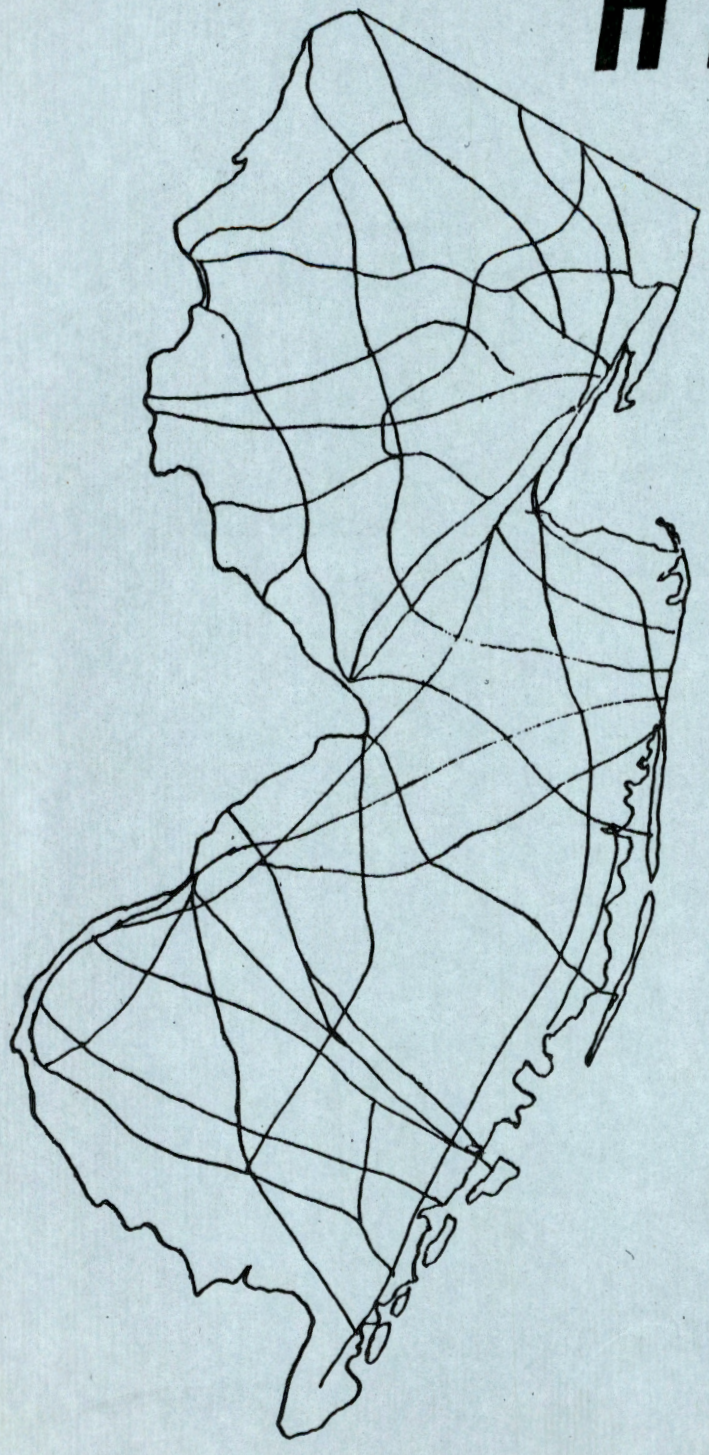
HIGHWAYS



An
INVESTMENT
in
NEW JERSEY'S
FUTURE GROWTH

To the Legislature and the People of New Jersey:

It is my privilege to present for your consideration certain facts, data and evaluations in respect to highway needs for the period 1964 – 1975 all of which, in the opinion of your Highway Department, have a natural bearing upon the subject of your review – – a proposed Bond Issue.

Dwight R. G. Palmer
Commissioner

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HIGHWAYS

An

INVESTMENT

in

NEW JERSEY'S FUTURE GROWTH

A SPECIAL REPORT

by the

NEW JERSEY STATE HIGHWAY DEPARTMENT

May 1, 1963

HIGHWAY NEEDS

THE REASON AND THE ANSWER

It has been said so often that New Jersey is an urban, densely populated corridor State with traffic volumes high above the national average, that every citizen should be aware of this fact by now. A trip around the State Highway System will present the fact far more eloquently than words. The statistics are frightening -- travel on our 1,900-mile State Highway System averaged 12,425 vehicles per mile in 1961.

And the demand for travel lanes continues to increase. Provision for new interstate crossings, such as the Delair Bridge, the Chester-Bridgeport Bridge, the second span for the Delaware Memorial Bridge, the Cape May-Lewes Ferry, the Narrows Bridge and improvement of existing crossings, all add to the load.

To meet this onslaught, planning is needed. The Federal Government provides highway funds for research and planning, amounting to 1½% of the annual Federal Aid allotments, and the Highway Department is using the money in such cooperative programs as the Penn-Jersey Study, the 10-County Northeast Study, the work of the Tri-State Transportation Committee and certain research projects. Such procedures are imperative as after 1965 all Federal Aid highway projects must be based on comprehensive transportation plans.

The New Jersey State Highway Department is no stranger to planning -- quite the contrary. Comprehensive blueprints for meeting the State's transportation needs have been in its files for more than 40 years and have been used in drafting annual construction programs. These long-range programs have been periodically revised. The Department is fully aware, just as much as the motorists who complain of congestion, hazard and delay, of what needs to be done.

But planning is not enough. No blueprint is more than an intriguing scrap of paper without the wherewithal to breathe life into it.

The answer to this problem is no secret to any of us. What we need is money.

HIGHWAY NEEDS
THE DOLLAR SIGN

The New Jersey State Highway Department has long been plagued with the yawning gulf between the State's highway needs and the limited resources to meet this need.

A State study prepared at the direction of the U. S. Congress in 1955 indicated the deficiency as more than $3,155,000,000. The figure arrived at was to put the State Highway System in a position to handle the estimated 1965 traffic demand.

This study, revised in 1958, was labeled as the Department's "Master Plan" -- a listing of the improvements required to handle estimated 1975 traffic demand.

Despite the progress made during the intervening three years, the total estimated deficiency stood at $2,940,000,000.

A review of the "Master Plan" shows the Department has made a sizeable dent in that long list of needed projects. But the most recent estimate of the cost of work remaining to be accomplished by the target date of 1975 indicates it still amounts to $2,007 million.

The bulk of the accomplishments to date can be credited to the construction programs of the past five years, which have averaged between $115 and $120 million a year. Some of the reduction in the total cost is due to sizeable savings in the cost of New Jersey's Interstate System between the 1958 and 1960 cost estimates required by the Congress. For example, a costly new bridge across the Hudson was eliminated.

Regardless of this, the present level of construction funds available to the Department will leave it short by substantially more than $1 billion in 1975.

The presently discerned needs of our State Highway System may be broken down as follows:

Completion of the Interstate System	$600 million
Needed Non-Interstate Freeways	814 million
Other Federal Aid Projects covering almost every existing land-service highway, in every county of the State.	$513 million
Projects which are not eligible for Federal Aid.	$ 75 million
Total -	$2,007 million

RESOURCES

What resources do we have to meet this need? The Highway Department contemplates a $117.4 million construction program for 1963-64, to be financed from normal tax revenues and the Federal Aid apportioned for that fiscal year. The proposed bond issue would provide $300 million for construction during a five-year period.* It is assumed it would finance work from July 1, 1964 through June 30, 1969. Estimated Federal Aid to become available during this period amounts to approximately $576 million.

Thus, the total amount available for expenditure through the end of the bond issue amounts to slightly more than $994 million. This would leave the Department needing (according to present estimates) to spend about $1,013,000,000 -- in order to fulfill the "Master Plan" --

*Note: Approximately $50 million would be required for construction operating costs.

but there would still be time to accomplish the task.

In short, there is no inexpensive way to provide for our future needs, and the longer we wait the more difficult and costly it becomes to catch up.

IS BOND-FINANCING WORTH THE COST?

Any improvement upon the face of the land produces benefits for the citizens who reside in that area and for those who travel through it. This is particularly true of highway improvements, for they not only facilitate the movement of people and goods, but they open up new territories for residential and industrial development. Most people understand these principles and there is no debate or argument as to the need for better highway transportation. The only question is: when will we be able to provide these benefits for the people of New Jersey? The answer -- when we have adequate funds and no sooner.

Should the State Highway Department share in the proposed $750,000,000 bond issue, it would receive a net of $30,000,000 a year more than it now receives through direct appropriations for a period of five years or a total increase of $150,000,000 over the next five-year period for use in improving the State Highway System.

In addition, a net of $12,000,000 a year for five years would be provided for State aid to county roads, for a total of $60,000,000 during the active life of the bond issue.

COSTS VS. BENEFITS

There is no dispute that there is a cost involved in bond financing. Who ever decried the fact that all businesses and industry borrow their working capital and pay interest or dividends on these borrowings until retirement? The same applies to the Federal Government. Here as in all cases the cost of neglect or postponement must be weighed in the balance against the benefits to be realized by accelerating such a program.

COST-BENEFIT RATIO

Looking at it another way, the cost of a bond issue financing method must be weighed against the cost of delaying the benefits which our citizens will realize from the earlier financing and construction of the new transportation facilities. Our country's State Highway Departments and the Federal Bureau of Public Roads have a standard formula that measures the benefits which are realized by the users of new highways. This is called the "cost-benefit ratio" method of analyzing these values.

Every facet of a proposed new highway is analyzed and compared with existing methods of transportation. Every angle -- savings in time, greater safety, greater convenience, and all other aspects of traffic service -- is taken into account.

Unit values, which are more or less standard throughout the nation, are assigned and it is the regular order of business to come up with a very detailed picture of the benefits any new or improved highway produces and equate them in dollars to the cost of the facility.

In New Jersey, the financial problems of our Highway Department center mainly around the need for funds to construct freeways completely within the State which must be financed either on a 50-50 matching basis or entirely by the State government. We have a great need for this kind of highway facility and it is precisely this kind of road which provides the greatest benefits. It is conservative to estimate that the users of these new freeways will realize six dollars in benefits for every dollar invested in the new roads over the life of the pavement. Incidentally, a figure of 30 years is used for pavement life - the same as the life of a normal bond issue.

RIGHT OF WAY

These are savings for the users of highways. We must not neglect the savings to the State government, which can be provided by accelerating our construction program. For example, the cost of right of way in a State as urban as New Jersey and facing a continuing population explosion, is constantly increasing. It is a known fact that in very many areas of our State the cost of land which could be

acquired now for highways if sufficient funds were available will be multiplied many times if the acquisition is deferred.

Here again, it is conservative to estimate that the Highway Department can realize a saving to the taxpayer of five dollars for every dollar invested in such advance purchase of right-of-way and this saving perhaps in a decade!

INTEREST COSTS

As mentioned previously, the proposed bond issue would provide a net of $150 million for the Highway Department in excess of the amounts now received from normal revenues. These amounts, averaging approximately $40 million a year in recent years, would also be substituted for by bond issue funds in order to provide an increase in State Aid to Education. In other words, of the total $750 million bond issue, $350 million would be allotted to State Highway construction. Of this $350 million, $200 million represents a replacement of current revenues in order to continue our present level of construction and $150 million represents an acceleration of these programs.

In estimating the benefits to be derived through the construction of new freeways and the advance purchase of right-of-way which

would be possible under this acceleration of our present rate of progress, only the proposed increase of $150 million has been taken into account and weighed against the financing cost of the bond issue. These benefits will be summarized later in this report, but it is significant to note that they alone would produce gains sufficient to not only counterbalance the estimated interest cost of the $150 million, but also of the entire bond issue!

And throughout this discussion of interest costs, we must not forget the interest available to the State, through investment, on the savings which would otherwise be spent.

GENERAL BENEFITS

There are a number of other very important economic aspects to highway construction which cannot be estimated in detail. Highways produce substantial benefits for the people who live along them as well as for the people who travel on them. Land values in accessible areas increase, new industry is attracted with a resulting favorable effect upon local tax rates. The economic vitality of entire regions is stimulated and these benefits in the long run, may outweigh all other considerations.

In summary, it can be stated that the savings which will be realized by accelerating our highway construction program more than balance the cost of financing this acceleration through a bond issue and, again looking at it from the other angle, the cost of delaying needed highway construction far outweighs the cost of paying interest on bonds.

TIME IS MONEY

IN THE

FACE OF RISING COSTS

A recent article in the Wall Street Journal noted that highway costs are rising and that the trend seems certain to continue. Indicating that highways will cost more the longer we wait to build them, the Wall Street Journal said . . .

"Highway construction costs are on the upgrade again after moving downhill much of the time since 1957. Of 21 state highway departments surveyed by The Wall Street Journal, more than half believe costs will continue to climb in 1963. Some think the rate will accelerate.

This trend is fairly recent. An index of bid prices on Federally aided highway construction compiled by the U.S. Bureau of Public Roads hit its peak, at 103.1% of the 1957-59 average, in 1957; from then through 1960 it fell 8.7%. The index turned around again in 1961, but the cost rise that year was less than 1%.

Big 1962 Rises

Last year, however, the index jumped 3.9% to 98.6% of the base-period average. It's possible these figures understate the actual rise, too. New York, the biggest highway builder in terms of dollar volume, recorded a 13% jump in road construction costs last year. Illinois had an 11.4% rise, California 7.1%.

One reason for this situation is that the Federal index doesn't include costs of acquiring rights-of-way for highways. Rising land prices have sent these up sharply in many states.

Wages and Inspections

Highway officials and road builders mention several other reasons for the climb in construction costs, including wage increases for road workers and higher prices for new roadbuilding machinery, which are reflected in contractors' bids. Ironically, they say, efforts by Federal and state authorities to get the most out of highway funds by tightening inspection to eliminate substandard work and contractor cheating also are raising costs for the contractors, and thereby for the governmental bodies building roads.

Average wholesale prices of new construction equipment such as bulldozers, graders and pavers have risen about 7.7% in the last four years, Government figures show.

Inspection Crackdown

Finally, in the wake of Congressional investigations which uncovered highway building scandals in several states, both Federal and state highway officials are tightening controls on highway construction.

The Bureau of Public Roads in the current fiscal year is adding 127 engineers, appraisers and auditors to its staff, a 13% increase in these categories. Their tasks range from boring holes in new pavement as a test of construction to poring over state claims for reimbursement under Federal matching-aid plans. Many states are taking similar steps: North Dakota has added 100 workers to its highway commission staff of 1,200 in the past two years.

ADVANCE PURCHASE OF RIGHT-OF-WAY

John A. Volpe, former Federal Highway Administrator, said six years ago:

"A mountain of evidence proclaims the benefits of advanced acquisition.

It greatly facilitates the orderly planning of a comprehensive system of arterial highways. It makes possible large monetary savings in the costs of future rights-of-way. These savings can range from five to thirty dollars for every dollar invested today for future highway right-of-way. Advance acquisition reduces the economic waste which occurs when rights-of-way are bought after public or private improvements have been completed in a particular area and it will hold to a minimum the number of persons and families who may be inconvenienced or displaced by a future highway improvement. Contractors and roadbuilders have a special stake in this phase of the new program. Long delays in acquiring and clearing right-of-way are often very costly to builders . . . . ."

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A.C. Clark, former Assistant Commissioner, Bureau of Public Roads noted:

"The cost of the right-of-way acquired for the construction of the Baltimore-Washington Parkway ranged from $250 to $350 an acre. Recent sales of large tracts along the right-of-way show that land values in rural areas along this highway have risen to as much as $3500 per acre. Closer to Washington, land along the Parkway is selling by the square foot.

Similar increases in land value have taken place along controlled access highways all over the country. They will take place along the new Interstate system, particularly around the interchange areas. Sites, readily accessible to these safe, efficient highway transportation arteries, will be in great demand for new industries, housing developments, shopping and service centers and other businesses.

This anticipated rise in land values along the Interstate system brings us to another provision of the Federal-Aid Highway Act of 1956 which has a historical background. In the past, failure to obtain right-of-way well in advance of scheduled starting dates for highway construction projects frequently led to difficulties. For one thing, land values would have already started increasing. Construction often has been delayed by right-of-way litigation or until utilities could be moved. To avoid such difficulties in

the new program, Congress in the Federal-Aid Highway Act of 1956 provided that States can be reimbursed later for right-of-way acquired as much as five years in advance of the construction of any Federal-aid highway project.

This provision, if fully utilized, will not only save tax dollars in right-of-way costs but will materially facilitate highway contractors operations. The Act further provides that any State which is unable to obtain the necessary right-of-way for any section of the Interstate system or cannot obtain it with sufficient promptness may request the Secretary of Commerce to acquire the land. The Secretary is authorized to comply with such requests . . . . ."

****

Dun's Review and Modern Industry stated:

"Land values along the routes being selected for the new highways are spurting upward. Commercial use of land immediately adjacent to the roads will be prohibited, but there is brisk demand for the land farther back. Some industries are planning locations near the new arteries. States and counties are planning feeder roads to access points on the new thru-ways. Full impact of the program, however, will not be felt until later."

DO FREEWAYS PAY FOR THEMSELVES?

The initial cost of freeways is high but in the long run they are the least expensive portions of our road and street plan. Due to the high volume of traffic they carry, costs per vehicle mile are low.

The initial cost of urban freeway construction and right of way looms large by comparison with expenditures for conventional roads and streets. Sections of some freeways, where terrain features have been formidable or where highly developed property had to be acquired, have cost as much as $35 million per mile. A cost of $5 million per mile has not been unusual.

When these expenditures are compared with benefits, such as reduced vehicle operating costs, savings of commercial vehicle time, and reduced accident costs, freeways prove much less expensive per vehicle mile than other roads or streets. Most freeways pay for themselves within a relatively few years.

Three different methods have been developed to measure the direct dollar benefits from freeways. Two of these involve the money savings to motorists; one measured on a cost per mile formula and the other on a cost per minute. The third method measures the dollar value of a freeway by the public revenue its traffic generates through user taxes.

The average saving from freeway use came to 2.0 cents per vehicle mile, computed roughly as follows:

Gasoline savings	0.33 cents
Vehicle maintenance cost savings due to elimination of stop-and-go travel	0.24 cents
Accident savings	0.56 cents
Commercial vehicle time savings prorated to all traffic	0.87 cents

What do these figures mean in relation to the investment in freeways? The first 46.3 miles of freeway in Los Angeles cost $197,507,000. In 1954 this system carried 1.2 billion miles of vehicle travel. At two cents per vehicle mile, this meant that motorists saved $24 million a year, or enough to cover construction costs in slightly more than eight years.

The Cabrillo Freeway in San Diego cost $4 million, and it was found that at the two cents per vehicle mile rate, savings to users would balance costs in less than four years.

Transportation economists generally agree that this formula, which assigns no value to the time of private vehicles, is a conservative one. This formula, applied to existing traffic volumes, shows that savings to users would equalize freeway costs in Detroit in 20 years, in Atlanta in 8.3 years, in Cleveland in 10.8 years and in Pittsburgh in 15.3. More difficult and costly construction in some cities, as well as differing traffic volumes, accounts for the variations.

Time savings to passenger occupied vehicles cannot be overlooked. The salesman or the contractor making his rounds, the doctor or the repairman on call, the legislator or businessman keeping an appointment, all can attach money value to the time even though their vehicles are not classed as commercial. That millions of persons pay a premium to use toll roads and save time shows the value they put on minutes and hours. Many traffic checks show that drivers generally choose the route that is shorter in time even though it may be longer in miles.

When a computed value is placed on the time of passenger car drivers, the savings per mile on the freeways studied come to 4.16 cents. By this measure of savings the freeways mentioned above would pay for themselves in one half the time noted.

This third method of figuring the dollar value of freeways, by the user revenues their traffic contributes to the public treasury, likewise shows them to be prudent investments.

Over and above the direct dollar savings to users there are many other benefits from freeways capable of measurement, such as faster service for transit riders, increased property values, industrial and residential growth and urban redevelopment which are discussed in other sections of this report.

BENEFITS TO HIGHWAY USERS

A study of the freeway from Perth Amboy to U.S. Route 22 near Somerville (Rte. I-287 and Outerbridge Connector), indicated an initial cost of approximately $60 million for 18.5 miles and maintenance of approximately $2,000 a year per mile.

It was estimated that it would take approximately seven years to complete the entire 18.5 miles, at the end of which the sections already opened would have earned $27 million in benefits.

However, the benefit curve continues to rise sharply for the next 20 years, while the cost curve flattens sharply. The two will balance each other exactly 3½ years after construction is completed. After that, the accumulated benefits are all on the "plus" side, reaching an estimated $200 million in excess of the cost by the time the route reaches capacity 16 years later.

This study developed a benefit-cost ration of 11.7 or $11.70 for every $1.00 invested on the basis of average benefits of $13,470,000 a year for 30 years divided by average costs of $1,159,000 a year for 30 years.

A similar study of I-80 for 16.2 miles from the George Washington Bridge to Route 23 indicated an initial cost of $129 million during an eight-year construction period. At the end of this time, the cost exceeds the benefits by approximately $68 million, however, the two factors balance out 6½ years later. By the time the route reaches capacity about 19 years after construction is completed, the benefits exceed the cost by almost $165 million.

This study developed a Benefit Cost Ratio of 7.7, or $7.70 for every $1.00 invested on the basis of average benefits of $14,954,000 a year for 30 years divided by average costs of $1,952,000 a year for 30 years.

SUMMARY

It has been reported in the press that the overall interest cost on the entire $750 million bond issue would approximate $500 million. While the validity of this figure would certainly have to wait upon the actual bond sales themselves, which would be accomplished at the most opportune time and in the most economical manner possible, still it can be used for talking purposes. On that basis, therefore, the prorated interest cost of the $150 million acceleration of highway construction would amount to approximately $100 million.

Portion of Bond Issue Applicable to Accelerated Highway Construction	**$150 million**
Prorated Interest Cost (approximate)	**$100 million**
Total Principal and Interest Charges	**$250 million**
$100 million devoted to Freeway Construction produces benefits of $600 million in 30 years.	$600 million
$50 million devoted to advance purchase of Right-of-Way produces savings of $250 million.	**$250 million**
Total Benefits to Highway Users and Taxpayers	**$850 million**
Net Gain over Cost	**$600 million**

This gain may seem incredible, but it is the natural result of the benefits produced by adequate transportation facilities. The only question of real importance is: when will these benefits be realized by the people of New Jersey? In the face of present revenue restrictions, a bond issue is a normal and accepted method of accelerating highway construction.

GENERAL FREEWAY BENEFITS

Here are a few of the experiences reported from areas where freeways have been completed:

1. Residential developments are springing up like mushrooms near the new routes, with the promise of quick and easy access to downtown offices and plants.

2. The resale value of homes abutting the expressways remains constant or falls off only slightly (not drastically, contrary to first impressions) while real estate values in areas 100 to 400 feet away rise faster than property values out of the highway's immediate "zone of influence."

3. Retail trade in a small community which has been by-passed by an Interstate route may slump temporarily, but it soon climbs back to its normal pace, and even accelerates.

4. New industry is moving into areas served by the highways, much as industrial expansion 100 years ago followed the railroads, creating more jobs for local citizens and producing more tax revenue for local governments.

5. The value of adjacent farm land rises, sometimes adding thousands, of dollars to the value of the "old homestead."

These are findings being reported to the U.S. Bureau of Public Roads with completion of a number of independent studies by universities, state highway departments and professional research organizations. All together, they constitute a striking justification for highway improvements only vaguely realized a few years ago.

The Engineers, economists, businessmen and legislators are discovering that new roads boost land values significantly. As mentioned above, the market value of land adjacent to a new expressway may decline slightly, but beyond this narrow fringe, it may skyrocket. The value of land along the Grand Central Parkway on Long Island, for example, has increased four times faster than land in the entire balance of the area it serves since the road was completed.

A wave of suburban development, the construction of badly needed new homes, frequently follows the extension of major commuter routes. A new expressway close by is a major factor in choosing a home these days. Realtors report that one of the first questions a prospective home purchaser asks is:

"How long will it take me to commute to my job?"

Completion of a new highway in a metropolitan area is followed not only by a burst of residential development, but also shipping centers, hospitals, schools, and other public facilities so much in demand by a burgeoning population. That the new expressways trigger such developments is a common report from counties across the land.

The researchers have found that industry is avidly seeking out new plant sites accessible to new roads, and large "industrial parks" are being developed just off many routes. Manufacturers and distributors realize that an efficient highway system throughout the area expands the size of their market considerably. Some firms now located along the Santa Ana Freeway, for example, have found it takes less time to get to the center of Los Angeles from their new outlying locations than it formerly did from their closer in-city sites.

Manufacturers have built dozens of new plants along the Eastshore Freeway outside San Francisco. In an area close to the highway which comprises only 9% of the total industrial acreage in Alameda County, industrialists have concentrated more than 43% of their total investment in new industry in the county.

Farmers are sometimes "hurt" when the engineers are forced to cut their way across country for a new superhighway, but the value of farm land also rises - usually more than enough to offset the inconveniences.

In the area of Hartford, Connecticut, directly under the influence of the Wilbur Cross Highway, an analysis showed that, in general, towns subject to expressway influences have increased in number of dwelling units and, by inference, in rate of property marketability to a greater extent than have those communities not subject to such influences.

The construction of new houses in Connecticut has been greatly accelerated along the parkways and expressways and also in the communities under the influence of these new limited access highways. Many of the new residential properties either abut directly on the right-of-way of the parkway or expressway, or are within sight of it. In one section of over 1,000 dwellings in East Hartford costing between $9,500 and $20,000 and up; all of the group is within four minutes driving time from the Wilbur Cross Highway and most of the more expensive ones are within sight of or within two or three hundred yards of the expressway.

An extensive survey showed beyond a shadow of a doubt that in most cases land adjoining or near the Merritt Parkway sold at prices as high as, and sometimes higher than comparable land some distance removed. The only instances in which lower prices were reflected involved properties below the level of the parkway.

The foregoing indicates that certain general conclusions are warranted. Connecticut communities subject to express highway influence have increased in population and industrial and commercial activities at a far more rapid pace than those not subject to such influences, much of this at the expense of the urban centers.

All in all, it appears reasonable to conclude that the express highway system has brought the country to the city and the city to the country, and further, that its effect has been extensive.

TURNPIKE REVENUES

The surplus revenues of the New Jersey Turnpike have been assigned as the major source from which the cost of the bond issue would be paid. We are all aware of the phenomenal growth in traffic and revenues -- far ahead of expectations -- which the Turnpike has experienced. However, its potential was recognized more than a decade ago.

Mr. Paul Troast, former Chairman of the Turnpike Authority, said in 1952:

"We have a problem of out-of-state through traffic which is not matched anywhere in the United States. The Turnpike was built to solve, in part, this extraordinary problem, and it is serving it well.

"The average trip on the New Jersey Turnpike is about fifty miles, and every traffic count has indicated that 60 or more per cent of the vehicles paying tolls and using the Turnpike, bear license plates of States other than New Jersey . . .

"If we would care to look down the road to the time when the present Turnpike has liquidated its indebtedness and reverts to the State debtfree, we can see vast millions of dollars available to the State for highway improvements from Turnpike revenues alone, if tolls are maintained."

A recent estimate of the Turnpike's future revenue growth indicated that beginning this year the toll collections would increase on a gradually declining scale from 5 per cent in 1963 to 1 per cent in 1974, when it was believed that existing traffic lanes on the Turnpike would reach saturation.

The Highway Department's own projections indicate the above estimate is conservative, and that the Turnpike should continue to experience some traffic and revenue growth beyond that date. This is particularly true of the southern section.

GARDEN STATE PARKWAY

The revenue structure of the Garden State Parkway is entirely different from that of the Turnpike. The major portion of its bonds are guaranteed by the State. As a result, the Highway Department has been and will continue to be careful not to jeopardize the future income of the Parkway.

MILEAGES

New Jersey Turnpike:

Deepwater to George Washington Bridge		118.0 miles
Newark Airport to Holland Tunnel		7.0 miles
Pennsylvania Turnpike Extension		5.8 miles
	Total	130.8 miles

Garden State Parkway:

Cape May City to Montvale	173.0 miles

THE PROBLEM OF URBANIZATION

The phenomenal population growth of New Jersey in recent years is well known. Many of the communities in this State are perfect examples of what is termed "urban sprawl." This congestion, this crowding together of our residential areas, is already creating tremendous problems for our highway designers. The task of placing a major freeway through the heart of a developed area and then winning public acceptance of the alignment is heartbreaking. And every attempt to satisfy local desires adds to the cost -- substantially. There is absolutely no reason to hope that this trend will reverse itself. New Jersey's geographical position at the hub of the greatest metropolitan complex in the world -- stretching from Boston to Washington -- renders that impossible.

In the older metropolitan areas in other countries where the ratio of population to the available land has become critical, the cost of obtaining land for public purposes has become almost prohibitive. For instance, we were represented at the recent United Nations-sponsored study week of the new railroad developments in Japan. On his return, our delegate reported that the cost of the new railroad being constructed from Tokyo to Osaka - a distance of 323 miles - averages about 2.5 million U. S. dollars per mile, or about 900 million Japanese yen per mile. This unusually high cost for construction in Japan is attributable to the many miles of elevated structure

being built to minimize right-of-way costs. Even so, the cost of the land over the entire route amounts to 21% of the construction cost.

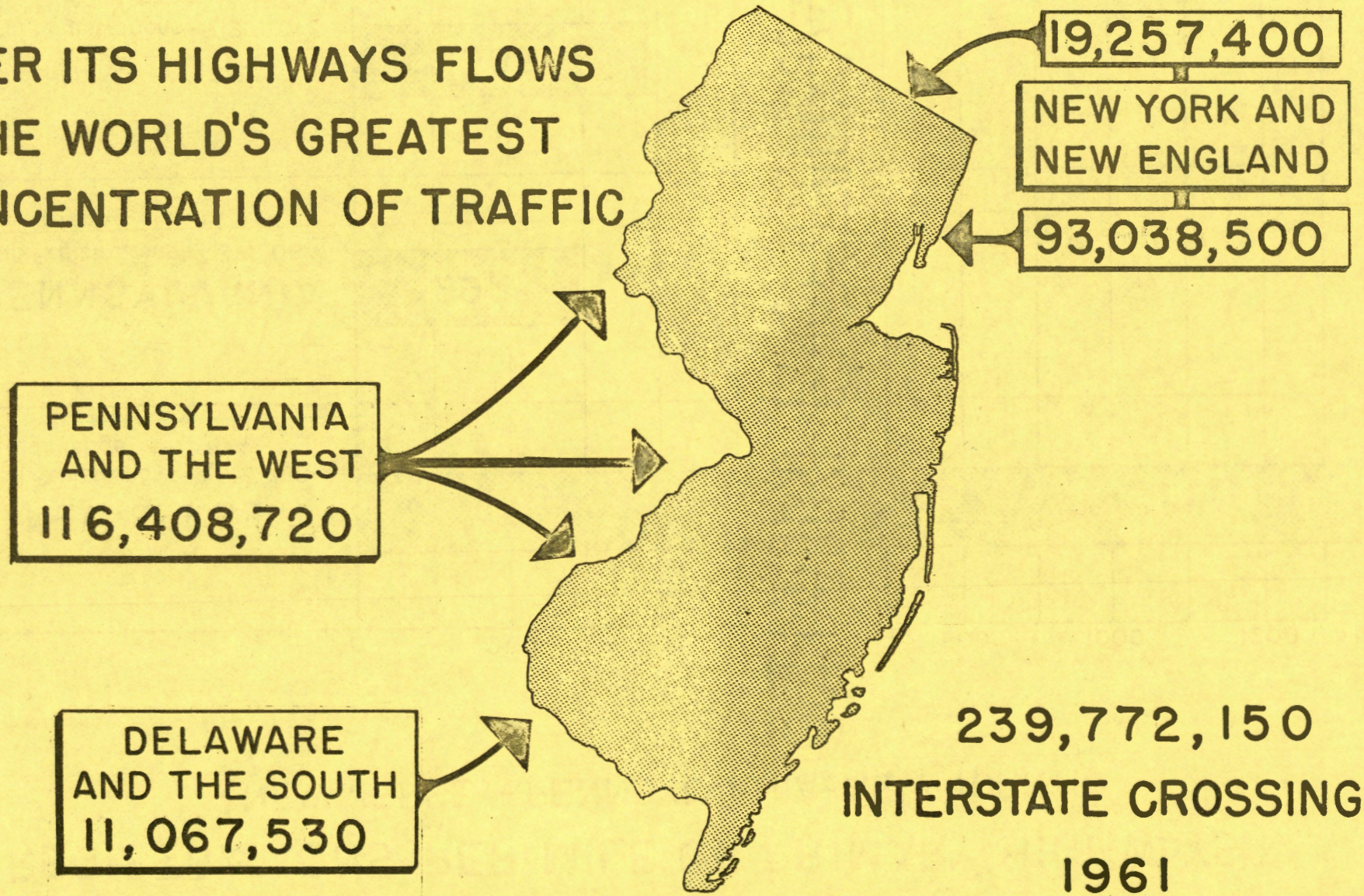
In the Tokyo metropolitan area, a 43-mile-long toll expressway is nearly completed. Because of the very high cost of obtaining right-of-way, 35% of the 43 miles is being constructed on viaducts over rivers or canals, 38% by double-decking existing streets or highways, 13% over other public land and only 14% on newly acquired right-of-way.

I am sure, because of the many objections we have received against elevated freeways, that this type of design will never be popular in New Jersey.

An illustration of the high cost of real property in Tokyo is found in the April 19th edition of the Japan Times. Under the Real Estate listings in the classified section two vacant lots are listed for sale. One 70'x100' on a corner lists for 6,000 yen per sq. ft. which is at the rate of $726,000 per acre or $16.65 per square foot. Another slightly smaller lot lists for 5,850 yen per sq. foot or about $700,000 per acre.

NEW JERSEY IS A CORRIDOR STATE

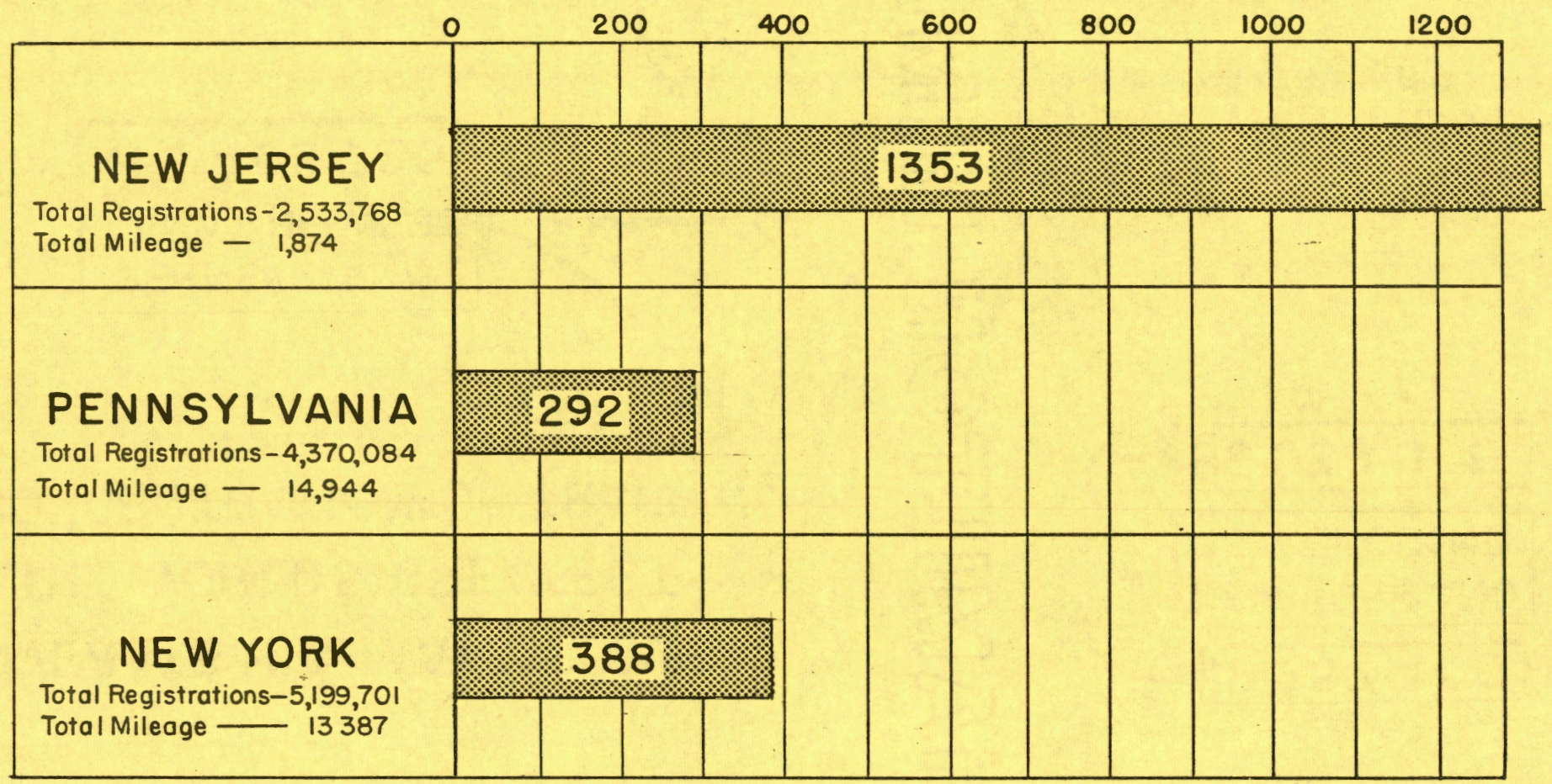
OVER ITS HIGHWAYS FLOWS
THE WORLD'S GREATEST
CONCENTRATION OF TRAFFIC



239,772,150
INTERSTATE CROSSINGS
1961

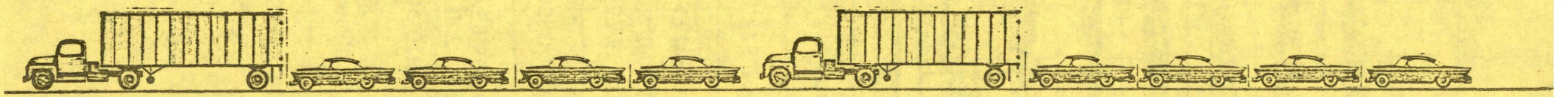
REGISTRATIONS PER MILE OF PRIMARY HIGHWAYS

NEW JERSEY-PENNSYLVANIA-NEW YORK

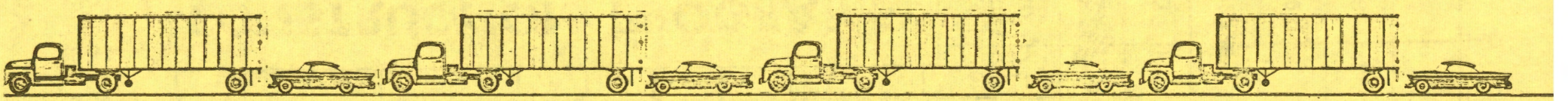


BUREAU OF PUBLIC ROADS
HIGHWAY STATISTICS 1961

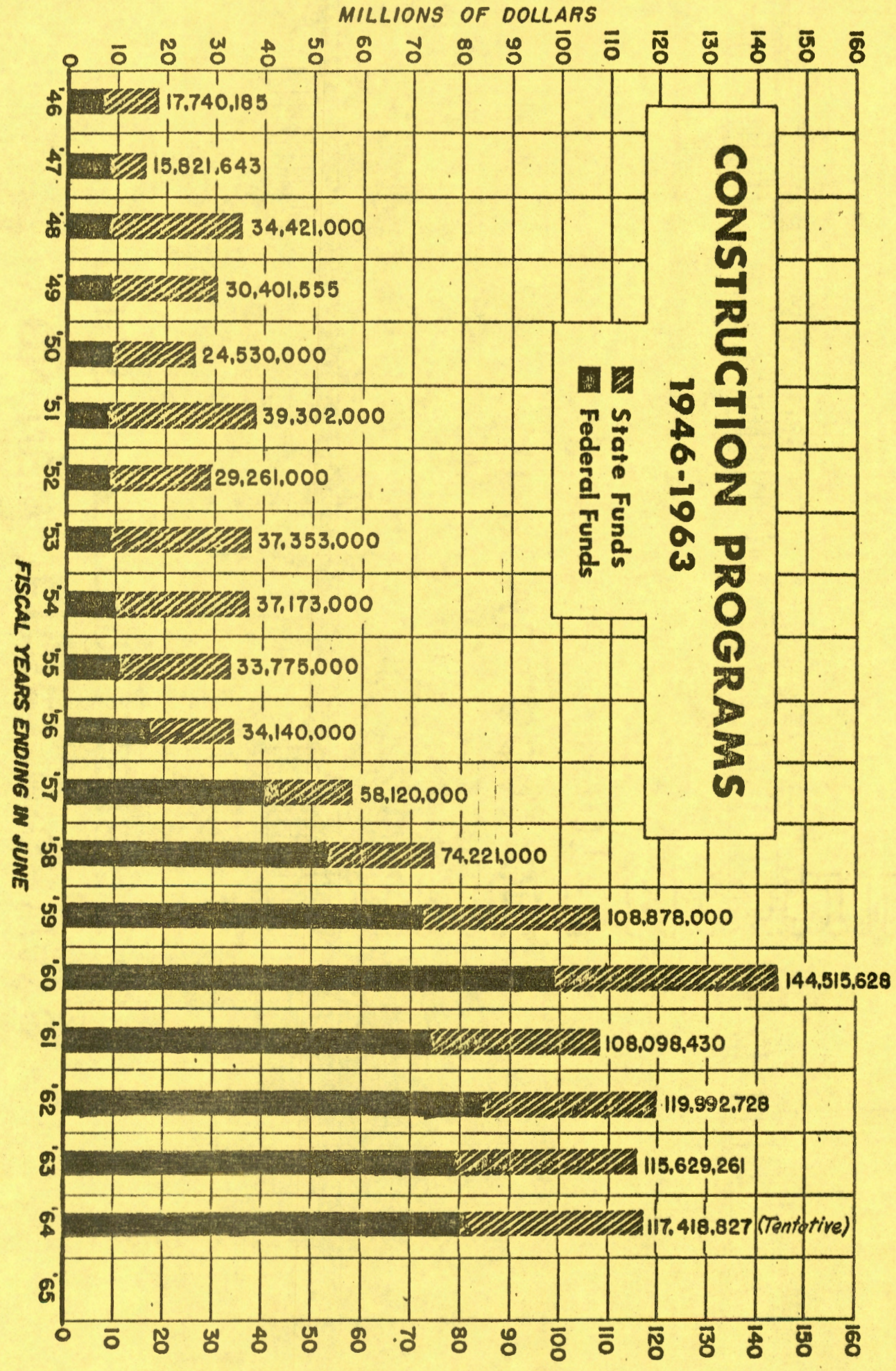
ON NEW JERSEY HIGHWAYS
1 OUT OF 5 VEHICLES IS A TRUCK



AT SOME LOCATIONS
THE RATIO IS 1 OUT OF 2



JANUARY 1963


CONSTRUCTION PROGRAMS
1946-1963
State Funds
Federal Funds
MILLIONS OF DOLLARS
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
FISCAL YEARS ENDING IN JUNE
'46 17,740,185
'47 15,821,643
'48 34,421,000
'49 30,401,555
'50 24,530,000
'51 39,302,000
'52 29,261,000
'53 37,353,000
'54 37,173,000
'55 33,775,000
'56 34,140,000
'57 58,120,000
'58 74,221,000
'59 108,878,000
'60 144,515,628
'61 108,098,430
'62 119,992,728
'63 115,629,261
'64 117,418,827 (Tentative)
'65

Proportionate Sharing of Costs on State Highway Construction

Interstate Routes	90% Federal Government	10% State
Primary Routes	50% Federal Government	50% State
Urban Routes	50% Federal Government	50% State

The U. S. Bureau of Public Roads regularly allocates funds to the states for highway construction purposes. These funds are not, however, available until matching funds are appropriated by the State Legislature. In New Jersey, this is usually seven or eight months after the Federal Aid is apportioned.

Federal approval of design features and alignment is required before aid funds can be committed to a project. All property acquisition agreements on Federal Aid Projects must be approved by the Federal agency before committed funds can be utilized for this purpose. All bids on proposed construction contracts involving Federal aid must be reviewed and approved by the Bureau of Public Roads before such contracts can be awarded.

In all ways the New Jersey State Highway Department and the U. S. Bureau of Public Roads might be considered as working closely together to produce the finest of highways.

ANALYSIS

1963-64 CONSTRUCTION PROGRAM

(Governor's Budget Message)

Federal Apportionments:		
Interstate	$67,602,275	
Primary-Urban	$16,152,594	
Subtotal	$83,754,869	
Less: Alloted by State Budget Bureau to Construction Operating Costs (76% Interstate - 24% Primary Urban)	$ 2,000,000	
Total Federal Aid Budgeted for Construction	$66,082,275 $15,672,594 $81,754,869	Interstate Primary-Urban
Required State Matching Funds:		
Interstate	$ 7,342,475	
Primary-Urban	$15,672,594	
Total	$23,015,069	
State Funds for Non-Federal Projects	$12,648,889	
Total Appropriation for Construction	$35,663,958	
State Appropriation for Construction Operating Costs	$ 6,197,466	
Total State Appropriation	$41,861,424	
Total Available for Construction	$117,418,827	
Total Available for Construction Operating Costs*	$ 8,197,466	

*This provides funds for the operating costs of the Division of Roads, Design and Construction, the Division of Bridges; the Division of Right of Way Acquisition and Titles; and some of the Bureaus in the Division of Planning and Traffic.

New Jersey State Highway Department Requests & Appropriations for Fiscal Years 1954-55 through 1962-63

		Requests 54-55	Appropriations 54-55	Requests 55-56	Appropriations 55-56	Requests 56-57	Appropriations 56-57	Requests 57-58	Appropriations 57-58	Requests 58-59	Approp. 58-59
610	Operating	$ 18,345,689.98	$14,921,620.42	$ 18,455,365.00	$15,788,809.27	$ 19,456,120.30	$15,764,756.50	$ 21,578,793.00	$16,064,446.00	$25,515,642.00	$17,865,763.00
610	" - Debt Service	2,597,900.00	2,597,900.00	2,591,675.00	2,591,675.00	2,888,800.00	2,888,800.00	2,870,090.00	2,870,090.00	2,864,458.00	2,864,458.00
610	TOTAL	$ 20,943,589.98	$17,519,520.42	$ 21,047,040.00	$18,380,484.27	$ 22,344,920.30	$18,653,556.50	$ 24,448,883.00	$18,934,536.00	$28,380,100.00	$20,730,221.00
611	Const. of Institutional Roads	$ 1,382,574.00	$ 849,400.00	$ 2,059,958.89	$ 1,420,890.25	$ 1,472,925.00	$ 1,397,925.00*	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00
612	Engineering & Cost of Acquiring Right of Way	5,115,831.00	4,307,411.00	4,866,384.60	4,729,943.60	4,903,875.00	4,481,530.00	9,713,848.00	4,356,350.00	5,275,433.00	3,513,081.00
612	Construction	70,625,000.00	15,000,000.00	66,000,000.00	20,000,000.00	142,300,000.00	20,000,000.00	130,630,816.00	18,570,740.00	44,464,000.00	37,164,000.00
612	Install. of Traf. Signals & New Bldg. & Land	240,000.00	240,000.00	200,000.00	200,000.00	490,000.00	240,000.00	916,000.00	208,000.00	889,100.00	350,000.00
620	State and Municipal Aid	17,064,560.00	17,043,565.00	17,143,707.60	16,872,917.60	17,098,740.00	17,033,425.00	17,143,270.00	16,868,970.00	17,098,893.00	16,746,695.00
	TOTAL	$115,371,554.98	$54,959,896.42	$111,327,091.09	$61,604,235.72	$188,610,460.30	$61,806,436.50	$182,877,817.00	$58,863,596.00	$96,132,526.00	$78,528,997.00

		Requests 59-60	Appropriations 59-60	Requests 60-61	Appropriations 60-61	Requests 61-62	Appropriations 61-62	Requests 62-63	Appropriations 62-63	Requests 63-64	Recommend. 63-64
610	Operating	$ 23,682,892.00	$19,149,492.00	$ 21,438,043.00	$20,022,992.00	$ 21,386,621.00	$20,389,298.00	$ 26,711,631.00	$21,618,758.00	$27,535,073.	$22,441,397.
610	" - Debt Service	2,871,638.00	2,871,638.00	2,885,933.00	2,885,933.00	2,872,180.00	2,872,180.00	2,880,677.00	2,880,678.00	2,886,277.	2,886,228.
610	TOTAL	$ 26,554,530.00	$22,021,130.00	$ 24,323,976.00	$22,908,925.00	$ 24,258,801.00	$23,261,478.00	$ 29,592,308.00	$24,499,436.00	$30,421,350.	$25,327,625.
611	Const. of Institutional Roads					25,000.00	25,000.00	160,000.00	50,000.00	175,000.	87,000.
612	Engr. & Cost of Acquiring R.O.W.	6,891,827.00	3,418,884.00	6,988,714.00	4,148,042.00	7,257,773.00	4,570,888.00	8,821,274.00	5,466,966.00	10,596,834.	6,197,466.
612	Construction	44,289,767.00	38,500,000.00	170,860,190.00	34,000,000.00	47,359,728.00	34,650,000.00	43,020,914.00	35,020,914.00	43,657,837.	35,663,958.
612	Install. of Traf. Signals & New Bldg. & Land	584,600.00	500,000.00	372,000.00	200,000.00	96,000.00	96,000.00	1,289,000.00	695,000.00	904,000.	180,000.
620	State and Municipal Aid	17,116,644.00	17,067,504.00	17,096,463.00	17,088,981.00	22,107,408.00	17,094,895.00	17,121,748.00	16,615,701.00	16,875,106.	16,809,729.
630	Railroad Transportation Admin.		200,000.00	248,000.00	200,000.00	210,650.00	100,000.00	225,000.00		205,700.	
630	Passenger Program				6,000,000.00	5,650,000.00	5,650,000.00	6,000,000.00		6,000,000.	
630	N. Y. & N. J. Transportation Agency					25,000.00		50,000.00	6,000,000.00	50,000.	6,000,000.
630	Camden - Kirkwood Line				1,000,000.00		500,000.00**	1,000,000.00		(Ferry)100,000.	
630	Tri State Transportation Study							50,000.00			
	TOTAL	$ 95,437,368.00	$81,707,518.00	$219,889,343.00	$85,545,948.00	$106,990,360.00	$85,948,261.00	$107,330,244.00	$88,348,017.00	108,985,827.	$90,265,778.

NOTE: * From 1957-58 fiscal year, the appropriation for Const. of Institutional Roads was made direct to the institutions.

** An additional sum not to exceed $500,000.00 shall be available for transfer from the Department of Public Utilities appropriation for the Camden - Kirkwood Line.

Since 1958-1959, the appropriation for Engineering and Cost of Acquiring Right of Way does not reflect the $9,400,000.00 (as of 7-1-63) which the Department has been required to take from its Construction Program Funds.

ESTIMATED MILEAGE AND COST OF PROPOSED NON-INTERSTATE FREEWAYS

Route	County	Location*	Est. Cost	Miles
9	Cape May & Atlantic	Rt. 9 near Seaville to Atl. City Exp'way	$25,000,000	22
9	Atlantic	Somers Point to Absecon	15,000,000	12
18	Monmouth	Middlesex Co. line to Rt. 35	19,500,000	13
20	Passaic	Paterson peripheral	20,000,000	5
21	Bergen, Passaic	Route 3 to Route 80	4,500,000	8.5
23	Essex	Rt. 10 to Int. Rt. 80	40,000,000	7
23	Passaic, Sussex	Newfoundland to N.Y.S. line	25,500,000	25.5
24	Morris, Hunterdon, Union Warren	Phillipsburg to Springfield	108,300,000	62.5
30	Atlantic, Camden	Folsom to Atco	16,000,000	12
35	Monmouth	Wall Township to Eatontown	20,000,000	12
37	Mercer, Ocean, Monmouth	Allentown to Toms Riv.	40,000,000	29
38	Burlington, Ocean, Monmouth	Mt. Holly to Rt. 34 near Asbury Park	55,000,000	39
40	Salem, Cape May, Cumberland	Deepwater to Somers Point	60,000,000	55
40	Salem	Woodstown by-pass	6,000,000	4
40	Gloucester, Atlantic	Malaga to Atlantic-Gloucester line	10,000,000	6

* For easy identification, freeways with no designations have been given numbers of nearby major highways.

Route	County	Location	Est. Cost	Miles
47	Cape May, Cumberland, Gloucester	Swainton, Millville, Vineland, Westville (Delsea Drive)	$70,000,000	58
49	Cumberland, Atlantic	Shiloh, Bridgeton, Millville, Mays Landing	35,000,000	32
49	Salem	Salem to Deepwater	15,000,000	10
54	Cumberland, Atlantic	Millville to Buena	10,000,000	10
68	Burlington	Ft. Dix to Rt. 70-72 junction	10,000,000	8
69	Mercer	Trenton to Pennington	12,000,000	6
73	Camden	Connection for future Delair Bridge	12,000,000	7.0
75	Essex	Rte.78 to Rte. 280	30,000,000	3.0
76	Union	Goethals Bridge to Rte. 1	10,000,000	4
92	Somerset, Mercer	Rt. 206 to Hightstown	11,500,000	8
94	Sussex	Rt. 206 to Rt. 23	13,500,000	13.5
208	Passaic	Oakland to N.Y.S. line	10,000,000	10
322	Gloucester	Bridgeport to Williamstown	30,000,000	23
440	Middlesex	Int. Rt. 95 to Outerbridge	26,000,000	7
440	Hudson	Danforth Ave. to Bayonne Bridge	18,000,000	4.2
		TOTAL	$ 814,300,000	516.2

STATE HIGHWAY SYSTEM MILEAGE GROWTH

LANES	MILEAGE Jan. 1, 1954	MILEAGE Jan. 1, 1963	LANE MILEAGE Jan. 1, 1954	LANE MILEAGE Jan. 1, 1963
2	1,180.8	1,110.3	2,361.6	2,220.6
3	53.5	46.2	160.5	138.6
4	542.1	645.6	2,168.4	2,582.4
5	2.0	3.8	10.0	19.0
6	12.6	75.2	75.6	451.2
8	8.6	10.9	68.8	87.2
10		2.0		20.0
16		0.1		1.6
TOTAL	1,799.6	1,894.1	4,844.9	5,520.6

This chart, while not indicating the full amount of new construction in the period from Jan. 1, 1954 through Jan. 1, 1963, illustrates the trend toward increasing the capacity of the State Highway System through construction of additional lanes. It will be noted that the mileage of two and three-lane highways has diminished, while the mileage of four and six-lane highways has greatly increased. The overall increase of 675 lane miles is the equivalent of more than 168 miles of four-lane highway.

TYPICAL

BENEFIT COST RATIOS

ROUTE	DESCRIPTION	BENEFIT COST RATIO
80	George Washington Bridge to Garden State Parkway	8.85
287	Middlesex Freeway from Outerbridge to Route 22	11.6
80S & 42	Camden North-South Freeway from Benjamin Franklin Bridge to Turnersville	7.4
280	Essex Freeway	14.2

Note - these ratios show the return to the motorist for every dollar invested in highways. For example, every dollar invested in the Essex East-West Freeway will return $14.20 in terms of faster, safer, and more convenient travel during a 30-year period.

SUMMARY OF

BENEFIT COST RATIO VALUES

COST

Roadway = 30 year life
Bridges = 50 " "
Drainage = 50 " "
Earthwork = 150 " "
Right-of-way = 150 year life
Maintenance)
Policing) $2,000 per year per mile
Administration)

BENEFITS

Time saved:

Passenger cars = 1½ cents per car minute.
Trucks = 3 cents per light truck minute
= 3 " " med. " "
= 4 " " heavy

Convenience:

Center Island = 0.1 cent per vehicle mile
Intersections:
Major = 0.1 cent per vehicle
Minor = 0.01 cent per vehicle

Congestion:
Over tolerable capacity = 2 cents per vehicle mile
Over satisfactory capacity = 0.4 cents per vehicle mile

Island Openings = 0.01 cent per vehicle per opening
Shoulders = 0.01 cent per vehicle mile
Parking = 1 cent per vehicle mile
Driveways = 0.5 cents per vehicle mile

Operation Costs:

Reduced Mileage:
Passenger cars = 3 cents per car mile
Trucks = 4 cents per light truck mile
=10 " " med. " "
=20 " " heavy " "
Stops and Starts:
Passenger cars = ¼ cent per car stop
Trucks = ½ cent per truck stop

Steep Grades:
Passenger cars = variable
Trucks = variable

Poor Roads:
Passenger cars = ¼ cent per car mile
Trucks = ½ cent per truck mile

Safety:
Accidents = $ 250
Injuries = 850
Fatalities = 23,000
Miscellaneous = $1,000 per new road mile created

Generated traffic = 4 cents per vehicle mile

15 percent of value of time benefit

2 per cent of value of convenience, operation costs and safety.

Newark Ev'ng News
3/3/58

State Road Plan

NO MAN to make little plans is Dwight R. G. Palmer, New Jersey's highway commissioner. He has unveiled a 17-year master plan providing for the construction of 821 miles of intrastate highways, in addition to the federal interstate freeway program now under way. The cost is estimated at $2,750,000,000, a large sum indeed.

Mr. Palmer undoubtedly anticipated that the release of the plan at this time would cause some to suspect that it is designed to support Gov. Meyner's plea for a cent increase in the gasoline tax.

The suspicion may be well-founded, but to suggest an element of propaganda in Mr. Palmer's timing is not to deny the need for what he is proposing.

The plan is designed to meet the anticipated traffic volumes of 1975 and it would be reckless to suggest that the projections are exaggerated. Estimates of annual increases in traffic on the New Jersey Turnpike and the Garden State Parkway were far below actual experience, and that's pretty much the pattern for New Jersey highways generally.

The demands of the motor age in this corridor state will increase. The highway department anticipates that travel mileage on state roads will almost double by 1975 and that motor vehicle registration will rise nearly 1½ million.

The question about Mr. Palmer's program is not whether it is needed, but whether the people of New Jersey are willing to pay for it. If they're not, they'd better not figure on buying many more cars.

Newark Star Ledger
3/8/58

1975 worries

If New Jersey fails to get a good head-start on the roads it's going to need by 1975, it won't be for lack of a forward-looking highway commissioner.

Dwight Palmer, state highway commissioner, already is worrying about how to solve the traffic problems of 1975. And it looks as if it's none too soon to start worrying.

A mere 17 years from now, Palmer estimates, there will be 1,500,000 more cars, trucks and buses. The traffic mess that will be produced by this extra load on the highways is not hard to visualize—unless there are many miles of new roads.

Palmer wants 821 miles of new expressways. And he wants more than 900 miles of the state highways widened.

Whether this program materializes depends a good deal on how much money is raised to finance road-building. Some will come from the federal government, but much of it will have to be raised by the state.

Palmer's program may seem like a big order. But it looks as if it's going to take a big order if we're going to keep 'em rolling, come 1975.

Herald News
(Passaic) 2/28/58

The 17-Year Highway Program

IT is frustrating to read the plans outlined by State Highway Commissioner Dwight R. G. Palmer for highway construction in New Jersey. The descriptions of the proposed freeways, dualizations, widenings and interstate routes sound wonderful until one reads when they will become available.

The program, Mr. Palmer says, will take 17 years to complete, and this is not certain. It depends on whether the money is made available.

We see a reason for the snail's pace when Mr. Palmer tells about the cost of constructing highways for the interstate system. This system will lace the state with modern super highways from Salem to Suffern and from Jersey City to Phillipsburg. So far, however, a mere 21 miles have been completed. Those 21 miles cost $31,000,000 to build. Another 17 miles have been contracted for. They will cost $22,000,000. These costs are exclusive of the expense of acquiring rights of way and relocating utilities.

Aside from the proposed superhighway linking New York with Trenton, Camden and the Delaware River bridge near Salem, the highways on the program would come in handy today. Seventeen years from now, well, if our population continues to increase and the number of cars and drivers continues to rise, the motorists will find 1975's highways just as inadequate as ours are today.

Bergen Ev'ng Record
2/28/58

At Last The Big Idea In Road Thinking

One pre-eminent fact stands out in the formal announcement of the State's master plan for highway development through 1975: This is the first time in the history of the State that the planning has been big enough and bold enough to cope with the problem.

Commissioner Palmer of the Highway Department says $2.75 billion will be spent on New Jersey roads by 1975. Much of this will be federal funds. The Government will contribute 90 per cent of the cost of 368 miles of interstate freeways. The Government will also underwrite 50 per cent of the cost of building 34 intrastate freeways totaling 453 miles and widening and dualizing another 1,830 miles of existing State roads.

But there remain 205 projects for which no federal funds will be available.

This is highway construction on the grand scale. But, of course, exactly that is what has been lacking—so long that now, when we try to make up for lost time, the cost becomes appalling. Is there any question about the necessity?

New Jersey alone has more than 2 million registered motor vehicles, and by 1975 that number will have been substantially increased. There are some 65 million registered motor vehicles in the United States, and on a holiday evening it seems as if every one of them is trying to use a New Jersey highway. The State is in fact a corridor, and, as the figures on the New Jersey Turnpike show, the big preponderance of vehicles that travel its length come from out of the State. The argument is sometimes advanced that in spending hundreds of millions for freeways we are accommodating transients. But they aren't transients when they're stuck fast in our village square. When we build roads we are also getting them out of our way. If we do not, no one will move. This includes us.

Daring as is Mr. Palmer's concept of New Jersey's future highway needs, two reservations come to mind. The first: Is it really big enough? We have thought so of other plans, then found them totally inadequate the day the road was opened. The second: How do we get to these fine new highways unless more nearly adequate provision is made for the construction and maintenance of our local secondary roads?

SOURCES:

U. S. Bureau of Public Roads

Automotive Safety Foundation

The Review -- Society of Residential Appraisers

Traffic Quarterly

Dun's Review and Modern Industry

Bergen Evening Record

Newark Evening News

Newark Star Ledger

Passaic Herald News

New Jersey State Highway Department
Bureau of Planning and Traffic

New Jersey State Highway Department
Division of Right of Way

NEW JERSEY TURNPIKE AUTHORITY

Bond Indebtedness — December 31, 1962

	Original amount authorized and issued	Acquired and cancelled in prior years	Amount outstanding Dec. 31, 1961	Acquired by Sinking Fund and cancelled during 1962	Amount outstanding Dec. 31, 1962
General revenue bonds:					
Turnpike revenue bonds (1950 issue), 3¼%, maturing January 1, 1985	$220,000,000	19,819,000	200,181,000	3,373,000	196,808,000
Turnpike revenue bonds (1951 issue), 3.20%, maturing January 1, 1986	35,000,000	—	35,000,000	—	35,000,000
	255,000,000	19,819,000	235,181,000	3,373,000	231,808,000
Second series revenue bonds, maturing July 1, 1988:					
Series B, 3⅜ % (1953 issue)	150,000,000	48,266,000	101,734,000	4,754,000	96,980,000
Series B, 3 % (1954 issue)	27,200,000	8,698,000	18,502,000	1,014,000	17,488,000
Series B, 2.80% (1955 issue)	34,000,000	10,761,000	23,239,000	1,274,000	21,965,000
	211,200,000	67,725,000	143,475,000	7,042,000	136,433,000
	$466,200,000	**87,544,000**	**378,656,000**	**10,415,000**	**368,241,000**

Note—To December 31, 1962 bond indebtness totaling $97,959,000 had been retired; $91,141,716 of which had been retired from revenues and $6,817,284 from excess construction funds.

NEW JERSEY HIGHWAY AUTHORITY

STATEMENT OF BOND INDEBTEDNESS

DECEMBER 31, 1962

Bond	Date of Issue	Amount Authorized and Issued	Matured or Acquired by Sinking Fund in Prior Years	Amount Outstanding December 31, 1961	Matured or Acquired by Sinking Fund in 1962	Amount Outstanding December 31, 1962
State-Guaranteed						
Series A	7/1/53	$150,000,000	$1,100,000	$148,900,000	$1,050,000	$147,850,000
Series B	7/1/54	135,000,000	1,200,000	133,800,000	900,000	132,900,000
		285,000,000	2,300,000	282,700,000	1,950,000	280,750,000
General Revenue						
Series C	11/1/54	20,000,000	165,000	19,835,000	135,000	19,700,000
Series D	7/1/56	8,000,000	65,000	7,935,000	60,000	7,875,000
Series E	7/1/56	17,000,000	140,000	16,860,000	115,000	16,745,000
		45,000,000	370,000	44,630,000	310,000	44,320,000
Junior Revenue						
Series One	7/1/62	40,000,000	—	—	—	40,000,000
TOTAL		$370,000,000	$2,670,000	$327,330,000	$2,260,000	$365,070,000
Reference						A

Note: The bonds were issued for the following purposes:

Basic Parkway construction	— Series A - D, inclusive
Thruway Feeder Road construction	— Series E
Extension improvement program in the Essex County section of the Parkway	— Junior Revenue Series One