

Warren E. Robinson

1-2-59

REPORT

To The

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT

On

A PUBLIC TRANSIT PLAN

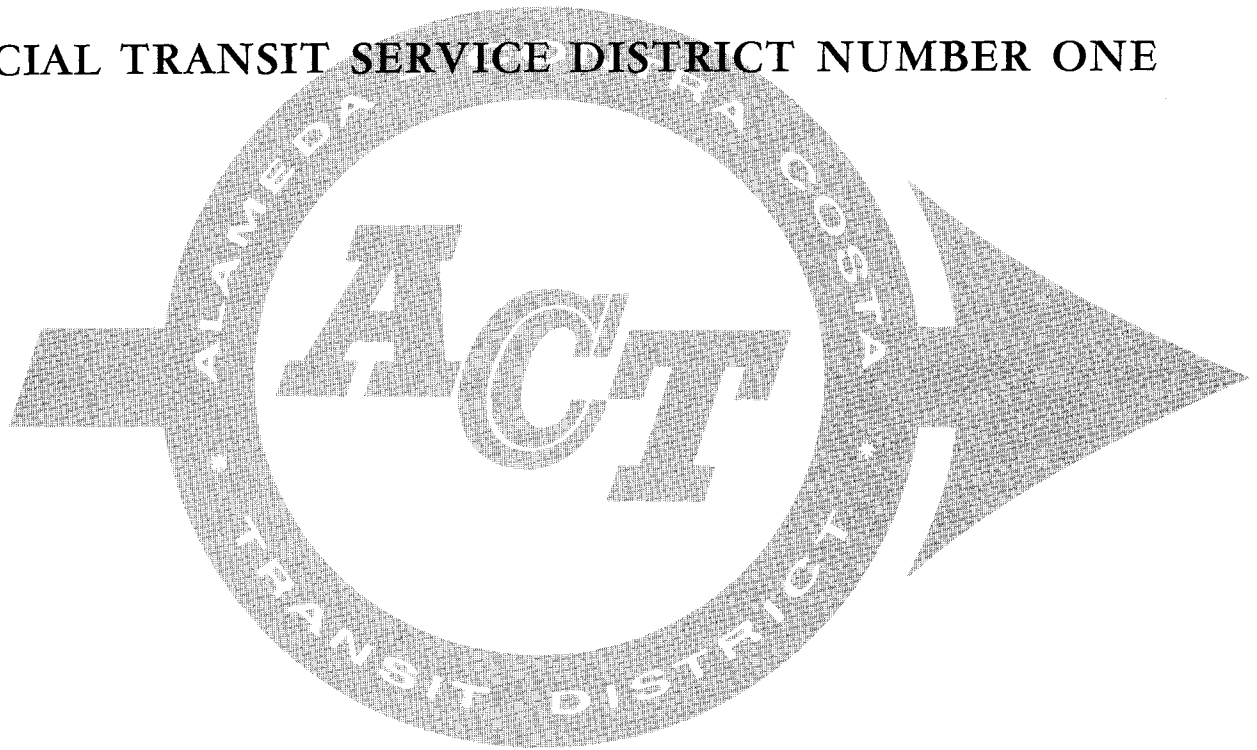
For

SPECIAL TRANSIT SERVICE DISTRICT NUMBER ONE

AUGUST 1959

DE LEUW, CATHER & COMPANY • ENGINEERS • SAN FRANCISCO

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ENGINEERS
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August 31, 1959

To the Board of Directors
Alameda-Contra Costa Transit District
Oakland, California

Gentlemen:

We are pleased to submit herewith our report and recommendations for an efficient transit system adequate to serve Special Transit Service District Number One. In this report we recommend the purchase of a substantial number of new diesel buses as well as those portions of the equipment and plant used in the existing privately owned system which would be useful in the new public transit operation. This plan provides for the purchase or lease of used equipment. It is, we believe, a logical program for establishing the public operation.

The entire program will require the issuance and sale of general obligation bonds totaling \$16,500,000. Estimates of operating revenues and expenses for the first five years indicate that operating income will be sufficient to pay interest and amortization charges on the proposed bond issue and leave net income sufficient to provide for replacement of all physical property owned or operated by the district at the expiration of the useful life of each component.

Based on present levels of prices, wages, and fares, our studies show that the proposed transit system will be self-supporting, and that the financing of all capital requirements can be accomplished without

the imposition of any additional taxes. It is also our belief that increasing patronage will generate additional revenue, sufficient to maintain the sound financial base of the transit system for an appreciable time with the present fare structure.

We wish to express our appreciation for the wholehearted and effective cooperation of the many individuals and agencies who have contributed to our studies. The engineering and planning staffs of the municipalities within the Special District have rendered valuable advice. The counsel of members of your Board, your General Manager, and staff, has been most sincerely appreciated.

Respectfully submitted,

DE LEUW, CATHER & COMPANY

A handwritten signature in dark ink, appearing to read 'Charles E. De Leuw', with a long, sweeping horizontal stroke extending to the right.

Charles E. De Leuw

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I. THE PRESENT SITUATION

Citizens of the two counties voted to establish the Transit District in November, 1956, and elected their first Board of Directors. This Board was provided with the necessary funds for preliminary organization, engineering, and legal expenses through a modest tax levied for the Fiscal Year beginning July 1, 1957.

Subsequently, our firm was authorized to prepare a report on a public transit plan for the Alameda-Contra Costa Transit District, which was submitted on August 27, 1958. That report summarized several engineering and operating studies; estimated the transportation needs of the area; presented a plan for an initial transportation system as well as an estimate of the operating and financial results; and finally, indicated the pattern of long-range transportation developments in the area.

A \$16,900,000 bond issue to finance the proposed transit plan narrowly missed receiving the necessary two-thirds majority during last November's general election. The bond issue received only a 40 per cent favorable vote in Central Contra Costa County as compared to more than 60 per cent favorable in Alameda County. These results indicate that the majority of residents in Alameda County favor an improved transit service operated by a public district.

Amendments to the Transit District Law were approved by the State Legislature on March 30, 1959 (Chapter 116, Statutes 1959) and made effective by signature of the Governor on April 10, 1959. These changes, among other things, provided for issuance of general obligation and/or revenue bonds upon approval by the majority of voters in a special operating zone as set up by the District within the boundaries of the District itself. The bill further liberalizes provisions of steps necessary for annexation to or withdrawal of specific areas in the District.

On April 28, 1959, the Board of Directors of the Alameda-Contra Costa Transit District established the boundaries of Special Transit Service District Number One, including Kensington and El Cerrito in Contra Costa County and all of Alameda County from Albany southward to the southern limits of Hayward, except for an unsettled area near the Upper San Leandro Reservoir. The boundaries of the Special District, as well as those of the Alameda-Contra Costa Transit District, are shown on Plate 1.

On June 18, 1959, we were authorized by the District to review our report of August 1958, and to effect such modifications as were required to provide for public operation of improved transit service within

and to Special Transit Service District Number One. This report presents a physical and operating plan together with estimates of capital outlay and annual financial results during the initial period of public operation.

The 1958 report included in some detail a description of the growth of the area; transit patronage; population projections; history of transit development; traffic and service surveys; and also existing facilities, rolling stock, shops and terminals of the Key System.

FARES

At the present time, the East Bay area is divided into four zones for purposes of fare collection, as shown on Plate 2. The one-way fares between zones are shown, in cents, below:

	<u>1st Zone</u> <u>(Central)</u>		<u>2nd Zone</u> <u>(North)</u>		<u>2nd Zone</u> <u>(South)</u>		<u>3rd Zone</u> <u>(South)</u>	
	<u>Token</u> <u>Fare</u>	<u>Cash</u> <u>Fare</u>	<u>Token</u> <u>Fare</u>	<u>Cash</u> <u>Fare</u>	<u>Token</u> <u>Fare</u>	<u>Cash</u> <u>Fare</u>	<u>Token</u> <u>Fare</u>	<u>Cash</u> <u>Fare</u>
1st Zone (Central	20	25	30	35	30	35	35	40
2nd Zone (North)	30	35	20	25	35	40	48	53
2nd Zone (South)	30	35	35	40	20	25	30	35
3rd Zone (South)	35	40	48	53	30	35	20	25

School childrens' fare between all zones is 10 cents when attending school, otherwise above adult fares apply.

Key System transbay fares to San Francisco are now 43 cents per ride from the first zone for users of commute books, or 50 cents for the casual rider not using a commute book. Higher fares apply for rides beyond the first zone as follows:

From the second zone 50.5 cents per ride and from the third zone 58 cents per ride, for commute book users. For riders

who do not use a commute book the fares are 60 cents per ride from the second zone, and 70 cents per ride from the third zone, with a roundtrip fare of 62.5 cents per ride. Special rates for children apply from all zones, 20 cents per ride from the first zone, and 25 cents per ride from the second and third zones.

TROLLEY COACH OPERATION

At the request of the District we submitted on May 26, 1959, a report on the feasibility of operating trolley coaches on certain lines of the transit system proposed for the District. The report covered a study of the feasibility of using trolley coaches along 16 lines, covering approximately 120 street miles. These are the heavier lines best suited for this type of operation. A comparison of the annual costs of operation and the capital investment required for the above lines with trolley coaches as opposed to diesel motor coaches was made, together with an analysis of the advantages of each type of equipment.

A comparison of the capital investment required to put the 16 coach lines included in this study in operation, utilizing trolley coaches or diesel motor coaches, based on the proposed purchase of used equipment, is shown in the table on the following page:

Item	<u>Trolley Coaches</u>	<u>Diesel Motor Coaches</u>	<u>Trolley Coaches Additional Cost</u>
205 Used Coaches @ \$3, 000	\$ 615, 000	\$ 615, 000	--
Maintenance and Storage Yard	1, 400, 000	1, 400, 000	--
Adaption of Yard for Trolley Coaches	200, 000	--	\$ 200, 000
Shop Equipment and Spare Parts	200, 000	200, 000	--
Overhead System (Including O/H Feeders)	7, 650, 000	--	7, 650, 000
Substations	<u>1, 820, 000</u>	<u>--</u>	<u>1, 820, 000</u>
Subtotals	\$11, 885, 000	\$2, 215, 000	\$ 9, 670, 000
Administrative, Engineering and Legal Expenses	965, 000	150, 000	815, 000
Contingencies	<u>965, 000</u>	<u>150, 000</u>	<u>815, 000</u>
Totals	\$13, 815, 000	\$2, 515, 000	\$11, 300, 000

Our studies indicated that there is no economy in the operation of trolley coaches within the Alameda-Contra Costa Transit District. On the other hand, the additional cost required to operate the 16 lines with trolley coaches as opposed to diesel motor coaches was estimated at over one million dollars during the initial year, as summarized below:

Operating Expenses	\$ 208, 000
Fixed Charges including Amortization on \$11, 300, 000, 3-1/2%, 25-year Bond Issue	686, 000
Depreciation	<u>200, 000</u>
Total	\$1, 094, 000

The principal advantage of trolley coaches is their complete freedom from exhaust odors. Their operation is also much quieter than that of the modern diesel buses. There are a number of inherent disadvantages, however, including the unattractive overhead wiring necessary to this operation; limited flexibility; lack of availability for service to special events; and perhaps most important of all, the large capital outlay in provision of the overhead system and substations.

Diesel motor coaches, with their advanced improvements in recent years, offer the passenger comfortable seats, air-ride suspension, improved combustion, pleasing color arrangements, modern lighting, and increased acceleration. The new diesel coaches are equipped with automatic transmission, power steering and two wide doors for speedy loading and unloading, with performance quite comparable to that of the electric trolley coach.

Diesel equipment has, moreover, substantial advantages in flexibility - so necessary in an area where extensions and modifications in routing are frequently required. This type of equipment can be used to provide express and local service on the same thoroughfare, and can also be utilized for service to special events and for rerouting in case of emergency.

Based on the findings summarized above, our report of May 26, 1959, recommended that no additional consideration be given to the operation of trolley coaches in the Alameda-Contra Costa Transit District. At this time, we reaffirm that recommendation.

II. RECOMMENDED PLAN FOR INITIAL PUBLIC TRANSIT OPERATION

The main consideration in the development of a plan for public operation of transit in the East Bay area is the need for additional and improved transit service best calculated to serve the needs of the public and to develop patronage comparable to that enjoyed in highly developed operations in other centers.

The program recommended includes purchase at the outset, of 296 new, modern diesel buses sufficient to provide the all-day base operations as well as a portion of the added rush hour service. Acquisition by purchase or lease, of 276 used serviceable diesel buses required to build up the service during the rush periods, is also recommended. The utilization of used buses for peak service, representing one or two trips per day, conforms to sound operating policies in effect on transit operations throughout the country.

Several extensions of service with minor adjustments of routes are planned in the central service area, and improvement in frequency on many routes is contemplated. Long-needed new service will be provided by the inauguration of several new local bus routes.

New express bus service, so clearly indicated for the long, narrow strip between El Cerrito and Hayward which contains the bulk of the East Bay's residential, commercial and industrial activities, will be provided by five high-speed express bus routes. In addition, operation on the existing East 14th Street express bus route will be improved.

MODIFICATION TO EXISTING ROUTES

We have found that the existing pattern of routes provides reasonably adequate coverage of the built-up areas requiring public transportation. We recommend, therefore, that public operations be inaugurated largely on the basis of the present routes and termini. Certain modifications are indicated, however, to improve efficiency, add to convenience and to properly supplement the proposed express bus routes on the following lines:

- Line F Berkeley - Euclid
- Line F Berkeley - Spruce
- Line H El Cerrito - Arlington
- Line L Albany - El Cerrito - Richmond
- Lines 7 and 75 Arlington - Euclid - Grizzly Peak
- Line 11 Oakland Avenue
- Line 12 Army Base - Grand Avenue - West 14th Street

Line 18 Park Boulevard - Lakeshore Avenue
Line 51-A Alameda - Berkeley
Line 59 Montclair
Line 65 Dwight Way
Lines 74 and 73-A Ashby - San Pablo
Line 79 Bay Farm Island - High Street

The total overall network, modified as recommended, is shown on Plate 2 and the detailed description of the recommended modifications appears in Appendix 2.

NEW EXPRESS BUS ROUTES

Possibly the most important single measure that can be undertaken by the Transit District to improve the service offered to the bus rider and to attract new riders to the system, is to inaugurate express bus routes for travel within the East Bay. These lines would operate on the freeways and on selected major thoroughfares. Express bus operation has enjoyed marked success in Atlanta, Chicago, Cleveland, Dallas, Detroit, Los Angeles, Pittsburgh, St. Louis, San Francisco and numerous other American cities.

Five entirely new express bus lines are recommended, as follows:

Line 1 Berkeley - Oakland Express
Line 2 MacArthur Boulevard Express
Line 3 El Cerrito - Albany - Berkeley - Oakland
Express
Line 4 Oakland - San Leandro - Hayward Express
Line 5 Oakland - San Lorenzo - Hayward - Decoto
Express

The practicability of these operations was established by analyses of present motor vehicle traffic flows between the focal centers proposed to be served. These are the major mass movements which produce congestion during rush periods on existing thoroughfares. The highway traffic data between origins and destinations throughout the area involved were analyzed to determine the probable use of the proposed new facilities.

These studies indicated that all-day express bus operation on Line 1 and Line 2 will be warranted. On Line 3, Line 4, and Line 5,

express bus service during the rush periods will be practicable and there is a reasonable probability that express service will be warranted during the entire day. It is recommended, therefore, that Lines 1 and 2 be inaugurated on a permanent basis and that Lines 3, 4 and 5 be established as an all-day operation on a trial basis. The detailed description of the proposed express bus services appears in Appendix 1, and the proposed routes are shown on Plate 2.

NEW LOCAL SERVICE

There are extensive residential areas throughout the district which now have limited coverage with dependable local bus transit lines. Thousands of people live in these areas where satisfactory local transit service does not exist. We recommend the inauguration of new lines in these areas as follows:

Hayward Area

Line 101	San Lorenzo Village
Line 102	Palma Ceia Plaza
Line 103	Schafer Park
Line 104	Tennyson Road

Alameda-Bay Farm Island

Line 107	Alameda - Bay Farm Island
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El Cerrito

Line 109	Fairmount - Colusa - San Pablo - Barrett
----------	--

Montclair

Line 110	Montclair - Snake Road
----------	------------------------

Certain street improvements are necessary to enable a bus to safely negotiate the steep grades and sharp turns on this route. Therefore, we do not recommend that the bus line be inaugurated until the street improvements have been completed.

New service recommended for these areas is shown on Plate 2 and detailed descriptions of the several lines will be found in Appendix 2.

IMPROVED FREQUENCY OF SERVICE

The frequency of service on a number of lines as now operated is below the standards considered suitable for transit service in a metropolitan center. We, therefore, recommend decreased headways during the off-peak periods on a number of the local lines and transbay lines as shown in the tabulation below. Through the increase in nominal week-day service mentioned above, a minimum half-hour service will be operated between all cities during the midday period.

Recommended Improved Frequency of Service

	<u>Midday Headway (Minutes)</u>		<u>Evening Headway (Minutes)</u>	
	<u>Present</u>	<u>Proposed</u>	<u>Present</u>	<u>Proposed</u>
<u>Local Lines</u>				
11	-	-	45	30
14	-	-	40	30
17	40	20	-	-
39	40	30	-	-
46	45	30	-	-
53	30	20	30	20
54	-	-	45	20
59/76	-	-	60	30
64	25	20	-	-
79	30	20	45	30
<u>Transbay Lines</u>				
C	45	30	-	-
E	45	30	-	-
K	45	30	-	-
L	35	30	-	-
O	45	30	60	30
R	45	30	60	30
T	45	30	-	-

PROPERTY TO BE ACQUIRED

Bus Equipment

The following tabulation indicates that a total of 572 buses will be

required for the recommended new system and shows the proposed allocation to rush hour and midday service.

Number of Buses Required For:

	<u>Rush Hour Service</u>			<u>Midday Service</u>		
	<u>36</u>	<u>51</u>		<u>36</u>	<u>51</u>	
	<u>Seats</u>	<u>Seats*</u>	<u>Total</u>	<u>Seats</u>	<u>Seats*</u>	<u>Total</u>
Existing Transbay Lines	--	204	204	--	42	42
Existing Local Lines	40	233	273	29	140	169
New Express Lines	--	37	37	--	23	23
New Local Lines	6	--	6	6	--	6
Subtotal	46	474	520	35	205	240
Plus Spares	4	48	52	3	21	24
Total	50	522	572	38	226	264

* Includes a small number of 45 and 48 seat units.

The midday service throughout the entire system, requiring 264 units, will be equipped with new, modern buses. For building up rush hour service, 308 additional diesel units are needed, consisting of 276 used and 32 new units.

The planned acquisition of new and used equipment at the outset of operations would be the most logical program for establishing the orderly change from private to public operation. The possibility of leasing the required 276 used diesel buses, should also be investigated by the District. Any attempt to provide all new buses for the initial operation would result in a heavy and unnecessary financial burden. The used buses would be replaced by new units under a planned renewal program beginning with the third year of operations and completed a few years thereafter. The net income which will accrue to the district from year to year will be sufficient to finance this renewal program.

The new buses will be of two types - the conventional transit type for local service, with two doors for speedy loading and unloading, seating arrangement of the conventional type, and aisles having the liberal width required to meet heavy loading requirements and the interurban type buses with single doors, high-back and wide seats all facing forward, luggage racks, reading lights, and other modern

conveniences. Many improvements have been made in bus design in recent years such as air-ride suspension, improved combustion, pleasing color schemes, more comfortable seats, modern lighting, and increased acceleration. The new equipment to be provided will include all of these and other features required to provide the utmost in operating economy and passenger convenience. A photograph of a modern bus of the transit type proposed is shown on Plate 3.

We recommend air-conditioning for all new buses purchased for assignment to interurban and express lines serving southern Alameda County. The exact type of air conditioning equipment to be selected should be subject to subsequent study by the District, with particular attention to climatic requirements, weight, and cost.

Division Bus Terminals

All three of the Key System bus terminals are so located and equipped as to provide for the efficient operation of most of the local, express, and transbay bus lines. We recommend the acquisition of the three division bus terminals together with all of the shop equipment except those units utilized in the maintenance and repair of gasoline buses. Major repairs would be carried on in the Emeryville Shop, as at present.

We also recommend the acquisition of a small tract and the installation of equipment required to fuel, clean, and make running repairs for approximately 30 buses in Hayward. This new facility would be utilized for night storage of buses used in that area. Provision of the new terminal is necessary to the efficient operation of the expanded services.

DEVELOPMENT DURING FIRST FIVE YEARS

In addition to the initial improvement and expansion of transit services recommended in this report, there will be refinements in the new services which will be found beneficial during the first five years of public operation. During the course of our studies we have received proposals and suggestions from various cities, communities and organizations regarding improvements in transit in different areas. We have considered carefully all such suggestions and have incorporated most of them in this report. A few proposals, however, related to improvements which were for various reasons considered impracticable for inclusion at this time. Such additional improvements in convenience to

the public and refinements in service should be developed by the staff of the District, which will carry on continuous research on the ways and means of improving efficiency and providing additional convenience.

Off-Street Terminals

Off-street transit terminals have been found desirable at key locations in a number of metropolitan centers. These add to the convenience for patrons traveling to and from the central business district of the communities served, since they provide shelter, seats, parcel lockers, rest rooms and facilities for purchase of newspapers, soft drinks, and other items. Detailed studies should be made in the early years for suitable locations in downtown Oakland and Berkeley and properties acquired or leases made for such terminals. The locations should be near the heart of the central business districts at points somewhat beyond their centers, to provide service through the central areas for the heavier lines. Additional bus stop shelters, similar to the one shown on Plate 4, should be provided throughout the District.

In addition, an analysis of the location of certain future freeways and the requirements for future express bus service indicates the probable need for centralized transit transfer facilities in other locations. Specifically, important transfer movements will occur on Telegraph Avenue near 51st Street, on Grand Avenue at Lakeshore Boulevard, on San Pablo Avenue near 40th and at numerous locations in the suburban areas.

Transit Parking Lots

All-day parking storage space for park-and-ride patrons has been found to be greatly desirable in metropolitan areas provided with rapid transit service. These not only add to the convenience of the patrons but also stimulate public transit traffic. There will be opportunities for the purchase and operation of such parking facilities at strategic points in the East Bay area served by the new express bus runs. Plans for these added conveniences should also be developed by staff research during the first five years of operation by the District.

III. FINANCING

CAPITAL OUTLAY

The equipment and plant recommended for the initial operations would be provided through the purchase of a substantial number of new, modern diesel buses, the construction of a new division terminal in Hayward, the acquisition of used diesel buses, and the purchase of land, buildings, and equipment at the three existing Key System terminals. Capital for this outlay will be raised through the issuance of general obligation bonds covering the entire cost, which is estimated as follows:

Purchase of 296 new buses	\$ 8,000,000
Acquisition of 276 used diesel buses	2,800,000
Purchase of land, buildings, and equipment owned by Key System and its affiliated companies	3,800,000
New bus maintenance and storage terminal at Hayward, and contingencies incidental to acquisition of equipment *	<u>1,900,000</u>
TOTAL	\$16,500,000

* Includes interest for one year during the period of acquisition, construction and completion of the transit system.

It is recommended that a \$16,500,000 bond issue be considered. We have assumed that \$12,000,000 in bonds with a maximum 25-year maturity would be sold in the initial year. The remainder of the bonds with a 24-year maximum maturity would be sold in the second year.

REVENUES

Estimates of annual revenues were based on the experience of the Key System Transit Lines and on the present fare schedule, with the exception of the local fare for children under 12 years of age, which has been reduced to 10 cents throughout the system, regardless of zones. These estimates agree very closely with data included in exhibits submitted

last year by both Key System and the engineering staff of the California Public Utility Commission in connection with the fare increase hearings. Additional revenue from the proposed new local and express lines at the outset was estimated, conservatively at 25 cents per bus mile. The annual revenues during the initial year of operation as thus estimated amount to \$10,613,000.

The additional mileage, the improved convenience resulting from reduced travel times and a modernized bus fleet, the increase in seat-mileage and the growth of population will produce, according to our judgment, an increase of 3 per cent in revenue traffic during the second year of operation and during each consecutive year of the five-year period covered in this report.

EXPENSES

Estimates of annual operating expenses were based largely on an analysis of the financial statements of the present operator, and include the recent wage agreement. We have eliminated the principal items of expense which would be non-recurring under public ownership, aggregating in excess of some \$840,000 in 1957, the last year for which detailed figures are available. They include:

Vehicle license fees	\$100,000
Real estate and personal property taxes	130,000
City franchise taxes, corporation franchise taxes, etc.	185,000
Federal fuel taxes and excise taxes	85,000
Federal income taxes	340,000
Certain corporate and legal expenses	(Not estimated)
TOTAL	\$840,000

State fuel taxes and employee benefits taxes which will have to be paid by the District were included. The following table shows the annual expenses during the initial year of operation for all of the District services and the transbay services as recommended - a total of approximately 19,700,000 bus miles:

Estimate of Annual Operating Expenses

Equipment Maintenance and Garage	\$1,552,000
Transportation	5,665,000
Station	67,000
Traffic Solicitation and Advertising	60,000
Insurance and Safety	761,000
Administrative and General	754,000
Operating Taxes	464,000
Total Operating Expenses	\$9,323,000

To provide for such service increases as may be induced by an anticipated rise in patronage we have estimated that operating expenses will increase by 2 per cent during the second year of operation and during each consecutive year of the five-year period covered in this report.

SUMMARY OF ESTIMATES OF ANNUAL RESULTS

The foregoing summary of estimates of annual operating revenues and expenses was utilized in estimating operating income. Fixed charges on the entire \$16,500,000 bond issue, consisting of interest and amortization at 4 per cent, on a level debt service basis, have been deducted to arrive at the estimated net income shown. We recommend that a substantial portion of the net income which will become available annually be used to establish a renewal reserve fund. Such amounts, when compounded at 4 per cent per annum, could provide the sums required for the replacement or renewal of all physical property owned and operated by the District at the expiration of the useful life of each component. Replacement of the used diesel buses will start during the third year of operation and be completed within a few years. A weighted average life of fifteen years for new diesel buses, forty years for all buildings and structures, and twenty years for shop and office equipment was assumed.

The estimated results during the initial year may be summarized as follows:

Operating Revenues	\$10,613,000
Operating Expenses	<u>9,323,000</u>
Operating Income	\$ 1,290,000
Interest and amortization on \$12,000,000, 4%, 25-year bond issue (On a level debt service basis)	<u>768,000</u>
Net Income	\$ 522,000 *

The estimated average annual results during the first five years of operation are summarized below:

Operating Revenues	\$11,269,000
Operating Expenses	<u>9,704,000</u>
Operating Income	\$ 1,565,000
Interest and amortization on \$16,500,000 bond issue at 4% (On a level debt service basis)	<u>1,004,000</u>
Net Income	\$ 561,000 *

* Available for an equipment renewal reserve.

Based on present levels of prices, wages, and fares, our studies show that the proposed transit system will be self-supporting, and that the financing of all capital requirements can be accomplished without the imposition of any additional taxes. It is also our belief that increasing patronage will generate additional revenue, sufficient to maintain the sound financial base of the transit system for an appreciable time with the present fare structure.

Future increases in operating expenses, of course, could reduce the net income from that estimated above. It would be presumptuous to attempt to guarantee that the present fare structure can be maintained for all time. Should inflationary trends experienced during the post-war

period continue indefinitely, it is obvious that all of the estimated net income might disappear and the District would then be faced with a policy decision as between moderate tax levies, increases in fares, or cutbacks in service.

IV. CONCLUSION

Marked improvements in convenience will result from the purchase of 296 new, modern diesel buses which will incorporate all of the improvements which have been developed in the past year or two. All of the off-peak service and the majority of the rush hour service will be rendered by the new buses so that the 276 used diesel buses will be used only during the rush hour. Recommended use of annual net income for the creation of a renewal reserve fund will permit the replacement of all of these used units within a few years.

The better financial position of a public agency as compared to private ownership will substantially aid in providing for those improvements. The new operation will be entirely free from federal and a number of other taxes. Other items of operating expenses which will be non-recurring under public ownership will include regulatory commission expenses, management and other fees paid to affiliated companies and similar items.

The increased flexibility of operation and the provision of entirely new local service in populous outlying areas within the District will be important improvements in transit operations. Thousands of people in the outlying areas of the District will, for the first time, have access to dependable local public transportation.

One of the major difficulties in the present operation, revealed by our surveys, was the fact that present operating schedules favor transbay service as compared to service to the centers of Oakland, Berkeley, Richmond, San Leandro, and Hayward. Substantial reductions in travel time through the operation of five express bus lines will develop from the recommended operations. Improvements in travel time on typical trips within the District are shown in the tabulation on the following page:

REDUCTIONS IN TRAVEL TIME RESULTING FROM RECOMMENDED EXPRESS BUS OPERATION

Between	And	Present Time via Key System Lines* (Minutes)	Time Using Proposed Express Buses* (Minutes)	Time Saving (Minutes)
Albany (Solano & San Pablo)	Shattuck & University - Berkeley	12	8	4
	14th & Broadway - Oakland	34	26	8
	14th Ave. & MacArthur - Oakland	53	38	15
	East 14th and High - Oakland	50	36	14
	East 14th and Estudillo - San Leandro	65	49	16
	"B" St. & Mission - Hayward	82	61	21
Berkeley (Univ. & Shattuck)	14th and Broadway - Oakland	28	18	10
	14th and MacArthur - Oakland	47	30	17
	East 14th and High - Oakland	44	28	16
	East 14th & Estudillo - San Leandro	63	41	22
	"B" St. & Mission - Hayward	76	53	23
Oakland (14th & Broadway)	14th Ave. & MacArthur - Oakland	19	12	7
	East 14th & Estudillo - San Leandro	35	23	12
	"B" St. & Mission - Hayward	48	35	13

* Waiting and transfer time not included.

LONG RANGE TRANSIT PLANS

Any plans for long range transit development in Alameda and Contra Costa Counties necessarily involve consideration of the separate functions of the San Francisco Bay Area Rapid Transit District and the Alameda-Contra Costa Transit District. Plans for efficient transit service within individual communities and integrated areas would remain the function of local jurisdictions - in this case, the Alameda-Contra Costa Transit District.

The San Francisco Bay Area Rapid Transit District has the responsibility for financing, constructing, and operating rail rapid transit throughout the entire metropolitan area. Such rapid transit development was initially considered as a high speed operation connecting the principal cities, with but little, if any, local service. The economic justification of the large capital outlay involved in rail rapid transit limited to the provision of interurban service should be the subject of serious consideration of both Districts. It is logical to expect that the greatest benefits to the East Bay area, as well as to the entire metropolitan region, would result from a rail rapid transit plan which serves urban as well as interurban needs.

The District covers an extensive area and its transit system must serve the intra-district needs of its residents, who will number an estimated two and a quarter million persons by the year 1980. This large metropolitan East Bay community will, therefore, require, in addition to purely local service, express bus or rail rapid transit service to tie together its more important focal centers such as the Concord-Walnut Creek area on the east; Richmond and San Pablo on the north; Hayward and San Leandro on the south; and downtown Oakland and Berkeley in the center.

Since the Key System now operates most of the transbay buses between the East Bay and San Francisco, the District must logically assume the obligation of continuing this essential transbay service. This service must be maintained during the six to seven year or, perhaps, longer period required for the Bay Area Rapid Transit District to plan, finance, construct and place in operation an improved transbay connection. Eventually, however, the District may be relieved of this responsibility so as to limit its functions entirely to the problem of adequate transit within Alameda and Contra Costa Counties.

The pattern of the transit service recommended for operation during the initial year within the District conforms to any logical plan for rapid transit which may be developed. As such plans take definite form, there undoubtedly would be a number of minor modifications of the local services to provide for the efficient and convenient interchange of passengers between local lines at rapid transit stations. Thus, no part of the equipment purchased with the capital recommended in this report would be duplicated or wasted when the Bay Area Rapid Transit District would start its operation.

The rapidly growing network of freeways in both Alameda and Contra Costa counties will offer opportunities for the inauguration of additional express bus service. The freeway network within the two counties now totals some 125 miles, with another 90 miles planned for future construction. The interchanges on most of these freeways will be located at logical transfer points between local and freeway express bus lines in most instances. The majority of the interchanges are of the diamond type, which permits an express bus to take an exit ramp to the street surface, make a stop at street grade, and then return to the freeway via an entrance ramp on the far side of the surface stop. Utilization of those interchanges for such stops should be inaugurated in developed areas as new freeways are constructed, thus extending the benefits of rapid transit service throughout wide areas. Such attractive express bus operations would also serve to reduce freeway traffic volumes during rush periods to workable proportions.

APPENDICES

APPENDIX 1

DESCRIPTION OF RECOMMENDED EXPRESS BUS LINES

The most serious deficiency in the bus service presently offered within the East Bay area is the almost complete lack of any reasonably fast service for the rider who must make a long trip. For this reason, we recommend the immediate inauguration of express bus service, operating over freeways wherever feasible, to provide the closest approach to a genuine rapid transit service possible at the present time. The several lines that we recommend for initial operation are illustrated on Plate 2.

Line #1 Berkeley-Oakland Express

This line will operate from Solano Avenue and The Alameda in Berkeley along the old Key System right of way and tunnel* to:

<u>Southbound</u>	<u>Northbound</u>
Sutter Street	Clay Street
Henry Street	11th Street
Shattuck Place	Broadway
Shattuck Avenue	Telegraph Avenue
Adeline Street	West Grand Avenue
Grove Street	Grove Street
West Grand Avenue	Adeline Street
Telegraph Avenue	Shattuck Avenue
Broadway	Shattuck Place
10th Street to Clay Street in downtown Oakland	Henry Street
	Sutter Street to the point of beginning

* When tracks are removed and roadbed and tunnel are paved.

The line will have a local zone at each end, where every local stop will be made for passengers; and an express zone in the middle, where only a few stops will be made for passengers.

The local zone at the north end will extend from The Alameda and Solano Avenue to Shattuck Street and University Avenue.

APPENDIX 1 - Continued

The express zone will extend from Shattuck Street and University Avenue in Berkeley to Telegraph Avenue and 20th Street in Oakland.

The local zone at the south end will extend from Telegraph Avenue and 20th Street to 10th and Clay Streets.

Stops for passengers are proposed at the following intersections:

The Alameda and Solano Avenue terminal
Hopkins Street and Sutter Street
Shattuck Place and Rose Street
Shattuck Avenue and Vine Street
Shattuck Avenue and Cedar Street
Shattuck Avenue and Virginia Street
Shattuck Avenue and Delaware Street
Shattuck Avenue and University Avenue
Shattuck Avenue and Kittredge Street
Shattuck Avenue and Dwight Way
Shattuck Avenue and Ward Street
Adeline Street and Ashby Avenue
Adeline, Grove, and Alcatraz Streets
Grove Street and 55th Street
Grove Street and MacArthur Boulevard
Grove Street and West Grand Avenue
Telegraph Avenue and 20th Street
Telegraph Avenue and 18th Street
Telegraph Avenue and 15th Street
Broadway and 13th Street
Broadway and 12th Street
Broadway and 10th Street
10th Street and Washington Street
10th Street and Clay Street

Running time between Shattuck Street and University Avenue in Berkeley and 14th Street and Broadway in Oakland is estimated at 18 ^{19 1/2} 20 minutes. This compares with from 28 to 32 minutes on the present local lines.

TEST RVN

APPENDIX 1 - Continued

Line #2 MacArthur Boulevard Express

This line will operate between MacArthur Boulevard and 73rd Avenue in East Oakland and downtown Oakland via:

<u>Westbound</u>	<u>Eastbound</u>
MacArthur Boulevard	Clay Street
Lake Shore Avenue	11th Street
Grand Avenue	Broadway
Harrison Street	20th Street
20th Street	Harrison Street
Broadway	Grand Avenue
10th Street to Clay Street	Lake Shore Avenue
	MacArthur Boulevard to
	73rd Avenue, with a
	turnaround in the
	vicinity of 75th Avenue

The line will also have a local zone at each end, where every local stop will be made for passengers; and an express zone in the middle, where only a few stops will be made for passengers.

The local zone at the east end will extend along MacArthur Boulevard from 73rd Avenue to 35th Avenue.

The express zone will extend from 35th Avenue to Grand Avenue and Harrison Street.

The local zone at the west end will extend from Grand Avenue and Harrison Street to 10th and Clay Streets.

Stops for passengers are proposed at the following intersections:

MacArthur Boulevard and 73rd Avenue
MacArthur Boulevard and Seminary Avenue
MacArthur Boulevard and 55th Avenue
MacArthur Boulevard and Millsview Avenue
MacArthur Boulevard and Simmons Street

APPENDIX 1 - Continued

MacArthur Boulevard and Pierson Street
MacArthur Boulevard and Calaveras Avenue
MacArthur Boulevard and Green Acre
MacArthur Boulevard and High Street
MacArthur Boulevard and 39th Avenue
MacArthur Boulevard and Patterson Avenue
(23rd Avenue)
MacArthur Boulevard and Loma Vista Avenue
MacArthur Boulevard and 35th Avenue
MacArthur Boulevard and Coolidge Avenue
MacArthur Boulevard and Fruitvale Avenue
MacArthur Boulevard and Randolph Avenue
(38th Avenue)
MacArthur Boulevard and Park Boulevard
MacArthur Boulevard and Lakeshore Avenue
Grand Avenue and Harrison Street
Harrison Street and 20th Street
Broadway and 19th Street
Broadway and 15th Street
Broadway and 13th Street
Broadway and 12th Street
Broadway and 10th Street
10th Street and Washington Street
10th Street and Clay Street

Running time through the express zone - MacArthur Boulevard and 35th Avenue to Grand Avenue and Harrison Street is estimated at 12 minutes, and to 14th Street and Broadway at 17 minutes. This compares with 27 minutes and 33 minutes, respectively, on the present local lines.

Line #3 El Cerrito-Albany-Berkeley-Oakland Express

This line will operate from San Pablo Avenue and Stockton Avenue in El Cerrito via: San Pablo Avenue, University Avenue to Shattuck Avenue in Berkeley; and thence via the same route as Line #1 to 10th and Clay Streets in downtown Oakland, returning via the same route to the point of beginning.

The line will also have a local zone at each end where every local stop will be made for passengers, and an express zone in the middle where only a few stops will be made for passengers.

APPENDIX 1 - Continued

The local zone at the north end will extend along San Pablo Avenue from Stockton Avenue to Solano Avenue.

The express zone will extend from San Pablo Avenue and Solano Avenue in Albany to Telegraph and 20th Street in Oakland.

The local zone at the south end will be the same as for Line #1.

Stops for passengers are proposed at the following intersections:

San Pablo Avenue and Stockton Avenue
San Pablo Avenue and Lincoln Avenue
San Pablo Avenue and Fairmount Avenue
San Pablo Avenue and Brighton Avenue
San Pablo Avenue and Portland Avenue
San Pablo Avenue and Solano Avenue
San Pablo Avenue and Gilman Street
University Avenue and San Pablo Avenue
University Avenue and Sacramento
University Avenue and Grove
University Avenue and Shattuck Avenue;

thence, the same stops as for Line #1.

Running time between San Pablo Avenue and Solano Avenue in Albany and 14th and Broadway in Oakland is estimated at 26 minutes. This compares with 34 minutes on the present local lines.

TEST RUN
31-OUT
32-IN

AT 72 CARLSON TO WEST GRAND 31-27

Line #4 Oakland-San Leandro-Hayward Express

This line will operate from Clay and 11th Streets in downtown Oakland via:

Clay Street
11th Street
Broadway
5th Street ramp to the Nimitz Freeway
Nimitz Freeway to Davis Street
Davis Street to downtown San Leandro, thence

APPENDIX 1 - Continued

East 14th Street - Mission Boulevard
A Street
Foothill Boulevard near Hayward Union High
School, returning via the same route to
Broadway, thence
10th Street to Clay Street

Stops for passengers are proposed at the following intersections:

Clay Street and 11th Street
Broadway and 11th Street
Broadway and 9th Street
Broadway and 7th Street
Nimitz Freeway and Davis Street *DOUGLAS ?*
Davis Street and Wainwright Avenue
Davis Street and San Leandro Boulevard
Davis Street and East 14th Street
East 14th Street and Estudillo Avenue
East 14th Street and Juana Avenue
East 14th Street and Estabrook Street
East 14th Street and 138th Avenue
East 14th Street and 148th Avenue
East 14th Street and Hesperian Boulevard
East 14th Street and Bayfair Drive
East 14th Street and 160th Avenue
East 14th Street and 167th Avenue
East 14th Street and Lewelling Boulevard
East 14th Street and Mattox Road
East 14th Street and Grove Way
Mission Boulevard and A Street
A Street and Foothill Boulevard
Foothill Boulevard at Hayward Union High School

A transfer stop at Nimitz Freeway and High Street should be provided in the future for pick up and discharge of passengers.

The estimated running time along the route would be:

Downtown Oakland to downtown San Leandro *20* 23 minutes
Downtown Oakland to downtown Hayward *37* 40 minutes
17

Service on East 14th Street northerly of San Leandro will continue to be provided by Lines 80, 81, 81A, 81W, and 83.

APPENDIX 1 - Continued

Line #5 Oakland-San Lorenzo-Hayward-Decoto Express

This line will operate from Clay and 11th Streets in downtown Oakland via:

Clay Street
11th Street
Broadway
5th Street ramp to the Nimitz Freeway
Nimitz Freeway to Washington Avenue
Washington Avenue
Lewelling Boulevard
Hesperian Boulevard
A Street to Mission Boulevard in downtown
Hayward

Here, one-half of the buses will continue to their terminal at Foothill Boulevard while the remaining half will continue on Mission Boulevard for an additional five miles to Decoto, the final terminus of the line, and en route will provide service to the Valle Vista, Alta Vista, and El Rancho Verde subdivisions.

Stops for passengers are proposed at the following intersections:

Clay Street and 11th Street
Broadway and 11th Street
Broadway and 9th Street
Broadway and 7th Street
Nimitz Freeway and Davis Street
Washington Avenue and Lewelling Boulevard
Lewelling Boulevard and Hesperian Boulevard
Hesperian Boulevard and Paseo Grande
Hesperian Boulevard and Hacienda Avenue
Hesperian Boulevard and Bockman Road
Hesperian Boulevard and Sunset Boulevard
A Street and Victory Drive
A Street and Santa Clara Street
A Street and Myrtle Street
A Street and Mission Boulevard
Mission Boulevard and C Street
Mission Boulevard and Jackson Street
Mission Boulevard and Orchard Avenue
Mission Boulevard and Harder Road

MILEAGE	NIMITZ	FREEMWAY
	POINT	ACCUM
BOWAY	0	0
ONR ST.	.50	.50
23 RD AVE	2.45	2.95
HIGH ST.	.85	3.80
HEGENBERGER	2.40	6.20
98 TH AVE.	.70	6.90
DAVIS ST.	1.15	8.05
FIRST AVE	.80	8.85
WASHINGTON (5 TH)	2.05	10.90
LEWELLING	.40	11.30

KEY SYSTEM LEWELLING

WOLF 3100

102 104

630 B. & MISSION

7

640 WHITMAN & HANDEK (104)

CALAPUGA & WINTON (102)

704

650 WEST TENNISON & BAHAMA

654

45

8
9
10
13
16
19

27
28
29

RESERVE
FOR
TRANSBAY

30's - X's

45

47
48
49
50

60
61
62
63

66

70
71

84
85
86
89

HAY. AREA

90.95
92.96
93
94

	O.W	P.T
102 -	6.00	12 -
103 -	4.75	9.50
104 -	6.70	14.40
		<u>35.90</u>

APPENDIX 1 - Continued

Mission Boulevard and Jefferson Street
Mission Boulevard and Tennyson Road
Mission Boulevard and Alquire Road
(Alvarado Road)
Mission Boulevard and Gresel Avenue
Mission Boulevard and Lexington Avenue
Mission Boulevard and D Street
Mission Boulevard and F Street

A transfer stop at Nimitz Freeway and High Street should be provided in the future for pick up and discharge of passengers.

The estimated running time along the route would be:

Downtown Oakland to Hayward 35 minutes
Downtown Oakland to Decoto 61 minutes

#5

PRO. TIME	BASIC	MILES	OFF PEAK		M.P.H.	PEAK	
			MIN.			MIN.	M.P.H.
0	10TH & CLAY TO BOWAY & NIMITZ	.45	5		6	5	6
	BOWAY TO PASEO GRANDE (VIA FREEWAY)	12.10	18	33 1/2	40.2 42.6	26	42 27.8
3 1/2	PASEO GRANDE TO B. & MISSION	.3.10	10		18 1/2	11	16.9
61	B. & MISSION TO DECOTO	6. -	19	16	19 22 1/2	19	19
		21.65	52	48	24.9	61	21.2

#4

PRO. TIME		MILES	OFF PEAK		M.P.H.	PEAK	
			MIN.			MIN.	M.P.H.
0	20TH & BROADWAY	0	0			0	
	11TH & BROADWAY	.55	4		8.2	4	8.2
	OAK & NIMITZ	.90	4		13.5	5	10.8
	HIGH & "	3.30	4 1/2	11	44.0	7	28.2
	DAVIS & DOUGLAS	4.80	6 1/2		44.2	10	28.8
24	ESTUERO & E. 14TH	.90	3		18	3	18.0
	150TH & E. 14TH	2.00	6		20.0	7	17.1
46	"B" & FOOTHILL	3.60	10		21.6	12	18.0
	TOTAL	16.05	38		25.4	48	20.1

APPENDIX 2

DESCRIPTION OF RECOMMENDED NEW LOCAL LINES AND MODIFICATIONS TO EXISTING LINES

A number of new lines and changes and rearrangements of existing bus lines are recommended in this report. Some of the changes should go into effect immediately, while others may be deferred pending further studies and analyses of bus and schedule requirements. The lines are shown on Plate 2.

NEW LOCAL SERVICES IN SAN LEANDRO-HAYWARD AREA

About half of this area is currently well served by the Key System Transit Lines. However, the remainder of the area, consisting of the southerly and westerly portions of Hayward, is virtually without transit service at the present time, except as is provided by the Emil H. Miller Bus Line.

Therefore, the inauguration of several new bus lines is recommended to serve San Lorenzo and the southerly portions of Hayward, as shown on Plate 2. The lines would all start at the new shopping area located on Foothill Boulevard, and would also provide service to the older shopping area. The San Lorenzo line is routed through the community center to give service to that area. Also recommended is an extension southward along Mission Boulevard of an express Line 5 from downtown Oakland, to provide service for Valle Vista, Alta Vista, Fairway Park, El Rancho Verde, and Decoto, as described in Appendix 1.

Line #101 San Lorenzo Village

For many years the residents of San Lorenzo Village, between San Leandro and Hayward, have complained about the lack of convenient bus service. Some portions of this densely populated residential area are more than a mile from the nearest Key System bus line.

We recommend, therefore, a new local bus line to tap this development and to connect it both to the downtown area and to the existing and proposed local and express Oakland lines.

The San Lorenzo line would leave Foothill Boulevard near Hayward Union High School in downtown Hayward by way of A Street, Meekland Avenue, Blossom Way, Hathaway Avenue, Hacienda Avenue, Hesperian Boulevard, and Paseo Grande to Via Media. From there it would make a loop through San Lorenzo Village, using Via Manzanitas, Via Alamos, Bockman

APPENDIX 2 - Continued

Road, Grant Avenue, Via Alamos, to Paseo Grande, thence returning to downtown Hayward along its outbound route.

Line #102 Palma Ceia Plaza

To augment or replace the somewhat irregular service now offered by private operators in the Palma Ceia Village area, we recommend the establishment of a new line connecting Palma Ceia Village and other neighborhoods in the southwest corner of Hayward with the downtown business district. This new line would leave Foothill Boulevard near Hayward Union High School via A Street, Mission Boulevard, Jackson Street, Winton Avenue, Calaroga Avenue, Poinciana Street, Kay Avenue, and Calaroga Avenue to a terminal loop consisting of Florida Street and Miami Avenue back to Calaroga Avenue. From there it would return along its outbound route to downtown Hayward. When Calaroga Avenue is extended all the way between Jackson Street and Winton Avenue, the line will follow this more direct route.

This line would serve the new Palma Ceia Plaza shopping center as well as South Gate and portions of Palma Ceia Village. Direct service would be provided to the Alameda County office building on Winton Avenue and the route would also pass the site of the proposed Hayward City Hall and Auditorium.

Line #103 Schafer Park

Schafer Park would be served by a line leaving Foothill Boulevard near Hayward Union High School in downtown Hayward via A Street, Santa Clara Street, Jackson Street, Harder Road, and Evergreen Street to a terminal loop consisting of Regal Avenue, Eldridge Avenue, and back to Evergreen Street via Underwood Avenue, returning to downtown Hayward along its outbound route.

Line #104 Tennyson Road

The Tennyson Road line would leave Foothill Boulevard near Hayward Union High School in downtown Hayward via A Street, Mission Boulevard, Jackson Street, Soto Road, Harder Road, Whitman Street, West Tennyson Road, and Darwin Avenue to a terminal loop consisting of Portsmouth Avenue, Tennyson Road, and Bahama Avenue back to

APPENDIX 2 - Continued

Darwin Avenue. From there it would return along its outbound route to downtown Hayward.

This line would serve Huntwood Manor #1, Tennyson Village, Tennyson Gardens, Warren Park and three sections of Palma Village. It would also pass the new Tennyson High School.

NEW LOCAL SERVICE BETWEEN ALAMEDA AND BAY FARM ISLAND

Population of Bay Farm Island has increased significantly in recent years. Service to this area is provided at present by the High Street Line #79, and passengers destined to downtown Alameda, or Oakland, must transfer to other lines. We recommend the establishment of a new line between Bay Farm Island and downtown Alameda. Subsequently, existing Line 79 will terminate on High Street at Otis Drive in Alameda.

Line #107 Alameda-Bay Farm Island

This line would start at Park Street and Buena Vista Avenue in downtown Alameda and will run via Park Street into the South Shore Shopping Center. From there the line would continue along Otis Drive, Bay Farm Island bridge, Maitland Drive, County Road, Mecarteny Drive, Island Road to Maitland Drive and back to Alameda.

Island Road should be resurfaced and widened to permit buses to operate on it.

NEW LOCAL SERVICE IN EL CERRITO

A new line is recommended to serve the foothill areas in El Cerrito which at present are some distance from existing lines.

Line #109 Fairmount-Colusa-San Pablo-Barrett

The line would begin at the new El Cerrito shopping center at San Pablo Avenue and Fairmount Avenue; thence traverse the foothill area via Fairmount Avenue, Colusa Avenue, Terrace Drive, Avis Drive, Navellier Street, Schmidt Lane, Scott Street, Navellier Street, Ganges Avenue, Snowdon Avenue and Cutting Boulevard to San Pablo Avenue.

APPENDIX 2 - Continued

The line then proceeds northerly along San Pablo Avenue to the intersection of San Pablo and Barrett Avenues, along Barrett Avenue to Arlington Avenue and then makes a loop via Tassajara Avenue to make the return trip.

NEW LOCAL SERVICE IN THE MONTCLAIR AREA

Local interests have urged the inauguration of a new feeder service extending into the hill area east of the Montclair shopping center in Oakland.

Line #110 Montclair-Snake Road

This line would leave the Montclair shopping area on Mountain Boulevard, proceeding to a loop involving portions of Florence Terrace, Merriewood Drive, Sherwood Drive, Broadway Terrace and Duncan Way. It would return to the Montclair shopping area via Mountain Boulevard and then continue on Moraga Avenue to Snake Road. From Snake Road the line would make a second loop on Magellan Drive, Drake Drive, Aztec Way, Asilomar Drive, Colton Boulevard and Hemlock Street, returning to the Montclair shopping area via Snake Road, Mountain Boulevard, and Moraga Avenue.

This new line would offer local service for shoppers in the Montclair area, and also act as a feeder for lines to downtown Oakland. However, certain street improvements are necessary to enable a bus to safely negotiate the steep grades and sharp turns on this route. Therefore, we do not recommend that the bus line be inaugurated until the street improvements have been completed.

A similar service has been suggested for the area situated west of the Warren Freeway in the vicinity of Estates Drive and Wood Drive. We do not recommend such a separate route at this time. If and when it becomes necessary to serve this area, it can best be accomplished by extending existing lines.

APPENDIX 2 - Continued

MODIFICATIONS TO EXISTING LINES

Line F Berkeley-Euclid and Line F Berkeley-Spruce

Many passengers of the F line reside in the Berkeley Hills area and have to transfer to Lines 7 and 67 at Shattuck and University to reach their homes. We recommend that selected trips of the Fxx line be routed during peak hours directly to Euclid Avenue and to Spruce Street. This will eliminate the necessity of transferring and will improve service for hill residents.

From Shattuck Street and University Avenue in Berkeley, the lines would continue along the following streets:

<u>F Euclid</u>	<u>F Spruce</u>
University Avenue	University Avenue
Oxford Street	Oxford Street
Hearst Avenue	Virginia Street
Euclid Avenue to	Spruce Street to
Grizzly Peak	Montrose Road
Boulevard	

The same routes would be used on the return trip.

The remaining Fxx lines, as well as the F and Fx lines, would continue to run as at present. However, as soon as tracks are removed and the old Key System roadbed and tunnel between Hopkins Street and The Alameda are paved, these lines would be routed along this new route, as shown on Plate 2.

Line H El Cerrito-Arlington

We recommend additional bus trips during peak hours on the H line which runs along Arlington Avenue and provides service between the hill areas of Kensington and El Cerrito and San Francisco.

APPENDIX 2 - Continued

Line L Albany-El Cerrito-Richmond

At present, Line L leaves San Pablo Avenue at Carlson Boulevard and follows Central Avenue to the Eastshore Freeway. In order to improve service to San Francisco for residents of Albany and El Cerrito, we recommend a change in the route of Line L in those cities.

Line L should run along San Pablo Avenue as far south as Buchanan Street, thence via Buchanan Street to the Eastshore Freeway, along the Freeway to San Francisco.

Consolidation of Lines #7 and #75

Line 7, Euclid Avenue, Berkeley, now terminates at Euclid Avenue and Grizzly Peak Boulevard where it connects with the Line 75 shuttle bus serving Grizzly Peak Boulevard.

We recommend that certain runs of Line 7 be extended to cover the territory now covered by Line 75 (shuttle) thereby eliminating the undesirable and unpopular transfer. These two lines as combined would contribute toward better service, reduced waiting and layover time, and should develop more patronage on the Grizzly Peak Boulevard portion of the line.

Future studies by the District should investigate the need for retention of the loop at the end of Line 75 since it attracts very little patronage. A possible revised route would terminate and layover at an existing turnaround at Shasta Road and Grizzly Peak Boulevard.

Lines #11, #12, and #18

Recent developments in the central business district of Oakland necessitate the rerouting of these three lines to improve service for riders attracted by new, large office buildings and stores.

Line 11 would enter the central business district via Harrison Street, 20th Street and Broadway and then continue as at present.

Lines 12 and 18 would enter the central business district via Harrison Street, 20th Street and Webster Street (Franklin Street will be used on the return trip) and then continue as at present.

APPENDIX 2 - Continued

Line #51-A Alameda-Berkeley

This line follows at present the same route as Line 51. We recommend that Line 51-A continue west on University Avenue, over the Eastshore Freeway to the Berkeley Yacht Harbor. The frequency of service would be determined by the usage of the line, and schedules would be adjusted for peak periods of use, such as weekends and holidays.

Line #59 Montclair

Line 59 serves the Montclair area via Broadway Terrace and Broadway. It originates at a station on the former C rail line on 40th Street. Passengers originating in the Montclair area are forced to transfer to Line 51 to reach downtown Oakland. This inconvenient transfer has been the subject of much hardship and complaint.

To rectify this situation, we recommend the extension of Line 59 during the rush hours to downtown Oakland, via Broadway. Ultimately it will be possible to reroute this line to Montclair via the proposed Grove-Shafter Freeway and the existing Warren Freeway.

Line #65 Dwight Way

For the convenience of residents in the Panoramic Hill area in Berkeley, we recommend the extension of Line 65 as follows:

From the present terminal at Dwight Way and Warring Street, the line would continue on Dwight Way, Prospect Street, Channing Way, Piedmont Avenue, Haste Street, Grove Street and back to Dwight Way.

The latter part of the route was changed due to the new one-way street pattern which was effected recently in Berkeley. Routes of other lines affected were also changed.

Consolidation of Line #74 Ashby Avenue and Line #73A Sixth Street

Existing Line 73A operates occasional rush-hour trips in a small territory of its own along 6th and 7th Streets in Berkeley, thence operating into downtown Oakland via San Pablo Avenue. Ashby Avenue

APPENDIX 2 - Continued

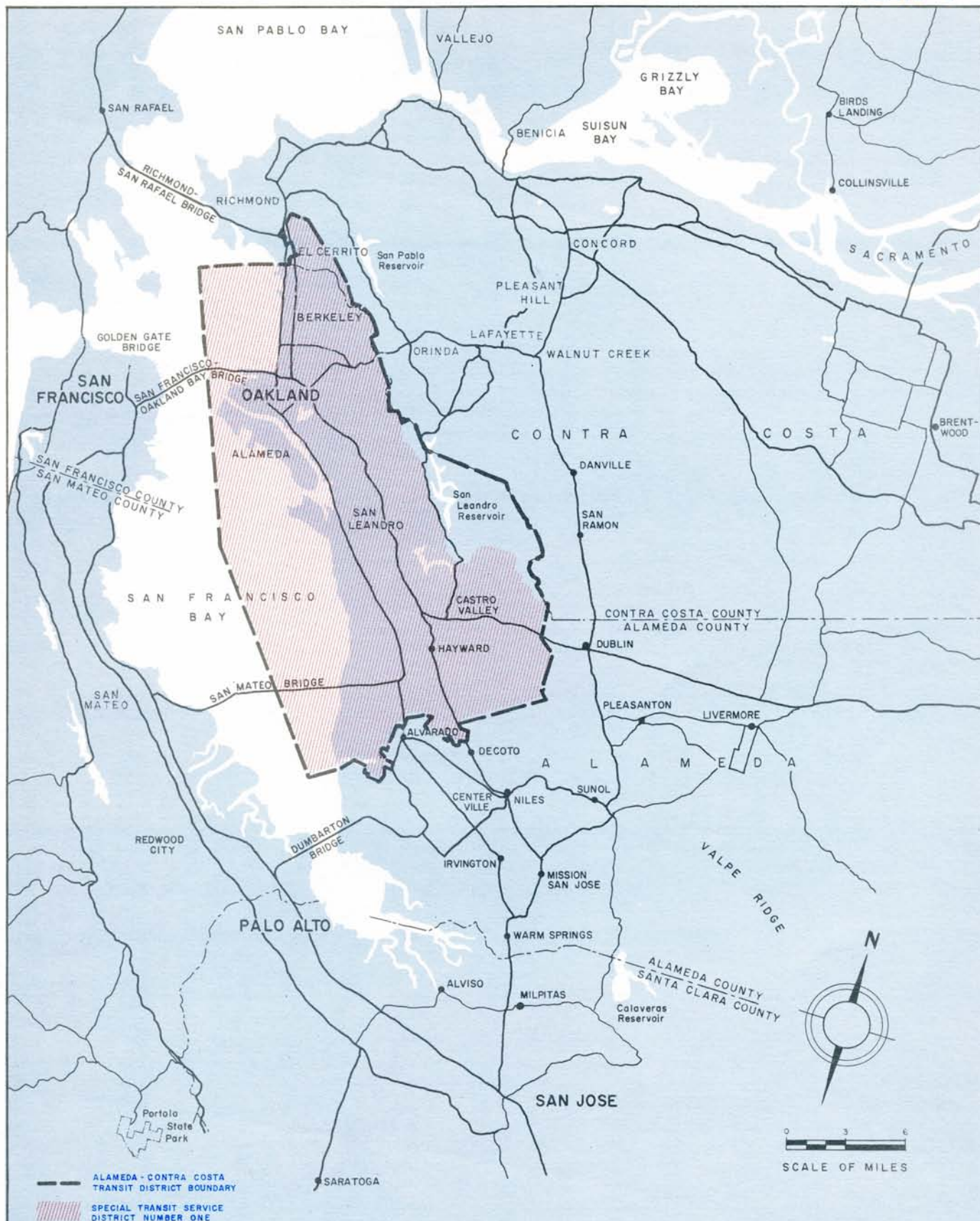
Line 74 operates from the Hotel Claremont to San Pablo Avenue via Ashby Avenue.

We recommend that these two lines be consolidated, with the new line to be identified as Line 74. Service along San Pablo Avenue would be provided as at present with the existing San Pablo Avenue Line 72. The territory in West Berkeley along 6th and 7th Streets would receive improved service, trips being 20 minutes apart during the rush hour instead of 40 minutes as at present on Line 73A. However, since the territory served along 6th and 7th Streets is largely industrial, no service along this portion of the route should be operated at night.

Exclusion of Lines

Lines #68, #69, #78 and #78-A which serve only areas outside the Special District were excluded from the recommended transit system. Lines L and 72 were included in our plan since they provide service to residents of the District.

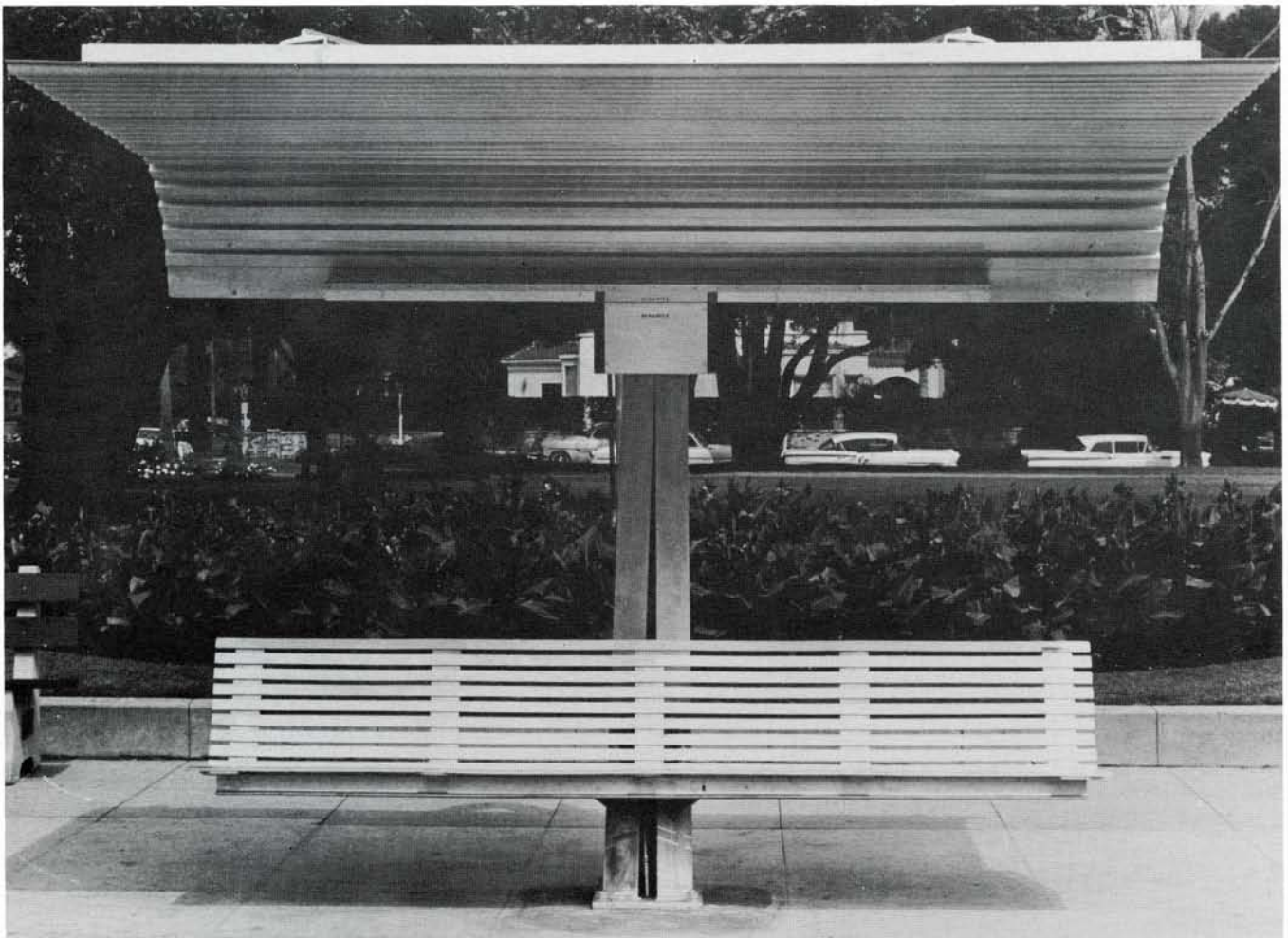
EXHIBITS



SPECIAL TRANSIT SERVICE DISTRICT NUMBER ONE
ALAMEDA-CONTRA COSTA TRANSIT DISTRICT



MODERN DIESEL BUS



BUS STOP SHELTER

