
Expressways, Public Housing and Renewal: A Blueprint for Postwar Philadelphia, 1945–1960

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During World War II, Russell Van Nest Black, the author of the 1931 Philadelphia Tri-State Regional Plan, characterized the Quaker City as either a "growing child in late adolescence," or "an ailing adult . . . rotting at the core."¹ Black's despairing sentiment, expressed in a letter of mid-1943, soon faded as the scintillating vision of postwar urban renaissance captured the imagination of planners, political reformers and businessmen alike. In many American cities, not only Philadelphia, once moribund city planning commissions were resurrected and their powers and staffs enlarged and professionalized. By war's end a diverse body of urban actors rallied behind redevelopment, housing construction and highway buildings. Planners, housing reformers, mayors, labor leaders, bankers, home builders, developers, and the heads of major universities, hospitals and other city institutions, seemed to agree with this three-part approach as the best way to rescue the city from decay and decline.²

In order to carry out the postwar vision of urban renaissance, organizations positioned in the van of what political scientist John Mollenkopf labels the "pro-growth coalition" touted urban redevelopment, housing, and highway building as the solution for urban problems, especially for the deteriorating downtown economy. These organizations included such heralds of the modern postindustrial city as Philadelphia's Citizens' Council on City Planning (CCCCP), and the Greater Philadelphia Movement (GPM), founded respectively during and just after World War II.³ According to their progrowth diagnosis of the urban crisis, Philadelphia, like other big cities, suffered in particular from urban blight, an invidious combination of structural deterioration, obsolescent land use, population loss and social deterioration. But observers equally decried the rising volume of downtown automobile and truck traffic, which was according to widely used contemporary metaphor, a giant python, strangulating its prey, suffocating the social and economic life of the city's center. Wartime planning literature reviled the city's ancient gridiron of narrow streets, criss-crossing each other at grade and causing traffic delays or potential accidents at every corner. "The result," stated one pamphlet, "has been congestion and growing strangulation arising out of the conflict between the dynamics of transportation and the statics of street design."⁴

Philadelphia planning burst into prominence in 1947, catalyzed by the pro-growth vision of the CCCP and the GPM, and led by its newly reconstituted and revitalized planning commission chaired by Robert Mitchell. This commission was directed by the young Philadelphia-born, Cornell-educated, Edmund Bacon, an architect-urban designer who had studied under Elliel Saarinen and who had formerly headed the Philadelphia Housing Association. With this leadership, the Quaker City devised an exciting strategy or blueprint for combating blight and achieving revitalization. Called the "Better Philadelphia Exhibit," the blueprint was designed jointly by Bacon and the prominent Russian-born Philadelphia architect, Oscar Stonorov. It emphasized urban redevelopment, the provision of low and moderate income housing, and the creation of a modern system of express highways.⁵

All three elements, housing, redevelopment, and expressways were viewed by planners, and business and civic leaders as critical to the renaissance of the city; but as this study will emphasize, little evidence exists that this *troika* of three elements was driven by a single mind. Moreover, there was little consideration of regional planning despite the city's involvement in such planning in the 1920s and the related interest in the 1930s evidenced by the work of the National Resources Planning Board. No serious recognition was given to the regional or metropolitan dimensions of the urban crisis or the metropolitan implications of redevelopment, housing, or highway building as solutions.⁶ In 1944 the American Institute of Planners acknowledged the downtown bias of most planning for the postwar years and cautioned its membership that unless "the redevelopment of the blighted area is not an outgrowth of and based upon a comprehensive plan of the whole territory of the city or urban community of which the blighted area is a part, the redevelopment will not produce those social and economic values which justify the expenditure and the exercise of the sovereign power of eminent domain and taxation."⁷

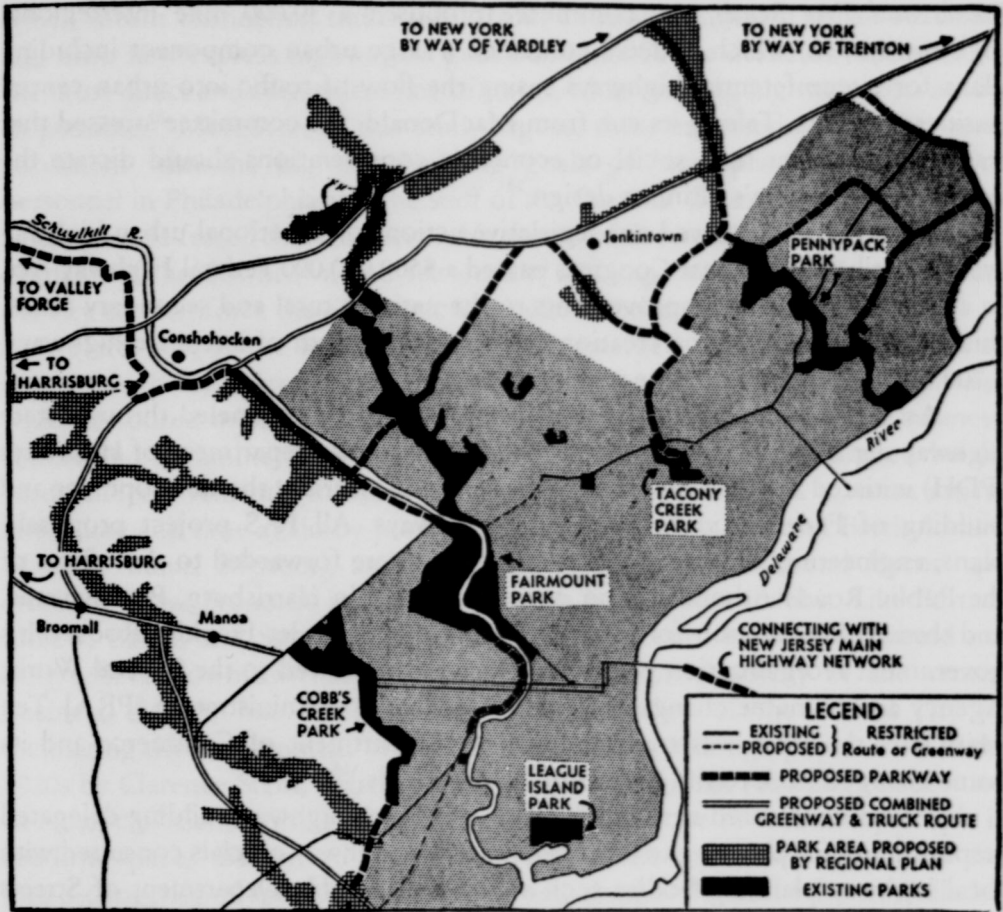
Such flashes of insight about the direction of postwar planning were rare. More often, as this study observes, redevelopment, housing, and highway planning proceeded along distinct paths, administered by separate agencies, and promoted by particular constituencies.

Initially, it appeared that at least two elements of the *troika*, housing and redevelopment, might be pulling together. Several postwar factors encouraged this development, including the city's continued economic dependence on federal intervention, and the severity of the postwar housing crisis. Both postwar urban redevelopment and modern housing, involving slum clearance of expensive inner city land, awaited the enactment of an enlarged federal public housing and redevelopment program. Between 1943 and 1949, pro-growth advocates fought for the enactment of the Wagner-Ellender-Taft Housing Act. Finally enacted in 1949, the legislation provided federal grants-in-aid for up to ninety percent of the cost of clearing urban land, but for purposes "primarily residential."

Significantly, the legislation reserved the key decisions about social issues and urban design for local housing and redevelopment authorities. These decisions included the location of expressways and other roadways in the redevelopment plan. The law, in addition, called for the construction of up to 810,000 units of public housing over a six year period. Redevelopers, anxious to use slum-cleared land sites in the downtown for office and hotel towers, chafed at the "primarily residential" clause, which in their minds produced the unhappy marriage of redevelopment and public housing. The marriage only lasted a few years, long enough for Philadelphia, which prided itself for having "shelter oriented" redevelopment, to develop skillfully several of its first redevelopment sites. East Poplar, Mill Creek, and Southwest Temple were neighborhood units which featured a tasteful admixture of public and private housing.⁸

Five years later, with private housing construction booming in the suburbs, President Dwight David Eisenhower's Housing Act of 1954 unshackled redevelopment by eliminating the "primarily residential" clause. Simultaneously, the Eisenhower administration reduced public housing starts to 135,000 a year. In 1954 public housing devolved into the handmaiden of redevelopment, becoming little more than a useful tool for rehousing families uprooted by slum clearance or highway building activity.⁹

Expressway-building formed the third element in the blueprint for urban renaissance. Unlike housing and redevelopment, highway building enjoyed a long history of federal involvement. Created in 1916 as the successor to the Bureau of Public Road Inquiry, the Bureau of Public Roads strove originally to "get the American farmer out of the mud." Placed first under the federal Department of Agriculture and then Commerce, and directed between 1916 and 1953 by Thomas H. MacDonald, the Bureau of Public Roads, according to historian Bruce E. Seely, mirrored MacDonald's progressive dedication to shaping the agency as a non-political apotheosis of engineering efficiency. Until 1938 the BPR conducted highway research and provided technical information and funding for states that created highway departments. The funds underwrote model highway projects, which attempted to set standards for an extensive federally-aided system of primary and secondary roads.¹⁰ Prior to World War II the BPR concentrated on mainly aiding highway building in the open countryside. However, during the 1930s, despite the Great Depression, the problem of urban traffic congestion worsened. Through federal agencies such as the Public Works and the Works Progress Administration the government in the 1930s used city highway building as one way to employ the jobless. In a few cities such as New York, where park and Triborough Bridge commissioner Robert Moses reigned over highway planning, federal largess was used to construct an extensive and impressive networks of urban parkways, expressways, bridges, and mid-town tunnels.¹¹ By the late 1930s both urban traffic congestion and its popular solution, the modern expressway system, captured the public imagination. Even the mood



A "wish-list" of highway projects, from Philadelphia Evening Bulletin, May 17, 1941

of the rural-road-oriented BPR changed in the late 1930s. When Congress in 1938 charged the BPR to prepare a report on toll roads, the bureau's findings published as *Toll Roads and Free Roads*, rejected toll roads in favor of a 26,750 miles freeway system linking America's cities.¹²

General Motor's "Futurama" exhibit at the 1939-1940 New York World's Fair helped solidify opinion in favor of expressways. Created by industrial designer Norman Bel Geddes, the "Futurama" excited thousands of fair-goers by portraying the modern city laced with a fantasia of looping, diving, sweeping multi-lane highways on which cars traveled at speeds in excess of 100 miles per hour. In an effort to develop a national highway policy, President Franklin D. Roosevelt in 1941 created the Interregional Highway Committee, which included as members Thomas H. MacDonald, National Resources Planning Board head Frederic Delano, city planner Harland Bartholomew, and New York City Planning Commission chairman Rexford G. Tugwell. Following the lead of *Toll*

Roads and Free Roads, the committee proposed a 39,000 mile interregional highway system, which, indeed, contained a large urban component including plans for circumferential highways easing the flow of traffic into urban central business districts. Taking its cue from MacDonald, the committee stressed that traffic needs rather than social or economic considerations should dictate the design of the system's ultimate design.¹³

World War II delayed any legislative actions on a national urban highway system until 1944, the year Congress passed a \$500,000,000 Federal Highway Act. In addition to funding improvements to the nation's rural and secondary roads, this measure called for the creation of a national system of interstate highways; 6,700 of those miles would be within cities.

As in the past federal highway funds were to be channeled through state highway departments. Under the act the Pennsylvania Department of Highways (PDH) initiated detailed engineering designs and oversaw the development and building of Federal-Aid System (FAS) highways. All FAS project proposals, plans, engineering and materials specifications were forwarded to the offices of the Public Roads Administration district engineer in Harrisburg, Pennsylvania, and then to Washington for final approval. (In 1939 under Franklin Roosevelt's government reorganization plan, the BPR was transferred to the Federal Works Agency and its name changed to the Public Roads Administration [PRA]. Ten years later the PRA was transferred to the Department of Commerce and its name changed back to the Bureau of Public Roads.)¹⁴

This decentralized structure for federally-aided highway building delegated responsibility for planning to city agencies. State highway officials consulted with local highway planning bodies such as the Philadelphia Department of Streets and the City Planning Commission which drew up preliminary plans and engaged consultants to produce final engineering and design studies. This model of authority and responsibility allowed and presumably encouraged local participation in highway planning. In practice, however, the state control over highway financing, and the federal review of every detail of highway development from initial siting to the specifications for concrete and asphalt, gave actual control over urban expressway building to highway experts in Washington and to Harrisburg. In fact, despite the urban component of the 1944 federal highway legislation, the PDH in 1947, according to state Secretary of Highways, Roy Smock, treated state federal-aid monies "as additional assets in the Motor License Fund . . . [not to be] designate[d] on any proportionate basis to the individual municipalities of Pennsylvania."¹⁵

The model assured the sovereignty of state and federal highway engineers over postwar expressway building. Seely has shown that an engineering mentality pervaded both the PRA and state highway departments. That mentality infused postwar expressway planning in Philadelphia. From the first the process was propelled by the goal of relieving traffic congestion economically and efficiently,

which meant channeling traffic away from existing congested urban roadways and onto new express highways, a goal that satisfied the desire of motorists for the most direct and convenient line of travel, while keeping highway costs as low as possible.¹⁶ Moreover, as this study argues, these engineering priorities were consistent with the highway building goals of local planning commission personnel in Philadelphia and the staff of the Citizens' Council on City Planning. These groups feared that the inexorable forces of decentralization threatened the primacy of the downtown and felt certain that expressways would recentralize the city and reinforce the economic and cultural primacy of the downtown.¹⁷

Here, too, at the local planning level, emerged the popular vision of an express highway system comprised of circumferential or beltway highways, which detoured traffic around the city, while arterial routes drew local business, tourist and commuter traffic into a gleaming downtown of unclogged boulevards and conveniently-located giant parking terminals. It was a vision articulated time and time again by prominent planners such as Harland Bartholomew of Saint Louis, Missouri, and by Philadelphia planner Edmund Bacon and architect Oscar Stonorov in their 1947 Better Philadelphia Exhibit. Like Bartholomew, Bacon and Stonorov believed that the modern expressway would not only relieve downtown traffic and reinvigorate the economy of the central business district, but would enhance the liveability of the central city by facilitating the development of the neighborhood unit design popularized in the 1920s by Clarence Stein, Clarence Perry, and the Regional Planning Association of America.¹⁸ Calling Philadelphia's "main problem" one of "too many people in too little space," Bacon and Stonorov envisioned the expressway carving the city into a congeries of spacious, garden-like neighborhoods. In the Better Philadelphia Exhibit expressways swept automobile traffic around neighborhoods in which city families, in Bacon's vision, resided on "quiet loop streets whose only traffic would be to their own house."¹⁹

However, an examination of the correspondence between the PRA, the Pennsylvania Department of Highways, and local agencies such as the Philadelphia Planning Commission and the CCCP, reveals that these social considerations played a very small role in postwar highway planning. Although planners such as Russell Van Nest Black, Harland Bartholomew, and Edmund Bacon urged a regional framework for highway development, and, on occasion expressed the belief that highway planning should be integrated with redevelopment and modern housing schemes, to date little evidence has been discovered that either a social or a regional framework for highway planning existed for Philadelphia. Prior to 1960 expressway planning progressed independently of concerns for regionalism or for the impact of highways on the social and economic fabric of the post-industrial city.²⁰

Philadelphia officially entered the express highway era in August, 1944 when the Philadelphia Chapter of the American Institute of Planners and the CCCP

urged Mayor Bernard Samuel to have the city's new planning commission review a 1941 agreement between the city and the state highway department for widening to 160 feet the Vine Street approaches to the Delaware River Bridge. The commission concluded that Vine Street should be redesigned as a modern, below-grade limited access highway. However, the state highway department rejected the commission's findings, contending that in view of the city's immediate need for traffic congestion relief at the Delaware River Bridge approaches, converting Vine Street to an expressway would be too costly and too time consuming.²¹ The state's obduracy only crystallized pro-expressway opinion in Philadelphia. For Philadelphia's progrowth disciples the stake in making Vine Street an expressway was nothing less than Philadelphia's reputation as a modern city. Failure to succeed would invite further traffic strangulation and the destruction of the downtown economy. They criticized as piecemeal other efforts to relieve automobile congestion in the downtown whether the city council's ban of daytime street parking, or plans, in imitation of San Francisco, Kansas City, Columbus, Ohio, and New York City for huge downtown off-street parking garages. "The basic solution," pronounced the CCCP, is the EXPRESS HIGHWAY."²²

By 1945, in addition to the AIA, the CCCP, and the planning commission, the Keystone Auto Club, the American Society of Civil Engineers, the Chamber of Commerce, Merchants Association, Association of Philadelphia Settlements, and forty-two other city organizations had joined the campaign to make Vine Street an expressway. This number including the Philadelphia Committee for the Relief of Traffic Congestion, authorized under a resolution of City Council on July 5, 1945. Headed by Robert A. Mitchell, of the city's Department of Streets, the Traffic Congestion Committee in August, 1945 presented a resolution to council stressing among other things that the "future economic welfare and expansion of business in the central business district depended upon expediting the movement of vehicular traffic in and out of the district and encouraging more traffic to patronize the district." Furthermore, stated the resolution "Vine Street built as a modern expressway would become a vital link in the postwar development of expressways and parkways for the Metropolitan area for which considerably more Federal and State funds are available than in 1941 [sic]." Such an expansion, concluded the resolution, was "in line with modern trends of highway development already put into practice in New York, Chicago, Detroit, Dallas, Washington, D.C., San Francisco, and Pittsburgh."²³ During the fall of 1945 the planning commission developed an illustrative plan for the Vine Street expressway and submitted it to the federal government's Public Roads Administration for review. The PRA informed the commission that by law highway projects must be initiated by the state, which in 1945 considered the city's Vine Street plans "ill advised."²⁴



Front cover of a 1948 brochure distributed by the Philadelphia Highway Traffic Board, which was seeking public support for an effort "to save the financial and business heart of the city from the ever-increasing menace of traffic congestion."

Wrangling over Vine Street involved in addition to cost and state politics, an important housing crisis because the widening of Vine Street required the demolition of hundreds of houses. Delay aside, what was never at issue was Philadelphia's commitment to expressways. Throughout 1945 the CCCP's transportation committee vigorously pressed the case for expressways and sought to make the 1946 state gubernatorial race a forum on the subject by pressuring both

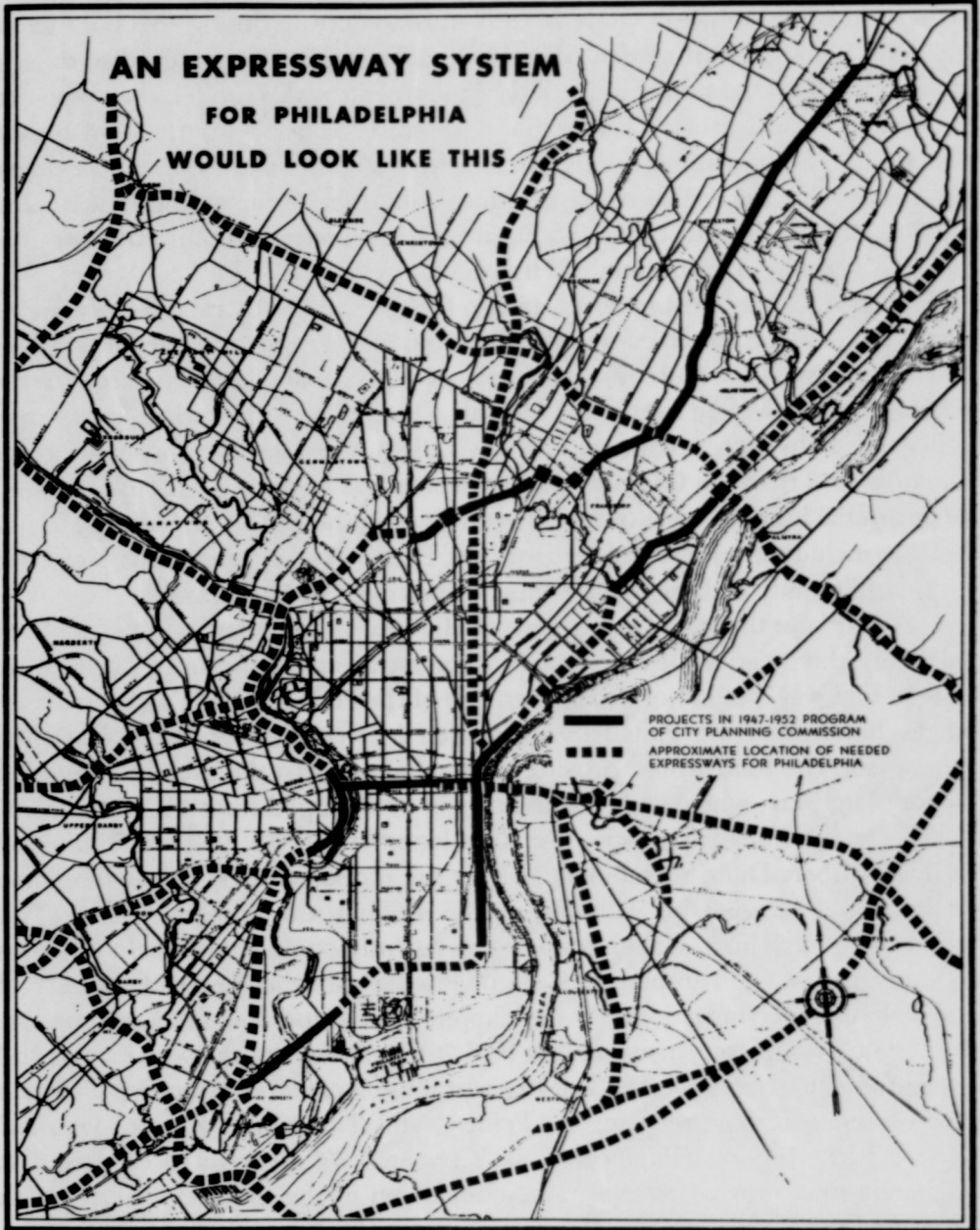
parties to adopt platforms emphasizing the "necessity of the state . . . improving the congested urban highway as in the past twenty years it has placed emphasis on the development of rural highways."²⁵

During the campaign to transform Vine Street into an expressway, Philadelphia planners had begun drafting the blueprint for a complete express highway system. Prior to 1947 expressways had not been included in state highway planning for Philadelphia. Highway planning focused more on developing arterial highways to relieve congestion from such important city arteries as Broad Street and Route 30, the Lincoln Highway, that connected Philadelphia to its Main Line suburbs, the city of Lancaster and points west.²⁶ In May of 1946 the president of the Community Heart and Civic Association of Ardmore, a Main Line suburb, wrote CCCP president Walter Phillips expressing his belief that "an urgent need now existed for a through route to carry motor vehicles traffic between Philadelphia and the West." He described the volume of automobile and trailer trucks clogging Main Line roadways as "intolerable," and called the solution a limited-access highway or "thru-way," which will remove traffic from Lincoln Pike, Haverford Road, and West Chester Pike. One route suggested followed the line of the West River Drive as far as Valley Forge.²⁷ Step one in any such highway planning, explained the CCCP in its 1947 publication *Expressways for Philadelphia*, was an origin and destination survey.²⁸

As early as 1934 Bureau of Public Roads chief Thomas MacDonald had stressed that highway planning be based on the findings of extensive traffic surveys. A few years later in 1936 H.S. Fairbank of the BPR developed the operational model for such comprehensive surveys.²⁹ Fairbank's model involved the systematic collecting of data about urban travel routes, and using that data to determine the most desired paths to selected citywide locations. The bureau's faith in these surveys hardened in the postwar era. Urging the use of "desire-line data" in selecting Pennsylvania highway routes, William F. Butler of the BPR's Harrisburg office spared few words in his memorandum to the chief engineer of the Pennsylvania Department of Highways. "We now have sufficient experience throughout the United States," he wrote, "to know that when pre-selected routes, supported only by engineering judgment, have been subjected to economic comparisons with factually selected routes, . . . engineering judgment alone may be grossly unreliable. . . ."³⁰

Philadelphia planners needed little convincing about the importance of origin and destination studies as they prepared to enter the expressway era. In preparation for the much ballyhooed 1947 Better Philadelphia Exhibit, city planners in 1946 drafted a "Preliminary Expressway Plan" as a key part of a six year schedule of public improvements. The plan, so excitingly unveiled in the 1947 exhibit, portrayed Vine Street as an express highway, showing a widened "Industrial Highway" gracing the Delaware River waterfront, and a sleek multi-lane expressway skirting the edge of the Schuylkill River.³¹

Courtesy of John Bauman



Planning map from a 1947 promotional document, "Express Highways for Philadelphia," published by the Citizens' Council on City Planning.

In 1946 city planning commission people met with the PRA and both the Pennsylvania and New Jersey state highway departments in order to map out plans for a Philadelphia-Camden Origin and Destination Survey. Funded by the Federal Aid Highway Act of 1944, and fully underway during the summer of 1947, the Philadelphia-Camden Metropolitan Traffic Survey involved stationing surveyors at selected points in the city. True to Fairbank's model, the surveyors, in order to record data on the origin, destination, time and purpose of person trips in the metropolitan area, distributed IBM cards to motorists, transit riders, and pedestrians alike. The study, conducted by the Planning Commission and the Philadelphia Bureau of Traffic Engineering, received a close monitoring by the PRA and state Department of Highways.³²

Data from the Philadelphia-Camden Origin and Destination Survey fueled a growing demand for an expressway to begin at the newly completed terminus of the Pennsylvania Turnpike at King of Prussia and extend through the Schuylkill River Valley to the Philadelphia City line and thence into downtown Philadelphia. In fact, no sooner was the Origin and Destination Survey completed in 1948 than the Chamber of Commerce was anxious to discuss the need for an arterial highway west of the city convened in the city's Ritz Carlton Hotel a meeting including representatives from the Better Traffic Bureau, the Keystone Automobile Club, and the Pennsylvania Department of Highways.³³

A year later the state Department of Highways forwarded maps to the BPR indicating the location of a Schuylkill Expressway and insisting in justification that the highway would not be an extension of the Pennsylvania Turnpike. Based on the findings of the Philadelphia-Camden Metropolitan Study, claimed the department, the road would provide substantial relief to the present congested Lincoln Highway, where daily traffic flows in 1948 ranged from 10,300 to 13,000 vehicles at the Philadelphia city line. In a letter of July 12, 1949 BPR Division Engineer Albert Dunn recommended that the proposed 18.37 mile expressway (designated FAS 264) be included in the Federal-Aid primary system. This highway, he explained, would connect the recently-completed eastern terminus of the Pennsylvania Turnpike at King of Prussia with the "heart of the City of Philadelphia." Having advanced the expressway's important linkage function, Dunn quickly retreated, insisting that FAS 264 "will serve traffic with origins and destinations north and west of the city and [only incidentally] serve to a certain extent traffic entering or leaving the Pennsylvania Turnpike at King of Prussia." Replied BPR Regional Engineer C. N. Conner, "We are glad to observe that efforts are underway to relieve traffic congestion in the Philadelphia area with Federal-Aid participation."³⁴

On January 1, 1950 the state made the Schuylkill Expressway part of its expanded highway system. The arrangement involved the state returning to Philadelphia seventy miles of state-maintained city roads and in return assuming responsibility for constructing thirty miles of new city highways, including the

REMOVAL OF MARKET STREET ELEVATED
STRUCTURE UNDER WAY

WORK STARTED AT 30th STREET STATION
LEADING TOWARD REMOVAL OF CHINESE WALL

PENNSYLVANIA BOULEVARD
PLANS COMPLETED

FIRST PHASE ENGINEERING PLANS FOR SCHUYLKILL
EXPRESSWAY AND VINE STREET EXTENSION COMPLETED

NORTH TRIANGLE REDEVELOPMENT PLAN COMPLETED

CONTRACT AUTHORIZED FOR YOUTH STUDY CENTER

RECEPTION CENTER FOR DEPENDENT
CHILDREN NEARING COMPLETION

TRAFFIC SAFETY ISLANDS IN
MARKET STREET COMPLETED

MAJOR COLLECTOR
SEWERS UNDER
CONSTRUCTION

PARKING AUTHORITY APPOINTED

RECREATION CENTERS IMPROVED

ORDINANCE INTRODUCED TO PUT
LOCUST STREET SUBWAY INTO OPERATION

REDEVELOPMENT AUTHORITY PREPARES
PLANS FOR APARTMENT PROJECTS

TRAFFIC REVERSED ON SPRUCE AND PINE
STREETS. TRACKS REMOVED STREETS REPAVED

VINE STREET WIDENING
UNDER CONSTRUCTION

STATE ACQUIRING LAND
FOR INDEPENDENCE MALL

SUPERSTRUCTURE OF PIER 2
SOUTH HAS BEEN REMOVED

INDEPENDENCE NATIONAL HISTORICAL PARK
AUTHORIZED BY FEDERAL GOVERNMENT

TWO NEW TRAFFIC LANES ON DELAWARE
RIVER BRIDGE UNDER CONSTRUCTION

Schuylkill Expressway. Connected to downtown by a widened Vine Street and a Roosevelt Boulevard extension, the Schuylkill Expressway was the centerpiece of Philadelphia's proposed expressway system, which included the Industrial Highway (or Delaware Expressway), and the Tacony Expressway, linking the Industrial Highway with the proposed Northeast Extension of the Pennsylvania Turnpike.³⁵

During the first decade and a half of postwar era, the design and construction of the Schuylkill Expressway and its Vine and Boulevard extensions represented the city's main highway building effort. Traffic flow ranked as the primary consideration driving the development of the system. Although the state highway department assigned to the Philadelphia Planning Commission responsibility for preparing the initial highway design and engineering studies, the commission betrayed the same narrow traffic-mindedness in its planning as did the state and the BPR.³⁶

To prepare the actual design and engineering study for the Schuylkill Expressway and the Vine Street and Roosevelt Boulevard extensions, the Philadelphia Planning Commission hired the New York City consulting engineers, Clarke, Rapuano, Holleran, Hardesty and Hanover. Clarke, Rapuano completed the study in May 1950, after which it became the central topic for numerous meetings and extensive correspondence. A look at the content of these meetings and at the correspondence discloses much about the rationale and justification for urban expressway planning in the early postwar era. First, traffic volume was the singular consideration dictating the location as well as the design of postwar expressways. As prescribed by the BPR, Clarke, Rapuano based its design for the Schuylkill Expressway as a six lane highway between City Line and University Avenues on its analysis of data found in the Philadelphia-Camden Origin and Destination Survey.³⁷

While the BPR lauded the thoroughness of the Clarke, Rapuano study, agency engineers questioned its conservative recommendations, especially the lane estimates derived from Clarke, Rapuano's analysis of the Philadelphia-Camden study. To speed the gathering and processing of data on origins and destinations of person trips, the Philadelphia-Camden survey had divided the urban area into zones, subzones, and districts. To the BPR's dismay, Clarke, Rapuano chose only "sample districts" as the source of data for calculating traffic flows projected over a thirty-year period, 1950-1980. These calculations formed Clarke, Rapuano's basis for design decisions about the number of traffic lanes on the Schuylkill Expressway, the size of medians, and the location and configuration of interchanges.

Even then the physical and topographical obstacles, principally the existence of the gigantic Pennsylvania Railroad Station at 30th Street, forced the engineering consultants to favor narrowing the roadway in the corridor between the railroad station and University Avenue from six to four lanes. Reluctantly,

the PRA acquiesced in the recommendation. Although fearing that the highway's design invited future traffic congestion, the economy-minded engineers of the state highway department and the PRA solaced themselves that the consultant's analytical model produced "no overdesign."³⁸

Clarke, Rapuano's traffic volume estimates and lane design presumed that the bulk of traffic using the expressway would be diverted from the picturesque East River and West River drives which paralleled the proposed expressway rather than from the heavily traveled Broad Street artery. PRA officials, however, believed the opposite to be true. They also faulted Clarke, Rapuano for failing to consider the impact of the completed Roosevelt Boulevard extension and the proposed Tacony and Delaware expressways on projected Schuylkill Expressway traffic volumes.³⁹ Acting District Engineer J.L. Stinson raised these concerns forthrightly in a March 24, 1950 memorandum to PRA Division Engineer S.L. Taylor. His memorandum also underscored the PRA's rigid traffic orientation toward postwar expressway development. Stinson wrote that a review of the major directional desire-lines indicated that 80% of the traffic between the existing connection of Roosevelt Boulevard with Broad Street and City Hall would be diverted from Broad Street to the Schuylkill Expressway. Construction of a section of the Delaware and Tacony expressways, argued Stinson, would channel traffic to the Boulevard Extension and thus, "by means of the Expressway to downtown Philadelphia." Stinson, explained further "that although the Roosevelt Extension would definitely relieve congestion in the Broad Street area, some consideration should be given to the effect of the above mentioned Expressways. The Delaware Expressway, if and when constructed, would definitely alleviate heavy traffic congestion and take care of a large percentage of traffic shown as a major desire-line from City Hall in a northeasterly direction. There are also large volumes of traffic with origins and destinations either due west or due south of the city center which ultimately will need relief facilities. No reference to these has been made in the report."⁴⁰

These broader traffic issues, notwithstanding, most discussion surrounding the development of the Schuylkill Expressway and the Vine Street and Roosevelt Boulevard extensions concerned engineering solutions to anticipated traffic congestion on that section of the express highway between City Line Avenue and University Avenue. PRA regional and district engineers advised large medians, wider shoulder "pull offs," and frequent exits to divert traffic overflow into Fairmount Park and on to the West River Drive. A minor engineering debate centered on clover leaf and direct design versus trumpet design for the Roosevelt Boulevard interchange with the Schuylkill Expressway. Although the PRA argued strenuously that Clarke, Rapuano's trumpet design was inappropriate for interchanges located in such high traffic volume areas, it, like the engineering consultant's traffic estimates, was reluctantly accepted as an economical alternative. It appeared in the completed expressway.⁴¹

Naturally, consideration of the macroeconomic or sociological ramifications of expressway building rarely if ever intruded into these usually technical discussions of desire lines, traffic flows, and trumpet versus clover leaf interchange designs. Socio-economic considerations, short and long term, were at best incidental. In fact, Clarke, Rapuano failed to include an economic justification in its report. Indeed, belief in the utility of expressways was so great and so widespread in the 1950s that it hardly warranted further amplification. In the PRA's view, the savings to motorists in time and money was sufficient justification for any expressway.⁴² For Bacon the value of expressways for the development of the modern metropolis was not debatable. He agreed that mass transit was the most efficient way to get people downtown, but, he wrote, "the function of getting people and goods to the centers of industry, commerce, and shipping, spread throughout the region on a well conceived expressway network[,] stands on its own feet regardless of how people get downtown."⁴³

Though planners like engineers in the 1950s assumed the economic utility of expressways, viewing them as good in themselves, they did not necessarily overlook the potential linkage of highway planning to redevelopment and housing. "I hasten to emphasize," explained Bacon in 1952, "that the primary purpose of redevelopment is not to create highways, and that highway improvements are not by-products of redevelopment possible only where highway needs and blighted areas coincide. However, this may be a very significant by-product, as our experience in Philadelphia [i.e., Vine Street] has shown."⁴⁴ Bacon spoke elsewhere about large-scale slum clearance in South Philadelphia, making land available for a widened highway as well as for public housing for those people to be displaced from the project area.⁴⁵ Importantly, it was not until 1957, following the 1956 Highway Act, that the Commissioner of the Public Housing Administration drafted a memorandum to Albert M. Cole, head of the Housing and Home Finance Administration, indicating the urgent need to coordinate public housing construction with major highway projects.⁴⁶

In most cases prior to 1956 any connection between highway-building, housing and redevelopment was in Bacon's view largely coincidental. Except for his 1947 vision of express highways swooping around and past spacious neighborhood units, evidence at present is lacking of any effort in Philadelphia to view expressways as either an instrument for regional planning, social planning, or as projects that might potentially disrupt families or isolate and destroy neighborhoods.⁴⁷

Nor did the public as a whole before 1956 exhibit any concern for the social implications of expressway building. Research to date has uncovered only two instances of resistance to the city's expressway plans. Both were minor. In one case several citizen's groups from the Germantown and Nicetown neighborhoods, affected adversely by plans for the Boulevard expressway extension, protested that a better route existed north of the city through the less densely settled

suburbs. The citizens only protested the route, not the necessity for an extension of the Schuylkill Expressway into North Philadelphia. In rejecting the citizens protest, Bacon joined the state and PRA in arguing that the alternative route north of the city "would not meet the established traffic needs and would further congest Philadelphia streets."⁴⁸

A second controversy arose in 1953 over plans for an alternative route running eastbound lanes of the Schuylkill Expressway from City Line to University Avenue on a "high route" through Fairmount Park, west of the city's zoological garden. In designing New York's highway system in the 1920s and 1930s, Robert Moses had found parkland routes both inexpensive and non-controversial. Philadelphians, however, displayed a deeper reverence for the sanctity of their venerable park. In the words of one opponent of the high route, "Money comes and goes, but great treasures like our Fairmount Park (and Valley Forge Park) should not be left to the ruthless who care for nothing but what they can get out of it." Both the Greater Philadelphia Movement and the CCCP joined in the outcry, which ultimately defeated the plan for a high route through Fairmount Park.⁴⁹

Only after the Federal Aid Highway Act of 1956 had greatly accelerated the pace of state highway building by infusing \$340 million into the Pennsylvania Highway program, including funds for the engineering studies of the Delaware Expressway, did anyone seriously question the social cost of expressways, or the basic assumption that only traffic volume should motivate highway building.⁵⁰ In 1957 John F. Howard, a professor of city planning at the Massachusetts Institute of Technology lamented the obliviousness of planners to the profound impact of expressways on regional land use patterns. "The purpose of highways," he wrote, "is not and should not be to carry traffic. That is the function of highways. The purpose is to serve the community."⁵¹

This study of postwar Philadelphia has attempted to show that in the Quaker City, an engineering mentality dominated the first phase of express highway development in the years between 1945 and 1960. Highway planners at the local, state, and federal levels focused narrowly on traffic relief, and rarely, if ever, considered the larger social, economic or regional consequences of highway building. They focused narrowly on traffic relief. The siting and design of Philadelphia's Schuylkill, Vine Street and Roosevelt Boulevard expressways reflected exhaustive traffic data from the Philadelphia-Camden Origin and Destination Survey and the interpretation and use of that traffic volume and desire line data by the engineering consultants, Clarke, Rapuano, Holleran, Hardesty and Hanover. Furthermore, little evidence presently exists that postwar urban planners seriously attempted to coordinate expressway development with schemes for redevelopment and rehousing. Instead, highway planning and development appeared to occupy a separate and exclusive niche in the world of urban planning. To be sure, the state highway department charged the city

planning commission to design the Philadelphia expressway system. But the structure of federal highway involvement, that is the process of project review, approval, and funding, diminished the role of the local agency in favor of the policy making role of the PRA and state highway department engineers.

Therefore, between 1943 and 1960 highway planning, existed as a compartmentalized process, alone, and even aloof from the more frenzied and politicized world of urban redevelopment and public housing. The CCCP and other progrowth boosters saw the expressway freeing the beleaguered postwar downtown from monstrous traffic congestion. Occasionally, they envisioned expressways as part of modern neighborhood development. They might even lump together highways and public housing as harmonious uses for redeveloped urban land. Nevertheless, what ultimately drove expressway building was less the vision of urban renaissance than the hard data on traffic volumes, lane capacity projections, and the advantages or disadvantages of trumpet design interchanges.

Notes

1. In a letter, B. Antrim Haldeman to Russell Van Nest Black, July 5, 1943 in Box 13, folder 68, Russell Van Nest Black Papers, Olin Library, Cornell University, Ithaca New York [hereinafter RVNB Papers] Haldeman quotes from Black's earlier correspondence where he calls Philadelphia an "ailing adult"; see also, "Progress Report of ASPO Committee on Highways and Transportation," May 1944, mimeographed, Box 13, folder 88, RVNB Papers, Ithaca; Mel Scott, *American City Planning Since 1890* (Berkeley: University of California Press, 1969), p. 473.
2. On vision of postwar city and revival of planning, see John F. Bauman, *Public Housing, Race, and Renewal: Urban Planning in Philadelphia, 1920-1974* (Philadelphia: Temple University Press, 1987), pp. 80-84; and John H. Mollenkopf, *The Contested City* (Princeton: Princeton University Press, 1983), pp. 47-96; see also Arnold R. Hirsch, *Making the Second Ghetto: Race and Housing in Chicago, 1940-1960* (Cambridge: Cambridge University Press, 1983); and Jeanne Lowe, *Cities in a Race with Time: Progress and Poverty in America's Renewing Cities* (New York: Random House, 1967).
3. On "progrowth coalition," see Mollenkopf, *Contested City*, pp. 3-46; the rise of Philadelphia's "progrowth coalition can be traced in David Wallace, "Renaissancemanship," *Journal of the American Institute of Planning*, 26 (August 1960), 157-176; also Kirk Petshek, *The Challenge of Urban Reform: Policies and Programs in Philadelphia* (Philadelphia: Temple University Press, 1973); and in Edmund Bacon, "How City Planning Came to Philadelphia," n.d., circa 1943, in Series III, folder 60, Housing Association of Delaware Valley Papers, Temple University Urban Archives, Philadelphia, Pennsylvania [hereinafter HADV Papers, TUA].
4. For quote, see Philadelphia Highway Traffic Board, untitled pamphlet discussing traffic congestion in Philadelphia and urging off-street parking garages as a solution; the graphic on the pamphlet cover portrayed a giant green serpent, its skin comprised of gridlocked automobiles, coiled around city, n.d., circa 1948, in HADV Papers pamphlet file, TUA; on widespread concern for blight, see Sidney Maslen, "Housing and City Planning," *Social Work Year Book* (New York: Russell Sage, 1943); "Address of William C. Bullitt, Democratic Candidate for Mayor of Philadelphia, Delivered at Meeting of Citizens' Council on City Planning, Bellevue Stratford, October 18, 1943," mimeographed, in Walter Phillips Papers, Box 12, TUA; among postwar city planners Bacon perhaps offered the most sociological explana-

tion of blight. He argued that two frames of reference were necessary in order to think through the essential nature of blight: "the economic problem of the decline of property values ... and the social problem off the decline of citizen morale," see Edmund N. Bacon, "Urban Redevelopment: An Opportunity for City Rebuilding," a talk given at the National Planning Conference of the ASPO, Cleveland, Ohio, October 11, 1949, Box 17, folder 2, Edmund Bacon Papers, Olin Library, Cornell University, Ithaca, New York [hereinafter Bacon Papers, Ithaca]; see also Mark Rose, *Interstate: Express Highway Politics, 1914-1956* (Lawrence Kansas: University of Kansas Press, 1979), pp. 58-59.

5. On Better Philadelphia Exhibit and Bacon, see Bauman, *Public Housing, Race and Renewal*, p. 100; and Peter S. Reed, "Planning and the Media," *Planning History Present*, 1 (1987); see also Philadelphia City Planning Commission and Redevelopment Authority of Philadelphia, *Progress in Rebuilding Philadelphia, 1947-1950: What Has Been Accomplished or Started Since the Better Philadelphia Exhibition in 1947*, HADV Papers, pamphlet file, TUA.

6. On planning in the 1920s and 1930s, see Scott, *American City Planning*, pp. 183-368.

7. American Institute of Planners, "Statement of the American Institute of Planners Through Its Committee on Legislation," mimeographed, circa 1944, Box 13, folder 88, RVNB Papers.

8. Mark I. Gelfand, *A Nation of Cities: The Federal Government and Urban America, 1933-1965* (New York: Oxford University Press, 1975), pp. 105-156; Richard O. Davies, *Housing Reform During the Truman Administration* (Columbia, Missouri: University of Missouri Press, 1966); and Rose, *Interstate*, pp. 53-54.

9. Bauman, *Public Housing, Race and Renewal*, pp. 139-140.

10. For the history of Bureau of Public Roads, see Bruce E. Seely, *Building the American Highway System: Engineers as Policy Makers* (Philadelphia: Temple University Press, 1987); and Rose, *Interstate*.

11. Seely, *Building the American Highway System*, pp. 77-166; Mark Foster, *From Streetcar to Superhighway: American City Planners and Ur-*

ban Transportation (Philadelphia: Temple University Press, 1981), pp. 166-176; see also John B. Rae, *The Road and the Car in American Life* (Cambridge: Cambridge University Press, 1971), and Robert A. Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Vintage Books, 1975), pp. 426-575.

12. Seely, *Building the American Highway System*, pp. 157-166.

13. On "Futurama," see Scott, *American City Planning*, pp. 361-365; on Roosevelt's Interregional Highway Committee, see Rose, *Interstate*, pp. 19-20.

14. "Summary of Federal-Aid Highway Act of 1944 prepared by the Bureau of Municipal Research of Philadelphia," June 13, 1946, mimeographed in Citizens' Council on City Planning Papers, Box 23, folder 193, Temple Urban Archives [hereinafter CCCP Papers, TUA]; also "A Summary of S. 971," in Box 12, Walter Phillips Papers, TUA; Rose, *Interstate*, pp. 22-26; on structure of Pennsylvania Department of Highways, see description of PDH in Record Groups 12, Records of Department of Highways, State Archives, William Penn Museum, Harrisburg, Pennsylvania; also Truman R. Strobbridge, comp., "Preliminary Inventory of Bureau of Public Roads Records, Record Group 30," National Archives and Record Service, Washington D.C., 1962.

15. For quote on federal-aid monies, see Roy F. Smock, Secretary of Highways, to James A. Sutton, CCCP, March 5, 1947, in Box 23, folder 195, CCCP Papers, TUA; see also John U. Shroyer, Secretary of Highways, to Thomas H. MacDonald, September 7, 1943, Bureau of Public Roads Records, Record Group 30, Files 481 Correspondence-FAS Pennsylvania, folder 2853, National Archives Center, Suitlands, Maryland [hereinafter BPR Records, Files 481 Pa, Box 2853, NARC].

16. Seely, *Building the American Highway System*, pp. 192-223; on desire lines, see Alan A. Altshuler, "The Intercity Freeway," in Donald A. Krueckeberg, ed., *Introduction to Planning History in the United States*, (New Brunswick, New Jersey: Rutgers Press, 1983), 190-223; on engineering mentality, see Joseph Barnett, Chief Urban Road Division of U.S. Public Roads

Administration, "Express Highway Planning in Metropolitan Areas," *Proceedings of the American Society of Civil Engineers*, 72 (March 1946), 287-305.

17. See John M. Picton, Chief Planning Engineer, Kansas City, Missouri, "Highway Studies in Cities," *Planning 1946: Proceedings of the Annual Meeting of the American Society of Planning Officials* (Chicago: ASPO, 1946), 28-31; Seeley, *Building the American Highway System*, p. 194; CCCP, *Express Highways for Philadelphia*, September 1947, pamphlet in HADV Papers, pamphlet file, TUA; and telephone interview October 1, 1987, with Mr. Henry Harral, State Secretary of Highways, 1963-1967.

18. On vision of urban expressway system and postwar highway plans, see "Philadelphia's Urgent Highway Needs," September 19, 1946, mimeographed statement of CCCP views, in CCCP Papers, Box 23, folder 193, TUA; also see letter Leonard A. Drake, Assistant to Vice President of Philadelphia Transportation Company, to Miss Molly Yard, CCCP, February 28, 1947, in CCCP Papers, Box 23, folder 196, TUA; on highways and neighborhood units, Edmund Bacon, "Philadelphia Plans Again: The Story of the Better Philadelphia Exhibit," December 1947, in Bacon Papers, Box 1, folder 3032, Ithaca; for origin of neighborhood units, see Daniel Schaffer, *Garden Cities for America: The Radburn Experience* (Philadelphia: Temple University Press, 1982); also on neighborhood planning and postwar highway planning, see Rose, *Interstate*, pp. 56-62.

19. On quiet loop streets, Bacon, "Philadelphia Plans Again," Bacon Papers, Box 1, folder 3032.

20. Seely notes that although "calls for integrated planning of mass transit and highways could be heard, . . . the favored solution to congestion continued to be more highways," *Building American Highways System*, 202; Catherine Bauer's pleaded for orderly postwar suburban development modeled on Europe, in "Planning is Politics . . . but . . . Are Planners Politicians?," in *Pencil Points—The Magazine of Architecture*, March 1944, in Walter Phillips Papers, Box 12, TUA. Her pleas went basically

unheeded; although planners and engineers were cognizant of the relationship between highways and decentralization, many took the matter of fact point of view of Elmer F. Steigelman and Harold M. Lewis, in "The Relation of Urban Expressways to Mass Transportation Facilities," *Proceedings of the American Society of Civil Engineers*, 75 (April 1949). "It is obvious to everyone," wrote Steigelman and Lewis, "that traffic conditions in metropolitan areas have become intolerable. . . . Having hotels, stores, theaters, and offices in a downtown area of a city is an advantage of modern living and decentralization of these facilities is not to be desired. Rather one must accept the fact that there is a centralized downtown area, that people will come to this area in their own cars instead of using public transportation, and that this traffic, together with other traffic creates an intolerable traffic condition."

21. "History of Vine Street Improvement," mimeographed, circa 1946, in Walter Phillips Papers, Box 12, TUA; on the state's obduracy, see "A Statement to the Citizens' Council (Prepared by the Keystone Automobile Club) Re: Highway Finances," December 27, 1945, in CCCP Papers, Box 23, folder 193, TUA.

22. CCCP, *Express Highways for Philadelphia*, TUA; also letter Henry Beeritz of the CCCP to Robert F. Maine, Provident Mutual Life Insurance Company and member of CCCP Transportation Committee, October 25, 1946, CCCP Papers, Box 23, file 196, TUA.

23. For resolution see "History of Vine Street Improvement," CCCP Papers, TUA; also, "Walter: This has also gone to Roy Larson," mimeographed, circa, March 1947, Walter Phillips Papers, Box 14, TUA; and J. Maxwell Smith, President of Keystone Automobile Club, to Walter Phillips, March 25, 1947 stating that it is "tragic" to build Vine Street as a grade highway and supporting the CCCP's crusade to have it made an expressway, Walter Phillips Papers, Box 14, TUA.

24. H.E. Hilts, Deputy Commissioner of PRA, to Raymond F. Leonard, Chief, Land Planning Division, City Planning Commission, December 26, 1945, BPR Records, Files 481 Pa., Box 2853, NARC; Leonard to Hilts, November 26,

- 1945, BPR Records, Files 481 Pa., Box 2853, NARC.
25. Press Release, "Citizens' Request Inclusion of Urban Highway Plank in Party Platforms," September 5, 1946, in CCCP Papers, Box 23, folder 196, TUA; Robert Maine, CCCP Transportation Committee, to Hon. Hiram Andrews, Chairman Platform Committee of Democratic Party, Harrisburg, August 22, 1946, CCCP Papers, Box 23, folder 193, TUA.
26. Roy Smock, Secretary of Highways, to James A. Sutton, CCCP, March 5, 1947, Box 23, folder 195, TUA.
27. Andrew Mutch, Acting President of Community Health and Civic Association, Ardmore, Pa., to Walter Phillips, President CCCP, May 2, 1946, CCCP Papers, Box 23, folder 193, TUA.
28. CCCP, *Expressways for Philadelphia*, TUA.
29. Seely, *Building the American Highway System*, pp. 167-168.
30. In the same letter Butler wrote to E.L. Schmidt, Chief Engineer of Pennsylvania Department of Highways, April 4, 1949, that "we presumed that the results [of the O and D survey], particularly traffic desire-line data, would be utilized in making factually supported selection of routes, first, for study purposes, and that alternate study-routes, would in turn be subjected to comprehensive economic analyses." in BPR Records, Files 481 Pa., Box 2851, NARC.
31. The PRA District Engineer wrote a memorandum for his files September 29, 1944, concerning a meeting in the Pennsylvania Secretary of Highways office, Harrisburg. He noted the general lack of traffic background data for the state, but noted that in Philadelphia "there was much interest among the City Officials in the kind of traffic study, with particular reference to the internal O. and D. as we had discussed that morning." BPR Records, Files 481 Pa., Box 2853; note also that Robert B. Mitchell, Executive Director of the City Planning Commission, wrote to H.S. Fairbank, October 17, 1947, that "It was very good to have you and Commissioner MacDonald in Philadelphia the other day [to look at the city's "Preliminary Expressway Plan]. . . . Restudy and

refinement will be undertaken upon the basis of criticisms received and analysis of information from the current Origin and Destination Survey. . . . I shall appreciate receiving your comments on the general system as planned and hope that we may have the opportunity to consult with you whenever new highway projects coinciding with or relating to the expressway proposals are to be studied or proposed by your department." BPR Records, Files 481 Pa., Box 2852, NARC.

32. H.S. Fairbank, Deputy Commissioner, PRA, to Robert K. Sawyer, Staff Engineer, Bureau of Municipal Research, Philadelphia, May 7, 1946, BPR Records, Files 710.6 Pa., Box 3568, NARC; Pennsylvania Department of Highways and New Jersey State Highway Department in Cooperation with PRA U.S. Department of Commerce and City Planning Commission, *Philadelphia-Camden Area Traffic Survey, Volume I* (1950), BPR Records, Files 710.6, Box 3566, NARC; Memorandum to Division Engineer from H.S. Fairbank, Deputy Commissioner, n.d., circa January 1950, File 710.6, Box 3566, NARC; Bacon discusses survey in "Philadelphia: Development of Projects," *Journal of the Town Planning Institute*, February 1950, in Edmund Bacon Papers, Box 14, folder 4.

33. C.H. Buckius, Assistant Chief Engineer of PDH, discussed the route of the Schuylkill Expressway and the Ritz-Carlton meeting in a letter to William Butler of the PRA, June 20, 1949, BPR Records, Files 481, Box 2851, NARC; Buckius was a well respected professional highway engineer, whose tenure with the Pennsylvania Department of Highways extended back into the 1920s.

34. For quote about Federal-Aid Route 264, the Schuylkill Expressway, connecting the Pennsylvania Turnpike "with the heart of the City of Philadelphia," which should not deter the BPR aiding in its development "since it will constitute a much needed route and relieve congestion on the Lincoln Highway," see Memorandum to Mr. A.G. Siegle from C.N. Conner, June 20, 1949, BPR Records, Files 481 Pa., Box 2851, NARC; and Memorandum, S.L. Taylor, Division Engineer, to Commissioner MacDonald, July 12, 1949, transmitting request from Pennsylvania Department of Highways

that Schuylkill Expressway be added to the approved Federal-Aid Primary System. BPR Records, Files 481 Pa., Box 2851, NARC.

35. Philadelphia City Planning Commission, *Annual Report: 1949* (Philadelphia 1949), in TUA.

36. Edmund Bacon, "Statement on Highway Planning Submitted to Pennsylvania Highway Planning Commission by City Planning Commission," April 17, 1950, in Bacon Papers, Box 1, File 1, Ithaca; Bacon, "Philadelphia Development of Projects," Bacon Papers.

37. Memorandum from R.W. Darling to J.L. Stinson, September 21, 1949 regarding Schuylkill Expressway, BPR Records, Files 481 Pa., Box 2851, NARC; J.L. Stinson to S.L. Taylor, October 18, 1949, BPR Records, Files 481 Pa., Box 2851, NARC.

38. At the September 14, 1949 meeting reported on in the memorandum Darling to Stinson, September 21, 1949, BPR Records, Files 481 Pa., Box 2851, NARC, E.H. Holmes of the BPR, expressed his opinion that "in view of the numerous instances of conservatism throughout the [Clarke, Rapuano] analysis procedure which were obviously for the purpose of developing a low traffic forecast, the actual traffic volumes drawn to the expressway upon completion should be sufficient to insure no overdesign." That view appeared again in more detailed reports on the expressway, see H.E. Hilts, Deputy Commissioner, to S.L. Taylor, Division Engineer, December 5, 1949, BPR Records, Files 481 Pa., Box 2851, NARC; see also Philadelphia City Planning Commission, *Person Trips to the Center City Obtained from the Philadelphia-Camden Area Traffic Survey June-November 1947* (Philadelphia: Philadelphia Planning Commission, 1954).

39. Memorandum, H.E. Hilts, to S.L. Taylor, March 14, 1950 regarding Schuylkill Expressway, BPR Records, Files 481 Pa., Box 2851, NARC; and Memorandum S.L. Taylor to J.L. Stinson, April 18, 1950, BPR Records, Central Office Decimal Files (General), Box 222, NARC.

40. Memorandum, J.L. Stinson, to S.L. Taylor, March 24, 1950 regarding Schuylkill Express-

way Report [of Clarke, Rapuano], BPR Records, Files 481 Pa., Box 222, NARC.

41. Memorandum, J.L. Stinson, Acting District Engineer, to S.L. Taylor, Division Engineer, January 12, 1950, on 20' versus 4' paved or unpaved medians, and observing that the state "did not believe the anticipated traffic [on the Schuylkill Expressway] justified more than a four lane highway." BPR Records, Files 481 Pa., Box 2851, NARC; and Report of G.L. Davis, Urban Roads Engineer, November 19, 1951, BPR Records, Files 481 Pa., Box 222, NARC; also "Detailed Narrative Report, Number 3: Schuylkill Expressway, Project N UI-981," November 26, 1951, discussing, among other things, interchange layout, BPR Records, Files 481 Pa., Box 222, NARC.

42. J.L. Stinson to E.L. Schmidt, Chief Engineer, PDH, May 12, 1950 submitting comments on Clarke, Rapuano preliminary report on Schuylkill Expressway, BPR Records, Files 481 Pa., Box 222, NARC.

43. Edmund N. Bacon, "Delaware Valley—The Challenge of the Region," Talk Before the Greater Philadelphia Movement Annual Meeting, November 4, 1953, in Bacon Papers, Box 17, folder 13.

44. Edmund N. Bacon, "Urban Redevelopment and Highway Planning," A Talk Before the 31st Annual Meeting, Highway Research Board, Washington, D.C., January 17, 1952, Bacon Papers, Box 17, Folder 11; and Curtis G. Bradfield, "The Relation of Urban Expressways to Mass Transportation Facilities," *Proceedings of American Society of Civil Engineers*, 74 (November 1948), 1597-1604.

45. Bacon, "Urban Redevelopment and Highway Planning."

46. Memorandum, Commissioner, PHA, to Albert M. Cole, Administrator, HHFA, September 4, 1957 on "Coordination with Major Highway Programs," Housing and Home Finance Administration Records, Record Group 196, Administrative Correspondence, Box 12, National Archives, Washington, D.C.; on Federal-Aid Highway Act of 1956, see Seely, *Building the American Highway System*, p. 215.

47. Charles M. Nelson, Editor of *Better Roads*, "Expressways and the Planning of Tomorrow's

Cities," *Planning, 1950: Proceedings of the Annual Meeting of the American Society of Planning Officials* (Chicago: ASPO, 1950), 116-125.

48. "Statement of Alberet H. Redles, Chairman of the Civic Planning Committee, and President of the Germantown-Mt. Airy and Chestnut Hill Improvement Association, at Public Hearing, October 17, 1950, Before Public Works Committee of City Council Opposing the Construction of the Roosevelt Boulevard Extension," BPR Records, Files 481 Pa., Box 222, NARC; Philadelphia City Planning Commission, Press Release, February 23, 1950, Bacon Papers, Box 17, folder 5.

49. Miss Hannah M. Sweeton to Citizens' Council on City Planning, October 15, 1953,

CCCP Papers, Box 23, folder 196, TUA; Greater Philadelphia Movement, *Annual Report, 1953*, in Greater Philadelphia Movement Papers, Temple Urban Archives; and Memorandum for Division Two Files by G.C. Davis, July 20, 1950, BPR Records, Files 481 Pa., Box 222, NARC.

50. Pennsylvania Department of Highways, Press Release, July 1, 1956, "State Ready for Hugh Road Program," in BPR Records, Box 91, Central Administrative Files, NARC.

51. John T. Howard, "Impact of Federal Highway Program," *Planning, 1957: Proceedings of Annual Meeting of American Society of Planning Officials* (Chicago: ASPO, 1957), 37-41.