pages long as published by Congress, compared with 86 pages for part I. It called for a 26,700-mile nontoll network. Based on the statewide highway planning surveys and national defense needs identified by the War Department, the master plan included a map showing the “Location of existing routes tentatively selected as approximately the lines of a proposed interregional highway system.” [*Toll Roads and Free Roads*, page 109] Although this mileage was less than 1 percent of total rural highway mileage, the report estimated that it would accommodate at least 12.5 percent of total rural vehicle-mileage.

In rural areas, the interregional highways would follow existing roads wherever possible to preserve the investment in earlier stages of improvement, with separated intersections where justified by traffic need. Right-of-way width in rural areas should be not less than 300 feet; in urban areas, 160 feet. More than two lanes of traffic should be provided only where traffic exceeded an average of 2,000 vehicles per day. The right to limit access should be acquired at all points, but exercised only where “. . . the amount of entering vehicles is likely to endanger appreciably, or interfere materially, with the freedom of movement of the main stream of traffic.”

For the rural interregional network, the report said:

Compared with the selected toll road system, conforming to the congressional definition, this suggested Primary Highway System of the United States, is nearly twice as large, made so by the essential inclusion of all routes of primary importance and interregional utility, not possible within the limits set by the act.

Improved as a system of public roads along lines chosen to facilitate the important traffic awaiting its service, it will attract traffic and generate new activity, in contradistinction to the traffic-repelling tendency of the proposed toll-road system. [*Toll Roads and Free Roads*, pages 107-111]

The primary traffic problem, however, was in metropolitan areas that many of those proposing superhighway networks, including President Roosevelt, proposed to avoid:

In the larger cities generally only a major operation will suffice—nothing less than the creation of a depressed or an elevated artery (the former usually to be preferred) that will convey the massed movement pressing into, and through, the heart of the city, under or over the local cross streets without interruption by their conflicting traffic. *Toll Roads and Free Roads*, page 93]

The master plan outlined at length what was needed for urban traffic:

The routes should enter and traverse all large cities by means of facilities adequately designed to promote free movement of traffic to and through the center of the city. At large cities, wherever necessary, limited-access belt lines should also be provided; and all small communities should be bypassed, not entered. [*Toll Roads and Free Roads*, pages 110-111]

The report described the look of these highways, using Baltimore, Fairbank's home town, as an example:

[The] depressed and divided arterial lanes would be bordered on each side by one-way surface streets for local service. At intervals, important cross streets would be bridged over the depressed way and in the first blocks from each of such bridges, ramps at each side of the artery would afford separated up-and-down connections with the surface streets

The belt line . . . would be a limited access facility, with all intersecting highway grades separated and access provided only from the most important roads. It is probable that the greatest single contributions to this belt line would be those of U S 1 [sic] at the south of the city and U S 40 [sic] at the east. Between these two highways the belt line would serve as a bypass route for that part of the Atlantic coastal movement that is desirous of avoiding the city entirely. The same section, including, as it does, a bridge across the city's outer harbor, would serve to connect two rapidly growing industrial sections on opposite sides of the river. [*Toll Roads and Free Roads*, pages 101-102]

In discussing extension of interregional highways into the cities, *Toll Roads and Free Roads* was a radical departure from past superhighway concepts such as the Steiner and Bulkley plans that intentionally bypassed cities. It departed from experience with the *autostrada* of Italy and the autobahnen of Germany. The report also was contrary to President Roosevelt's view that the cities should take care of their own road needs, without Federal funds. Nevertheless, MacDonald and Fairbank, true to their Progressive Era views, followed the data to the conclusion that the country's worst road problems were in the cities and that the next stage in road development must address their needs.

In addition, the master plan addressed the right-of-way acquisition problem that the interregional highway system would pose. In the past, most projects were constructed on existing right-of-way. When additional right-of-way was needed, State or local authorities provided it without Federal-aid funding. Often, property owners donated the needed land since they would have access to the road. With regard to the proposed new interregional network, acquisition of right-

of-way would encounter several problems if left to the States. As noted in MacDonald's report to the President, many States lacked legislative authority to control access or to acquire right-of-way for protective purposes long before a highway project or widening is needed. The States also would be unable to satisfy the Federal desire—insisted on by President Roosevelt—to acquire excess right-of-way. [*Toll Roads and Free Roads*, pages 114-118]

To solve these problems, the report proposed creation of a Federal Land Authority ". . . having corporate status with adequate capitalization and authority to issue obligations within prescribed limits, which would be empowered to acquire, hold, sell, and lease lands for stated purposes." [*Toll Roads and Free Roads*, page 121] The authority would be used not only for highway purposes but for other Federal public works projects.

The report also noted the relationship between the proposed urban network and the improvement of the Nation's cities. One of the advantages cited for the Federal Land Authority was that it "might supply very effective means for promoting a reasonable coordination" among public works projects. For example, the Authority could avoid conflicts between the location of Federal slum-clearance projects and Federal-aid street improvements. The Authority was needed as soon as possible to acquire "decadent property" in urban areas at lower prices. [*Toll Roads and Free Roads*, pages 121-122]

Aside from proposing a Federal Land Authority, the report recommended detailed investigations in cooperation with the State highway agencies and the War Department "leading to the designation of a system of reasonably direct interregional highways, with appropriate connections through and around cities . . . and limited in total extent to not more than 1 percent of the total mileage of rural highways in the United States, without specific limitation in each State." The report also recommended continuation of the Federal-aid highway program, the program to eliminate hazards at railroad-highway grade crossings, and the program of secondary and feeder road construction. [*Toll Roads and Free Roads*, page 122]

(Appendix C described experiences in the United States and other countries with excess condemnation. In the 19th century, London's Metropolitan Board of Works had applied to Parliament for authority to condemn land in each instance." The board widened 14.13 miles of streets, "condemning land worth \$58,859,000; it recovered \$26,608,000 from the sale of surplus land, which was 43.5 percent of the construction cost." The improvement of Northumberland Avenue was the only project where the entire cost could be recouped through excess condemnation. Because the avenue was in a low economic part of London, the board was able to acquire the property at a reasonable cost. "The avenue created new economic utilities in its neighborhood and it was thereby possible to dispose of frontages at good prices."

(The appendix also cited the Kingsway improvement, discussed earlier. [*Toll Roads and Free Roads*, page 130])

Reaction to BPR's Report

Senator Hayden praised the report and the President for their discussion of excess taking. "The old legal concept of taking private property for public use was that only so much as was actually needed could be taken. That is gradually being revised in this country." He pointed out that

London had “paid all the costs” of a street improvement in this way. [Associated Press, “For Military Use in War,” *The New York Times*, April 28, 1939]

The Evening Star in Washington explained that the report “opposed immediate construction of six transcontinental superhighway toll roads suggested by several House members.” The toll roads “would not be economically feasible or adequate to meet traffic needs.” The article continued:

At the same time, however, the bureau recommended 16 “international [sic] routes,” 6 of which conform closely with suggestions by Representatives Snyder, Democrat, of Pennsylvania, and Randolph, Democrat, of West Virginia for three East-West and three North-South highways

Representative Snyder said the bureau’s interregional route system “doesn’t go as far as we do in the vision of national building and the requirements that thousands of people must leave the cities.”

He estimated the six super-highways he proposed would induce 10,000,000 persons to move from the cities to the highway routes in 25 years. In addition, he contended manufacturing plants also would “get out in the fresh air.”

Representative Cartwright introduced a bill creating a new agency to begin planning for construction of streamlined, transcontinental highways. He said his bill “would provide for an Authority which would have the same power of operation as the [Tennessee Valley Authority] to proceed, under the right of eminent domain, with a national program.” The Authority would establish the routes, eliminate “bottlenecks,” and coordinate congestion relief. “It’s too big a problem for the individual States to handle.” [Associated Press, “New Agency to Map Long-Range Highway Program Proposed,” *The Evening Star*, April 29, 1939]

Better Roads published a lengthy summary of *Toll Roads and Free Roads*, as well as two linked editorials. The first, “Not Cross-Continent,” began:

We now have something to replace the prophetic insight of the advocates of transcontinental superhighways who were splashing all over the front pages a year or so ago.

BPR engineers found that the 14,000-mile toll network “would not come within 50 per cent of being self-supporting.”

The second editorial, “But a Master Plan,” described part II as “a bold solution” that “deserves, and will have, the close study of road administrators, planners and highway-minded citizens.” [“A Highway Plan for America,” “Not Cross-Continent,” and “But a Master Plan,” *Better Roads*, May 1939, pages 13, 15-16, and 34]

Mississippi Highways magazine said that President Roosevelt’s endorsement of the need for action was “gratifying for it may be taken as an indication of a large program beginning with Federal aid legislation next year.” The report’s detailed analysis would “undoubtedly increase

the highway program rather than to diminish it as many people feel is being attempted due to the efforts on the plea of economy.” Details remained to be worked out, but the magazine concluded:

It is gratifying that the report has been made at this time for it will surely have an influence on highway appropriations which are to come up next year. Instead of another reduction in the Federal Aid appropriation we can look for an increase with the possibility that an additional appropriation may be made for the first step in the interregional system. [“National Superhighways Submitted to Congress,” *Mississippi Highways*, May 1939, page 24]

On May 29, Chairman Cartwright delivered an address, titled “Plans for Future Highway Improvement,” during the National Radio Forum arranged by the *Star* and broadcast over the National Broadcasting Company. He called *Toll Roads and Free Roads* “the most complete assembly of facts on highway use and the most comprehensive discussion of the highway problems of the entire country that has ever been made available.” He told listeners:

For several years there had been an increasing number of visionary proposals by advocates of elaborate coast-to-coast superhighway networks, with more and more agitation for congressional action, but there had been no thorough analysis of the actual and potential volume of transcontinental travel, and not much factual information was available by which to judge the feasibility of tolls and other factors. We now have the facts.

He summarized the conclusion that “only a small portion of present traffic could be attracted to the toll system.” After explaining why that was the case, he said that the report was not entirely negative. The facts showed the need for continued highway improvement, including a special system of direct interregional highways:

It is estimated that a system of interregional highways providing reasonably direct connection between the larger cities would include not more than 30,000 miles. This is about twice the mileage of the proposed toll system, but a lesser mileage would not include all routes that are of primary importance. Traffic-flow maps would be the most important guide in fixing the location of these routes. In large part the system could be created by modernizing existing highways.

If the Bureau plan is adopted, the interregional routes would enter and traverse all large cities by means of facilities adequately designed to promote free movement of traffic to and through the center of the city. Aiming these routes at the center of large cities may be a surprise to many people, but that is where most of the approaching traffic is bound. Limited-access belt routes would be provided wherever it is found that enough people wanted to pass around the city rather than go through.

Chairman Cartwright pointed out that the Secretary of War concurred in the report as being in accord with national defense needs:

During the World War all transportation facilities between centers of population and between industrial areas were overburdened and congested with traffic. An interregional system of highways would be a necessity in turning our peacetime facilities to production of the materials for war and in moving men and materials to any front whenever and wherever needed. Our Army is now motorized, and any army without roads would be like a submarine without an ocean.

Before people “get all excited and write to Washington concerning the exact location” of the route, he wanted to emphasize that the location had not been fixed. The report was merely a guide. He added, “I wish also to emphasize that Congress has never yet determined the exact route of any highway, and probably never will.”

After describing the report’s other recommendations, he said of the master plan that BPR’s job “was simply to define the need for highways, and a fine job it has done.” It was, however, just a plan “and no more.” His committee was studying it, but he said, “It is not contemplated . . . that there will be any hasty action by the Congress.” [Cartwright, Representative Wilburn, “Plan for Future Highway Improvement,” Appendix, volume 84, part 13 (May 24, 1939, to July 12, 1939), *Congressional Record*, pages 2304-2306]

Later in the year, *Better Roads* asked several authorities on city planning and development for their opinions on the urban elements of BPR’s master plan. Professor William Bailey, a sociologist at Northwestern University, predicted that urban superhighways would accelerate suburban growth:

Suburban areas are now growing three times as fast as the city areas, and superhighways must be built to transport many of their people to the heart of the city. However, many self-contained shopping centers in the suburban areas are cutting into the commercial business in the city’s heart.

Robert Kingery, manager of the Chicago Regional Planning Association, agreed that suburban development would increase automobile traffic to the heart of the city, but that fewer shoppers would rely on downtown. “The larger cities, he says, continue to centralize as business centers and to decentralize as shopping centers.”

Miller McClintock, director of the Yale Bureau for Street Traffic Research, had recently addressed the Pittsburgh Chamber of Commerce, declaring that “the parking problem cannot be solved and never will be solved along the curbs of our streets.” With “considerable reluctance,” he had concluded that public control of parking was necessary. Every large city should organize an automotive terminals commission to “handle the development and operation of parking lots and garages very much as public utility commissions handle problems of necessity and convenience in the utility field.” Professor Bailey agreed that street parking should be eliminated because it was uneconomical and not basic in the common law.

McClintock also had suggested a system of elevated highways that would increase business for downtown merchants:

Unless steps of this kind are taken, there will be in the next decade such a radical depreciation of business values upon which the tax structure of the community is predicated that great difficulties can be foreseen.

George H. Herrold, planning engineer of the city planning board of St. Paul, Minnesota, agreed with the master plan's theory about the impact on cities:

[The] construction of such express parkways and their terminals may also cause a retarding effect in the movement of both people and commercial businesses towards the periphery of the city, and create an entirely new conception of city life, with more emphasis on the basic internal transportation problem and basic and logical rebuilding of home districts—a thing that would be most welcome in these days of premeditated bankruptcy of cities.

The magazine also consulted urban critic Lewis Mumford, had collaborated with Benton MacKaye on the essay about townless highways but was better known at the time as author of the critically acclaimed and influential *The Culture of Cities* in 1938. He was skeptical that the proposed express highways would benefit cities:

Instead of integrating the cities more within themselves, he fears that “the habit of routing arterial highways into and through big cities is one of the factors that is most seriously draining them of population.”

Construction of expensive highways, he warns, “only adds to their potential bankruptcy, at the same time that, by encouraging the increase of daily commutation distance, it decreases the possibility of ever catching up in taxes with their local needs: since more and more, the people who work in the city live in outlying areas, beyond the reach of the municipal tax assessor.”

Mr. Mumford contends that highway planning hinges upon city organization. “You cannot unite a 1940 highway with an 1840 city plan, revamped only by broadening and depressing express avenues. The cities that have gone farthest in this direction, Detroit and Los Angeles, are the worst examples of urban chaos.”

To make the suburbs more attractive without making the cities better places to live in is precisely the wrong way to plan transit routes. Good highway planning, Mr. Mumford declares, “means indeed the replanning of the city, but not to enable broad arteries to penetrate the city; rather the opposite, to keep them out and make them needless—partly by the rebuilding of blighted areas for housing.

Walter H. Blucher, director of the American Society of Planning Officials, was skeptical of the master plan's concept that the new express highways could rehabilitate blighted districts that exist in every city. The highways might stimulate improvement of the districts, but he said that other factors were involved in how the land was used. “The problem of the residents of the blighted area is an economic problem.”

The director of the Chicago Area Project, Clifford Shaw, said that based on his experience in the city, the primary cause of blight was economic. “People live here who can’t afford to live elsewhere,” he said. “Historically, whenever a group of people can afford to live elsewhere, they move. Generally their movement is outward—even as far as the suburbs.” Blighted areas tended to spread their blight, even to present first-class residential areas:

In Chicago, at least, the workers want to live near their factories. Better means of transportation won’t change this situation much. “The slum area is going to be with us, and it’s going to stay in the center of the city,” Mr. Shaw declares. “And where would the slum-dwellers go, anyway?”

The expressways might have a positive impact by splitting blighted areas into small units that would be easier to address:

The theory of the Chicago Area Project today is to work with the people now living in the blighted areas to develop interest in their problems and to build up community spirit and the will to do something about their present situation. Where a natural geographical community exists, this is much easier.

As Professor Bailey pointed out, the blighted areas, by their proximity to downtown, were the most valuable land in the city. “We should make the maximum use of these accessible districts instead of the least use, as at present.” That would be possible if transportation between them and downtown were improved.

Better Roads also asked about other urban transportation, but the experts said that cities varied in their application of transit. In New York City, 90 percent of travelers rely on the area’s excellent mass transportation. In Los Angeles, where mass transit is “much inferior,” the automobile was dominant. Chicago showed a different pattern, as Kingery explained. Occupied areas followed railroads, while comparatively little development occurred along highways. The magazine summarized this point even though “the profusion of billboards, hot-dog stands, filling stations and other strip development might lead us to think otherwise.”

Coordination of the modes, particularly transit, was essential:

No superhighway program should be worked out unless all transportation facilities are considered, Professor Bailey declares. “The most economical transportation is collective transportation. The automobile becomes a very expensive means of travel within the city when other forms are available”

Professor Bailey declares flatly that mass-transportation facilities must not be discarded in favor of the automobile. He predicts a greater use of collective transportation on the highways, but warns that “our superhighways are likely to become congested, no matter how wide we build them, because they draw traffic from a wide radius.”

Blucher asked, “Is it good practice to widen the streets so that a man can drive downtown alone, rather than force him to use mass-transit facilities?”

Charles Gordon, managing director of the bus-oriented American Transit Association, rephrased the issue by asking why cities exist:

He concludes that they arise from the need to group large numbers of people in order to provide easy accessibility for carrying on their activities In other words, the main reason for cities is to permit people who have business to transact with each other to get around and transact it easily. If they can't get around and travel within the city, then the city will die.

Mr. Gordon believes that the great masses of people must continue to be dependent upon public carriers. Large numbers of city-dwellers cannot afford to drive automobiles. At present, however, available economic resources of the cities are being spent to benefit automobile riders "while the basic problem of urban congestion grows worse instead of better."

McClintock agreed that "whatever steps are taken to bring about ultimate traffic solutions, due consideration must be given to mass-transportation facilities and to the needs of a substantial portion of the population that will always find it necessary or desirable to use mass facilities."

Blucher declined to recommend ways to increase the use of transit, which at the time was provided mainly by private companies, not public authorities:

"Not at this time," says Walter Blucher. "We simply do not have enough information on which to base them. The state-wide highway planning surveys in themselves are fine things—but so many other factors enter in determining an urban highway program!

"Generalizations are simply impossible. Each city is unique and has its own highway and street problem, which is intimately related to its entire transportation problem." ["Motor Traffic and Tomorrow's Cities," *Better Roads*, August 1939, pages 19-20, 31]

Seely put the master plan in the context of the changing highway community that had emerged in the 1930s:

The BPR clearly designed this plan as the foundation for a new consensus, for it incorporated ideas of three of the four main groups of road builders—state highway departments concerned with the primary system, the superhighway enthusiasts and urban road builders. Yet always visible were the BPR's traditional planning goals—to build roads that could meet current traffic needs and pay for themselves. [Seely, page 171]

From the perspective of history, part II of *Toll Roads and Free Roads* was the first public description of what became the Interstate System. At the time, however, the master plan was a recommendation that neither the President nor Congress had requested—they had requested the study contained in part I. Moreover, on April 30, just a week after the report's release, the 1939 World's Fair opened in New York City with its popular, visionary Futurama exhibit that made the master plan look like a very boring option.

As a result, *Toll Roads and Free Roads* did not immediately halt consideration of toll superhighways on excess right-of-way with room for multi-lane handling of cars, trucks, buses, trains, and aircraft. It did not discourage the visionaries who had proposed such ideas, Members of Congress who supported them, or President Roosevelt.

A Prophet Looks Back

In October 1939, Frank Sheets addressed AASHO's annual meeting in Richmond, Virginia, on the topic: "The Development of Primary Roads During the Next Quarter Century." He told his former colleagues that he was not before them in the role of prophet. He had adopted that role in his April 1937 talk on "The Highway of Tomorrow." Instead, he planned to "point out a rational procedure for the solution of the problem, whereby we may use progressively all available means—*To go as far as we can see*, so that, in turn, we may—*See how far we can go*."

Others had ventured predictions since April 1937, but Thomas H. MacDonald had made "a most significant contribution to our thinking" with release of his "masterful report" on *Toll Roads and Free Roads*:

In that report Mr. MacDonald, with his feet planted on solid reality, has done much to challenge merely wishful thinking, and has with unerring instinct pointed out some of the practical problems that must be met in our future development. In Part 2 of that report he presents a master plan for free highway development which merits thorough and continued study by all those interested in the future of highways, and with commendable vision points out that the most formidable barrier to present progress and to the realization of future highway needs is the acquisition of the rights-of-way upon which to build the facilities.

Sheets took a few moments to discuss another vision of the future, that of Norman Bel Geddes and his Futurama exhibit:

Some who have viewed that challenging exhibit are convinced that not only its broad vision but its detailed concepts are correct. Others have challenged some of the ideas presented. In the mind of the highway engineer and administrator there may arise certain practical questions when this exhibit is viewed.

For Sheets, the important feature of Futurama was that everyone emerging from the exhibit did so "with a very positive conviction that some heroic measures are needed, both in engineering planning and in financing if tomorrow's highway needs are to be met." By creating a "public vision," it was building "public acceptance of our future needs and the latent reservoir of civic opinion which may later be crystallized into support of a carefully planned program of primary road development during the next quarter century."

What was remarkable about these and other concepts of the future was that fairly recently "we were self-satisfied, complacent and smug about our highway situation." The view was that "we had highways enough and that it was time to call a halt to highway expenditures." The realization of the inadequacies of the highway network was "refreshing" because it meant that

“we recognize the necessity of taking some heroic steps if we are to meet even the obvious needs of the future.” He continued:

How fortunate it is that during the last two years we have had these voices crying in the wilderness of chaos, hazard, congestion and inadequacy which characterize today’s highway situation, and demanding that we must courageously attack our future problems.

It is of little importance to me just who is right about future highway needs and facilities. Some concepts may be visionary, some views may be too rosy, some ideas may be too conservative, but the all-important and soul-satisfying fact is that at last we have our eyes focused on the future. The big story is that we have an enormous highway job ahead, and that during the next 25 years we must execute a highway program which will overshadow in volume and in money expenditure the program of the last 25 years.

In thinking about the future, Sheets thought back 25 years earlier:

When I look back 25 years to the lack of facts which we had available for guidance in formulating our highway programs, when we didn’t even know what manner of vehicle or how many vehicles we were designing to carry, when massed public opinion demanded sticking to the old locations and directing every highway past the peanut stands, grocery stores and civic centers of our municipalities, when every doctor, lawyer, preacher and business man was an expert highway engineer—I marvel that the engineer of that period was able to exercise the vision and the courage which has brought about our highway system of today. He is entitled to praise and gratitude, rather than criticism.

The data now available, Sheets said, “will enable you to embark upon a period of unprecedented service and unprecedented highway development during the next quarter century.” He continued:

As this public sentiment inevitably crystallizes into action, let us resolve to be ready to use intelligently and with vision the broad background of experience and the great mass of facts which we have gained from the planning surveys, so those who come back to the Golden Anniversary of this Association [AASHO in 1964] may look back upon another 25 years of accomplishment with pride and with the conviction that the American public has been served well.” [Sheets, Frank T., “The Development of Primary Roads During the Next Quarter Century,” AASHO, 1939, italics in original]

The Struggle Over Highway Funds

In discussing release of *Toll Roads and Free Roads*, *Time* magazine said the “Congress had an admiring eye cocked on Adolf Hitler’s great new system of Reich auto roads” when it asked BPR to investigate the feasibility of a system of toll superhighways. “But deliberate, slow-spoken Chief Thomas Harris MacDonald . . . decisively turned his broad back” on the idea. Instead, “MacDonald had another plan for which he plumped, a plan edited and approved by Franklin Roosevelt himself.” [“Road Report,” *Time*, May 1, 1939, page 64]

However, within weeks of sending *Toll Roads and Free Roads* to Congress, the President was again talking about toll superhighways. On June 15, he met with aides to discuss a relief program of self-liquidating projects that could be funded outside the regular budget. The idea was to create several Federal “authorities” that could issue their own securities to raise funds they would lend to quasi-public bodies for the projects. *The New York Times* explained:

A “toll authority” might be set up to gather funds by selling its own securities to the public, and lend them for toll bridges and roads. Another “authority” might be commissioned to make equipment loans to railroads. It has been suggested that some provision be made for a close tie-up between one of the authorities and the Export-Import Bank to facilitate self-liquidating credits to our Latin-American neighbors. [Catledge, Turner, “Roosevelt Weighs New Spending Plan,” *The New York Times*, June 16, 1939]

On June 21, 1939, he responded to an inquiry from Senator James F. Byrnes (D-SC) about a provision in the House version of the proposed Work Relief and Public Works Appropriation Act of 1939 that would allot \$125,000,000 to PWA for loans and grants for non-Federal public works. The President opposed the provision because he said it would force WPA to drop 165,000 workers from employment. As an alternative, the President proposed a public works loan program:

I believe there is a better way to accomplish the laudable purposes of this bill There seems no reason why there should not be adopted as a permanent policy of the Government the development and maintenance of a revolving fund fed from the earnings of these government investments and used to finance new projects at times when there is need of extra stimulus to employment. Such times will recur in the future, as they have in the past, and there will always be need for public facilities and improvements in our natural resources which can be most profitably met by the use at times of greatest need of employment of the accumulated receipts of such a revolving fund.

He had canvassed government agencies to identify “genuine public needs—projects that can be put under way quickly and, of great importance, will be self-liquidating.” He proposed “investment of funds in revenue earning channels on a self-liquidating basis and in no way competitive with private enterprise.” He listed numerous public works, but the second item was:

Express Post-Roads: Self-liquidating toll roads: bridges, high-speed highways and city by-passes.

President Roosevelt followed up on these ideas by writing to congressional leaders on June 22 to propose a \$3.86 billion self-liquidating revolving fund loan program as a relief measure. For the express highway program, he proposed to make \$750 million available under a 4-year program, with \$150 million to be disbursed in 1939-1940. As recounted in a news service report, the President held a special press conference in Hyde Park on June 22 to discuss the message:

[The] President pointed out that the plan he had in mind for the self-liquidating highways conformed in general to the recommendations of the Bureau of Public Roads BPR advised against construction of a network of “superhighways” across the country, Willy-

Nilly suggesting a series of new primary roads between population centers, as well as construction of new city-entrance and exit arteries and by-passes around cities for through traffic.

The President also reiterated his belief in the theory of excess condemnation of lands adjacent to the proposed express highways, a theory he has repeatedly espoused as a method of recoupment through lease and sale of adjacent condemned lands, in order that the government, rather than individuals, may profit by the unearned increment.

The President's sudden proposal for a revolving fund loan proposal was, however, running into snags. The Republican National Committee issued a statement by Representative Dudley A. White of Ohio, a member of the House Appropriations Committee:

[The plan is] not only another ascent into the stratosphere of New Deal jitterbug economics, but, if adopted, it would be the first major step toward state socialism under which the federal government would take over private industry and the United States would become a totalitarian nation. [NPN News Bureau, "Toll Road Plan Urged by FDR," *National Petroleum News*, June 28, 1939.]

The day after the President's letter, *The New York Times* reported that reaction "was mixed," explained:

There was a strong undertone of combined resentment and surprise at the proposal to encourage construction of toll roads and bridges. The Congressional trend has for long been away from toll roads and bridges and there were indications that this feature faced stiff opposition. [Belair, Jr., Felix, "Self-Liquidating Loan Program Gets Mixed Reception in Congress," *The New York Times*, June 23, 1939]

On June 23, the President and congressional leaders agreed on a course of action for introducing and considering bills on the new plan before the congressional recess began on August 5. Among the Administration officials participating in the conference was John M. Carmody, who would head the FWA when it began operations on July 1 with BPR, renamed PRA, within its ranks. (Most recently, Carmody had been the head of the Rural Electrification Administration.)

By then, however, opposition in the Senate and House was growing. Senator Harry Flood Byrd (D-Va.), a lifelong highway booster with an equally lifelong objection to debt, public or personal, denounced the proposal as an "evasive plan for public spending." He introduced a resolution calling for more information on the liabilities, assets, bookkeeping methods, and other details of 30 lending agencies already in existence. [Catledge, Turner, "President Pushes Congress to Enact Loan Program Now," *The New York Times*, June 24, 1939]

On June 25, Administration officials were already looking for ways to modify the bill to address the growing opposition. Senator John E. Miller (D-Ar.) was skeptical that lending \$750 million over 4 years for self-liquidating express roads, toll bridges, and city bypasses would prove practical. "It wouldn't be long after these roads were built until there would be a demand on

Congress that the Federal Government lift the tolls and pay off the bonds,” he said. [Associated Press, “May Drop Lending Bill,” *The New York Times*, June 26, 1939]

Senator Byrd considered the “lending” bill really a “spending” bill designed to get around the national debt ceiling. According to “Political Mill” columnist G. Gould Lincoln, Senator Byrd had “given particular attention to the part of the bill which seeks to finance a federally constructed highway system—a system of superhighways, express roads, etc., traversing the country.” The \$750 million in the bill for such projects would be “only a starter,” in the Senator’s view. To back up this view, he cited *Toll Roads and Free Roads*, which dismissed what Lincoln called the “Bulkley Bill” toll proposal, while President Roosevelt, in his transmittal letter, emphasized excess condemnation as a method of self-liquidated financing:

To Senator Byrd and other critics of the President’s lending bill, the plan to have the Federal Government condemn land which the Government, or Government-owned corporations, is to use for business purposes is an entirely new wrinkle. Under the plan, the Government, or its corporations, would lease or sell land for filling stations, hotels, amusement places, stores of one kind or another, all across the country. If this is not placing the Government in competition with private business, they want to know what it is. Furthermore, they contend that the use of condemnation processes for taking land in excess of what is actually needed for the right of way of the proposed highways is not in conformity either with the Constitution or public interest. [“Critics of Lending Bill, Suspecting Another Spending Program, Plan Rough Reception of Measure,” *The Political Mill*, *The Evening Star*, July 18, 1939]

On July 29, the Senate voted 42 to 38 to approve an amendment stripping the superhighway program from the bill, and 45 to 32 to remove a proposal to let the RFC buy \$350 million of railroad equipment for lease to the railroads. For the Senate’s bipartisan economy bloc, these were the two most objectionable feature of the bill.

On July 31, the Senate approved a stripped-down version of the bill authorizing loans of \$1,615,000,000. Among the items dropped was \$500 million for toll highways and bridges. [“Senate Votes Lending Bill of \$1,615,000,000, Slashing Roosevelt Total by Half,” *The New York Times*, August 1, 1939]

The following day, the House killed the bill. In what the *Times* called “the severest defeat yet dealt the Roosevelt Administration by the increasingly independent Congress,” the House voted 193-166 against the House Rules Committee rule on consideration of the bill. The “nays” included 147 Democrats:

The end of the lending bill, so far as this session is concerned, came suddenly after only an hour’s debate. The finish was written by the same shifting coalition of Republicans and conservative Democrats who wrested control from the titular leaders more than two weeks ago and have run the Congress ever since. [Catledge, Turner, “Lending Bill is Killed in House, 193-166,” *The New York Times*, August 2, 1939]

The reaction of the highway community to the President's lending bill had generally been favorable, although doubts soon began to appear regarding the implications of the proposed Federal authority. The president of AASHO, W. W. Mack of Delaware, summed up some of the concerns at AASHO's annual meeting in October. He praised BPR's report for clearing away "a mass of ill-founded theories and misinformation," but cautioned that AASHO should give careful consideration before supporting any proposal that would increase the authority of the Federal Government in road building at the expense of the States. Mack cited Federal acquisition of lands, without the consent of the individual States, as an example of a doubtful proposal. Mack also warned against the "use of Federal funds as an opiate to soothe the objections of those who fear the influence of Federal domination."

(Representative Boland, who had worked with Dr. Drew on his Jersey City-to-Washington express highway, continued to pursue a superhighway plan. General Watson sent a memo to President Roosevelt on May 22, 1939, about Representative Boland's plan to introduce a bill to create a Federal Highways Corporation to build express toll highways with excess taking of land to be used for resettlement projects, airplane fields, and general service facilities. On June 20, Representative Boland wrote to ask General Watson to secure the President's opinion on the advisability of introducing the bill. The President's response, written before the House killed the lending bill, was not found, but a draft stated:

As you know, I have been much interested in your proposal to provide authority for "construction of express toll highways and excess taking of lands for other purposes". In my letter to Senator Byrnes of June 21, I suggested including some of the features of your draft bill in general legislation authorizing self-liquidating projects. The bill since introduced into Congress may provide sufficient authority without introduction of a separate bill such as you suggest in your letter to General Watson under date of June 22.

The general subject which you and Dr. Drew presented to me should, of course, have further study and I am asking the National Resources Planning Board and the Commissioner of Public Roads Administration [sic] to keep in touch with the situation. [Ritter, FDR Library, OF 129, Box 3, folder "Roads and Highways 1939"])

On August 2, 1939, Representative Boland introduced H.R. 7469 authorizing the RFC to subscribe in the stock of a corporation established to finance self-liquidating express highways. As with so many such bills, Representative Boland's legislation received no further action.

Object Lesson: The Pennsylvania Turnpike

On January 29, 1940, MacDonald told ARBA that he was particularly concerned about interests that would support alternatives to the interregional highway proposal if they did not think they would benefit from it. In a speech titled "Accord or Discord?" he said that "the chorus remains constant but the verses sung by various groups glorify superhighways, transcontinental routes, farm-to-market roads, city streets, and more lately defense highways." As far as he was concerned, only "downright selfishness" would cause rejection of the master plan of "fair and honestly balanced programs in the use of highway revenues."

As Seely pointed out, the master plan was hurt by several other factors. Compared with the extremely popular Futurama exhibit, which had caught the public's fancy, the master plan was conservative, if not downright boring. Further, Germany's blitzkrieg invasion of Poland on September 1, 1939, had launched World War II, prompting the United States to begin to focus on defense measures instead of visionary or even conservative plans for a national superhighway network.

However, another factor was the immediate success of the early toll superhighways and parkways, a success that undermined the credibility of *Toll Roads and Free Roads*, especially the toll portion of the report. The success of Connecticut's Merritt Parkway, which was attracting 18,800 passenger cars per day, and the Pennsylvania Turnpike, which exceeded BPR's traffic projections from the first day, tarnished the BPR's recommendations on toll roads. [Seely, pages 175-176]

The first section of the Merritt Parkway opened in June 1938 as a toll-free parkway with commercial traffic excluded. The bonds used to finance construction were expected to be retired with tax revenue. Instead, the State imposed a 10-cent toll on the parkway in June 1939 to finance an extension. Rather than switch to the parallel toll-free Boston Post Road (U.S. 1), motorists preferred to pay a dime for the advantages of parkway travel. [Radde, Bruce, *The Merritt Parkway*, Yale University Press, 1993, pages 85-86]

Dan Cupper, in his history of the Pennsylvania Turnpike, explained that the key to the plan was an abandoned 1880s railroad project. William H. Vanderbilt, who owned the New York Central, was determined to undermine the Pennsylvania Railroad by building a parallel line. In 1884, his crews began work on tunnels through the mountainous region east of Pittsburgh. However, in July 1885, financier J. Pierpont Morgan brokered an end to the battle between the two railroad owners. "On September 12, with 60 percent of the grading completed, and 4 ½ miles of tunnel excavated, work was halted so abruptly that laborers left their tools where they lay." The abandoned project became known as "Vanderbilt's Folly." [Cupper, Dan, *The Pennsylvania Turnpike: A History*, Applied Arts Publishers, Second Revised Edition, 2001, pages 4-5]

In the mid-1930s, the State began planning a 160-mile toll superhighway from Irwin near Pittsburgh to Carlisle near the State capital of Harrisburg. The cost of the superhighway project could be reduced by routing the turnpike along Vanderbilt's roadbed and tunnels. When bankers were not willing to risk purchasing the bonds, the Pennsylvania Turnpike Commission turned to the Federal Government. Cupper explained how the commission put together the financing package, beginning in 1935:

Edward N. Jones, state director for one of the New Deal programs, the Works Progress Administration, teamed with Warren Van Dyke, then Pennsylvania's secretary of highways, to seek federal funds for a survey. Further, WPA chief Harry Hopkins not only sold the idea to Roosevelt, but he also won the president's support for a loan from another New Deal agency, the Reconstruction Finance Corporation, to aid construction. A WPA grant was awarded, and on January 27, 1936, a new generation of survey crews began invading the mountains and hollows of south-central Pennsylvania.

In 1938, the Pennsylvania Turnpike Commission was ready for construction, but bankers were hesitant to buy the bonds issued to pay for the project:

The projects [sic] magnitude wasn't really the problem—the \$35 million Golden Gate Bridge near San Francisco, a toll facility, was opened in May 1937. But, as one observer pointed out, bankers couldn't imagine a toll bridge 160 miles long. Nobody had ever built a toll highway of this length, cost and scale before, and it was not at all clear that it would or could pay for itself. A preliminary \$60 million bond offering was so weakly received that it was canceled.

At Roosevelt's direction, the RFC offered to buy \$35 million (later increased to \$40.8 million) in turnpike bonds at 3¾ percent interest (considered high at the time, again because of the unproven nature of the toll superhighway concept), but this agreement hinged on the commission's ability to win a Public Works Administration grant to cover 45 percent of the construction cost. PWA was a federal program that made grants for work to be performed under contract rather than directly employing people.

Commission Chairman Walter A. Jones was dealing personally with Roosevelt's Interior Secretary, Harold L. Ickes, who also oversaw the WPA. Ickes assured Jones that, with the clouds of war in Europe on the horizon, Roosevelt was convinced of the strategic military value of the Turnpike and would be good for the \$26 million (later \$29 million) needed to satisfy the RFC.

A last minute hitch developed, as Jones recalled:

“One day our hopes seemed about to be dashed. Mr. Ickes telephoned me. ‘I have bad news,’ he said, ‘the President will give you only \$20 million.’ Mr. Ickes showed me a radiogram from San Francisco where President Roosevelt was about to put out to sea for a prolonged vacation trip. It looked as if the arrangement was going to fall through unless we could get the President to change his mind.

“We immediately dispatched a wire to the President. Fortunately, it reached him a few minutes before his cruiser was set to sail. Mr. Roosevelt's reply was: ‘I'll let you have \$25 million.’ And then Mr. Ickes took the responsibility of adding the last million to build the road. Financing of the Pennsylvania Turnpike had been completed.”

With confirmation of Federal financing on October 10, 1938, construction began on October 27 with the ceremonial turning of earth on a farm in Cumberland County. [Cupper, pages 7-8]

(The incident Jones described happened in July 1938. Beginning on July 7, President Roosevelt had traveled by train across the country on a circuitous route backing Democratic candidates in the mid-term election. His train crossed into California on July 13, stopping at Crockett. The next day, President Roosevelt and his party left the train early in the morning to travel by car to the Mare Island Navy Yard in San Francisco and the Treasure Island site of the San Francisco International Exposition, scheduled to open in 1939. He attended a luncheon in the exposition's Administration Building. President Roosevelt began his speech by saying:

Rarely, perhaps never, in my life have I been as thrilled as I have today, starting with the visit to my old friends of nearly a quarter of a century ago at the Mare Island Navy Yard, and then taking that trip by motor over wonderful highways to that view of your two new bridges that I had never seen before.

(He added:

And I am glad, too, that we have been able to help the State of California and the municipalities around San Francisco Bay in the construction of the two great bridges which I saw today for the first time. Those bridges form a magnificent illustration of the new saying that "what nature has put asunder, man can join together."

(With Europe threatening to go to war, the President spoke of efforts to maintain the peace. "We fervently hope for the day when the other leading nations of the world will realize that their present course must inevitably lead them to disaster. We stand ready to meet them and encourage them in any efforts they make toward a definite reduction in world armament."

(He also referred to the 1939 New York World's Fair and the pending San Francisco exposition:

It has been suggested that it was a mistake to hold two expositions in one year—but I cannot agree with that because it seems to me that each is a supplement to the other. Thousands of Americans are already planning to visit both of the expositions next year—to see both ends of our wide Nation and perhaps to travel one way by the all-American route via the Panama Canal.

Furthermore, those who visit us from other countries will be stimulated to cross our country, the way I try to do every year that passes. Too often we are judged by those from other lands who spend a few hurried weeks or even days on one seaboard and think they know America.

(President Roosevelt inspected the Pacific fleet aboard the U.S.S. Houston before returning to his special train to travel to El Portal, California. He visited Yosemite National Park on July 15 before traveling by train to Los Angeles, where he gave a speech from the rear platform in support of Senator William G. McAdoo's reelection campaign (which he lost in November). The President then motored into the city for a brief speech before continuing on by car on U.S. 101 to San Diego. An Associated Press account briefly described the journey:

Through Los Angeles and outlying towns, thousands thronged the streets to watch the President pass by. The crowds included numerous children in sun suits, girls wearing slacks and bronzed youth in bathing trunks.

Farther on, in open country, President Roosevelt gazed out over the blue Pacific. At one point a man held up his rod and two fish to exhibit his luck to the President, a fisherman himself who soon will be angling from the cruiser Houston On the way to San Diego, the President paused momentarily at Laguna Beach, an artists' colony, to shake hands with several residents, including one white-bearded elderly man.

The party stopped for a picnic luncheon at San Clemente State Park, south of Laguna Beach. President Roosevelt ate in the open overlooking the Pacific. He was protected from the sun by a thatched roof erected on posts.

(Fifteen minutes after receiving a key to the city of San Diego, the President boarded the U.S.S. Houston for a fishing expedition off the Galapagos Islands before traveling through the Panama Canal to Pensacola, Florida. [This summary of the trip is from *The New York Times* coverage: Associated Press, "Fleet Ready for Review, July 13, 1938; Belair, Jr., Felix, "Roosevelt Silent as Both Candidates in Nevada Join Him," July 14, 1938; Belair, Jr., Felix, "Roosevelt Offers to Join a World Disarmament Movement; He Sees Trend to 'Disaster,'" July 15, 1938; Belair, Jr., Felix, "Roosevelt 'Hopes M'Adoo Will Win' in California Race," July 17, 1938; Associated Press, "President to Fish for Wild Wahoo," July 17, 1938; Associated Press, "Roosevelt Lands Huge Yellowtail," July 19, 1938])

The design of the Pennsylvania Turnpike incorporated some of the features of the many proposed superhighways, but without the excess right-of-way that many of them featured and that President Roosevelt favored. The commission acquired a 200-foot right-of-way for the four-lane divided turnpike. Traffic lanes, paved in concrete, were 12 feet wide with a 10-foot median and 10-foot berms, for a total width of 78 feet. Engineers settled on a maximum 3-percent grade and a maximum curvature of 6 degrees, with substantial superelevation on curves. Access was by interchange only with no at-grade crossings. Cupper quoted engineer Charles Noble about another key feature, uniformity of design:

Unlike the existing highway system of the United States, in which design standards fluctuate every few miles, depending on the date of construction, the turnpike will have the same design characteristics throughout its 160-mile length. Every effort has been directed towards securing uniform and consistent operating conditions for the motorist.

In fact, the design was attacked from the viewpoint of motor-car operation and the human frailty of the driver, rather than from that of the difficulty of the terrain and method of construction. This policy of design, based on vehicle operation, is relatively new. [Cupper, pages 10-11]

MacDonald, while skeptical of the toll aspect of the turnpike, cooperated with the engineers designing it and "kept a wary eye on events in Pennsylvania," as Professor Lewis recounted:

MacDonald might have been opposed to toll roads, but he was a professional engineer above all. Respect for the turnpike's chief engineer, Samuel Marshall, and the staff he assembled to complete the project far outweighed the differences MacDonald had with Walter Adelbert Jones about the efficacy of a toll road. The Chief and his staff cooperated fully with Samuel Marshall. For his part, Marshall consulted frequently with the bureau about the details of construction, seeking advice from federal engineers about design matters like drainage, width of the median strip, composition of the roadbed, and thickness of the concrete.

As the plans for the turnpike crystallized in 1938, secretaries in the Bureau of Public Roads clipped newspaper stories about the progress. Field engineers working for the bureau sent in articles from papers around the country as well. When press reports on a collapse in the Laurel Hill Tunnel and the subsequent gruesome deaths of five workers in 1939 drifted into Washington, Bureau of Public Roads secretaries filed them carefully along with all the numerous press releases and public relations brochures that Jones's staff sent from Harrisburg. Often, when the chairman delivered a speech about the dreamway to a Rotary Club or civic organization, a bureau employee attended and sent a report on Jones's remarks to the ever-growing file in Washington. [Lewis, pages 64-65]

MacDonald and Fairbank had used the massive highway survey data to compile a table labeled "Length of selected routes and estimated average daily traffic that would have used them if operated as toll facilities in 1937, by sections in descending order of traffic volume." The table is on pages 24 and 25 of the committee print of *Toll Roads and Free Roads*. The segment with the highest projected traffic was from Jersey City, New Jersey, to New Haven, Connecticut, a 65.6-mile segment that would have carried a predicted 3,508 vehicles a day if it had been a toll facility in 1937. (Today, the segment is part of I-95.) The 19th highest traffic volume, 715 vehicles, was on the Pittsburgh-to-Carlisle segment then under construction.

On August 26, 1940, a month before the turnpike opened, the commissioners conducted a preview of the road for over 160 dignitaries, including Members of Congress, reporters, and others, including MacDonald and BPR engineers. Lewis described the trip:

A fifty-car motorcade stretching for a mile entered at the Middlesex interchange near Carlisle and zoomed the entire 160 miles to Irwin at speeds as high as a hundred miles per hour. Even the morning fog and steady rain did not daunt the party cruising what publicity proclaimed the "all-weather highway." At Midway the group stopped for gas at the Esso station and had lunch at the Howard Johnson's restaurant.

The New York Times conveyed the reaction to the preview: "Not a word of dissent was heard as the fifty-car motorcade roared over the 160-miles concrete turnpike . . ." Chairman Cartwright was one of the "most enthusiastic 'previewers.'" At a dinner in Pittsburgh, he said, "This road is absolutely extraordinary," adding, "I think we should have roads leading to and from other eastern cities." He said it was "better than anything Germany can build" and "we're going to have to build more of them as traffic demands." He declared the Pennsylvania Turnpike "the mother of them all."

General Jacob L. Devers, representing Secretary of War Henry L. Stimson, predicted that the Pennsylvania Turnpike would be beneficial "in war as well as peacetime." He said, "The importance of the road for the transport of Army supplies cannot be minimized, particularly as it leads to one of the most vital cities [Pittsburgh, then part of a major steelmaking region] in the Nation's defense."

The night before, the commissioners had sponsored a dinner in Hershey where MacDonald called the turnpike "a magnificent accomplishment that will be a monument to the foresight of its builders":

Every feature of modern road design contributing to a strong, durable roadway and safe, smooth, uninterrupted flow of traffic has been incorporated in the design

This highway represents the best in American practice based on a long experience in road building Such work could have been done only by a highly competent engineering staff, working under able administrative direction.

It was, he said, “very necessary to extend this road to Philadelphia.”

H. G. Sours, director of the Ohio Department of Highways and president of ARBA, said the turnpike was “a fine example of what we hope to develop in inter-regional and free-way types of roads.” [Lewis, pages 66-67, italics in original; “Turnpike Hailed by First Riders,” *The New York Times*, August 27, 1940; “New Turnpike Acclaimed,” *The New York Times*, August 26, 1940; Associated Press, “Superpike Extension to Philadelphia Next Pennsylvania Goal,” *The Evening Sun*, August 27, 1940]

This initial segment of the turnpike, which opened October 1, 1940, carried 24,000 vehicles during its first 4 days of operation:

By the end of 1940, the Turnpike had carried 514,231 cars, 48,170 trucks and 2,409 buses, and collected total revenues of \$562,464 Fortune magazine noted: “The Turnpike is the first American highway that is better than the American car. As such, it will represent the maximum in road construction for many years. It is proof against every road hazard except a fool and his car.” [Cupper, pages 22-23]

Motorists no longer had to plan a trip to Germany to see such highways—they had only to drive to Pennsylvania for what many motorists thought of as a “magic carpet ride.”

The turnpike also resolved the nature of a superhighway. For decades, visionaries had described superhighways as including dozens of lanes, each designated for different speed ranges, accommodating airports and railroads, as straight as possible, bypassing every town and city, with monitors telling travelers when they could switch lanes or safely enter or exit. As with Geddes’ *Futurama*, depicting the far off 1960, these superhighways seemed to be from a future time, not one America could afford for now.

The Pennsylvania Turnpike provided the contrary model of what a superhighway, built within current budgets, could be, with or without tolls. Visions of massive, arrow-straight, multimodal superhighways would not entirely go away, but the Pennsylvania Turnpike provided an object lesson for those actually responsible for planning the next generation of highways”:

The Pennsylvania Turnpike was the prototype of the modern high-speed heavy-duty Interstate highway. It incorporated the most advanced practice of German and American design engineers on highway grades and curvature and was hailed by many as the safest highway in the world. [*America’s Highways 1776-1976*, page 137]

The immediate financial success of the Pennsylvania Turnpike also proved enticing to officials from other States. "By 1941," Seely wrote, "five States—New York, Maryland, Maine, Florida, and Illinois—had created toll road commissions." America's entry into World War II would delay these efforts, but they resumed after the war, with many turnpikes built or planned in corridors identified for the Interstate System before the Federal-Aid Highway Act of 1956 made Federal financing of toll-free expressways feasible. [Seely, page 176; *America's Highways 1776-1976*, pages 166-168]

(Just a few months after the Pennsylvania Turnpike opened in October 1940, the first freeway in the West, the toll-free Arroyo Seco Parkway, opened on December 30, 1940, in Los Angeles (renamed the Pasadena Freeway in 1954). During the opening ceremony, Governor Culbert L. Olson said he wanted to "ceremonialize and celebrate an achievement so extraordinary as the completion of this, the Arroyo Seco Parkway." He wanted to do so "before it fades from memory," as the State moves on to "even greater achievements . . ." He continued:

Now that we have it, and it all looks so rather simple, so obviously necessary, so wholly practical, some will ask, "What is there so wonderful, or so bold about it?"

Oh, yes—but it takes courage to do a thing the FIRST time, no matter how necessary, no matter how simple and obvious it may appear AFTER it is done. And this, fellow citizens, is the first Freeway in the West. It is ONLY the first. And THAT is its great promise to the future—the promise of many more freeways to come.

Funds for the initial segment came from the WPA, which contributed the largest share (70 percent); gas tax revenue from Los Angeles, Pasadena, and South Pasadena; Federal-aid highway funds for railroad-highway grade crossings; and a matching share from two railroads. [Jones, Jr., David W., *California's Freeway Era in Historical Perspective*, California Department of Transportation, June 1989, pages 169, 174-175, emphasis in original]

The traffic volumes on the Pennsylvania Turnpike did not alter MacDonald's view of toll roads. When New Hampshire was considering construction of a toll turnpike on the Pennsylvania model, he responded to a brief inquiry from Ralph Blagden of *The New Hampshire Sunday News* with a six-page letter dated April 22, 1947: The second and third paragraphs stated MacDonald's views clearly:

The views of the Public Roads Administration concerning the advisability of a resort to toll financing for the construction of highways have been clearly presented on previous occasions, notably in the report entitled Toll Roads and Free Roads, submitted at Congressional request to the 76th Congress in April 1938. Copy of this report is supplied herewith.

Our views as presented in Toll Roads and Free Roads remain substantially unaltered. Even in particular instances in which traffic can be attracted to toll highways sufficient in volume to repay the costs of financing, construction and operation, we regard the toll device as an inadvisable and expensive expedient. So far as we know, there is no existing toll road (except some short roads built to afford tourist access to mountain tops and

coastal resorts) on which earnings have been sufficient to cover all costs of the undertaking. It is not generally understood that the Pennsylvania Turnpike was subsidized by a substantial PWA grant amounting to \$29,250,000 of the original cost of \$71,500,000.

After repeating many of the arguments from *Toll Roads and Free Roads*, MacDonald concluded his lengthy letter:

Just one thing more. You ask if I think there is any foundation for your assumption that a factor in the current wave of toll road proposals is “some strong organized pressure possibly from powerful financial interests who underwrite the financing of the bonds.” Isn’t that a purely rhetorical question? I ask you.

(The letter can be found in the digital collection of the U.S. Department of Transportation Library: http://ntl1.specialcollection.net/scripts/ws.dll?websearch&site=dot_Turner.)

Futurama’s Magic Motorways

In early 1940, Norman Bel Geddes put his ideas on transportation into print in the form of a book called *Magic Motorways*.

He began by recalling the incredible success of his Futurama exhibit. “In long queues that often stretched more than a mile, from 5,000 to 15,000 men, women and children at a time, stood, all day long every day, under the hot sun and in the rain, waiting more than an hour for their turn to get a sixteen-minute glimpse at the motorways of the world of tomorrow. Many observers had tried to explain the phenomenon:

And most of them agreed that the explanation was really very simple: All of these thousands of people who stood in line ride in motor cars and therefore are harassed by the daily task of getting from one place to another, by the nuisances of intersectional jams, narrow, congested bottlenecks, dangerous night driving, annoying policemen’s whistles, honking horns, blinking traffic lights, confusing highway signs, and irritating traffic regulations, they are appalled by the daily toll of highway accidents and deaths; and they are eager to find a sensible way out of this planless, suicidal mess. The Futurama gave them a dramatic and graphic solution to a problem which they all faced. [Geddes, Norman Bel, *Magic Motorways*, Random House, 1940, pages 3-4]

In his book, Geddes intended to explain Futurama and the premises behind it:

Starting from the facts of congestion, confusion, waste and accidents, we have gone through analysis and blueprints until we have come out on the other side with an over-all plan. We have come out with transcontinental roads built for a maximum of one hundred and a minimum of fifty miles an hour. We have come out with cars that are automatically controlled, which can be driven safely even with the driver’s hands off the wheel. We have discovered that people could be driving from San Francisco to New York in twenty-four hours if roads were properly designed. Peering through the haze of

the present toward 1960 is a great adventure. It is an adventure so broad in its attack and so far-reaching in its consequences that there is no reason why each reader, layman as well as expert, should not repeat it now for himself and discover where it leads. [Geddes, page 8]

He pointed out that after achieving “a partial success,” people tend to “sit back, self-satisfied and blind themselves to the fact that the success is only partial.” That was true of road transportation, where the automobile had accomplished much, but people were unable to “make use of its full potentialities.” Congestion was undermining the potential of the motor vehicle. “Until recently, we have been told that the cure of these paradoxes lies in hit-of-miss, spasmodic road ‘improvements’ and catchy safety slogans.” The roads were the problem:

The word “traffic” is usually taken to mean “too many cars.” But, actually, traffic is simply the flow of cars along a road, and roads are supposed to be built to accommodate that traffic. When traffic is congested, the answer is not that there are too many cars, but that the roads have not been designed to perform their function properly. Their construction and design are inefficient.

The real trouble with American highways is the simple fact that they are not designed for the traffic they bear. The automobile has advanced in much greater strides than have roads. It has attained a far greater point of perfection. Automobiles are in no way responsible for our traffic problem. The entire responsibility lies in the faulty roads, which are behind the times.

When the horse was discarded, the winding roads over which he joggled were not discarded with him. The automobile inherited them. Some of them have been “improved” from time to time, but their basic features have remained unchanged. The result of pushing motor cars out over these old roads was at first simply a mild havoc and runaway horses, but later, the Traffic Problem. Today we are still rebuilding old roads that were constructed for another vehicle, instead of starting to build special roads for the special needs of the automobile.

This simple fact is the key to the whole present-day traffic problem. [Geddes, pages 11-13]

As far as Geddes was concerned, highways were “not only are lagging, but are obsolete.” Automobile travel was “less efficient . . . than any other form of travel.” Further, roads were “the only transportation routes which are not systematically planned in accordance with the needs of the vehicles which use them.” Ships, railroads, and airplanes were contrary examples. Airplanes and railroads are the competition for automobiles over long distances, so travel on roads must match their competitors in comfort, safety, economy, and speed. Simply building better automobiles was not enough. Highways must be designed with today’s automobiles in mind:

A properly designed highway follows the most direct route that is available from one point to another; it obeys the old geometric axiom that a straight line is the shortest

distance between two points. That is a simple, perhaps obvious, statement, and yet if it were really carried out in practice it would completely transform our highway system. It is the first guiding principle that should be considered before any highway is constructed, before the first plans for it are made. [Geddes, pages 34-36]

Geddes believed that “the four gospels of safety, comfort, speed and economy” should function together. “A highway which follows one of these goals at the sacrifice of the other three cannot be an efficient motorway.” A road that does not meet all four goals is “not a motorway—for that word means a right of way explicitly designed for and adapted to the uses of *motor* traffic”:

The aim of highway engineers in the twentieth century should be to construct motorways instead of highways. It is an important task, and an inspiring one. It means pioneering, traveling over uncharted territory instead of following in the well-worn paths which tradition has laid down. But just as the horse and buggy have been replaced by the motor car, so must the highway be replaced by the motorway. [Geddes, pages 39-41, italics in original]

He explained one premise behind Futurama:

To convert all American roads into high-speed superhighways would be both impracticable and undesirable. But a certain number of motorways where safe, fast driving and an uninterrupted trip would be possible are nevertheless an immediate need. By stimulating the use of motor vehicles, such new motorways would amply pay the cost of construction and would serve as models for the future. [Geddes, page 151]

Recalling the words of Treasury Secretary Gallatin, Geddes said that “to unite by intimate community of interest the most remote quarters of the United States,” the new country needed fast and easy communication:

Roads can be built to correct this situation. But, to put it simply, as road builders we Americans have failed to see the relation that exists between the transportation facilities we are building and the population and economic changes that may result from them. We have failed to regard roads functionally, creatively. [Geddes, pages 248-251]

Groups and individuals had asked the Federal Government to “boldly take a more direct part in highway building” to provide the universal links. Many proposals had “only scratched the surface” and had not addressed “the fundamental question of deciding what should be the basis of a national system.” He pointed out that the Bulkley and Snyder plans, as well as *Toll Roads and Free Roads*, indicated that “the frame of mind of the nation today is sympathetic to some such system.” Geddes described the “Master Plan for Free Highway Development,” but said of all the proposals cited:

All of these proposals show a tendency to link city to city in an arbitrary grid, which will act primarily as a palliative for present traffic ills rather than as a preventive for the future.

The problem can be permanently solved only by better coordination between traffic and the needs of the population. It is not enough to consider present requirements; future needs must be anticipated

It is not sufficient to give up the present local method of hit-and-miss road planning, and substitute for that a method of building a lot of big roads on a grand scale. For the present travesty of planning, *real* planning must be substituted. Road building as it is being done won't free the country from the likelihood of future congestion. But road building as the result of a comprehensive plan to increase national distribution, eliminating local whims and fancies, ending aimless duplication of effort, taking in all the contingencies of the nation's geography, economics, and population trend—that is a very different thing indeed. [Geddes, pages 255-258, italics in original]

Now was the time to act “with knowledge of the past and thought for the future” to address “a pressing national emergency”:

America cannot do less than lay out, with the best forethought it can muster, a system of motorways which twenty years from now will not be a vast lost investment, but an adequate answer to growing needs. If these motorways are to be built, it can be done only under the authority of one great national plan. [Geddes, page 274]

Using “broad sociological and economic issues,” planners should envision what America will look like in 50 years, including population distribution that may be very different than in 1940. The plan must take into account our geographic neighbors. “Routes will have to be designed to accommodate traffic draining through the United States from Alaska to South America.” The routes should “not be allowed to infringe on city boundaries or the city proper.” Instead, they must rely on “feeder roads” for links to cities, ports, and industrial centers:

They must be designed to enlarge the sphere of each individual motor-car operator; to develop road construction into a higher type of industry, using the full knowledge of all phases of engineering, prefabrication, permanent and resilient surfacing, illumination and automatic traffic control. [Geddes, pages 274-275]

He described the design features of the routes in his National Motorway System:

They will overpass and underpass each other, using wide-flowing development of present-day cloverleaves; their traffic streams in the opposite direction will be completely separated, and individual lanes in the same direction will be segregated by separators Their lanes designed for three separate and constant speeds of 50, 70 and 100 miles an hour. Their grades are constant, never excessive. Their curving radii are constant, and always generous. All over the United States, the motorways are uniform and function in exactly the same way. [Geddes, pages 277-278]

With these features included in the National Motorway System, “traffic by car, bus and truck can move swiftly, safely, comfortably, and economically over direct rights of way with a sufficient number of lanes to take care of the corresponding volumes of traffic.” [Geddes, page 280]

The National Motorway System that Geddes envisioned was “not an impractical, visionary proposal,” but for it to be built, he said:

Road building must be viewed in an entirely different light than it has been up to now. It has to be considered as something far more than merely providing the means for getting people from one place to the next. The motorways must be considered as an essential part of the entire economic system of the country. The problem of traffic is only a step removed from the problems of resources, conservation, national defense, education and unemployment. As the American road builder of the future becomes a planner, he will grow into a key individual who is responsible to the whole nation. [Geddes, pages 282-283]

The impact of Futurama and *Magic Motorways* on highway development is hard to measure. Seely indicated that despite MacDonald’s view that Geddes’ ideas were “bizarre,” the exhibit and book “captured the public’s imagination.” He added:

Certainly the “high-tech” image of highways shown in the Futurama upstaged the conservative approach adopted by the BPR. [Seely, page 175]

DiMento and Ellis concluded:

But the direct effect of Futurama on actual freeway planning remains unknown, despite its evidently strong effect on the public imagination. Bona fide power brokers like Robert Moses considered the exhibit a mere “work of the imagination.” Moses told Bel Geddes that “you are simply taking a look into the future; that you don’t want your recommendations to be taken too seriously by practical work-a-day people who must live in their own time.”

Moreover, Futurama and *Magic Motorways* depicted a world where Geddes’s vision could be implemented by a “National Motorway Planning Authority” of experts “independent of factional politics.” DiMento and Ellis wrote:

But in a domain so entangled with the national economy, real estate development, and urban social conflicts, the wish for apolitical solutions was utopian and ideological, screening the struggle for power, wealth, and status played out on the urban scene

Bel Geddes’ urban visions and industrial designs were dramatic, compelling, and immediately understandable by the untrained observer, quite unlike the boring, statistic-packed reports of the highway and planning bureaucracies. [DiMento and Ellis, pages 52-53]

When *Magic Motorways* was published, Geddes sent a copy to PRA’s MacDonald with the handwritten inscription:

To Thomas H. MacDonald with best wishes of Norman Bel Geddes. 14 March, 1940

MacDonald's copy is now part of the permanent collection of the U.S. Department of Transportation, listed as copy 2.

National Defense Needs

As mentioned, the impact of *Toll Roads and Free Roads* was muted by national defense concerns. After war broke out in Europe in September 1939, President Roosevelt began focusing on providing aid to the country's European allies. Industry began shifting to war aid, which increased employment, thus providing an alternative to superhighway construction as a method of work relief.

On June 21, 1940, President Roosevelt wrote to Carmody regarding the "adequacy of our highway system to meet the needs of our national defense." The President wanted PRA "to make a survey of our highway facilities from the viewpoint of national defense and advise me as to any steps that appear necessary." He urged PRA to pay particular attention "to the strength of bridges, the width of strategic roads, adequacy of ingress to and egress from urban centers, and the servicing of existing and proposed Army, naval, and air bases." [*Highways for the National Defense*, Committee on Post Offices and Post Roads, Senate Committee Print, 77th Congress, 1st Session, February 1, 1941, page 1]

MacDonald forwarded PRA's study, *Highways for the National Defense*, to Carmody on February 1, 1941. In a transmittal letter, MacDonald wrote:

Two general construction programs are necessary, the providing of access roads, and the development of the strategic network to eliminate known weak and inadequate sections. There is no padding of the needs with theoretical conceptions or community desires masquerading behind defense requirements. Our highways and streets are inadequate for the national defense in definite particulars. These deficiencies can be remedied promptly and progressively in the order of their defense importance only if adequate programs including the necessary funds are provided, to be carried on through the established State and Federal highway organizations.

This was not a time for transcontinental superhighways, however visionary or data-based their conception.

MacDonald also discussed the European experience that "may have influenced the planning of the German military machine." He explained:

The relatively small number of motor vehicles and production capacity in the countries of Europe, so totally unlike the conditions in the United States, provided a rare opportunity to the German General Staff. At the very moment England was imposing limitations upon the motortruck, Germany was subsidizing its use and, as a major national policy, engaging on a magnificent scale in the construction of a national system of super highways. The mileage actually completed before Germany's war machine went into action could not have had more than a limited utility, but the whole scheme was symbolic of Germany's conception of the new technique of warfare based upon fast and

coordinated movement of mechanized power units over the land, upon the sea, and in the air. [*Highways for the National Defense*, page 5]

The report, prepared after consultation with the Department of War, recommended \$150 million for access roads to military and naval reservations and defense-industry sites; \$25 million for tactical roads; \$100 million to replace substandard bridges and correct other critical deficiencies on the strategic highway network; and \$12 million for engineering surveys and plans for the strategic highway network. Carmody forwarded the report to the President the same day. [*America's Highways 1776-1976*, page 144]

ARBA, holding its annual meeting in New York City, January 27 to 31, 1941, included several presentations on the weak links in the country's strategic highway network, including an initial Roads for Defense Forum. Mayor Fiorello LaGuardia opened the forum with a greeting to ARBA members, general comments, and a brief discussion of national defense. He acknowledged a need for better roads for military purposes:

The Germans and the Italians both saw that and provided for it. The Italian strata [sic] and the German autobahn were built having in view the need of rapid mobilization in addition to the use of the railroads.

He had one appeal to the road builders:

You will find it, I think, just as advantageous if our road building program is based on the normal needs of the country rather than to pin it to national defense except in those cases where it can absolutely be justified. [Proceedings, 38th Annual Convention, American Road Builders' Association, 1941, pages 5-6]

FWA Administrator Carmody told the forum that, "The Army, Navy and defense industries . . . are in vital need of approximately 4,000 miles of roads and streets within and approaching [military] reservation and industrial sites." This mileage, with an estimated cost of \$230 million, was "priority No. 1." A key reason work wasn't proceeding on these access roads was the absence of money. Some of the projects would be eligible for Federal-aid highway funds, but the law required a State match of 50 percent. State highway agencies were reluctant to contribute their share to work they saw as a Federal responsibility. "We hope that this will be clarified by the Congress at an early date."

Carmody added that this work was more important than "the 75,000 miles of long-distance routes designated as the strategic network." Those roads should be improved, too, but "this improvement has been overemphasized in recent months." The Nation's best interests would not be served by "immediate construction of extensive improvement on the strategic network in the guise of national defense, such as express highways through large cities and by-passes around smaller cities and towns." Funding roads of that type would create an "unavoidable drain" on resources for "other vitally urgent defense activities." Instead, he recommended planning these roads to be built when resources were no longer needed to meet defense needs. "They will be needed to sustain our industrial activities in the shift from a war economy to an economy of peace." [Proceedings, ARBA 1941, pages 12-13]

Chairman Cartwright, in the general session, was surprised that in just a few months, defense access needs had apparently become a higher priority than interregional highways. He endorsed the interregional system proposed in *Toll Roads and Free Roads* as “the next stage in our highway building program.” He endorsed bypasses and beltline highways, adding:

The development of the interregional system of highways is . . . a long-term job—one beset with legal difficulties, obstructed by tradition, and limited by the competition of other public works for available funds, materials, and labor. The interregional system needs to be developed with all possible dispatch, within the limits of practicability. But we must recognize that it is not stamped with the urgency of many roads within and adjacent to military reservations and defense-industry sites. No elaborate scheme for the construction of long continuous stretches on an ultra-modern scale can be justified on the grounds of defense necessity, in the opinion of those best qualified to judge.
[Proceedings, ARBA 1941, pages 32-38]

According to *Engineering News-Record*, Chairman Cartwright was ill; Representative James W. Robinson (D-Ut.) of the Committee on Roads read the speech. [Proceedings, 1941, pages 39-41; “Roadbuilders Express Concern Over Lag In Defense Road Work,” *Engineering News-Record*, February 6, 1941, page 10]

(Representative Cartwright lost his reelection bid in 1942 and joined the U.S. Army as a Major, serving in northern Africa and Europe. After the war, he served in several posts in Oklahoma. Representative Robinson succeeded Cartwright as chairman of the Committee on Roads.)

PRA’s MacDonald also was ill. In his place, H. E. Hilts, director of PRA’s highway planning survey, informed ARBA that access roads were the number one problem. “As has been pointed out, there is no set financing scheme that applies to access road projects.” He said of the interregional network:

To raise the entire rural network to the standards eventually desirable for safe and convenient use by both civil and military traffic, and to provide further for the costly improvements required on portions of the main network within the corporate limits of cities and for the essential improvement of auxiliary lines would require a continuing expenditure for a considerable period.

For now, what was needed was a “step-up” cooperative program with the States to eliminate weak links on important routes between control points. [Proceedings, ARBA 1941, pages 32-41]

Representative James W. Mott (R-Or.), who had been on the Committee on Roads for 8 years, attended the meeting although the proceedings of the convention do not contain a formal presentation. *The New York Times* reported that he said the country should spend the \$500 million collected in highway user taxes each year to improve the strategic network the War Department had identified. [Coan, Philip B., “Roads Weak in Defense,” *The New York Times*, February 2, 1941]

President Roosevelt's priorities might have shifted, but he was still interested in through highways. During a press conference on February 7, 1941, a reporter asked, "There has been speculation as to where the new Baltimore highway will be built, whether most of it would run through land already belonging to the Government. Can you tell us about that?" After clarifying that the reporter was referring to a road between Baltimore and Washington, not New York and Washington, the President acknowledged that he "hadn't heard anything about that." However, the question prompted him to tell the reporters "a story on this, because it is just being started now."

The story involved the period after November 11, 1918, when World War I ended:

[We] didn't stop all the employment on defense work. The policy at that time was to make no new contracts after the Armistice, and the policy was also to hold up production where contracts had been given but the production itself had not started; but the policy was to continue to completion almost everything that had been actually ordered and was in production.

The result was that during the following year, '19, and even the first half of '20, employment in the United States on defense work decreased rather gradually. It wasn't cutting everybody off on any one given date or in a month; and the aftermath, the economic aftermath of the war in 1920 was fairly serious but not as bad as it might have been.

As the country shifted to war production, he wanted to anticipate its end. He explained that "as a general proposition you may see at this session certain authorization bills for various things going through Congress, which means that Congress very appropriately will decide on the type of work that is to be done when that time comes." He wanted projects authorized and "on the shelf, ready to take out when the end comes." He continued:

One of those, you might say, divisions of things on the shelf [sic] will be highways; and Mr. Commissioner MacDonald is coming in to see me today at 12:15 to talk about this whole subject of certain through national highways, which was talked about for a great many years—I think it goes back to the spring of 1933—and in that discussion we will talk about, first of all, the needs of the country, both military and civil, in times of peace, for these highways.

And we will talk about the principle of excess condemnation that we have talked about many times before, by which the—what do they call it?—the added increment that accrues to real estate along a new road that is put through virgin territory—that added increment which is a mere matter of chance whether you happen to own the farm next to it or five miles away—if you are five miles away, you are out of luck, and if you are right on the new highway, you may suddenly find the value of your farm increased from \$5,000 to \$20,000.

It seems to be constitutional—it has been done in several States—for the Government to buy more land than it needs for the 100-foot or 200-foot right of way and then, over a

period of years, sell this land, after having paid for it the reasonable going price of the land at the time, and the Government gets the benefit of the increase in valuation on that land, and in that way pays back either a large part or the whole of the capital cost of the highway.

It has been done in a great many places, and we are talking about that today.

A reporter from *The Philadelphia Evening Bulletin* wondered if “it might not prove necessary to build some of these highways at the present time in the interests of national defense rather than taking up the economic slack at the end of the emergency? They are complaining about the transportation problem between Washington, New York, and Boston—inadequate highway.”

THE PRESIDENT: Well, does the Transportation Division of the Advisory Council [The Advisory Commission to the Council of National Defense] admit that?

Q. I think almost everybody who uses the road admits it, sir! (Laughter)

Q. People get lost in Philadelphia, sir!

THE PRESIDENT: I know it! (Laughter) But all you have to do is show your fingerprint and you're all right! (Laughter)

(This was an apparent reference to a requirement that government employees were to be fingerprinted and have “mug” shots taken.)

A report in *The New York Times* was more explicit than the available transcript of the press conference. The President planned to talk with MacDonald “about plans for constructing a series of national super-highways on what, he told his press conference, he hoped to make a largely self-liquidating basis.” The report added, “As part of the national highway program a super-highway along the Atlantic coast from North to South would be considered.” [“President Plans Post-Defense Jobs,” *The New York Times*, February 8, 1941]

The Evening Star added:

Appropriations for the authorized projects will not be sought until the post-war period, the President emphasized, with the plans being stored in a reservoir and in such shape that they may quickly be applied as private employment shows signs of lagging.

With regard to anecdote about November 1918, the Star said this “reservoir” would be “an even more effective industrial shock absorber.” [Henry, John C., “Huge Works Program is Planned to Meet Post-War Slump,” *The Evening Star*, February 7, 1941]

A brief Associated Press story stated that after the meeting, MacDonald indicated he did not know what the appropriation request for highways would be:

He said that the Bureau of Public Roads [sic] had submitted some recommendations for roads to be built for access to Army posts, but that his conversation with the President dealt only with non-defense projects which might be undertaken to employ defense workers when the current rearmament program slowed down. [Associated Press, "MacDonald Sees President," *The New York Times*, February 8, 1941]

On April 14, President Roosevelt appointed a National Interregional Highway Committee to report to him by October 1 on recommendations for a limited system of national highways to provide a basis for improved interregional transportation. He hoped the committee would prepare detailed plans and specifications so that when the present defense program ended, they would be available to use the people and industrial capacity that would become available.

On June 2, 1941, the President sent information to Congress on expansion of highway facilities for national defense. He recommended less than the Carmody report called for, arguing that an earlier request for funds to improve community facilities would cover some of the highway and bridge needs. He added:

It has been estimated by the Federal Works Agency that \$458,000,000 will be required as a minimum for strengthening the entire strategic network of highways of more than 75,000 miles. It is my belief that no necessity exists for undertaking such an extensive program now. Some progress is being made in this work under the normal highway program.

He requested only \$25 million to strengthen bridges and widen surfaces in key areas.

Congress completed work on the bill on July 29, with authorizations totaling \$295 million. The Defense Highway Act of 1941 closely followed the recommendations in the Carmody report:

- \$125 million to be apportioned to the States under the Federal-aid formula to correct deficiencies in the strategic network of highways;
- \$150 million for access roads to military and naval reservations and defense-industry sites, with projects to be selected by the Federal Works Administrator;
- \$10 million for flight strips along highways for emergency airplane landings;
- \$10 million for planning; and
- Up to \$25 million to reimburse local communities for highway damage resulting from Army maneuvers.

On August 2, 1941, President Roosevelt vetoed the bill. He objected, among other provisions, to the \$125 million for strategic highways and apportionment of the funds in accordance with the Federal-aid formula.

Following debate on August 6, the Senate voted, 57 to 19, to override the President's veto. The following day, the House sustained the President's veto, with 128 Representatives voting to sustain the veto but 251 to override, 2 votes less than the required two-thirds.

Congress revised the bill and sent it to the President, who approved it on November 19. He made clear, however, that he did so reluctantly and only because he "felt constrained" to do so by

the urgent need for access roads and flight strips. He approved of the \$150 million authorization for access roads and \$10 million for flight strips, but he objected to the \$50 million authorization for strategic highways and the increased Federal share of 75-25 for any Federal-aid highway project on a strategic highway.

(According to *America's Highways 1776-1976*:

Congress made its first major departure from the policy of not participating in right-of-way costs with the Defense Highway Act of 1941. It authorized 100 percent Federal reimbursement for right-of-way costs on defense access roads and the payment of three-fourths of such costs on strategic network projects. It also authorized the Federal Government, itself, to acquire any new or additional lands that might be required for such purposes. [*America's Highways 1776-1976*, page 357])

President Roosevelt intended to send corrective legislative proposals to Congress. However, the bombing of Pearl Harbor on December 7, 1941, moved the country to declare war. During the war, PRA focused its efforts on defense access projects (often off the Federal-aid system) and the Alaska Highway. Between the need for civil defense projects and the shortage of materials, normal Federal-aid projects were on hiatus for the duration.

Boston-to-Washington Superhighway

Although Dr. Drew had lost his reelection bid in 1938, work on his proposed Boston-to-Washington superhighway continued.

On January 29, 1941, with the country increasingly turning to war production in aid of its European allies, New Jersey Highway Commissioner E. Donald Sterner addressed ARBA on the need for a Boston to Washington Super Highway as a defense express highway. ARBA's decision to hold its annual meeting in New York City was fortunate, Sterner said, because it provided an opportunity to "focus attention on the most vital road construction project in the entire country in the interest of national defense, as well as the greatest highway need in the nation from the standpoint of continued industrial development and economic necessity."

Sterner was chairman of the committee studying the Boston to Washington Express Super Highway. On December 19, 1939, he and other State highway officials had met with PRA's MacDonald at the Hotel Pennsylvania in New York City to discuss the proposal:

At that meeting it was unanimously decided that due to the national emergency created by the new war the time had arrived to give the most serious consideration to the construction of a direct express super highway link over the entire length of the North Atlantic seaboard for a number of reasons, chief of which were military purposes and economic necessity.

(A contemporary account of the 1939 meeting reported that MacDonald and the States decided after a 2-hour meeting "that a super-highway between Boston and Washington was vitally needed." Sterner was to work with PRA to "consider means of acquiring the land and other problems." The short article concluded, "Pointing out that the heaviest [sic] traffic congestion in

the country was in this area, Mr. MacDonald said he believed the States should feel indebted to Mr. Sterner for taking the lead in promoting such a super-highway." ["8 States to Push Super-Road Plan," *The New York Times*, December 20, 1939]

Sterner told ARBA that when the Association of State Highway Officials of the North Atlantic States met on February 15, 1940, his committee met to discuss tentative locations and cost estimates for the Super Highway. The States agreed that each would study these issues within its borders:

These studies have now been completed by the various States and the results obtained have been forwarded to Commissioner MacDonald with the thought that this data might be helpful in assisting him to present to those officially interested the urgent necessity, at this particular time, for such a highway.

He discussed the increased traffic as America shifted to a defense footing. Although an invasion of the United States was unlikely, Sterner said "military authorities are unanimous in their opinions that our defense program must include the construction of proper military highways over which may be moved troops and mechanized units and supplies necessary to a modern army." Roads in the Boston-to-Washington corridor were already congested with peacetime traffic and would be inadequate to carry "the tens of thousands of pieces of artillery and other mechanized equipment which will be part of our new streamlined mobile armies."

In closing, he recalled the early years of the war in Europe:

The Battle of London impressively illustrates the importance of numerous airports near industrial centers and heavy populous regions, to guarantee the greatest protection against the bombing of important war industries and supply depots, the destruction of docks and wharves, and the lowering of the civilian worker's morale.

On the other hand, the tragic fall of France serves as a grim testimonial to the failure of a great nation to provide adequate highways for both its civilian traffic and its mechanized army to move swiftly into positions to meet the rapidly advancing enemy. It was the main handicap that led to the comparatively quick defeat of France.

Still fresh in our minds are the stories and pictures of the French civilian population of women, children, and elderly people fleeing before the Nazi hordes, cluttering the narrow roads of their homeland and thwarting the efforts of their defenders to establish a common front on which to combat the invaders. The resultant confusion and delay made France easy prey for Hitler's legions.

It is well to remember the lessons of transport preparedness which was written in the terrific speed and prompt and massive support of the German aggression into the low countries.

As fully established now, Hitler's first step in preparing and developing Germany for the present war was the enormous expansion of its airports and the construction of great

motor super highways running north, east, south, and west and paralleling every frontier. This was supposedly for the purpose of having Germany lead the world in air travel and furthering its industrial growth, but, in reality, it was the initial phase before the great mass of Nazi planes and mechanized military equipment.

The United States should learn from these experiences:

In view of the strategic position of the North Atlantic seaboard in the preparedness drive, now is the opportune time when public opinion must be aroused and our citizenry must demand the construction of this vitally needed Boston to Washington, D.C., super express highway as part of America's enormous national defense program. [Stern, E. Donald, "Boston to Washington Super Highway as a Defense Express Highway," Proceedings, ARBA 1941, pages 48-54; Senator W. Warren Barbour (R-NJ) inserted the speech into the *Congressional Record* on February 19, 1941 ("Superhighway Between Boston and Washington Would Air National Defense, Extension of Remarks, *Congressional Record-Appendix*, February 19, 1941, page A792-A795)]

Based on the States' findings, the Boston-Washington Superhighway was reported to be 405 miles long with an estimated cost of \$253 million. The estimate did not include the route in the District of Columbia. *Engineering News-Record* reported:

The route selected for the highway runs directly through the large industrial centers. They were not bypassed because traffic surveys show that the great bulk of the traffic is short-haul, moving from one industrial center to the next.

The estimates were based on a 12-lane highway in the most heavily congested areas, six lanes of high-speed traffic, and six for the slower traffic. Elevated roads or viaducts will be required at many points to separate the highway from all intercepting roads.

The magazine, in an editorial, said the committee's conclusions "show how costs of building superhighways through congested areas continue to mount, and point to the necessity for early and generous planning for better highways between the large centers of population." Whether the road was toll or not was "not important" because either way, it would be a freeway and "its characteristics will vary little whether toll or free." The Boston-Washington Superhighway was "badly needed," but the significance of the committee's work went beyond this single road:

Crossing seven states, a superhighway from Boston to Washington cannot be of maximum usefulness without close cooperation during the initial stages in selection of a route. Some of the funds appropriated by Congress for surveys and plans for strategic highways could well be spent on plans for this superhighway. ["Superhighway Planning" and "Boston-Washington Superhighway," *Engineering News Record*, April 10, 1941, pages 38, 64-65]

Prior to the bombing of Pearl Harbor on December 7, 1941, PRA began shifting its focus to supporting the growing military preparedness. Efforts included improving access to defense

camps, relieving congestion at defense plants, and strengthening weak links in strategic highways.

After Pearl Harbor, the Boston-Washington Superhighway was no longer a priority. In the Interstate era, it would be built as part of I-95, the East Coast's main highway from Houlton, Maine, to Miami, Florida. The route was planned to go through every major city from Boston to Washington, but these urban segments were among the most controversial in the Interstate System. In the case of Boston and Washington, the controversy killed the route through the cities and it had to be routed onto the circumferential routes to maintain I-95 continuity.

Disputes Within the Partnership

In 1943, a new Congress considered legislation to authorize a post-war highway program. All parties understood that this would not be a routine bill, but would set the country's long-term course for highway development. The more immediate concern was that the State highway agencies were severely constrained. Engineers, construction workers, materials, and equipment were all in short supply.

As MacDonald explained in his annual report for FY 1942:

After December 7 [1941] approval of highway projects was restricted to those certified as essential in carrying on the war While striving toward the provision of critical improvements, the Public Roads Administration has cooperated with the Office of Price Administration and the War Production Board in steps taken to defer all noncritical highway work and to reduce to a minimum the use of steel, copper, zinc, asphalt, tar, and other critical material in work that cannot be deferred. [Work of the Public Roads Administration 1942, pages 2-3]

For the State highway agencies, the problems had worsened on December 1, 1942, when nationwide gasoline rationing began, resulting in significant reductions in State gasoline tax revenue. PRA estimated that during the first month of rationing, traffic on rural roads declined 35 to 50 percent compared with the same period a year earlier. These estimates were based on monthly automatic traffic records provided by the State highway agencies and comparisons with traffic declines in 17 eastern States subject to rationing since the spring. The eastern States had experienced declines in fuel tax revenue in the 40-percent range in recent months, with the greatest decline, 49 percent, in August. ["Highway Bureaus See Drop in Revenues as Gas Rationing Becomes Nationwide," *Engineering News-Record*, December 17, 1942, page 52]

AASHO's annual meeting, December 7-9, in St. Louis, was dominated by concerns about road maintenance. Outgoing AASHO president G. Donald Kennedy of Michigan acknowledged the frustration of State highway officials but said:

Our principal assignment for today, and for the duration, is to provide and conserve essential transportation. If we fail—if we grow discouraged, if we shrug off the responsibility—war transportation cannot do the job that must be done. And we may

well fear that if we fail in vision and energy today, tomorrow the job will no longer be in the hands of the state highway departments.

He urged State highway officials to prepare plans for the post-war period when highway building would be used to bridge the employment gap between war and peace. In addition, he said, they must consider projects to reduce urban highway problems as a primary obligation. ["Road Maintenance Problems Dominate Meeting of State Highway Officials," *Engineering News-Records*, December 17, 1942, pages 54-56]

As 1943 began, MacDonald summarized the drop in project development:

Obligations during 1941 made without the restraints imposed by wartime restrictions amounted to \$282,672,479 for the improvement of 3,835 projects totaling 8,962.6 miles. This compares with the 1942 obligations other than access roads, amounting in ten months to \$76,772,754 for 615 projects on 1,214.2 miles of improvement, principally on main roads.

With revenue from the gas tax and vehicle registrations declining, "some states may not have sufficient funds to maintain their main roads in adequate condition even after the elimination of replacement construction." [MacDonald, Thomas H., "The National Highway Situation Under War Conditions," *Engineering News-Record*, January 14, 1943]

On January 7, Representative Randolph reintroduced his bill, now H.R. 776 on T. E. Steiner's behalf to establish "The Transcontinental Streamlined Highway Corporation of the United States of America" to build, maintain, operate, and manage transcontinental superhighways (H.R. 776). The next day, Representative Elmer H. Wene (D-NJ) introduced H.R. 892, which provided in section 1:

That a new system of durable, concrete-surfaced, safety automobile superhighways and airplane emergency landing fields and commercial airports, and their appurtenances, for national defense in time of war, or insurrection, and the use of Government, commercial, private automobiles and airplanes in time of peace, be constructed and operated within and by the United States

The bill specified the location of 14 toll superhighways and provided that branch superhighways "shall be extended from main-line superhighways to near every State capitol [sic] not otherwise connected with the main lines." A Director of Superhighways would supervise construction and operation of the roads, subject to approval of a commission, all to be appointed by the President with the advice and consent of the Senate. The superhighways "shall be located outside of cities, towns, and villages," with pedestrian, animal-drawn, or "slowly moving vehicles" prohibited.

Like so many bills before them, both bills were referred to the Committee on Roads, which killed them.

With hearings pending on the post-war bill, the highway community was unusually divided. Even the AASHO bill, which usually provided the basis for Federal-aid highway legislation, had

divided the member State highway agencies. MacDonald and Michigan's Kennedy had helped AASHO's new president, Brady Gentry of Texas, prepare the bill, released in March. It called for annual authorizations of \$1 billion for 3 years after the war ended, including \$750 million for interregional highway construction. The bill temporarily increased the Federal share to 75 percent while the States were experiencing declines in highway user tax revenue that they used for matching funds. Upon enactment of the AASHO bill, State highway agencies would be able to use previously apportioned Federal-aid funds for advance design and right-of-way acquisition for projects that would then be ready for construction after the war.

The formula for apportioning post-war funds was adjusted to increase funds to States with the most mileage of urban arterials, a key component of the concepts in *Toll Roads and Free Roads* as well as the pending *Interregional Highways*. Instead of basing apportionment on equal proportions of population, area, and post-road mileage, AASHO proposed apportionment based half on population, and one-fourth each on area and mileage. The bill also retained Federal-aid participation in right-of-way acquisition by including it under the statutory definition of "construction." AASHO balanced the focus on urban arterials with increased funds for secondary roads. [Seely, pages 182-183]

In addition, the bill authorized designation of the roads that would form the Interregional Highway System, not to exceed 40,000 miles. They were to be:

. . . so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers of each geographic region of the United States with metropolitan areas, cities and industrial centers of like importance in all other geographic regions and to connect at suitable border points with routes of continental importance in Canada and Mexico.

The "regions" referred to in the bill were those that the Bureau of the Census had established based on generally similar population and economic characteristics. The bill continued:

Within each geographic region the routes of the Interregional Highway System shall be initially selected by joint action of the State highway departments of the States comprising the region. The routes initially selected shall be reviewed by the Public Roads Administration and such revision as may be necessary to provide for the interconnection of the routes initially selected at the boundaries of geographic regions shall be prescribed by the Commissioner of Public Roads after consultation with the State highway departments of the regions affected.

All designated routes were to be included in the Federal-aid highway system "without regard to any mileage limitation."

Despite the effort to accommodate the Federal-aid highway program's many partners, the formula for apportioning Federal-aid highway funds was a key point of disagreement among the States. In favoring States with large cities, AASHO had antagonized other States, as Seely explained:

In more than two decades of close cooperation, state officials had rarely disagreed with the BPR. Crucial to this harmony was the allocation formula that determined each state's share of funds. But in 1943, the formula provoked a major argument within the AASHO, with unrest centered in the highway departments in seven industrial, urban states in the Northeast that contributed more in taxes than they received in federal aid.

Even with the adjustment to the formula in the AASHO bill, leaders of these States wanted more Federal funds. With the forces contending over how the funds would be distributed, "the dispute quickly caused hard feelings within the organization. [Seely, pages 184-185]

Rural interests were concerned about the urban focus of AASHO's bill and the Interregional Highway System, as described in *Toll Roads and Free Roads*. They wanted a separate program to be administered by a Division of Local Road Administration within BPR and they wanted to work directly with BPR, not with the State highway agencies. Federal highway officials had rejected this option prior to the Federal Aid Road Act of 1916 because of the difficulty a small agency would experience in working with over 3,000 counties instead of 48 States. [Seely, pages 184-185]

Others objected to the proposed increase in the Federal share of project costs, fearing that the increase would inevitably lead to greater Federal domination over the States.

Nevertheless, by mid-April, the Senate Committee on Post Offices and Post Roads and the House Committee on Roads were considering identical versions of the AASHO bill, with sponsorship by Senator McKellar (S. 971) and Representative Robinson (H.R. 2426). Despite this strong sponsorship, *Engineering News-Record* reported that, "No immediate action is contemplated on the legislation." ["Three-Billion-Dollar Road Program Now Before Both House of Congress," *Engineering News-Record*, April 22, 1943, page 52]

In the absence of consensus on these and other issues, Congress put off action on the post-war program and passed, instead, the Federal-Aid Highway Amendment Act of 1943, which President Roosevelt approved on July 13, 1943. It was a holding action to continue the program for another year while making some modifications to address wartime needs.

The 1943 Act prohibited PRA from withdrawing previously apportioned funds that the States, because of wartime restrictions, were unable to obligate by their due date. It allowed the State highway agencies, in cooperation with PRA, to obligate up to \$50 million of these unexpended funds "for engineering and economic investigations of projects for future construction and for surveys, plans, specifications, and estimates for post-war highway improvements." These would be the "on the shelf" projects ready to go at war's end.

The Federal-State matching ratio remained 50-50, but the 1943 Act permitted the States to use Federal-aid highway funds to pay their matching share for up to a year after the war. In addition, the legislation expanded the definition of "construction" to include "the costs of rights-of-way incidental to the construction of a highway" and authorized PRA to reimburse up to 50 percent of the current reasonable value of any toll bridge if the bridge was built to Federal-aid standards and is to be made toll-free.

In early May, Representative Randolph and Senator John L. McClellan (D-Ar.) had introduced identical bills calling on the Commissioner of Public Roads to conduct a survey of the need for a system of express highways, how many highways were needed, what routes they should follow, and how much the system would cost. He was to report to Congress within 6 months after the provision became law “together with such recommendations for legislation as he deems advisable” (H.R. 2615, introduced May 4, 1943, and S. 1079, introduced on May 5).

Section 5 of the 1943 Act contained the Randolph and McClellan language:

The Commissioner of Public Roads is authorized and directed to make a survey of the need for a system of express highways through the United States, the number of such highways needed, the approximate routes which they should follow, and the approximate cost of construction; and to report to the President and to Congress, within six months after the date of the enactment of this Act, the results of such surveys together with such recommendations for legislation as is deemed advisable.

Without saying so, Section 5 directed the National Interregional Highway Committee to submit the report that was essentially completed in 1941, but interrupted by war-related priorities. Seely speculated that, "this action was a mark of MacDonald's desire to release the report." [Seely, page 180]

The delay in passage of comprehensive post-war legislation was especially distressing because all parties agreed that having highway construction plans on the shelf and ready to go was essential to providing employment for returning soldiers to avoid resumption of the Depression. The 1943 Amendment Act addressed the need for “on the shelf” projects, but left many issues to be resolved. As for the interregional highway system, projects “on the shelf” would be only theoretical until Congress authorized the system.

Interregional Highways

As a followup to MacDonald’s February 7 meeting with President Roosevelt, Carmody had sent recommendations to the White House for membership on the National Interregional Highway Committee. The President accepted the recommendations and appointed the seven members on April 14, 1941:

Harland Bartholomew, City Planner, St. Louis, Missouri.
 Frederic A. Delano, Chairman, National Resources Planning Board (NRPB).
 Bibb Graves, former Governor of Alabama (1927-1931 and 1935–1939).
 G. Donald Kennedy, Michigan State Highway Commissioner.
 Thomas H. MacDonald, Commissioner of Public Roads, PRA.
 C. M. Purcell, State Highway Engineer, California (1928-1942).
 Rexford G. Tugwell, Chairman, New York City Planning Commission.

On April 11, Presidential aide James Rowe had advised the President on the recommendations. Most of the nominees were “well-known and non-political men.” Delano might “not wish to take on the added work personally, but he can send an alternate and the Resources Board should

be included.” Rowe reminded President Roosevelt that he had recommended Governor Graves and Kennedy to MacDonald for membership. “Senator Lister Hill has been anxious to get some kind of a prominent position for Graves to help in his coming race for Governor of Alabama.” Rowe considered Graves to be “no great shakes,” but added, “I can’t see what harm he would do and Lister Hill wants him very much.”

Kennedy “was included to help him in his race for election to State Highway Commissioner which position, as you know, is politically powerful and controls the State government of Michigan.” Murray D. Van Wagoner, the commissioner since 1933, had been elected Governor in 1940 and took office for what proved to be his single 2-year term on January 1, 1941. Rowe added:

Unfortunately this list got lost on your desk and Senator [Prentiss M.] Brown became irritated because the names were not announced before the election held last Monday. Kennedy was elected. In any event, I cannot be broken-hearted that this list was not made public before the election so as to help Kennedy, because I remember the shameful picture of Van Wagoner and Kennedy, who is Van Wagoner’s brain, in the 1940 election. They made a deal with the Republicans, the name of Roosevelt was not mentioned by Van Wagoner and we lost the State of Michigan.

I have told Senator Brown this list would be released as soon as possible. [Ritter, FDR Library, OF 4388]

At the committee's first meeting on June 24, 1941, Governor Graves nominated Kennedy to be chairman, but he declined and recommended MacDonald instead. After the members approved MacDonald, he appointed his top aide Fairbank to be secretary. Kennedy served as vice chairman.

During this first meeting, Fairbank informed the committee members about the highway planning surveys, *Toll Roads and Free Roads*, and *Highways for the National Defense*. Seely explained:

Importantly, the committee accepted, without debate, these documents, the state traffic surveys, and the BPR’s planning philosophy of determining which roads could pay for themselves by using traffic counts as the technical foundation for its work. Bartholomew and occasionally Tugwell interjected visions of highways as more than devices for moving traffic, but BPR ideas permeated the committee’s deliberations from the beginning.

With the acceptance of the BPR’s data and planning approach, everything else fell into place. When Graves and Bartholomew suggested that military needs receive highest priority, Purcell quickly dissented, echoing the bureau’s traditional viewpoint that no special military roads were required. Instead, he argued that the highways most in need of improvement were in, near, and through cities. Only Graves resisted what became the underlying assumption of the committee’s report, and when Bartholomew listed a dozen objectives that had appeared during initial discussions about interregional roads, eight

related to cities. This result was hardly surprising because Tugwell, the man behind the Greenbelt towns of the mid-1930s, had wrestled with transportation planning for New York, and Bartholomew had authored several urban highway plans. In addition, Kennedy and Purcell came from the states leading in the development of urban freeways.

The members accepted PRA's anti-toll ideas, retention of the Federal-aid concept for construction of the proposed interregional highways, and an increased Federal share of 75 percent, at least during the immediate post-war period. [Seely, pages 179-180]

(In Detroit, Kennedy initiated a highway project incorporating expressway design features to the Ford Willow Run bomber plant near Ypsilanti. Seely considered this project, along with the access system under construction for the new Pentagon building to be the two largest access-road projects during the war. Hyde wrote:

Michigan's wartime road-building program produced three significant expressways: the Davidson Limited Highway, which extended 1.3 miles through densely populated Highland Park; the Willow Run Expressway, a system of access roads serving the Ford Willow Run bomber plant; and the Detroit Industrial Defense Expressway, which extended the Willow Run Expressway eastward into Detroit. These three expressways would become models for the freeway system built for the Detroit area in the decades following the Second World War. [Seely, page 178; Hyde, pages 76-77])

Neither Delano nor Tugwell attended the committee's next two meetings, during which the members considered several options for the length of the rural interregional network (48,400 miles, 36,000 miles, and 33,920 miles). The committee accepted BPR's views on incorporating the design standards from *Toll Roads and Free Roads*. Wilfred Owen, a highway planner substituting for Delano during the third meeting on October 2, 1941, objected to the focus on rural interregional routes. This focus was "misplaced," he said, because the NRPB's studies suggested "a lessened use of highways for long-distance movement in the future, such movement to be made increasingly by air":

The committee ignored this opportunity to broaden the inquiry to include alternative transportation systems, and instead assured Owen that the final report would suggest building the road system outward from the cities. [Seely, page 180]

The committee was not able to meet the President's original deadline of October 2, but largely completed its work in early November. [*Interregional Highways*, Message from the President of the United States, 78th Congress, 2d Session, House Document No. 379, January 12, 1944, pages ix-x]

The members played varying roles in the committee's work during 1941 and the coming years:

- Tugwell's role ended after President Roosevelt nominated him in July 1941 to be Governor of Puerto Rico; he took office on September 19, 1941, as the last appointed Governor.

- Delano, who began his career in railroading before World War I, withdrew from active service on the committee, but would continue to play a role in urban planning, with a focus on long-range planning until his death in 1953.
- Governor Graves died on March 14, 1942, at the age of 68 as he looked forward to the Democratic primary election on May 5 in his bid for a third term as Governor.
- Kennedy, who was president of AASHO (1941-1942), lost his reelection bid in 1942. He resigned in December to join the Automotive Safety Foundation as vice-president of highway transportation, a post he used to advocate the concepts in *Interregional Highways*. [Seely, page 182]
- In 1942, Governor Earl Warren appointed Purcell to be California's Director of Public Works. A former State Highway Engineer (1928-1942), chief engineer for the San Francisco-Oakland Bay Bridge, and AASHO president (1937-1938), Purcell held the post until he retired in 1951. [Multiple sources, including Seely, page 180]
- Bartholomew, one of the Nation's leading urban planners, continued to play a key role in developing urban transportation networks, particularly in Washington and its suburbs. His company, Bartholomew and Associates (established in 1919), developed highway plans for many cities, usually following the pattern of arterials intersecting circumferentials described in *Toll Roads and Free Roads* and *Interregional Highways*.

The provision in the 1943 Act prompted MacDonald and Fairbank to complete *Interregional Highways*. As noted, the committee had considered several options before agreeing on an Interregional Highway System of 33,900 miles, including 29,450 miles through rural areas and the remainder to carry the routes through cities. This mileage did not include circumferential or distributing routes that were essential to operation of the Interregional System; their location could be determined only by detailed study. The committee estimated that these routes would not exceed 5,000 miles.

The report stated that, "although in miles it represents scarcely over 1 percent of the entire highway and street system, it will probably serve not less than 20 percent of the total street and highway traffic." The committee recommended designing the Interregional System to accommodate the traffic "which will exist 20 years from the date of construction." [*Interregional Highways*, pages 3, 6, 52]

Rural segments would be limited access highways, with access only at designated points. All intersecting highways and railroads would be carried over or under it by means of a structure. Where construction of a structure was not possible initially, the at-grade crossings should be designed to provide a high degree of safety.

Rural sections carrying less than 3,000 vehicles a day would have two lanes. Two-lane rural sections would be marked as no-passing zones or zones in which passing was unsafe. For daily traffic of 3,000 to 15,000 vehicles, the rural segments would have four lanes, with a median strip of at least 15 feet. To carry higher traffic volumes, rural segments would have six lanes, also with a median strip at least 15 feet wide. All lanes would be 12 feet wide.

Rural segments in flat topography should be designed for speeds not less than 75 miles per hour for passenger vehicles and 60 miles per hour for trucks. In more difficult terrain, the minimum speeds should be 55 miles per hour for passenger vehicles and 35 miles per hour for trucks.

In rural areas, sufficient right-of-way should be acquired for the highway facilities that would be needed to accommodate traffic over 20 years. Also, the committee recommended that public control be obtained, by purchase or easement, over a strip of land sufficient to prevent erection of any private structure or sign within 100 feet of the outer edge of the road surface as it is likely to exist within a 20-year period. The total width, therefore, was estimated to be 224 feet (lightly traveled rural segments) to 288 feet. In fact, the committee recommended acquiring a strip of land 300 feet wide without regard to future highway needs.

Urban sections would also be constructed as limited access highways, with 12-foot lanes, access only at designated points, and grade separation for intersecting highways and railways. To avoid frequent intersections, urban sections should be elevated or depressed, with the latter being preferable. Local service streets should be provided on each side where needed for the service of property.

For urban sections expected to carry less than 20,000 vehicles per day, four lanes should be provided, with a raised median strip at least 4 feet wide. For higher volumes of traffic, routes should be designed to carry six lanes of traffic, also with a 4-foot wide raised median strip. [Appendix V, *Interregional Highways*, pages 150-155]

The report went into considerable detail on freeways in cities. Rapid urban expansion, without sufficient plan or control, had resulted in blighted or slum areas. Suburban home development, which attracted suburban businesses, was at the heart of a decentralization or dissipation of the urban area:

This is a most difficult problem to solve. So long, however, as the central areas of the cities are poor places in which to live and rear children, people will continue to move to the outskirts. Undoubtedly, a factor that has facilitated this movement has been the improvement of highways. [*Interregional Highways*, pages 53-54]

It was important for the interregional highways to be located to "promote a desirable urban development." Because urban areas often consist of several political jurisdictions, the committee recommended that "an overall authority" be created to cooperate with the State highway agency to develop an overall thoroughfare plan. Urban segments, to the extent possible, should be located in "wedges" of undeveloped land created when improvement of highways at urban centers stimulated outward extension of city growth. Use of these wedges would not only minimize the difficulties of locating highways in urban areas but offer an opportunity for redeveloping the land through city planning. [*Interregional Highways*, pages 55-56, 62-65, 71]

Urban segments should be located "to permit and encourage a desirable coordination of highway transportation with rail, water, and air transportation." The committee recommended that the overall authority coordinate freeway location with housing and city planning authorities, railroad, motorbus, and truck interests, air transportation and airport officials, and any other agencies, groups, and interests that might affect the future shape of the city. In addition, the

location of interregional routes in cities should be considered along with the projected location of new housing developments, city centers, parks, greenbelts, and other changes affecting large tracts of land. [*Interregional Highways*, pages 66, 70-71]

What the committee clearly believed was that the interregional routes "will tend to be a powerful influence in shaping the city." Location, therefore, was vitally important:

In favorable locations, the new facilities, which as a matter of course should be designed for long life, will become more and more useful as time passes; improperly located, they will become more and more of an encumbrance to the city's functions and an all too durable reminder of planning that was bad. [*Interregional Highways*, page 71]

As discussed in *Toll Roads and Free Roads*, circumferential routes would serve the dual purpose of linking radial highways for local traffic and allowing through traffic to bypass the city. Several circumferential routes might be desirable for large cities, including one around the downtown business district in the largest cities to serve as a distributor of traffic among local streets and keep traffic out of downtown that was not bound there. [*Interregional Highways*, pages 64-65, 71-74]

Acquisition of right-of-way as soon as possible was essential if construction of the Interregional Highway System were to serve its purpose as a post-war program. The two main hindrances to this goal were (1) the failure to plan and provide funds for land purchases sufficiently in advance of construction and (2) the "the cumbersome and time-consuming land acquisition processes" under State law. Although the committee endorsed creation of a Federal Land Authority, it was mindful of the concerns expressed after release of *Toll Roads and Free Roads* regarding Federal intrusion into State affairs. The committee, therefore, recommended creation of similar authorities at the State and local levels under a Federal-aid plan that would finance the acquisition, by State and local authorities, of needed lands for highway and other public purposes. The authorities would, inevitably, "aid in the efficient assembly and appropriate redevelopment of large tracts of blighted urban lands."

States should acquire sufficient right-of-way for the lanes needed at present but also "provide for any surface widening that may be reasonably anticipated":

Nothing is more completely demonstrated by past experience than the costliness of successive acquisitions of property frontage to make room for repeated unanticipated road widenings.

The width should also be sufficient to accommodate, at each side of the roadway in its eventual anticipated width, marginal strips of land to serve as a protection against the unsafe and unsightly development of closely crowding roadside stands, filling stations, and signboards.

Beyond those limits, only a few States sanctioned excess right-of-way acquisition:

Cases in which such proposed takings have been tested in the courts have been complicated with a purpose to resell a portion of the land acquired and with the

presumption of a motive to recoup a portion of the cost of the land retained by profiting on the sale of the excess. It is evident the courts have not been persuaded that the acquisition of marginal strips, even for future roadway widening or for present border protection, is an appropriation for a “public use,” the test to which they firmly adhere in determination of the validity of all expropriation. It must be admitted, however, that the necessities of such acquisition have not been clearly presented for judicial determination.

Nevertheless, the committee concluded that acquisition of marginal land for border protection and future roadway widening constituted a “‘public use’ in the narrowest sense of the term.” State laws should permit at least this level of right-of-way acquisition. The report did not advocate excess condemnation. [*Interregional Highways*, pages 83-88]

President Roosevelt transmitted *Interregional Highways* to Congress on January 12, 1944. His transmittal letter stated:

Early action by the Congress in authorizing joint designation by the Federal Government and the several State highway departments of a national system of interregional highways is desirable

The President also summarized the advantages of such a system:

[The] program can serve not only to help meet the Nation's highway transportation needs, but also as a means of utilizing productively during the post-war readjustment period a substantial share of the manpower and industrial capacity then available. A program of highway construction will, in addition, encourage and support the many diverse economic activities dependent upon highway transportation.

Finally, the President added a personal observation in support of excess condemnation. After citing the case of the farmer who benefitted from the acquisition of a narrow strip of his property for a main highway, the President concluded:

After all, why should the hazard of engineering give one private citizen an enormous profit? If there is to be an unearned profit, why should it not accrue to the Government—State or Federal, or both? [*Interregional Highways*, pages III-V]

Authorizing the Interstate System

Hearings resumed on a long-term Federal-aid highway bill in February 1944. The House Committee on Roads would hear from 110 witnesses. This outpouring of interest reflected the recognition that, as MacDonald put it when he testified on April 27:

I wish to make as the urgent note of what I shall say to the committee that this is in no way temporary legislation. It is legislation that, in my judgment, will determine the progress of road development for the next quarter of a century. [Federal Aid for Post-War Highway Construction, Hearings before the Committee on Roads, U.S. House of Representatives, 78th Congress, 2d Session, on H.R. 2426, volume 2, page 944]

As the hearing began on February 29, Chairman Robinson made one thing clear at the start:

I will say frankly that this bill is prepared largely by the American Association of State Highway Officials, and it was their thought that it represents . . . the type of legislation that should be enacted. It was introduced by me. [Federal Aid for Post-War Highway Construction, page 5]

The bill called for authorization of \$3 billion, with \$1 billion to be apportioned to the States for each of the first 3 years after the war. The apportionment formula would be modified to:

One-half population, one-fourth area, one-fourth post-road mileage.

One-half of the funds were for projects on Federal-aid highways. The other half was for projects in urban areas (defined as those with a population of 10,000 or more) and secondary and feeder roads. The division among urban areas and secondary or feeder roads was to be based on comparative population. The Federal share was not to exceed 75 percent, plus an amount not exceeding 5 percent for States with large amounts of nontaxable public and Indian lands. If necessary, PRA could advance funds to the States for their matching share.

Section 7 implemented the concepts in *Interregional Highways*:

There shall be designated within the continental United States an Interregional Highway System not exceeding forty thousand miles in total extent so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers of like importance in all other geographic regions of the United States and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico. Within each geographic region the routes of the Interregional Highway System shall be initially selected by joint action of the State highway departments of the States comprising the region. The routes initially selected shall be reviewed by the Public Roads Administration and such revision as may be necessary to provide for the interconnection of the routes initially selected at the boundaries of geographic regions shall be prescribed by the Commissioner of Public Roads after consultation with the State highway departments of the regions affected. All highways or routes included in the Interregional Highway System as finally selected, if not already included in the Federal-aid Highway System, shall be added to said system without regard to any mileage limitation.

The bill also provided for PRA cooperation with the State highway departments “in the location, development, and construction of off-street facilities for parking of vehicles and the construction of highway facilities to give access to and between transportation terminals.” In addition, the bill provided that in any State that did not have the authority to acquire sufficient right-of-way for a federal-aid highway project, the Federal Works Administrator could acquire the property by purchase, donation, condemnation, or otherwise. The Administrator could then convey the property to the State by proper deed in return for funds taken from the State’s Federal-aid apportionment. [Federal Aid for Post-War Highway Construction, pages 1-3]

Samuel C. Hadden, chairman of the State Highway Commission of Indiana and president of AASHO, was the first witness. He referred to the 1943 AASHO bill, which also called for \$1

billion a year. “It may be doubted” if that amount would still be adequate in view of changes over the past year, such as declining State highway revenues, continued highway deterioration under wartime loads, “and we have but recently had presented for our consideration the desirability of designating a Nation-wide system of interregional highways for construction within a 10- to 20-year period at an estimated annual cost of \$750,000,000.” He was not sure Congress would authorize such a large amount at this time for the new system, but he thought it “quite likely that the use for this purpose of a substantial portion of the funds we are requesting will be considered judicious, and, if so, this will tend substantially to increase the minimum considered sufficient a year ago.”

Like many State highway officials, Hadden believed the Federal Government should repeal Federal excise taxes on highway products such as gasoline. However, now was not the time for it, since “it is very doubtful if the State legislatures would advance their State taxes fast enough to take up the slack, so to speak, if the Federal Government should suddenly retire from this field of taxation.” Moreover, the revenue would be needed if Congress authorized the requested funds to meet the Federal Government’s obligations:

We refer specifically to the obligation of the Federal Government to foster interstate commerce, to construct post roads, and to provide for the common defense which certainly includes the provision of adequate military highways The justification for such a large-scale program as we are considering rests on road needs, on the employment provided by such a program, on the obligations of the National Government in connection with highways, and in recognition of the part played by construction, including road construction, in our national economy.

Hadden acknowledged that the shift in the apportionment formula had “provoked a great deal of animated discussion” since AASHO first proposed it in 1943 to replace the traditional apportionment formula dating to 1916 (equal weight to population, area, and post-road mileage). The shift was justified, he said, by the substantial shift of population from country to city since 1916, greater improvement since then of intercity highways than their municipal extensions, and the likelihood that if unemployment returns to pre-war levels, the problem would be greater in cities than rural areas.

He referred to the “epoch-making importance” of the interregional highway system:

We believe that it is time to take definite steps for the designation of such a system of highways while leaving to State highway officials a large measure of discretion as to the rapidity of their construction, and leaving also to the State highway departments a large measure of discretion in the choice of the standards of construction to be employed in improving this system. Manifestly it would be a serious mistake to require that a disproportionately large amount of the funds available to any State for Federal-aid highway construction should be expended on such a limited system of highways as will be embraced in any designated interregional system. With these reservations in mind we believe that the highway officials of the country would enthusiastically endorse the designation at this time of the interregional highway system for which the pending bill provides.

In response to questions from Representative William M. Whittington (D-Ms.), Hadden agreed that since section 7 did not specify a time limit for designating the system, the work might not be completed within the 3 years covered by the AASHO bill. A statutory deadline might be appropriate, but Hadden added that, “if the States in any area are unable to agree, I doubt if there can be any serious objection to the Public Roads Administration stepping in and making the final decision.”

Representative Randolph asked if AASHO considered construction of toll roads on the model of the Pennsylvania Turnpike. Hadden replied that most State highway officials “regard the toll road as a hangover from ancient times.” In his opinion, “they are out of date”:

I don’t see how you can make a toll road prosper in the presence of free highways. I just don’t believe that people would use them.

When Representative Randolph pressed for an opinion on the Pennsylvania Turnpike, Hadden replied that he would prefer not to express an opinion, but said. “I think the Administration has for a good many years looked upon the toll road as just as extinct as the well-known dodo.”

Representative Randolph pointed out that one of the spectators was “a gentleman who was one of this country’s pioneers in bringing before us the subject of highways and express roads, T. E. Steiner.” He recalled the hearing in 1937 when ARBA’s Charles Upham said he thought such proposals were “fantastic at that time, but they are a part of our work today.”

Representative Hugh Peterson (D-Ga.) was impressed by section 7, but wondered why it referred several times to “regions.” He asked, “isn’t it just as essential to have a trunk-line highway connecting San Francisco with New York City?” Hadden replied that PRA would ensure the regional alignments met national objectives.

Representative Peterson was not convinced because the bill, as drafted, called on PRA to “deal with regions primarily.” He asked:

Then aren’t you opening up the possibility of having one region of America pitted against another one and doing the things we have been trying to eliminate all these years—this regional issue?

Hadden replied that the term just meant that “these different highway departments and these different areas will counsel together and choose these routes.” He was not the author of that term and had no pride of authorship regarding “regions,” he said, “but it never had occurred to me there was anything objectionable about it.”

Representative Peterson was concerned that if the interregional highway system was designated on a regional basis, regulation of trucking would, likewise, be implemented on a regional basis:

And haven’t you injected back here into the transportation of this country or the regulations on transportation an issue that has certainly been a cause of tremendous

friction in this Nation in the years past and still is? We are trying to eliminate it in certain fields, and here we are initiating it in a new field.

Hadden conceded the point. "I think I can say for the State highway officials if any better or fairer way can be devised for designating this system, it will certainly be acceptable to us." [Federal Aid for Post-War Highway Construction, pages 6-25]

Overall, the testimony revealed substantial agreement on some points. An urgent need existed to overcome the accumulated deficiencies of the road network. To preserve the sovereignty of the States, the basic concepts behind the Federal-aid highway program should be preserved. The competitive bidding process should be retained for Federal-aid highway projects. Projects should be approved to appropriate standards based on road classification, including the construction of modern expressways and improvement of farm-to-market systems. Congress should, without delay, enact a single, comprehensive highway bill so the States could get on with the complex legal, financial, and engineering problems that must be solved to prepare their post-war on-the-shelf projects. [Mertz, W. Lee, *Origins of the Interstate, Federal Highway Administration*, page 81, <http://www.fhwa.dot.gov/infrastructure/origin01.cfm>]

But the testimony also revealed continuing rifts in the highway community, as summarized by Seely:

As usual, AASHO president Samuel Hadden presented the bill and the executive committee followed with orderly presentations about its main features. But events quickly departed from the norm, for instead of the usual procession of state engineers voicing agreement, the Roads Committee heard northeastern officials attack the old formula as discriminatory against cities while engineers from several rural states opposed any aid to cities. Most state highway engineers avoided these absolute positions and urged Congress not to resolve the problem by using rigid formulas to divide funds between rural and urban highways.

Disarray among the States was only one problem:

[The] testimony of business and trade groups and state and local government officials proved even more divided. Agricultural groups fought the interregional system, while mayors argued that only urban highways matter. The general counsel for the Pennsylvania Turnpike favored toll roads, while truckers opposed them. Charles Upham presented the ARBA's plan, which called for a \$1.5 billion annual appropriation, 50 percent more than the AASHO's bill. There were frequent favorable references to the National Interregional Highway Committee's report, but no one suggested giving priority to the most traveled roads as each argued that their roads should be funded first, a pattern that had been set by the eastern highway officials. [Seely, pages 187-188]

The Interregional Highway System was endorsed by the great majority of witnesses. Among the States, only Colorado testified against the system. Colorado's concern, as expressed by State Highway Engineer Charles D. Vail, was not with the concept but with the mileage the State would receive as shown in *Interregional Highways*. Using current numbering (which was not

established until 1957), the report identified the State's recommended system as east-west I-70 from the Kansas State line to Denver and north-south I-25 from State line to State line, with the two routes intersecting in Denver:

Colorado is opposed to the interregional system of highways . . . in that the roads designated in Colorado do not reach any direct destination to the north, west, or south. I am also fearful that the tentative standards of design as given out will encourage heavier loading than now recommended by the American Association of State Highway Officials. [Federal Aid For Post-War Highway Construction, pages 338-339]

(Colorado's objection would not be resolved until 1957, when the route that became I-70 was extended across the State's western mountains to Utah.)

T. E. Steiner saw an opportunity for his own superhighway plan in the in-fighting within the highway community. When he testified on April 26 before the House Committee on Roads, he said that he had been "promoting this plan of mine, advocating it and working out all the complex details." He was fully in favor of the type of interregional highways and other improvements the committee was considering:

[We] certainly must improve our highways, and to show you I am much in favor of that personally, I travel about 50,000 miles every year, and, therefore I know the need of the improvement of our highways, and this program [the committee is considering] is very good and we certainly are going to need it. But I am going to emphasize the need of something to precede it.

Given the likely contention among the States, "it is going to take a long time to get this program into action." What was needed was a plan that "will take up the slack, take care of the boys that come from the front, take care of the people who come from defense factories and will be needing the jobs."

His proposal, he said, would have been a great idea if implemented before the war but now it was even more appropriate because it would "provide honorable employment for 15,000,000 people." At a cost of \$12 billion worth of bonds, Steiner's 10,500-mile network could be completed in just 6 years.

Steiner expressed some bitterness early in his testimony when he said:

[With] respect to these Federal highways, express highways, a certain man wants to call them express highways because he has been condemning superhighways for years and he says we don't need superhighways and he says we are now calling these express highways, which is a very good name, and which will be needed as we all know. [Federal Aid For Post-War Highway Construction, pages 898-904]

Steiner did not identify that "certain man," but clearly had MacDonald in mind.

When MacDonald testified on April 28, he got off to a bad start by showing a Department of Commerce map of the Census Bureau regions, with the recommended interregional routes

depicted as black lines. The depiction of the regions prompted Representatives Peterson and Leon H. Gavin (R-Pa.) to raise the issue. They thought the term “interregional” was inaccurate because many routes cut across the regional lines shown on the map. However, the Republican anti-Roosevelt, anti-New Deal attitude began to dominate the discussion, with the term “region” standing in for all that they despised about the New Deal planners.

MacDonald seems to have been frustrated that the name of the proposed network was taking up so much time and diverting attention from what he considered the important issues. Still trying to get back to his prepared topics, he made a second mistake by pointing out that the National Interregional Highway Committee that developed the proposal included Delano and Tugwell, who as far as Republicans were concerned were two of the most hated of all the New Deal “socialists,” with the NRPB so despised that it had been defunded in 1943 and forced to close up shop. MacDonald tried to explain that neither Delano nor Tugwell had played a significant role in the committee’s work, but his effort was in vain. He conceded:

We are perfectly willing to have that term "interregional" left completely out of the designation. It was our choice to avoid the use of such terms as "transcontinental" or "superhighways" We didn't want to use the term "transcontinental" because we have tried to get away from the idea of building long-distance roads and instead provide for highways that will adequately connect the population areas of the country.

Chairman Robinson suggested deleting "interregional" and saying, "There shall be designated within the continental United States a highway system not exceeding 40,000 miles?" Clearly exasperated, MacDonald replied, “That's all right.” [Federal Aid For Post-War Highway Construction, pages 971-989]

On May 16, 1944, Representative Mott, one of the Republicans who despised the Roosevelt “planners,” introduced H.R. 4811, the latest version of the Federal-Aid Highway Act of 1944. Section 7 authorized designation of a 40,000-mile “National System of Interstate Highways,” a name that left out the hated New Deal regional structure of the country. That name would survive.

The result of the disagreements exposed during the hearings was that the House and Senate committee’s drafted their own bills, neither of which authorized the \$1 billion sought by AASHO:

The existence of two bills created a situation unprecedented in the history of highway policy Obviously, the absence of unity among road builders had opened the door for Congress to tinker with the bill. This time, the two committee chairpersons could not squash divergent ideas by announcing that the AASHO opposed them. [Seely, page 189]

The debate within Congress continued through most of the year. One issue that lost out during the debates was Roosevelt pet idea: excess condemnation. The end came on November 28, when Representative Randolph introduced an amendment during the floor debate:

Provided, however, That the Commissioner of Public Roads shall not as a condition of approval of any project for Federal aid hereunder require any State to acquire title to or control of any marginal land along the proposed highway in addition to that reasonably necessary for road surfaces, median strips, gutters, ditches, and side slopes.

He told the House that this was a protective amendment "to reserve to the States reasonableness in connection with the purchase of the rights-of-way." Some States might want 300 feet, but others might not:

I do not want a farmer's land to be taken out of productivity because that acreage happens to abut on a road. I do not want legitimate business which is close by a highway, if it does not interfere with the actual motor travel, to be torn down and removed.

Representative Earl C. Michener (R-Mi.) was suspicious:

Mr. Michener. Is this the amendment that has the support of the outdoor advertising companies?

Mr. Randolph. It has general support, including those whose business is highway-sign advertising.

Mr. Michener. That means billboards.

Representative Leon H. Gavin (R-Pa.) urged his Republican colleagues to support the amendment. It "simply prevents Federal aid to highways from being used as a club to force State action and legislation—a purpose for which Federal aid was never intended to be used." He hoped the Commissioner of Public Roads had not advocated such withholding, for "it would cause much public resentment to have a Federal official use his veto power" over the States on marginal right-of-way.

Chairman Robinson, in a dialogue with Representative J. Harry McGregor (R-Oh.), tried to show that the amendment was not needed by saying that all the Commissioner of Public Roads would do is approve or disapprove State proposals:

Mr. J. Harry McGregor (Ohio). May I ask my chairman, what if he does not approve? What is going to be the effect?

Mr. Robinson. If he disapproved it, of course, then he will have to set forth his reasons for disapproval.

Mr. McGregor. Then if the chairman wants to be fair, and the Commissioner wants to be fair, why is there any objection to this amendment?

Mr. Robinson. Simply because we are trying now to make a harmonious road system throughout the whole United States. It will be for the entire people. If something arises where some State is interfering with the rights of the people of the United States, we feel,

and the committee felt, that the Commissioner should have some say as to what action should be taken under those circumstances. [*Congressional Record-House*, November 28, 1944, Pages 8509-8511]

The House, nonetheless, adopted the amendment. In the final version of the 1944 Act, it reads: That the Commissioner of Public Roads shall not, as a condition of approval of any project for Federal aid hereunder, require any State to acquire title to, or control of, any marginal land along the proposed highway in addition to that reasonably necessary for road surfaces, median strips, gutters, ditches, and side slopes and sufficient width to provide service roads for adjacent property to permit safe access at controlled locations in order to expedite traffic, promote safety, and minimize roadside parking.

Throughout the Senate debates in 1944, the original name, the "National System of Interregional Highways," had been used. However, when the conference committee met in December to resolve differences between the House and Senate bills, the Senate yielded to the House regarding the name of the network. Section 7 of the final bill severed the new highway network from any link to the "socialistic" regional lines drawn by the Census Bureau:

There shall be designated within the continental United States a National System of Interstate Highways not exceeding forty thousand miles in total extent so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico. The routes of the National System of Interstate Highways shall be selected by joint action of the State highway departments of each State and the adjoining States, as provided by the Federal Highway Act of November 9, 1921, for the selection of the Federal-aid system. All highways or routes included in the National System of Interstate Highways as finally approved, if not already included in the Federal-aid highway system, shall be added to said system without regard to any mileage limitation.

In that one paragraph, Congress set the Interstate Highway Program in motion. It did not authorize special funding for the new system, although funds authorized for the Federal-aid system and its urban extensions could be used on Interstate routes. The Federal-State matching ratio would be the same as for other systems: 50/50. As Chairman Robinson explained to AASHO:

Because of variation in conditions among the States no attempt was made to specify what portion of available funds should be applied to the Interstate System.

He assured AASHO he saw no chance that the Federal Government would assume responsibility for the total cost of construction. However, he indicated willingness to consider changes if experience showed they were warranted in such areas as matching share, standards, or the urban program. [Mertz, page 84]

What also was absent from the legislation was any commitment to the planning and coordination of highway facilities in urban areas, as called for in *Toll Roads and Free Roads* and

Interregional Highways. MacDonald and his staff would work with State and local officials to identify urban Interstate routes, with the work not completed until 1955.

Also missing was a Federal land acquisition agency. The 1944 Act retained right-of-way acquisition under the definition of “construction” but took no other step to address what *Toll Roads and Free Roads* and *Interregional Highways* had identified as a significant potential problem.

President Roosevelt signed the Federal-Aid Highway Act of 1944 on December 20. He issued a statement that said, in part:

Adequate facilities for highway communication will be essential in the future as a part of an expanding, prosperous economy that will insure jobs. They will be essential also to the national defense, as well as to the safe and efficient transportation service which belong to America's way of living.

He added:

This legislation makes possible the advance planning of the needed facilities on a sound basis. Now it becomes a challenge to the States, counties and cities which must originate the specific projects and get the program ready for construction after the war ends.

According to PRA’s annual report, approval of the Federal-Aid Highway Act of 1944 “resolved all uncertainty as to the character and extent of the [post-war] program.” Funding was well below AASHO’s and ARBA’s expectations:

The legislation authorized appropriation of \$500,000,000 to aid the States in highway improvement in each of the first three postwar fiscal years. For each year there was authorized \$225,000,000 for the Federal-Aid Highway System, \$150,000,000 for expenditure on a system of principal secondary or feeder roads, and \$125,000,000 for sections of the Federal-Aid System in urban areas. [Annual Report, Public Roads Administration, 1945, pages 5-6

The States could not use the funds until the start of the first fiscal year after the end of the war.

(Representative Randolph, who once again introduced his bill on behalf of Steiner in July 1945 (H.R. 50), lost his seat in the Republican rebound election of 1946, took a job with ARBA, and then won election to the Senate in 1958. In the Senate, where he rose to become chairman of the Committee on Public Works, he was a strong supporter of good roads, including the Interstate System, until he retired on January 3, 1985.)

Launching the Interstate Era Part 4

Postwar Activities

The European phase of World War II ended on May 8, 1945. Japan surrendered on August 14, 1945. (Italy had entered into a truce with the allies in September 1943, following the removal and arrest of Mussolini, and declared war on Germany the following month.)

The post-war period would be different, in many ways, than pre-war observers, commentators, and officials had expected. For one thing, Franklin D. Roosevelt, who had helped nurture the Interstate System through its conceptual stages, was no longer President. The President was now his final Vice President, former Senator Harry S. Truman. He had taken the oath of office in the White House on April 12, 1945, just 2 hours and 24 minutes after President Roosevelt died of a cerebral hemorrhage at the "Little White House" in Warm Springs, Georgia.

Little good was expected of Truman. As biographer David McCullough put it:

[The] news of Franklin Roosevelt's death, followed by the realization that Harry Truman was President, struck like massive earth tremors in quick succession, the thought of Truman in the White House coming with the force of a shock wave. To many it was not just that the greatest of men had fallen, but that the least of men—or at any rate the least likely of men—had assumed his place.

"Good god, Truman will be President," it was being said everywhere. "If Harry Truman can be President, so could my next door neighbor." [McCullough, David, *Truman*, Simon and Schuster, 1992, page 349]

For the highway community, however, the biggest difference was economic. For years, the idea had been that a big post-war roads program must be ready to go at war's end, with projects on the shelf, to provide jobs for returning soldiers. In part, President Roosevelt had advocated transcontinental toll roads and had supported the interregional highway plan based on this assumption.

In 1943 and again in 1944, the urgency of completing the post-war highway bill was accepted by all concerned. The funds authorized in the 1943 Act were expected to be used to build a stockpile of projects ready to go after the war. The 1944 Act contained a trigger mechanism—none of the funds could be used until Germany, Italy, and Japan were defeated.

The immediate aftermath of the war seemed to support this expectation. The Pentagon canceled billions of dollars in war contracts. Layoffs from wartime jobs were common. Strikes broke out across the country. Unemployment was expected to soar. Road construction jobs, it appeared, were surely needed.

Instead, after a period of disruption, the Nation entered what is typically known as the "post-war boom." By the time of Truman's State of the Union address on January 6, 1947, he could

accurately say that the Nation was prospering as never before. The boom was in full swing by 1948. McCullough summed up the impact:

Profits were up. Farmers were prospering. American prosperity overall was greater than at any time in the nation's history. The net working capital of American corporations hit a new high of nearly \$64 billion. For the steel, oil, and automobile industries, it was a banner year. Unemployment was below 4 percent. Nearly everyone who wanted a job had one, and although inflation continued, people were earning more actual buying power than ever before, and all this following the record year just past, 1947, which, reported *Fortune* magazine, had been "the greatest productive record in the peacetime history of this or any other nation." [McCullough, page 621]

The Nation faced the biggest housing shortage in history. The shift of America's population to the suburbs, supported by the G.I. Bill of benefits for returning soldiers, had accelerated in response to the shortage. The first Levittown development, created by William Levitt on Long Island, New York, had opened in 1947. It had been built on the mass production concepts that had transformed the auto industry, with the houses priced low (initially \$7,990, with easy monthly payments for veterans), and arranged in a community that included village greens, shopping centers, playgrounds, bowling alleys, swimming pools, and a town hall. As Levittowns and their suburban imitators spread to other States, they filled the need for the growing families that gave the country the demographic upsurge known as the "Baby Boom."

Automobile sales did more than keep pace with the boom—the sales spurred the economy. Mark Rose described the boom:

Between 1946 and 1950, Americans replaced older vehicles and added new ones rapidly, forcing up registrations by more than two-thirds. In 1945, about 31 million vehicles of all sorts were registered; in 1946, state officials listed more than 34.4 million; and by 1950, they had registered 49 million, including 8.6 million trucks. [Rose, Mark, page 31]

The urban problems that MacDonald's and Fairbank's concept of interregional highways had been designed to address were accelerating, as Rose explained:

After World War II, urban businessmen and residents continued to flee to the suburbs, leaving behind declining property values, falling retail sales, and an unsightly collection of decayed buildings and unrented space in the cities. Traffic congestion, since the 1920s a headache for urban leaders, motorists, truckers, and residents alike, composed a particularly critical part of the dilemma. Between 1945 and the mid-1950s, as trucks and autos poured onto narrow streets, traffic tangles grew larger, making the American city an even less desirable place to visit, to play, and to conduct business. [Rose, Mark, page 55]

MacDonald addressed a Business Men's Conference on Urban Problems on September 11, 1947:

There is altogether too much fear of the so-called decentralizing effect of expressways. The type of decentralization now in progress is inevitable, expressways or no expressways. Our cities are expanding, de-densifying, to use the action term.

Meanwhile, the post-war Interstate System highway plan designed to keep the economy from falling into Depression with plans “on the shelf” was faltering. The war ended just half a year after the 1944 Act authorized PRA to designate the Interstate System. The designation, which was essential before Interstate projects could be developed, was in an early stage at war’s end.

Shortly after President Roosevelt signed the Federal-Aid Highway Act of 1944, PRA began implementing it. Funds were apportioned on January 6, 1945 (construction with this funding could not legally begin until the war ended). Rules and regulations implementing the act were issued on April 6, 1945.

PRA was also moving rapidly on designating the National System of Interstate Highways. In February, the PRA asked each State highway agency to prepare recommendations on which of their routes should be included in the Interstate System. PRA had formulated the procedures for designation in cooperation with AASHO's Subcommittee on Legislation and Administrative Policy. Although PRA directed the States' attention to the system of highways identified in *Interregional Highways*, the request to the States made clear that PRA did not intend to limit the freedom of the States in making recommendations.

Some States proposed the same routes shown on the tentative system map in *Interregional Highways*:

A few States proposed routes in addition to those recommended by the National Interregional Highway Committee, and supported the proposals with such convincing evidence of importance that the addition could not well be denied.

After eliminating all routes that were not justified beyond reasonable question, and adding a small mileage at the request of the War Department, there resulted a total mileage of 37,324 miles in the system of main routes as integrated by Public Roads. On March 14, 1946, a map showing this tentatively integrated system was transmitted to the States with the request that they concur in the routes as shown or propose alternatives. At the same time it was stated that routes agreed to by the States might be regarded as tentatively established, provided there was no reason to believe that disagreement on the part of adjacent States might jeopardize their final designation. Replies from a number of States were made quickly, the first acceptance of the system as shown being received from Nebraska on March 28, 1946. By the end of the fiscal year [June 30, 1946] acceptances had been received from 37 States and the District of Columbia. Seven States had not replied officially and four still proposed alternate routes that did not meet the routes proposed by adjoining States.

While the system has not been officially established by promulgation of the Federal Works Administrator, by far the largest part is unofficially established and is so recognized by the States for purposes of administrative records and in designing

improvements. It is hoped that early agreement will be reached with the remaining States so that this important system may be publicly announced and attention focused on the need for its rapid improvement to the high standards already agreed upon by the States and the Public Roads Administration. [Work of the Public Roads Administration 1946, pages 11-12]

PRA also began developing Interstate plans for the larger cities. Cooperation with the States, the cities, and officials of adjacent areas had been necessary. For the rural segments, PRA had been able to base route designation on data resulting from the stopping of vehicles during the state highway planning surveys. For urban areas, PRA wanted similar data but stopping high percentages of vehicles was impractical. Instead, PRA launched a survey of travel habits using new home interview techniques. As with the statewide planning surveys, these new urban surveys were to serve the Progressive function of providing the data that would allow officials to resolve disputes by harmonizing the views of differing factions, each of whose proposals, in the absence of facts, was of necessity based on opinions. PRA worked with the State highway agencies and local officials to conduct the surveys, analyze the information, and outline the needed highway facilities. (For a detailed discussion of this process, see "Designating the Urban Interstates" on this Web site at <http://www.fhwa.dot.gov/infrastructure/fairbank.cfm>.)

Simultaneously, PRA worked with AASHO's Special Committee on Planning and Design Policies on standards for the location and design of Interstate highways. PRA's annual report for 1945 summarized the goal:

There was no thought of requiring that every mile of the system be built according to a rigid pattern but it was believed essential that there be a high degree of uniformity where conditions as to traffic, population density, topography, and other factors are similar.

The committee met in Washington on June 18 and 20, 1945. After considering the comments received from the States, the committee adopted minimum standards. PRA concurred in the committee's action, after which the standards were referred to the States for consideration. AASHO approved the design standards on August 1, 1945, and they were adopted by PRA for use on Interstate System projects. [PRA Annual Report, 1945, page 8]

The approved standards recognized the basic standards in *Interregional Highways* as "embodying the elements of design to produce the highway facilities that now appear, as a long-range plan, necessary for the limited mileage of highways to be designated as the National System of Interstate Highways." In general, the standards were intended to "represent the best practice in the light of present knowledge." The standards called for:

- The Interstate System would be designed for the mix of traffic expected 20 years from the date of construction.
- Full control of access would be provided where State law permitted it. In other States, additional right-of-way should be obtained to provide for construction of frontage roads to provide the required access from abutting properties.
- In most cases, railroad crossings of the Interstate System would be separated from the highway. However, where the railroad operated five or less regular train movements at a

crossing, separation of grades should be provided only if justified by an economic analysis. Where separation was not justified, adequate warning devices should be installed.

- Similarly, on Interstate routes carrying 3,000 or more vehicles a day, every effort should be made to separate cross traffic. For Interstate routes with lower traffic density, grade separation should be provided when justified by an economic analysis. When grade separation was not provided at a cross road, traffic signal control installations, channelized intersections, or stop control on the crossroad were to be provided.
- Design speed varied based on location. In flat topography, rural segments should have a minimum design speed of 60 and a desirable design speed of 70; in rolling topography, 50 and 60, respectively; and in mountainous topography, 40 and 50. All urban sections should have a minimum design speed of 40, with a desirable design speed of 50.
- Two-lane sections were permitted on lightly traveled rural segments. To increase capacity, sight distance should be sufficient to permit passing on as much of the highway as possible. [*Design Standards for the National System of Interstate Highways*, American Association of State Highway Officials, August 1, 1945]

The standards were criticized by some because they were not comparable to the "superhighway" standards used on existing parkways and turnpikes. The committee, however, operated on the assumption that even for the Interstate System, design should be based on "the highest standards commensurate with traffic needs," as Barnett explained in a 1955 article. He summarized the committee's view:

Except for the fact that interstate highways constitute links in a national system and are given priority due to their importance for long-distance transportation and the national defense, their design should not be materially different from that of any other road carrying a comparable volume and kind of traffic.

Based on this view, the committee had agreed to allow two-lane sections of the Interstate System. Barnett acknowledged that, "It may come as a surprise to some that there will be a considerable mileage of two-lane roads on the interstate system."

As for the criticism of permitting at-grade crossings, Barnett responded that, "The redeeming feature is the requirement for acquiring the right-of-way for future separations at once so that they can be provided readily when accident or delay experience proves they are needed." [Barnett, Joseph, "Our Interstate Highway System," *Civil Engineering*, July 1955, pages 40-41]

Finally, PRA had reorganized to administer "the huge program ahead." PRA headquarters was reorganized into five departments (Research, Design, Construction and Maintenance, Finance and Business Management, and Legal). In addition, PRA abandoned its practice of requiring all project approvals to take place in headquarters. Instead, "many of the responsibilities of approval have been transferred to the field organization, leaving to headquarters only the necessary minimum of control." The new field organization consisted of nine divisions supervising work in 4 to 8 States, as well as a district office in each State:

The delegation of responsibility effected by the reorganization will permit quick decisions and eliminate delays. Of the principal procedural stages in Federal-aid work, the extension and modification of the Federal-aid system and programs of proposed Federal-aid projects continue to be subject to approval at Washington. Execution of project statements, project agreements, and legal contracts between Public Roads and the State highway departments, is now delegated to the division offices. The district offices are authorized to approve construction plans except for projects involving structures or complicated design. Such plans are referred to the division office or, if desirable, to headquarters. [Work, 1946, pages 19-21]

Efforts to identify routes for the Interstate System continued well into 1947, as PRA worked with the States to identify the network and resolve disputes about connections at State borders. On August 2, 1947, PRA and the FWA announced the designation of 37,681 miles of the Nation's principal highways, including 2,882 miles of urban thoroughfares carrying the intercity routes through the cities. PRA assigned neither names nor numbers to the routes; they were simply black lines on a white map with State borders outlined and main cities identified. To fill out the 40,000-mile Interstate System, the PRA had reserved 2,319 miles for additional urban circumferential and distributing routes that would be designated later (in September 1955 as it turned out).

The designated Interstate routes comprised only 1.1 percent of all rural roads, but would carry 20 percent of all rural traffic. They reached 42 of the 48 State capitals and directly served 182 of the 199 cities having a population of 50,000 or more. [Work of the Public Roads Administration 1947, pages 5-7]

In announcing the designations, MacDonald emphasized a point that would often be misunderstood in the next few years. The Interstate map, with its lines drawn between cities, implied that the current main roads would be upgraded, but that often would not be the case:

Although the new Interstate System follows, in general, the principal routes in the present Federal-aid system, it may be necessary in many instances to relocate existing highways or build alternate routes for express traffic in order to meet essential standards of width, grade, alinement, and control of access.

He also summarized the design of the urban sections:

In many large cities depressed or elevated expressways will be built, making possible city travel at an average speed of 35 to 45 miles an hour, without stops for traffic signals and free of interference by cross-traffic. Depressed portions of expressways will be supplemented by parallel frontage roads for "local" traffic, and bridges will be constructed at intersections to serve cross-traffic.

The National System of Interstate Highways, or at least the intercity portions of it, was now official. What was missing was a program to build it and a national commitment to the job.

(For more information on President Truman's role in the history of the Interstate System, see "The Man Who Loved Roads" in the May/June 2002 issue of *Public Roads*, available at <http://www.fhwa.dot.gov/publications/publicroads/02may/08.cfm>.)

President Eisenhower

During the 1952 presidential campaign, General Eisenhower responded to a request from the Hearst Newspapers, then in an aggressive nationwide pro-highway campaign, for his thoughts on highway needs:

The obsolescence of the nation's highways presents an appalling problem of waste, danger and death.

Next to the manufacture of the most modern implements of war as a guarantee of peace through strength, a network of modern roads is as necessary to defense as it is to our national economy and personal safety.

We have fallen far behind in this task—until today there is hardly a city of any size without almost hopeless congestion within its boundaries and stalled traffic blocking roads leading beyond these boundaries.

A solution can and will be found through the joint planning of the Federal, state and local governments.

When President Eisenhower took office on January 20, 1953, he had other things on his mind, including the Korean War and demands by colleagues in the Republican Party, which had been out of the White House since March 1933, to cancel Federal programs, including most elements of the Federal-aid highway program, or devolve them to the States.

By 1954, however, he was ready to advance his highway ideas. He often attributed his support for better roads to his experiences in 1919 on the U.S. Army's first transcontinental convoy of military vehicles and his support for express highways to his observation of Germany's autobahn road network during and after World War II.

As best as can be determined, he was not aware of actions involving the Interstate System before he took office, such as President Roosevelt's frequent highway advocacy, the 1939 and 1944 reports to Congress on interregional highways, the 1944 Act's authorization to designate the Interstate System, or the accomplishment of that task, at least primarily for rural segments, in August 1947. He was, at least in his mind, starting fresh.

In 1954, he established internal committees to study the highway problem and report back to him. Even before they did so, he went public. He intended to explain his views in a speech to the Nation's Governors on July 12. Due to a death in the family, President Eisenhower could not deliver the speech in person. In his place, Vice President Richard M. Nixon read from and elaborated on the President's notes describing his vision for creating "the highway net as it should be":

[First,] a grand plan for a properly articulated system that solves the problems of speedy, safe, transcontinental traffic—intercity communication—access highways—and farm-to-market movement—metropolitan area congestion—bottlenecks—and parking.

Second, a financing proposal based on self-liquidation of each project, wherever that is possible, through tolls or the assured increase in gas tax revenue, and on Federal help where the national interest demands it.

And third—and I would emphasize this, particularly at this Conference, because I know how deeply the President believes in this principle: a cooperative alliance between the Federal government and the States so that local government and the most efficient sort of government in the administration of funds, will be the manager of its own area.

And the fourth, very probably, a program initiated by the Federal government, with State cooperation, for the planning and construction of a modern State highway system, with the Federal government functions, for example, being to advance funds or guarantee the obligations of localities or States which undertake to construct new, or modernize existing highways.

Then, Nixon read the last sentence of the President's notes, exactly as he wrote them:

Quote, "I hope that you will study the matter, and recommend to me the cooperative action you think the Federal government and the 48 States should take to meet these requirements, so that I can submit positive proposals to the next session of the Congress."

By "properly articulated system," the President meant that each level of government would improve its part of the highway system. He did not refer specifically to the "Interstate System." However, providing such a highway network was the Federal Government's responsibility, but one to be exercised in cooperation with the States.

President Eisenhower called on an old friend, retired General Lucius D. Clay, to put a committee together to work with the Governors to develop a plan for an articulated system on a self-liquidating basis that would not add to budget deficits. The Clay Committee completed its work late in the year, and on February 22, 1955, the President submitted the committee's report, *A 10-Year National Highway Program*, to Congress. The transmittal began with the two paragraphs quoted earlier about our unity as a Nation depending on our communication and transportation systems.

The Clay Committee's report covered many aspects of the country's highway needs, including the importance of the existing Federal-aid highway program. It recognized that the Interstate System, with an estimated cost of \$27 billion over 10 years, "is preponderantly national in scope and function." [Eisenhower, Dwight D., *A President's Message*, February 22, 1955, page XIII]

(The \$27 billion estimate counted necessary urban-connecting arterials, but did not include the type of Interstate freeways that would actually be built in metropolitan areas and greatly underestimated their cost. Nevertheless, in 1955 and 1956, Congress relied on the Clay

Committee's estimate to develop a program that would provide the Federal share of that amount. For more information, see "Target: \$27 billion - The 1955 Estimate" on this Web site at <http://www.fhwa.dot.gov/infrastructure/target.cfm>.)

Congress had authorized token funds for the Interstate System in the traditional 2-year Federal-Aid Highway Acts of 1952 (\$25 million year with a 50-50 Federal-State matching share) and 1954 (\$175 million a year with a Federal share of 60 percent). Although the Federal-State matching requirements should remain 50-50 for other Federal-aid projects, the Clay Committee report explained that Interstate projects should have an increased Federal share of 90 percent:

In the accelerated program, the States would be expected to contribute annually the amount they are required to contribute now to obtain funds from the \$175 million made available to the interstate system by the Federal Government. The cities would be expected to participate to the same degree. This would make the cost of the 10-year program to the Federal Government about \$25 billion. [Eisenhower, page 19]

This recommendation was consistent with the concerns of the Governors. Before the Grand Plan speech, they had wanted the President to support devolution of most of the Federal-aid highway program to the States. They were not enthusiastic about the Interstate proposal. Therefore, they asked General Clay to ensure they would not have to increase their matching contribution for its construction.

To finance the Federal share of the Interstate System, the Clay Committee recommended creation of a Federal Highway Corporation as an independent agency of the Federal Government to finance the work "through a capitalization of appropriated funds in accordance with accepted financial principles." The corporation would have four purposes: (1) make payments to the States for construction of the Interstate System and approved arterial connecting routes or for projects undertaken by the Federal Government in the Federal domain; (2) to establish a credit to any State that uses State funds, or funds under State control, to build Interstate segments, toll or nontoll, in designated corridors between 1955 and 1964, the final year of the envisioned program; (3) finance administration, research, planning, and other purposes authorized by Congress; and (4) establish a revolving fund to finance improvements pending receipt of payments. The corporation's self-liquidating accounts would be outside the Federal Government's budget. [Eisenhower, page 20]

For these purposes, the corporation would issue bonds in an amount sufficient to complete the Interstate System during a construction period of 10 years. Maturity schedules, interest rates, and other conditions would be determined by the corporation with the approval of the Secretary of the Treasury. The bonds would be secured by a contract between the corporation and the Treasury Department to ensure the corporation would "receive certain specified amounts annually as authorized by the Congress, always sufficient to meet its obligations." The report added:

It is estimated that these amounts plus those proposed herein for continued allocations to the other Federal-aid highway programs, will be approximately equivalent to that portion of the receipts from Federal taxes on gasoline and lubricating oils. [Eisenhower, page 21]

No tax increases would be needed since increased traffic would create increased gas tax revenue. However, as a precaution, the corporation would have “a mandatory call” on the United States Treasury for loans up to \$5 billion to ensure investors of the ability to meet obligations.

A board of directors would manage the corporation. The board would consist of three members-at-large, to be appointed by the President, while the Secretaries of the Treasury and Commerce would be *ex officio* members. (PRA, again called BPR, had shifted to the Commerce Department in a 1949 reorganization.) On problems of location, the Secretary of Defense would be an *ex officio* member. The President would designate the board’s chairman, who alone would receive an annual salary and devote full time to the task.

The Commissioner of Public Roads would serve as executive director of the corporation. He would assume all management responsibilities for the construction program. However, the board of directors would serve as an appeals board when disputes arose between BPR and the State highway agencies. [Eisenhower, pages 22-23]

The Clay Committee had also considered how to treat segments of the Interstate System that had been or would be built to required standards by the States, either as toll-free or toll highways, on their own initiative. The committee did not wish to discourage such construction since “our goal is maximum highway improvement.” Therefore, credit would be given in varying percentages for roads built between 1947 and 1951 (40 percent of costs other than financing), prior to 1955 (70 percent of costs), and in 1955 or later (full cost). For toll facilities, credit would be provided only if toll revenue above costs were applied to other highway improvements:

The funds thus made available to the States will not only encourage matching of available funds but will also make possible accelerated improvement of primary, secondary, and other roads, and will encourage local financing of interstate mileage to make funds available for other roads without increasing total Federal responsibility. [Eisenhower, page 19]

The Clay Committee also addressed Interstate design issues. The number of lanes needed for the Interstate System would vary:

Under the standards used in developing the program, approximately 7,000 miles of the Interstate system when completed to 1974 standards would remain 2-lane highways, but large sections would become 4, and in some cases 6- and 8-lane facilities to meet anticipated traffic volumes. [Eisenhower, page 13]

One of the keys to the success of these Interstate highways would be acquiring sufficient right-of-way to permit control of access, which restricted the points of entry and exit to those designated by the highway designers rather than commercial developers. As the Clay Committee pointed out:

Otherwise, experience shows that the facility becomes prematurely obsolete due to developments crowding against the roadway which make it unfit for the purposes for which it was designed Present highway inadequacy results in part from the need to

replace highways which have become unsafe and limited in capacity because of unlimited and uncontrolled access. We must not repeat such costly mistakes in the large investments which must be made now. [Eisenhower, pages 12-13]

The Clay Committee concluded that on a considerable portion of the Interstate System, but especially in urban and suburban areas that the main lines would traverse, relocating highway service onto a new location would be more economical than trying to control access along an existing road. Relocation would have the added advantage of allowing the highway designers to eliminate sharp curves on the existing routes, as well as reducing mileage between terminal points by selecting more direct routes.

Given the importance of control of access, the Clay Committee was concerned that State laws on acquisition of highway right-of-way presented “serious obstacles to the program.” The committee called on Congress to enact legislation that would allow exercise of the Federal right of eminent domain where necessary and where requested by the State “similar to that authority now contained in the Federal-Aid Highway Act as related to the program of access roads for the national defense.” [Eisenhower, page 25]

On some issues, the Clay Committee deferred to Congress. During the committee’s public hearings, for example, utility companies had testified that they would incur “huge costs” in the relocation of utilities if the program were adopted. They urged the Federal Government to bear the costs. BPR’s needs estimate had not judged the cost of utility relocation. (BPR’s report was not released until March 1955, but the data was provided to the Clay Committee.) The committee, therefore, did not make a recommendation on the industry’s proposal “which is, of course, far reaching in its effects.” This was a broad policy matter that the committee thought should receive the attention of Congress. [Eisenhower, page 25]

The Clay Committee also took no position on motorist services. The turnpikes developed on the model of the Pennsylvania Turnpike, mainly in the Northeast and Midwest, provided services within the right-of-way, exercising a monopoly because motorists preferred not to pay a toll to exit and re-enter the turnpike for a meal or to refuel at facilities beyond toll booths. The committee suggested that “care must be exercised to insure that traditional free enterprise is promoted and that no monopolistic tendencies develop in the provision of needed facilities to service the highway user with food, lodging, vehicle fuel, and similar needs.” This problem required “careful thought and planning” by the Federal and State Governments as well as by private industry “so that equitable plans may be developed taking local requirements into account.” [Eisenhower, page 13]

The report’s conclusion contained a strong endorsement of the need for the President's Grand Plan.

We are indeed a nation on wheels and we cannot permit these wheels to slow down We have been able to disperse our factories, our stores, our people; in short, to create a revolution in living habits. Our cities have spread into suburbs, dependent on the automobile for their existence. The automobile has restored a way of life in which the

individual may live in a friendly neighborhood, it has brought city and country closer together, it has made us one country and a united people.

But, America continues to grow. Our highway plant must similarly grow if we are to maintain and increase our standard of living In fact, we face a challenge today and America has ever evidenced its readiness to meet a challenge head on with practical bold measures Thus, we will accomplish the objective sought by the President for “a grand plan for a properly articulated highway system that solves the problems of speedy, safe, transcontinental travel—intercity transportation—access highways—and farm-to-market movement—**** “paying off in economic growth—**** and making “a good start on the highways the country will need for a population of 200 million people.” [Eisenhower, pages 26-27]

As Congress took up the proposal in 1955 and 1956, the Interstate System proved highly popular, with no significant opposition to the concept. The President’s financing proposal, however, was unacceptable to Congress. Senator Byrd, now chairman of the Finance Committee, was one of the leading critics of the financing proposal. Even before President Eisenhower released the report, Senator Byrd reacted to early accounts of the proposal by indicating his opposition to the financing concept, which he thought was “thoroughly unsound” and an attempt “to defy budgetary control and evade federal debt law.”

He objected to creation of a Federal Highway Corporation to enter into a debt that would be outside the lawful national debt limit—guaranteed not by the full faith of the Federal Government but by the Department of the Treasury—and beyond congressional budget control. Despite the Treasury Department’s guarantee, the corporation would have neither assets nor income to repay the debt. Instead, the hands of Congress would be tied for 30 years, during which the gas tax revenue must be appropriated to back the bonds. Moreover, he pointed out that the proposed \$20 billion, 30-year bond issue would require an interest cost of \$11.5 billion (at the 3-percent interest rate anticipated by the Clay Committee). Interest payments, therefore, would amount to 55 cents on every dollar borrowed. And it would be, he said, “a very violent assumption to predict these bonds will be paid off at maturity.”

Aside from viewing the Clay Committee’s proposal as a poor way to finance roads, Senator Byrd saw it as an unfortunate precedent:

If the government can borrow money in this fashion, without regarding it as debt and without budgetary controls, it may be expected that similar proposals will be made for financing endless outlays.

He emphasized, “the bonds still would be debt,” adding, “you cannot avoid financial responsibility by legerdemain.”

As a counter-proposal, Senator Byrd suggested cutting a half cent from the present Federal excise tax on gasoline and allowing the States to raise their gasoline tax by that amount. The Federal Government would continue matching State funds on a 60-40 basis for the Interstate System. His plan would save \$11.5 billion in interest payments, retain State control over their

highways as in the past, and allow for even distribution of road revenue to keep highways modern. ["Byrd Would Reduce U.S. Gas Tax and Allow States to Hike Theirs," *Transport Topics*, January 24, 1955]

Members of Congress who did not share Senator Byrd's lifelong opposition to debt found the amount of interest payments unacceptable. Senator Dennis Chavez (D-NM), chairman of the Committee on Public Works, also expressed reservations to reporters:

We are going to try to get out a road bill that will build roads. Personally, I'd like to build roads with the interest money instead of giving it to coupon clippers. [Odlin, Jr., William S., "Opinions Split on U.S. Road Bills," *Transport Topics*, February 28, 1955]

In 1955, Congress could not agree on the needed financing mechanism to launch the program. In 1956, however, Congress came together to pass the Federal-Aid Highway Act that launched the Interstate Construction Program. Section 108 stated the purpose of the new program:

It is hereby declared to be essential to the national interest to provide for the early completion of the "National System of Interstate Highways", as authorized and designated in accordance with section 7 of the Federal-Aid Highway Act of 1944 (58 Stat. 838). It is the intent of the Congress that the Interstate System be completed as nearly as practicable over a thirteen-year period and that the entire System in all the States be brought to simultaneous completion. Because of its primary importance to the national defense, the name of such system is hereby changed to the "National System of Interstate and Defense Highways". Such National System of Interstate and Defense Highways is hereinafter in this Act referred to as the "Interstate System".

The 1956 Act employed a "self-liquidating" method of construction based on highway user taxes credited to a new account in the general Treasury called the Highway Trust Fund. President Eisenhower signed the legislation on June 29, 1956, without ceremony. He had been hospitalized since June 7 at Walter Reed Army Medical Center following surgery.

The Federal-Aid Highway Act of 1956 did what President Roosevelt had not been ready to undertake, what President Harry S. Truman had not attempted due to the need to focus on housing construction and later the Korean War, and that President Eisenhower desired.

At last, the country was ready to build a vast system of interconnected highways spanning the continent.

A Note on Sources

"A Vast System of Interconnected Highways: Before the Interstates" contains citations on sources throughout the text. Unless otherwise noted, the source of presidential speeches,

messages, and statements is the American Presidency Project (<http://www.presidency.ucsb.edu/>) maintained on line by the University of California, Santa Barbara.

Heinonline's U.S. Congressional Documents collection is the source of House and Senate debates (http://www.heinonline.org/HOL/Index?collection=congreg&set_as_cursor=clear).

The U.S. Department of Transportation's National Transportation Library was the source of many documents unique to the Department. The library also maintains many of the congressional reports associated with Federal-aid highway legislation.

In May and October 1986, FHWA's Joyce N. Ritter visited the Franklin Delano Roosevelt Presidential Library and Museum in Hyde Park, New York. She was assisting FHWA's W. Lee Mertz, who was writing his project on the history of the Interstate System (his work can be found on this Web site at: <http://www.fhwa.dot.gov/infrastructure/origins.cfm>). Many of the items she located were useful during the preparation of "Vast System." These items, consisting of her typed transcript or abstracts, are cited as "Ritter, FDR Library" with her citation of where she found them in the Library.

Ms. Ritter was the editor of FHWA's 1976 Bicentennial publication, *America's Highways 1776-1976: A History of the Federal-Aid Program*, another valuable source for "Vast System."

Some documents, such as correspondence with individuals on transcontinental highways, were located in the National Archives and Research Administration in College Park, Maryland. They are part of the Record Group 30 collection, on "Transcontinental highways."