ANNUAL

REPORT

110

1953

TRAFFIC ENGINEERING DEPARTMENT

CITY OF PROVIDENCE

CITY OF PROVIDENCE • RHODE ISLAND • Walter H. Reynolds • Mayor

TRAFFIC ENGINEERING DEPARTMENT

Roger T. Chandler
Acting Traffic Engineer

147 Fountain Street, Providence 3, R. I.

February 10, 1954

The Honorable Walter H. Reynolds
Mayor of Providence
The Honorable City Council
City Hall
Providence, Rhode Island

Gentlemen:

Submitted herewith is the Annual Report of your Traffic Engineering Department for 1953.

The report reviews the activities of this department with respect to physical improvements made in the street system, changes made in the downtown traffic pattern, additions made to the traffic signal system, and progress made toward providing additional off-street parking. The report also reviews the organization of the department and summarizes the expenditures made by the department.

With your continued support, the program of this department will be directed toward making the best use of the existing street system and toward planning new major traffic facilities.

Respectfully submitted,

Roger T. Chandler

Roger T. Chandler
Acting Traffic Engineer

RTC:EM

IN CITY COUNCIL
FEB 18 1954
READ
ORDERED THAT
THE REPORT BE RECEIVED.
D. Everett Whelan
CLERK

C O N T E N T S

CITY OF PROVIDENCE
Traffic Engineering Department
147 Fountain Street

Part I

The Growing Traffic Problem in Brief

1953 was a record breaking year for traffic!

State motor vehicle registrations increased 5% during 1953, to a new record of 296,226 registrations.

Motor fuel purchases in the State increased 6% during 1953, to a new record of 189,985,417 gallons.

Vehicle miles traveled in the State increased an estimated 6% during 1953.

The number of vehicles entering and leaving the Providence central business district increased approximately 4% to a new high of 131,000 vehicles per day.

With this increase in the number of vehicles and the increase in vehicle usage, it is no wonder that the street system is becoming filled beyond practical operating capacity. As vehicle usage continues to increase year after year, the only lasting relief will be found in the immediate construction of new major traffic facilities such as the Roberts Expressway and the proposed North-South Freeway.

Vehicle Registration

	State	Providence
1947	212,000	54,000
1948	225,000	56,000
1949	235,000	58,000
1950	254,400	64,000
1951	260,000	68,000
1952	282,000	70,000
1953	296,226	71,000
1954 est.	310,000	72,000

Population

	State	Providence
1900	425,000	180,000
1910	525,000	210,000
1920	625,000	245,000
1930	680,000	254,000
1940	740,000	254,000
1950	795,000	248,000
1960 est.	820,000	245,000
1970 est.	830,000	240,000

Average Daily Traffic Volumes

	On Point Street Bridge	On Washington Bridge	Entering and Leaving Central Business District
1947	36,800		118,100
1948	34,200		122,800
1949	37,500		124,500
1950	40,500		125,100
1951	42,000	37,658	125,500
1952	43,000	35,845	126,200
1953	41,600	35,296	131,000

Motor Fuel Purchased

1930	86,606,713 gallons
1945	101,449,998 gallons
1948	144,933,544 gallons
1950	161,565,784 gallons
1951	166,720,891 gallons
1952	179,129,083 gallons
1953	189,985,417 gallons

Part II

Traffic Engineering Department Organization

The importance of maintaining a good transportation system in the city and state cannot be emphasized too strongly. The economic life of the city and state is directly affected by the quality of the overall transportation system serving the area. It was in recognition of this fact that the establishment of a Traffic Engineering Department was authorized by the City Council Ordinance in October, 1948. The department was activated on March 1, 1949, with the appointment of a Traffic Engineer, the reassignment of other personnel, and use of a separate budget.

General Organization

The Traffic Engineer is appointed by and reports directly to the Mayor. The Traffic Engineering Advisory Committee is composed of members of the official City family, and is available for consulting guidance. The members include:

Mayor Walter H. Reynolds, Chairman
John J. Cashman, Finance Director
William E. McCabe, City Solicitor
John A. Murphy, Chief of Police
Charles F. McElroy, Director of Public Works
Angelo Aiello, Chairman of City Council's Committee of Public Works
Frank H. Malley, Director, City Plan Commission
Peter J. Hicks, Jr., Public Service Engineer

The department is organized into two divisions under the Assistant Traffic Engineer, Roger T. Chandler. The Division of Traffic Planning and Design under Edwin F. Colby is responsible for making all surveys and studies necessary to produce plans for any traffic improvement. The Division of Traffic Control Devices under Robert L. Jaffe is responsible for the installation and maintenance of all traffic control devices in the City.

The Organization Chart indicates the personnel and functional assignments. In July, 1953, the Traffic Engineer, Dwight T. Myers, was granted a year's leave of absence to become the Deputy Commissioner of Traffic in New York City.

Cooperation with Other Departments in City Government

It is essential to the efficient operation of the transportation system in the city that close cooperation be continued between all the departments of city government having some responsibility in developing and maintaining the transportation system. The other departments most concerned are the Police, Public Works, City Plan Commission, and the Redevelopment Agency.

Civic and Business Organizations

It is the function of this department to work closely with many business and civic organizations in operating the transportation system. Organizations such as the United Transit Company, the Chamber of Commerce, the Retail Board of Trade, the Rhode Island Truck Owners Association, the Automobile Club of Rhode Island are only a few of the many groups with which the department has repeated contact. Other groups such as the various businessmen's organizations are contacted frequently when they have a specific problem to discuss or the department wants to acquaint them with various proposals under consideration. This phase of the department's activity is important in expanding sound public relations among the various users of the transportation system.

Radio and television appearances have also been made to extend to the general public as far as possible, all available information concerning the plans and proposals of the department.

Budget

The accompanying breakdown indicates the manner in which the money appropriated for this department's use has been spent.

Budget 1952-1953

	Original Appropriation	Additional Appropriation	Spent	Returned to General Fund
0	$112,461.89	$ 722.82	$110,953.72	$2,230.99
I	26,700.00	3,305.00	29,390.00	615.00
II	32,900.00	3,195.00	36,023.59	71.41
V	3,680.00	10,775.00	14,362.00	93.00
	$175,741.89	$17,997.82	$190,729.31	$3,010.40

Breakdown of Operating Budget

Item 0 - Salaries $110,953.72

Item I - Services Other Than Personal

Automatic Signal Company (rental)	$ 7,500.00
Narragansett Electric Company	16,500.00
Other Items	5,390.00
	$29,390.00

Item II - Materials and Supplies

Maintenance Materials of Office and Shop	$ 3,500.00
Repair Parts for Traffic Control Equipment	2,300.00
Materials for Sign Construction and Erection	8,500.00
Street Painting Materials	16,300.00
Other Items	5,423.59
	$36,023.59

Item V - Plant Equipment

Service Body on Signal Truck	748.00
Paint Shaker	318.50
Trafficounter	306.20
Spray Booth, Compressor, and Attachments	1,049.91
Parking Meters	11,125.00
Other Items	814.39
	$14,362.00

The total amount spent during the past fiscal years:

1949 - 1950	$197,892.94
1950 - 1951	$256,929.83
1951 - 1952	$199,033.32
1952 - 1953	$190,729.31

Signal Installation Loan

Of the $400,000 bond authorized by the voters in November, 1950, $172,935.36 has been spent as of December, 1952. A total of $96,562.01 has been spent during 1953, leaving $130,502.63 for further traffic signal work.

Part III

Activities for 1953

"Making the best use of the existing streets" continues to be the basic philosophy governing the activities of this department. Although a major facility is being planned in the North-South Freeway, the basic transportation system will continue to be the existing street system. Therefore, everything that can be done to reduce the accident toll, expedite traffic flow, provide for safe pedestrian movements, and maintenance of all control devices has been the goal for 1953. During the year the following have been the major activities of this department.

1. Traffic Construction Program

This phase of activity is comprised of those construction projects which were planned by Department personnel. The major emphasis was centered on completing the third and final stage of recommendations contained in the Smith-Dibble "Traffic-Transit Integration Plan."

A. Smith-Dibble Traffic-Transit Integration Plan

In brief, the report recommended changes in one-way streets, some rerouting of transit as a result of the one-way changes, installation of more traffic signals at specific locations, the addition of stop signs at certain intersections, modification of certain parking regulations, and "special treatment" at twenty major intersections throughout the City.

The outstanding one-way changes recommended involved Richmond, Chestnut, Weybosset, Washington, Dorrance, Canal, North Main, and Francis Streets. All of these changes have been accomplished with the exception of Dorrance and Francis Streets. These were not changed because of the redesign of Exchange Place.

All the modifications in transit routings which were necessitated by the change in design in Exchange Place have been completed.

Now that Washington and Weybosset Streets have been made one way, work can proceed with the further signalization of several downtown intersections. Of the forty new signal locations recommended in the report, fifteen have been installed, and others are scheduled for construction in 1954.

Additional stop signs have been installed at many points throughout the City. In most instances the signs have been placed so as to establish more "through streets." Many new parking regulations have been added; and still more will be added, as the need for them becomes apparent.

With the completion of the changes on Washington and Weybosset Streets, all the major recommendations included in the Smith-Dibble report have been adopted.

B. Harris Avenue-Eagle Street Extension to Roberts Expressway

During the final construction stages of the Roberts Expressway, plans were drawn up for the extension of the Expressway by a major redesign of the intersection of Harris Avenue, Eagle Street, and Atwells Avenue. The new intersection was opened early in 1953, and has proved to be a valuable asset in the smooth operation of traffic in the Atwells Avenue-Eagle Street section.

C. Widening of Burnside Square

The Burnside Square-Point Street Bridge area has continued to be one of the critical traffic-handling areas in the City. In an effort to provide some relief in Burnside Square before the construction of the North-South Freeway begins, a section of the medial island on

George M. Cohan Boulevard was paved, and a corner cutback was made at the junction of Bridge and South Main Streets. Both of these changes, although minor in nature, have proved to be very beneficial in expediting the heavy volumes of traffic through the Burnside Square intersection.

D. Exchange Place

Due to the possibility that the Railroad station might be relocated, it was felt that any large expenditures in the Exchange Place area would be unwise at this time. The Smith-Dibble report had recommended a channelization and signalization plan for the entire Mall which involved a considerable expenditure. Although the channelization that has been constructed is a greatly modified version, it has simplified movements through the Mall, and permitted the complete resignalization and coordination of traffic movements, including for the first time all pedestrian movements.

A new system of bus handling was instituted on Francis Street, which eliminated the necessity for the Smith Hill busses to travel around the Mall. The resulting improvement separates the Smith Hill busses from all other traffic, substantially decreasing the bus turnaround time, and increasing the efficiency of operation of the entire area.

E. Weybosset-Richmond, North Main-Matilda, Mathewson-Weybosset, Huntington-Union, Hartford-Killingly

At each of the above intersections some channelization and/or curb cutbacks were made to facilitate turning movements and to make the control of the movements through the intersections more orderly.

Project	Approximate Land Cost	Approximate Construction Cost
Harris-Eagle-Atwells	$40,000.00	$104,167.00
Burnside Square	None	1,500.00
Exchange Place	None	5,000.00
Weybosset and Richmond	None	300.00
North Main and Matilda	None	500.00
Mathewson and Weybosset	None	200.00
Huntington and Union	None	500.00
Hartford and Killingly	None	300.00
	$40,000.00	$112,467.00

2. Street Painting

During the past year 3,586 gallons of reflectorized paint were used in marking 83.5 miles of pavement on 99 different streets and 532 different crosswalk locations. This is an increase of 15 miles of streets painted during 1953. Approximately half the work was done at night to avoid traffic congestion and tracking of wet paint.

3. Traffic Signs

As in the past several years, all traffic signs used throughout the City were manufactured in the Department sign shop. The tabulation of signs fabricated is as follows:

Reflectorized on wood blanks	674	
steel blanks	121	
		795
Painted on wood blanks	2676	
plastic blanks	500	
steel blanks	608	
masonite blanks	462	
		4246
Total		5041

Work done by sign installation and maintenance crews is tabulated below:

	1953	1952
Signs installed	4925	4809
Damaged or missing signs replaced	2970	1075
Steel sign posts installed	1069	1498
Movable standards placed	82	100
Parking meter posts set or replaced	170	166

4. Traffic Signals

A. New Construction

During the past year the traffic signal system has been expanded by means of City contracts financed by part of the $400,000 bond issue voted in 1950. The following new locations were completed or put under contract during 1953: Hope and Doyle, Brook and Angell, Waterman and Brook, Richmond and Weybosset, Prospect and Waterman, Exchange Place and Washington Row, Hartford and Killingly, Huntington and Union.

The following locations were old signal installations in need of rebuilding: Exchange Place and Exchange Street, Exchange Place and Exchange Terrace, Exchange Place and Dorrance-Fulton, Exchange Place and Washington-Francis, North Main and Matilda, Point and Plain, Prairie and Public.

Summary of Traffic Signals Operating in Providence as of December, 1953

Intersection controlled by	
Vehicle actuated equipment	
City owned	44
Leased from Automatic Signal Company	11
	55
Fixed time equipment	82
Total signalized intersections	137

B. Routine Maintenance

Maintenance of a traffic signal system involves not only the work that can be done during the normal working day but also the trouble calls reported during non-working hours. Routine maintenance involves such things as changing lamps, cleaning lenses and reflectors, rebuilding vehicle detector foundations, servicing controllers, painting the equipment, and repairing any faulty equipment. During the year 709 trouble calls were answered of which 306 were taken by the trouble man outside of normal working hours. Trouble calls are reported by the Police, other members of the Traffic Engineering Department, and interested citizens. The more common type of trouble calls are listed below:

Mechanical or electrical trouble	246
Lamps burned out	200
No trouble found	111
Damage to equipment	87
Shorted cable and blown fuses	17

5. Complaints and Requests

The number of complaints and requests processed during the year was 24% more than in 1952 with 625 complaints being handled in 1953.

The following summary indicates the type of requests received and the final action given to these requests:

Parking problems		311
Loading zones		111
Intersection control	- 5)	
Stop control	- 81)	
Yield control	- 14)	127
Traffic signals	- 27)	
One way streets		6
Miscellaneous		70
		625

Requests granted	38%)	
Granted with alternate action	6%)	44%
Requests not granted		43%
Action pending		9%
Closed due to temporary nature		4%
		100%

6. Off-Street Parking

Definite progress was made toward building an off-street parking garage. A decision has been made to build the first garage on the block bounded by Pine, Page, Friendship, and Garnet Streets. The architect has been hired to draw construction plans to be submitted to the City Council for approval. After Council approval of the plans, the land can be acquired and construction will begin.

Attempts were made during 1953 to provide a major parking facility on part of the railroad freight yard. The negotiations for the use of this land became involved in original land ownership as well as North-South Freeway requirements and the East Side Railroad tunnel use. Because of these complications, it was not possible to arrive at any agreement whereby the City could open a parking lot capable of accommodating about 900 cars.

It has been announced by one commercial parking lot operator that two new parking lots will be opened in the central business district as soon as the buildings can be torn down. It is encouraging to note that additional off-street space is going to be available through private and public efforts after so many disappointments in recent years.

7. Parking Meters

New meter installations were completed during the year to bring the total to 1774 as compared to 1659 in 1952. In addition to these new installations, the remaining old-type meters were completely converted to new model meters.

A constant effort has been made to keep the maintenance at a high level so that mechanical trouble will be detected and repaired before causing the public any inconvenience. The net revenue from the meters has continued to increase. This is partly due to the increase in the number of meters but also due to the reduction of certain lime limits from one hour to thirty minutes.

Year	Net Revenue	Number of Meters in Service
1937	$ 21,639.16	----
1938	52,425.54	----
1939	61,750.30	----
1947	41,245.20	----
1948	125,055.92	----
1949	111,656.02	----
1950	110,799.77	1121
1951	132,384.14	1621
1952	158,345.64	1659
1953	179,344.83	1774

8. Changes in Traffic Regulations

Every change in traffic regulations is covered by an official letter which serves as a work order within the department and as official notification to other governmental departments and news agencies. A total of 484 traffic regulation changes were made in 1953 as compared to 567 regulations the previous year. The following is a summary of these regulations.

	Established	Rescinded
Parking Prohibited in Designated Places	77	19
No Parking to Corner	59	5
No Parking to Corner 7 A.M. to 6 P.M.	2	
No Parking Between Signs	18	13
No Parking 7 A.M. to 4 P.M. or similar time limits	16	10
30 Minute Parking 8 A.M. to 6 P.M./or 4 P.M.	6	1
One Hour Parking 8 A.M. to 6 P.M. or similar time limits	31	12
Two Hour Parking 8 A.M. to 6 P.M./or 4:30 P.M.	21	
Three Hour Parking 8 A.M. to 6 P.M.	3	
No Standing Any Time	1	
No Standing 4 P.M. to 6 P.M. or similar time limits	14	12
No Stopping Standing to Corner	5	1
Left Turn Only	1	
Angle Parking	1	

	Established	Rescinded
Traffic Signal Control	14	
Stop Control	41	11
Yield Control	4	2
One Way Streets	10	4
Bus Stops	20	2
Loading Zones	23	17
Taxi Stands	5	3
Totals	372	112

9. Extension of Parking Prohibitions

Parking was prohibited at all times at 77 new locations as compared to 65 the previous year. The need for such restrictions becomes more and more apparent as the traffic volumes continue to increase. Although this approach is negative as far as the parking problem is concerned, it is, nevertheless, essential in order to keep the traffic moving as freely as possible.

As long as street widths remain constant and traffic volumes increase, the trend must be to eliminate the parked vehicles in order to give preference to traffic that desires to move.

10. One-Way Streets

Ten one-way streets were established during 1953 upon recommendation of the Traffic Engineer and approval by the City Council. Most of these changes took place within the central business district and constituted a major part of the Traffic Engineering program. They are as follows:

1. Crout Street, southerly, from Atwells Avenue to West Exchange Street.
2. Bough Street, southerly, from Westminster Street to Dike Street.
3. Harris Avenue, northeasterly, from Atwells Avenue to Sims Avenue.
4. Crimea Street, northerly, from Chalkstone Avenue to Douglas Avenue.
5. Union Street, southeasterly, from Fountain Street to Weybosset Street.
6. Mathewson Street, northwesterly, from Weybosset Street to Fountain Street.
7. East Approach, southerly, from Exchange Terrace to Exchange Place.
8. West Approach, southerly, from Exchange Terrace to Dorrance Street.
9. Washington Street, westerly, from Dorrance Street to Empire Street.
10. Weybosset Street, easterly, from Empire Street to Dorrance Street.

11. School Protection Program

Continued emphasis has been centered on school-protection activities. The project of prohibiting parking along school frontages has been continued to eliminate the possibility of child injuries and to expedite the loading and unloading of children from vehicles. Considerable time was spent in making available special map material for the school department safety coordinator for his use in improving school safety.

12. Traffic Activities Inventory

As a result of participation in the National Safety Council Annual Traffic Activities Inventory, Providence received the following recognitions in the 200-300 thousand population group:

a. First place for the lowest fatality rate in 1952—awarded by the Association of Safety Council Executives.

b. First place for outstanding performance in Traffic Engineering for the second consecutive year--awarded by the Institute of Traffic Engineering.

c. Second place for the over-all highway safety program.

d. Second place for Pedestrian Protection Program—awarded by the American Automobile Association.

13. Freeway Planning

As the planning of the first sections of the North-South Freeway has progressed, it has been an important phase of the department's activity to cooperate with all other agencies involved in the planning so that the best possible facility can be constructed at the earliest date.

14. Roberts Expressway

The average daily volume using the Roberts Expressway has increased significantly since the completion of Harris-Eagle-Atwells Avenue. The

volume using certain sections of the Expressway now exceed the volume which was originally estimated would use those sections in 1975! This accelerated use is particularly evident on the Harris Avenue-Huntington Avenue sections. The volume on Huntington Avenue has reached the point where a major extension to the Roberts Expressway is necessary to handle adequately the traffic which desires to flow through the area.

15. Traffic Accident Analysis

The following tabulation shows the source of all accident reports collected by this department:

	1951	1952	1953
Providence Police Department	5148	5711	5718
United Transit Company	958	952	590
R. I. Department of Motor Vehicles	446	519	1408
Yellow Cab Company	127	156	153
	6679	7338	7869

These figures indicate an increase of 7.5% in the number of reported accidents. As a result of these accidents, there were 11 fatalities, 1773 personal injuries, and 6096 property damage accidents.

The cost of the accidents to the citizens of Providence is illustrated by the average accident costs based on national averages furnished by the National Safety Council.

	Fatalities @$11,500 each	Persons Injured @$425 each	Property Damage Accidents @$125 each	Total Cost
1950	15	1693	4395	$1,441,400
1951	12	1392	5287	$1,390,475
1952	8	1517	5821	$1,608,975
1953	11	1773	6096	$1,642,025

Even though Providence has been fortunate in sustaining only a few fatalities, the large number of persons injured and the number of property-

damage accidents make it exceedingly important that the activities of all public, private, and civic groups concerned with engineering, education, and enforcement be continued with increasing effort toward reducing the accident toll.

16. Traffic Counting Program

To determine the quantity of traffic movements throughout the City, an accelerated program of traffic counting was begun in 1952 and expanded during 1953. Through use of recording-type counters, counts are obtained which give complete information on the amount of traffic at each counter. Repeated counting of all major arteries is necessary to keep informed on traffic growth.

17. Other Activities

Some of the other projects worked on during the year included 1. continued emphasis on providing modern bus stops, 2. design and erection of special color coded numbered route signs, 3. work on a committee of the State Traffic Commission for the preparation of a Uniform Manual of Traffic Control Devices for the State of Rhode Island, 4. preparation of a paper on "Sign Erection and Maintenance Techniques" which was presented at the annual meeting of the Institute of Traffic Engineers.

Part IV

Planned Program of Traffic Activities for 1954

1. General Objective

The main objective for 1954 will continue to be one of operating the existing transportation system as efficiently as possible. This includes the maintenance of all existing traffic control devices as well as the installation of new devices and the establishment of new regulations. It will be equally important to work with all cognizant agencies of government and citizen groups in planning and bringing about construction of modern traffic facilities, such as freeways, at the earliest possible time.

2. Traffic Construction Program

In 1954 traffic construction program will consist primarily of a number of curb line changes at a minimum expense to make possible a smoother flow of traffic at particular locations.

3. Traffic Signal Construction Program

A major effort will be made during 1954 to signalize several of the important intersections in the downtown area. The locations selected will be those which will provide the greatest benefit toward providing coordinated traffic movement, reduction of accident potential, control of pedestrian crossing, and the release of police personnel for general enforcement work in the central business district.

4. Off-Street Parking

It will be the duty of this department to assist in every way possible to expedite the construction of the first municipal off-street parking garage. This department, in cooperation with other City departments, will

continue the appraisal of the parking needs of the downtown area so that a coordinated program of development can be formulated.

5. Modern Bus Stops

In conjunction with the General Objective stated above, one of the most important regulation changes is the provision of modern bus stops. During 1954 it is expected that considerable progress can be made toward installing modern bus stops on many of the most heavily traveled arteries.