

TRAFFIC STUDY REPORT

OF THE CITY OF

DOVER, NEW HAMPSHIRE

COMPILED BY THE

CITY PLANNING BOARD

1950

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INDEX

	Page
Introduction	1
Traffic Increase	3
Importance of Retail Traffic	5
Summary and Conclusions	7
Central Avenue Improvements	11
Reduction of Curb Parking Time	12
Parking Outside Metered Zone	12
Prohibition of Left Turns	13
Second Through Way	14
Economic Development in the City	16
Expansion of Business District	17
Increased Property Values	17
Limited Access By-Pass	19
Western Route	19
Eastern Route	20
Parking Facilities	21
The Errand Parker	21
The All-Day Parker	22
The Cliental Parker	22
Off-Street Parking Lots	24
Effects of a By-Pass	28
Local Traffic Compared to Through Traffic	28
Purpose of a By-Pass	29
Cost of the Proposed Program	31

I. INTRODUCTION

History of Dover's Traffic Problem

The ever increasing problem of vehicular traffic congestion which faces the City of Dover today is by no means unique in America. We have, in Dover, a combination of factors which combine to make the traffic situation much more critical than that found in most American cities of comparable size. But the basic problem is not uncommon, particularly in the nation's older cities.

The nub of the problem stems from the fact that Dover's highway system was never designed to accommodate anything close to the present day traffic loads. To state it bluntly, Dover's highway system was never planned at all, and has merely grown spontaneously and haphazardly for a century or more.

Virtually all of Dover's principal streets were laid out at a time when the population of the City was less than 50 per cent of its present size. The street pattern was formed by gradual growth long before the present era of high-speed motor vehicle transportation. The Central Avenue business district was in its formative period in the days when most of Dover's urban shoppers made their visits to the store on foot. In those days the horse and buggy mode of transportation probably held shopping trips into Dover by residents of surrounding towns to an average of once a week or less.

Motorists Are Shoppers

Today, the automobile has moved from the luxury to almost the necessity class, and the American motorist is tied to his automobile. Today, Dover is a city of some 16,000 inhabitants, and is a "functional" city of some 40,000 people. In addition to the population within our own boundaries, Dover now serves as a shopping and business center, and often times a place of employment for more than 20,000 people living in surrounding communities.

To summarize: The street pattern in Dover's retail business section, formed in the days when the City's trading potential included perhaps 8,000 persons traveling on foot or horse drawn, is now being asked to accommodate motor vehicle traffic carrying some 40,000 people.

Tourist Travel

Still another factor stretches the comparison even further, in the days when Dover's street pattern was taking shape, the relatively small number of out-of-state tourists who visited the White Mountain resort areas and the beaches, reached those areas only by train. Today, New Hampshire tourist trade has jumped its seasonal bounds, and - summer, spring, winter and fall - Dover's main arteries handle the swollen traffic caused by the city dwellers en route to resort areas.

Parking Is A Key Factor

Another factor complicating our traffic problem, and a key factor in any attempt to alleviate the congestion, is the problem of parking facilities.

It is perhaps a wry commentary on our street designers and city planners, that parking space was much more available in America in the 19th century than it is today. The term "horse and buggy days" is now used as a derisive phrase to indicate backwardness and ultra-conservatism, yet, studies by the American Automobile Association show that before the advent of the automobile, virtually every city and hamlet in America had a municipal stable where the horses could be "put up" and the buggies stored. When the automobile replaced the horse and buggy, traffic engineers seemed to have been caught by the delusion that a parked automobile would take care of itself. This was probably true in the days when automotive traffic was light, but today excessive parking privileges and abusive use of these privileges threaten to choke the economy of many of our cities.

Traffic Will Continue To Increase

Bad as is Dover's traffic situation today, every indication points to the fact that the situation will become vastly more critical in the years ahead unless some solution to the problem is discovered and carried out. There are two factors which seem certain to increase Dover's traffic appreciably:

(1) Natural growth. With the exception of the war years, there has been a steady increase in the number of motor vehicles each year on the highways of America. The increase in the number of vehicles registered in New Hampshire and in Dover roughly follows the graph of the national increase. During the past three years, the only years for which accurate figures are available, there has been a steady increase in the volume of traffic on Central Avenue. (See Figure 1)

(2) Artificial. As soon as the State of Massachusetts completes the Newburyport Turnpike as a super highway to the state line, connecting with the recently opened seacoast highway, the route passing through Dover will become, by all means, the best and most heavily traveled route between the cities of eastern Massachusetts and most sections of the White Mountains.

Traffic-Business Ratio

For years, any attempt to divert any part of the traffic flow from Central Avenue has met with unyielding opposition from some local merchants. This opposition appears to be based on the theory that there is a direct ratio between the

TRAFFIC INCREASE ON CENTRAL AVENUE

APRIL	1948	1949	1950
Mon	14856	18528	
Tue	15129	15683	
Wed	14914	14466	
Thu	14956	16355	
Fri	16106	17747	19084
Sat	18416	17253	18072
Sun	14783	14348	15447
MAY			
Mon		14413	
Tue	15925	16727	17240
Wed	14836	16185	16679
Thu	15472	16777	17292
Fri	15563	18554	19122
Sat	16927	17877	18423
Sun	12095	14603	15048
JUNE			
Mon		17351	
Tue	16755	16913	18328
Wed	16804	16571	18258
Thu	16583	17494	18982
Fri	17919	19109	20564
Sat	19073	17604	
Sun	14521	14328	

Figures from State Highway Department traffic recorder

(Figure 1)

amount of traffic which passes a merchants door and the size of his business. There is no quarrel with this theory up to a certain point. However, when traffic density has reached the point where it becomes difficult for the potential customer to park his automobile and conveniently transact his business, the economic law of deminishing returns is bound to be effected. This means simply that, from that point on, the ratio is inverted, and should read "the greater the traffic the less the business".

Mercantile Trade Important

Studies by the Planning Board indicate that Dover's economic base is composed of two major factors: Industrial and mercantile. Also indicated is the fact that more than 50 per cent of the market served by Dover merchants is composed of people living outside the corporate limits of the city. Because of its geographical location, surrounded by smaller communities whose trade facilities are limited, Dover is in a good position to expand further its retail marketing asset. However, as noted, the merchant of today is dependent heavily upon the automobile to bring the potential customer to his door.

Make Shopping In Dover Easier

Therefore, it seems logical to deduce that the extent to which Dover can expand its second greatest economic asset--a means of livelihood for many of its citizens--depends largely upon the ability of the city to provide an

easy vehicular access to its mercantile district, and good parking facilities for these vehicles.

While it is the hope of the Planning Board that the adopting of the traffic control program outlined in this report will make motoring through Dover more enjoyable for out-of-state tourists passing through, the Board has been careful to guard against possibilities of improving the traffic conditions for through traffic at the expense of the retail business of the city. To the contrary, a primary objective of this program is to aid and nurture the retail business of the city and encourage the expansion and growth of this vital part of Dover's economy.

II. SUMMARY AND CONCLUSIONS

It has become apparent that Dover cannot continue to demand 1950 service from an 1850 street pattern, particularly when that antiquated street design is called upon to handle local business and shopping traffic, and at the same time serve as an arterial highway for constantly increasing through traffic.

A laissez-faire policy can lead only to such severe congestion that our mercantile district will become stagnant, and business houses will be forced to move outside. They will leave behind a deteriorated business center, marked by a sharp fall in property valuations. Mercantile properties will fall into disrepair because the profit incentive for investment in them will be missing.

Three Needed Developments

A three-step program to permanently cure the city's traffic ills is recommended.

1. Improvement of the traffic flow in the Central Avenue business district, by redesigning two bottleneck squares; use of 41 feet of highway for four lane traffic; reduction in curb parking privileges, to be more than compensated by adequate off-street parking facilities.

2. The opening of a second north-south through way, along a route which roughly follows Chestnut, Walnut and Locust Streets. The project includes the construction of an underpass under the Boston

and Maine railroad tracks at Third Street, and the construction of a bridge across the Cocheco River between Chestnut and Walnut Streets.

3. The construction of a limited access highway to the west of the city, leaving the present route 16 south of Elliott Park and rejoining the main artery at the junction of routes 16 and 16A.

This overall program is designed to increase the business volume potential of the local mercantile economy by making it easier and more convenient for the shopper to drive into Dover and do business; and at the same time, to encourage rather than discourage tourist travel through Dover by making it easy for the tourist to visit the city without delaying his trip unnecessarily.

The application of a formula worked out by the State of Washington Design Standards Committee* indicates that based on the 1949 average traffic load, Central Avenue was bearing traffic 38 per cent beyond the capacity of its design. If proposals one and two are put into effect, it would increase the through street capacity by 300 per cent. Viz: It would provide eight traffic lanes for the traffic now concentrated into two lanes. Even as a practical matter, these proposals should increase traffic capacity by 200 per cent, and this should suffice for further growth and traffic increases during the foreseeable future.

*"Public Works", April, 1950

The third proposal is designed exclusively for that portion of the through traffic which has no reason or desire to stop in Dover. It is more of a state and federal problem than it is a Dover problem. Presumably, such a by-pass facility will be constructed around Dover, as it will around every sizable community in the nation, at some time in the future, and Dover's long range traffic planning should take into account this possibility. Such a by-pass may be constructed sooner than most people realize if Dover insists on maintaining bottlenecks for through travel within the city. However, as a very practical matter, the application of proposals one and two, to eliminate these bottlenecks, should postpone the construction of a by-pass into the distant future, for the simple reason that it would virtually eliminate the need for such a highway at the present time.

It should be understood that the program presented, represents something of a compromise from the ideals of traffic engineering design. Throughout its months of study on the problem, the Planning Board has strived to avoid the possibility of presenting a traffic plan, ideal in theory, but which would be beyond the city's ability to handle financially.

Rather, it has been the intention of the Planning Board to present the best program possible, within the limits of a reasonable budget, without extensive damage to physical properties, and without the loss of intangible economic values.

It is the belief of the Planning Board that the program presented herewith is one which will return to the city more dollars than will be spent to activate the program. This return should come from two sources: (1) An increase in the volume of mercantile business; (2) An increase in tax money from properties where economic values will be substantially bettered.

III. CENTRAL AVENUE IMPROVEMENT

Four Traffic Lanes

Portions of Central Avenue should be re-designed to permit passage of four lanes of traffic between Central Square and the junction of Central Avenue and Chestnut Street. To obtain the necessary width for four traffic lanes, it will be necessary to restrict parking privileges to parallel parking at the curb on both sides of the Avenue between Washington and Second Streets, and between Broadway and Chestnut Street. Such a pattern would also require a slight widening of the street between First and Second Streets. At the narrowest point in the street the additional width required would be not more than 2 feet. This added width may be obtained by cutting back sidewalks at this point. (See Figure 2) Since the institution of parallel parking will make it possible to place parking meter standards much closer to the curb than is possible for angle parking design, it is believed that this sidewalk narrowing will not produce added pedestrian inconvenience.

Width of Traffic Lanes

The street pattern proposed by the program will permit four traffic lanes, each 10 feet wide, one 1 foot center line strip, and 7 foot parking lanes at each curb. These figures are the measurements possible at the narrowest point in the street. Along all sections of the highway, with the exception of the block between First and Second Street, it will be possible to widen these lanes somewhat.

Lanes for Through and Local Traffic

To properly implement this program it will be necessary to line the street between Washington and Second Streets, and between Broadway and Chestnut Street. The two inside lanes should be designated and marked plainly for through traffic. The two outside lanes would then be available for motorists planning to stop in the business district and seek a parking space.

One Hour Curb Parking Limit

Since this proposed change in parking privileges will place a high premium on curb parking space between Central and Franklin Squares, it is recommended that the parking meter regulations be changed, and the legal time limit reduced to 1 hour, for these meters only.

Parking Outside Metered Zone

To prevent abuse of curb parking privileges in the area immediately outside the metered district, it is recommended that a time limit of 2 hours be set for parallel curb parking on Central Avenue from the southern end of the metered curb to Silver Street, and from the northern end of the metered curb to New York Street.

To eliminate an extremely hazardous situation, it is recommended that parking privileges along Silver Street between Central Avenue and Locust Street be limited to parallel parking.

Re-design Central and Franklin Squares

Central Avenue improvement should include the re-designing of the traffic flow in both Central and Franklin Squares, to eliminate the present bottlenecks at these points; properly channel traffic flow through these critical points; and permit proper turning movements into the various streets leading into both these squares.

Prohibition of Left Turns

A four lane traffic design will make it essential that left hand turns be prohibited at Orchard, Waldron, First, Second, Fourth, Fifth, Preble and Pierce Streets, as well as the private right-of-ways within this area. The left turn prohibition should be effective both for cars leaving Central Avenue and entering Central Avenue.

Pedestrian Traffic - Traffic Lights

For the safety and convenience of pedestrian shoppers, the final design of the Central Avenue traffic pattern should include the installation of synchronized traffic signals between Central and Franklin Squares. These signals would also serve to implement and control the flow of vehicular traffic leaving and entering Central Avenue at the intersections.

IV. SECOND THROUGH WAY

As step number two in a traffic improvement program, it is recommended that a second major street be opened up through the city, designed primarily for through traffic, but without any limited access provisions which would restrict its use by local traffic.

Description of Route

The most feasible route, and the one which would appear to give the greatest impetus to the city's economy and in the long run cost the least, is one which would divert south bound traffic from Central Avenue at the point of the present intersection of Chestnut Street. This proposed street would follow the street lines of Chestnut Street virtually its entire length, underpass Third Street and the railroad crossing with an underpass facility stretching roughly between Fifth and Second Streets. (See Figure 3) The proposed highway would swerve slightly to the east below First Street, bridge the Cocheco River to connect with the present Walnut Street, and follow Walnut Street across Washington Street. (See Figure 4) South of the State Theater, the highway would again curve slightly eastward through four pieces of residential property, two barns, and an auto body shop to St. Thomas Street. At this point the highway would curve slightly to the west necessitating the removal of a few feet of the high school lawn, and thence follow the present lines of Locust Street as far as Silver Street.

Alternative Routes

Two alternatives appear feasible to complete the final step of this second through way:

1. Locust Street could be widened to permit the four lane traffic pattern as far as the present intersection of Trakey Street, at this point it would veer east at a curve of approximately 45 degrees, and move in a straight line to some sort of a rotary facility at the present intersection of Central and Stark Avenues.

2. Since the first proposal would require extensive land damage on Locust Street between Silver and Trakey Streets, and since the building setback along this residential street is not sufficient to permit the widening adequate for four lanes of traffic without tremendous esthetic damage, an alternative is suggested. At the intersection of Silver and Locust Streets, it is suggested that Locust Street be made one-way, with south-bound traffic only permitted to the corner of Trakey Street, at this point it would be feasible to permit the south-bound traffic to move along the route suggested in proposal number 1, or make a 90 degree turn to the east and travel along Trakey Street to Central Avenue. Under this arrangement, north-bound traffic would proceed along Central Avenue to the junction of Silver Street, turning west onto Silver Street for one block to the proposed four lane highway on Locust Street.

Rotary at North End

The ideal arrangement for tying together these two through streets at the north end would be a traffic rotary or similar facility to guide the flow of traffic at the triangular plot presently bounded by Central Avenue, Chestnut Street and Sixth Street.

Traffic Lights

Consideration should be given to the installation of traffic control lights at the points marked by the present intersections of Washington and Walnut Streets and Silver and Locust Streets. All other entrances to this proposed highway should be marked by stop signs.

It is recommended that along the entire route of this proposed highway a building set-back line be established to prohibit the construction of buildings within 10 feet of the property lines which will be established. This recommendation is designed:

1. To encourage beautification of the highway.
2. To forestall any possibility that the growth and development of the city and of this area would result in traffic congestion similar to the present situation on Central Avenue.

Economical Development of the City

A major factor in the decision of the Planning Board to recommend the Chestnut Street-Walnut Street route for the construction of a second through way, is the fact that by comparison with all other routes studied it appears to be

the location where the construction of a highway will encourage and assist the orderly growth and development of the city's retail business district.

Logical Expansion of Business District

For some years, a variety of studies by the Planning Board has indicated that the logical place for the expansion of the present business district is in the area immediately to the west of Central Avenue.

At the present time, Dover's retail district is bursting at its bounds. In seeking to expand, it is pushing both to the north and to the south along Central Avenue, the city's only main street, at the present time. As the business area pushes further on each end of Central Avenue, it further prolongs the already elongated one "main stem". The longer this business district strings out, the more uneconomical it becomes for the city to provide the special services required by business districts. Also the longer it becomes, the more uneconomical it becomes as a business site for the merchants and businessmen located within this district.

A more orderly growth to the west of the area would serve to keep the City's mercantile economy within more compact bounds and we feel would increase its potential business volume by making it more convenient for the shopper.

Increased Property Values

Another factor which should be noted in a discussion of the values of the Chestnut-Walnut Street route in the development of the city, is the latent possibility that

such a route would serve to increase property values in the area adjacent to the route. In connection with studies made by the Cole-Layer-Trumble Company, as part of a reappraisal of taxable property in Dover in 1948-49, front footage values shows an enormous difference between present commercial values of land on Central Avenue and land only one block west along the proposed route. According to the Cole-Layer-Trumble formula, frontage values on Central Avenue range from \$400 to \$650 per front foot. A single block to the west along the proposed route, the current values are set at \$15 to \$20 per front foot. The potential for a tremendous increase in property values along the proposed route becomes self-evident.

V. LIMITED ACCESS BY-PASS

The final step in a program to alleviate Dover's traffic congestion should be the construction of a limited access by-pass, or cut-off route connecting with route 16 at the north and south ends of the city. This route should completely circumvent the compact area of the city, and would remove from Dover's in-town streets all through traffic which has no reason or design to stop in Dover.

Since this is a step which is not anticipated in the near future, and actually is not a purely local problem, this report will not attempt to go to any great amount of detail in the discussion of such a route.

Two Possible Routes

A thesis study made in 1949 by two University of New Hampshire students* indicates the feasibility of two such cut-off routes.

1. A route which would leave route 16 a few hundred feet south of Elliott Park and terminate at the present intersection of routes 16 and 16A (the Somersworth and Rochester roads). This route follows the old Dover-Portsmouth railroad tracks for a short distance; crosses Bellamy River south of Sawyer Mills; crosses Back River Road, Durham Road (route 108), Bellamy Road, Knox Marsh Road,

*"A By-Pass Proposal for Dover, New Hampshire"- by John E. Peterson and David R. Pettigrew - June, 1949.

Littleworth Road (route 4); overpasses the Boston and Maine railroad tracks; crosses Washington Street; bridges the Cocheco River; crosses Sixth and Horne Streets before re-entering route 16.

In addition to the bridges over the Bellamy and Cocheco Rivers and the Boston and Maine railroad tracks, this route would require the construction of rotary structures at each end of the route and at the crossings of the Durham Road and Littleworth Road.

2. A possible eastern route leaves route 16 at Tuttle Lane and follows a wide arc to the east of the city; crosses Middle Road, Back Road, the Cocheco River, Atlantic Avenue east of Oak Street; bridges the Boston and Maine railroad tracks in Rollinsford; crosses Broadway in Rollinsford; continues to the east of Garrison Hill; and returns to route 16 at the junction of routes 16 and 16A.

Western Route Recommended

The estimated cost of the two alternatives is virtually the same. The western route is by all means the more practical, since the purpose of such a by-pass is to siphon all possible through traffic onto it. In addition to the route 16 through traffic, the western route would feed on an appreciable volume of traffic coming from routes 108 and 4.

VI. PARKING FACILITIES

Parking A Key Factor

The establishment and maintenance of first-class parking facilities within the commercial area of Dover is one of the most important requirements for any program properly designed to permanently ease the city's traffic congestion. As a matter of fact, the establishment of good parking facilities for a large number of cars must be made a reality before any attempt to improve traffic conditions can hope to be successful.

One of the greatest stimulants that can be administered to a compact mercantile area today is the establishment of adequate parking facilities, sufficient to accommodate the peak shopping and business traffic, located close to the shopping center. There are three distinct types of potential parkers for whom adequate provisions must be made.

1. The Errand Parker

This group includes motorists who wish to stop, usually for only a few minutes, never for more than one hour. This motorist is interested in buying a package of cigarettes, making a deposit at the bank, shopping for a single item, or perhaps keeping a half hour dentist appointment. Usually this person will not park more than a half block from his destination, and his brief stop makes it unattractive to him to pay more than a penny for the privilege. Sufficient curb parking space (metered or free) must

be available for him, close to his destination, otherwise, he is likely to attempt to double park and block moving traffic.

2. The All-Day Parker

This type of a parker is oftentimes employed in the business district. He wants to park for at least half a day at a time, and sometimes all day. This type of parker should be willing to go a few blocks from his destination to make use of an off-street parking facility.

3. The Cliental Parker

The cliental parker is by far the most important of the three categories. It is he who motors into the city to spend a large portion of money received by the merchants and businessmen. He is the customer of the stores, the client of the professional men, the patron of the theaters. The time which he will spend in a single location in the downtown area will vary from less than an hour to all day. Every effort should be made to keep sufficient good parking space open for the cliental parker. This may be accomplished in two ways:

1. A reduction in the legal time limit on the use of metered space at the curb, and the enforcement of this regulation, to permit a greater turnover of premium

curb parking spaces. This allows the cliental parker a better opportunity to use a curb space if his stay is to be brief.

2. The establishment of first-class off-street parking lots, close enough to the business district to be attractive to him, if his stay is to be extended.

Need Both Meters and Off-Street Lots

Although the parking meter is a relatively new gadget in America, it has become an axiom with traffic engineers throughout the country that parking meters must be supplemented by good off-street parking facilities. In fact, there is not a single case on record where a city has been able to term its experience with parking meters an unqualified success, unless metered curb parking has been supplemented by good off-street parking.

Highways Built For Travel - Not Storage

Scarcely anyone will disagree with the theory that a highway is constructed primarily for the movement of vehicular traffic. At the present time, Dover's most heavily traveled street is designed to permit angle parking on both sides. This means simply that almost 50 per cent of this expensive, heavily traveled highway is not being used for its primary purpose, the movement of vehicular traffic, but rather for the storage of automobiles. The experiences of virtually all

American cities show that the municipality can furnish parking space in off-street lots at considerably less expense than is required to maintain curb parking space.*

Parking Lots Must Be Good

Throughout this section of the report, we have stressed the words "first-class" off-street parking lots. The answer to a reduction in excessive curb parking, which is clogging our streets certainly cannot be found through abortive attempts to force parkers into half graded, semi-hidden, poorly lighted lots which do not have adequate entrances and exits. Motorists cannot be driven into these lots. They simply will not use them. Instead, they will take their business elsewhere, where good facilities are available. The term "first-class parking lot" is construed to mean a sizable lot, close to the business area, easily accessible, graded, hard surfaced, lined, well lighted, and policed. Preferrably, these municipal lots should be free, but a large number of American cities have had good experiences with municipal parking lots where a nominal fee is charged.

Another reason which makes the establishment of first-class off-street parking lots in Dover a definite "must", is the fact that the traffic control program presented in this report must, of necessity, recommend the reduction in the number of curb parking spaces available. And curb parking

*"Prohibition of Curb Parking, 1948" - Eno Foundation for Highway Traffic Control - Saugatuck, Connecticut.

space in downtown Dover is already at a premium. In fact, parking space is already at such a premium that no reduction in these parking privileges can be countenanced until adequate off-street parking lots are available.

Potential Off-Street Parking Locations In Dover

The long range traffic control planning in Dover requires the establishment of a minimum of four sizable, convenient parking lots, in or close to the business district.

1. Adjacent to Central Avenue, between the municipal building and the bridge.
2. Adjacent to Central Avenue, between the bridge and the Boston and Maine railroad tracks.
3. Adjacent to the proposed second through way, between Sixth Street and the bridge.
4. Adjacent to the proposed second through way, between the bridge and St. Thomas Street.

Central Square

In the first of these four areas, we recommend no specific location. Partly because we believe the parking facilities in the general vicinity of Central Square are partially taken care of by the patron parking lot of the First National Store, and the private parking lot owned by Harry L. Farnham, and because we are led to believe these two lots may be made more readily available to the public in the near future without expense to the city. However, the further development of the city lot adjacent to the mill property should not be discounted.

Franklin Square

To accommodate parkers in the Central Avenue area north of the bridge, we strongly recommend the development of the large area at the rear of the American House. (See Figure 5) Though we are informed that this land is not available for purchase, we have been given assurance that the owner would be willing to consider a long term lease. At the start of the program, the 12 foot driveway between the Parle store and the Ramble Inn will be sufficient if used as an entrance only. An exit on Portland Avenue is available, and a second exit either on Broadway or St. John Street appears to be feasible. Long range planning should include the purchase of the land occupied by the Ramble Inn to make a 43 foot entrance, with the establishment of a bus stand on a portion of the lot as a possibility. The owner has assured us he is willing to demolish the 50-foot one-story shed extending from the rear of the American House without compensation. The other building on the lot, an 80 by 60 foot storehouse, is currently leased to M. J. Murphy and Sons, and will be more expensive to demolish.

Lots On Proposed Route

However, the demolition of these two buildings, the opening of proper entrances and exits, and the improvement of the lot would make this area an almost ideal off-street parking location.

In relation to the proposed second through way, the planning should include the designation of areas for off-street parking on both sides of the proposed bridge. On the north side of the bridge, the most likely spot seems to be between First Street and the river, to the east of the proposed route. The designation of a parking lot site on the south side of the river will depend on a final determination of land, building and economic values in the area adjacent to the route.

VII. EFFECTS OF A BY-PASS ON DOVER TRAFFIC AND ECONOMY

Local Traffic Compared With Through Traffic

On both the origin and destination check, and the trip purpose survey, taken by the State Highway Department in July, 1949, the percentage of through traffic compared with total traffic is 23.6 per cent.

In the origin and destination check made at 8 stations located on the main arteries leading into Dover, a total of 20,316 cars were interviewed. Of this number, 15,509 (76.4 per cent) were classified as local, while 4,807 (23.6 per cent) were classified as through traffic.

Of the 4,807 cars listed as through traffic 567 (11.8 per cent of the through traffic and 2.8 per cent of the total traffic) made an intermediate stop, while 4,240 cars (88.2 per cent of the through traffic and 20.8 per cent of the total traffic) made no stop in the city.

Purpose Of Stop In Dover

Of this 567 who stopped, 264 stopped for business or social calls, medical or dental treatment, school, to serve a passenger, stay overnight, or change mode of travel. It seems safe to assume that they would continue to come into Dover even if a by-pass were available.

232 cars said they stopped for shopping or to eat a meal. Let us assume that 25 per cent, or 58, of these motorists were familiar with the city and would enter despite the by-pass.

The above figures indicate that 322 cars (60 per cent) of this through traffic which made a stop, would still stop in Dover, despite a by-pass, while 245 cars (40 per cent) of this travel would avoid the city.

Purpose Of A By-Pass

A perfect by-pass facility would be one which would screen out of the downtown area all traffic which did not intend to stop in the city for any reason, and encourage motorists who might do some business in the city to enter the business area. Obviously, such an ideal can never be completely realized.

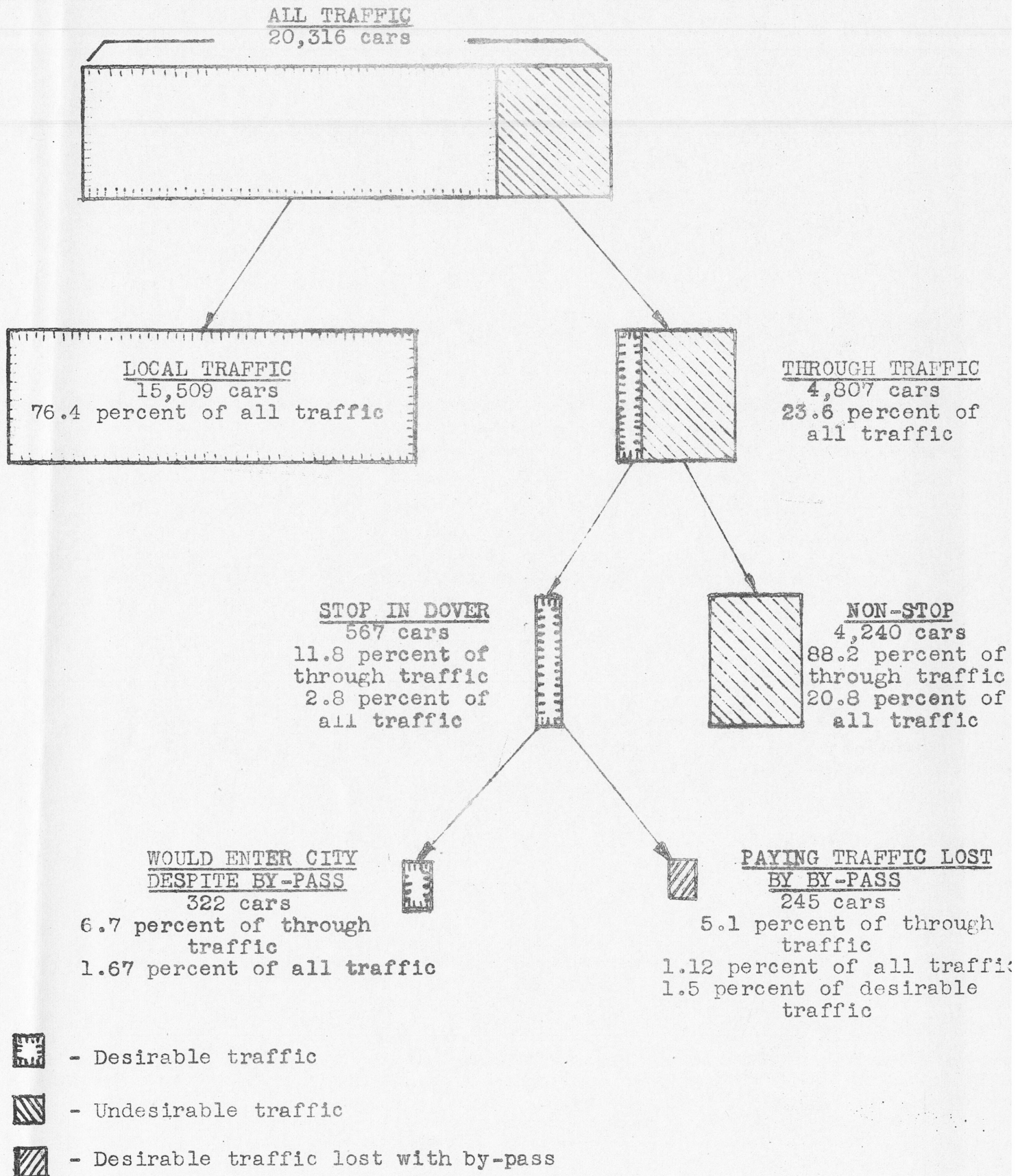
A perfect by-pass, then would remove 20.8 per cent of the total traffic from the bottleneck sections and permit freer access to the business district for the other 79.2 per cent, which includes local traffic and all through cars making a stop.

In actual practice it would appear that a by-pass would siphon off about 22 per cent of the traffic.

This includes today's non-stop through traffic and about 40 per cent of the through traffic which now stops; or (1.1 per cent of the total traffic).

This 40 per cent of valuable through traffic which would be lost is actually 1.5 per cent of the potential business traffic now moving on Central Avenue.

(See Figure 6)



(Figure 6)

Reduce Through Traffic - Increase Shoppers

The advisability of a by-pass, therefore, resolves itself into a consideration of whether or not the loss of 1.5 per cent of worthwhile traffic on Central Avenue would be disastrous to local merchants, and whether or not the removal of 22 per cent of all traffic would make the local business establishments more easily accessible to paying traffic and thereby more than make up for this loss of potential business.

Every traffic engineer consulted by the Planning Board believes that in the long run, Dover's retail business would be increased rather than reduced by the diversion of non-stop traffic from Dover.

The experiences of the vast majority of American cities that have been by-passed by main traffic arteries show that the volume of retail business in the city is not adversely effected.

This proposal, based upon the assumption of a by-pass which would avoid the compact section of the city, is not to be confused with the proposal for a second through way. It is believed that the amount of desirable traffic diverted from Dover's business area by a second through way would be much less than that siphoned off by a by-pass.

It appears certain that the almost negligible amount of tourist trade which Central Avenue merchants could conceivably loose by the construction of a second through way would be compensated many times over by additional trade from within the Dover regional market area.

VIII. COST OF THE PROPOSED PROGRAM

It must be understood that the tentative estimated cost figures on the proposed highway construction and improvements, submitted herewith, are based only upon the roughest sort of preliminary surveys and estimates. Most of the figures listed come from engineers of the State Highway Department. Any attempt to estimate these costs accurately will require detailed engineering surveys of every phase of the program. However, since we have been assured, particularly in the instances where figures come from the State Highway Department, that the estimates are high enough to cover any eventuality, it seems safe to use the figures as the ceiling costs on the projects.

Central Avenue Improvement

Improvement of highway, including re-surfacing the pavement through the business area and re-design of both Central and Franklin Squares		110,000
Federal Aid Urban money	55,000	
City Share	55,000	
Off-Street Parking lot development		
American House Lot	30,000	
City Lot adjacent to Mill	10,000	<u>40,000</u>
Total cost of Project 1		150,000
City of Dover share		95,000

Proposed Through Way

Stage 1--Central Ave. to First St. (including railroad underpass)	800,000
Stage 2--First St. to Washington St. (including bridge)	<u>450,000</u>
Total cost of Stage 1 and 2	1,250,000

Federal Grade Crossing Elimination money	600,000
Federal Urban Aid	350,000
City of Dover share	<u>300,000</u>
	1,250,000

Stage 3--Washington St. to Central Ave.	150,000
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Federal Urban Aid	75,000
City of Dover share	<u>75,000</u>
	150,000

Total cost of Project 2	1,400,000
City of Dover share	375,000

By-Pass (western route)

Structures (bridges & traffic rotaries)	725,000
Right of Way	63,000
Construction of highway (3.75 miles)	<u>487,000</u>
Total cost	1,275,000

APPENDIX A

STATE OF NEW HAMPSHIRE

Highway Department

Concord

C
O
P
Y

June 27, 1950

DOVER URBAN

Robert L. Price
City Hall
Dover, New Hampshire

Dear Sir:

We have made some preliminary estimates on the Chestnut Street and Central Avenue railroad highway separations. At this time personnel is not available to make detailed estimates so the following figures are approximate only.

The Central Avenue project is estimated in excess of one million dollars and in view of the large amount of property involved the City's share would approach half a million dollars. We understood the City does not favor this alternative because of the effect on business and business properties in the area. The Chestnut Street improvement could be accomplished in two stages, the first from Central Avenue to First Street and the second from First Street to Washington Street. It is felt that the first stage would be only partially effective because of the First Street connection to Central Avenue.

The first stage has been estimated at approximately eight hundred thousand dollars. The division of funds is estimated as four hundred thousand, railway-highway funds, one hundred and fifty thousand, Federal Urban funds and two hundred and fifty thousand, City of Dover funds.

The second stage would cost approximately four hundred and fifty thousand dollars and this would be divided, two hundred thousand Federal Urban funds and two hundred and fifty thousand City of Dover funds.

If the whole improvement from Central Avenue to Washington Street was made one project, as you suggested, the State would make another year's allotment of 100% railway-highway funds available to the project. This would amount to approximately two hundred thousand dollars and the probable division of funds would be, six hundred thousand 100% railway-highway funds, three hundred and fifty thousand Federal Urban funds and three hundred thousand City of Dover funds.

The status of Federal Urban funds is such that they might lapse and revert to the Federal Treasury. Because of this and the fact that it takes a great amount of time to complete the plans for a project of this type we must know by September 1st if the City wishes to proceed with the project and will definitely make funds available for their share. State funds are not available for any portion of the work as it is within the compact portion of the City.

Very truly yours

(signed)

Frank D. Merrill
Commissioner

FDM:mc