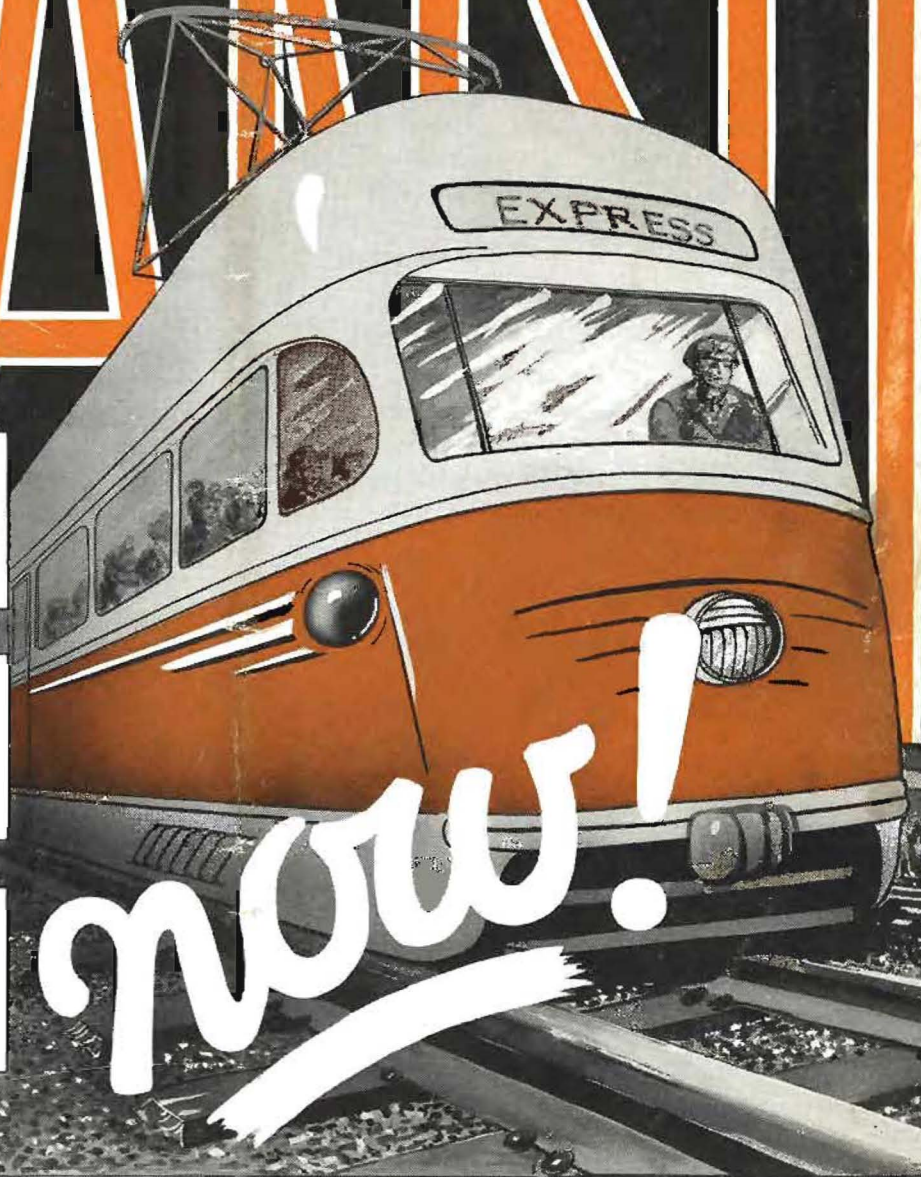


RAIL RAPID

TRANSIT



IT'S NEEDED—Autos and buses can't move Los Angeles' four million people *now*. Crawling traffic will come to a shuddering, chaotic halt when we have six million people, *plus*.

NOW OR NEVER—The modern way to build a rail rapid transit system is between the roadways of a freeway. The freeways are being built now. The rail system must be built at the same time.

IT COSTS LESS—Rail rapid transit will cost a fraction as much built in a freeway. It can be financed. It can be self-supporting. And 4 times as many people can ride for $\frac{1}{2}$ the cost, per person.

now!

LIVE where you like...WORK where you please

An Immediate Program by The Rapid Transit Action Group, Los Angeles Chamber of Commerce—Coordinator
February, 1948

Foreword

THE RAPID TRANSIT ACTION GROUP . . . prepared this book and made the plans outlined in the following pages because the Los Angeles community needs and must have, now, a rail rapid transit system.

There are three ways to move people daily in a community—by auto, by bus, and by rail. The group is convinced that a combination of all three is necessary. Autos are too expensive for most people. Both autos and buses congest the streets. Rails separated from all other traffic are a *must* when a city becomes as large as Los Angeles and its sister communities.

The Metropolitan Traffic and Transit Committee of the Los Angeles Chamber of Commerce, in September, 1947, called for a mutually-participating agency to be formed to devise a plan for rail rapid transit, and a method of financing.

During the following months, scores of trained engineers have worked quietly and diligently. Alternate methods of moving millions living here

were tested and discarded. Conservative conclusions were reached as to patronage, costs, revenues and the risks involved in financing.

The conclusions:

**IT CAN BE DONE.
IT MUST BE DONE NOW.**

This report has the approval of the members of the RTAG as individuals, but not necessarily in their official capacities. It is subject to the approval of the various governmental agencies involved. After the resultant public hearings, we will be sure that all people of the communities involved will be satisfied that their interests will be best served by the final plan.

(Signed) LEROY M. EDWARDS

THE GROUP INCLUDES:

FROM THE STATE OF CALIFORNIA

S. V. Cortelyou, *Division of Highways*
William H. Gorman, *Public Utilities Commission*

FROM THE COUNTY OF LOS ANGELES

William J. Fox, *Regional Planning Commission*

FROM THE CITY OF LOS ANGELES

Mayor Fletcher Bowron
Lloyd Aldrich, *City Engineer*
K. Charles Bean, *Board of Public Utilities*
Charles B. Bennett, *City Planning Commission*
Frank Gillelen, *President, Board of Public Works*

Jim Wilson, *Board of Public Works*

FROM TRANSIT COMPANIES

Stanley Lanham, *L. A. Transit Lines*
Oscar A. Smith, *Pacific Electric*

AND CITIZENS

LeRoy M. Edwards, *Group Chairman*
James L. Beebe, *Chairman, Finance Committee*
Neil Petree, *Chairman, Metropolitan Traffic and Transportation Committee*
Homer H. Grant, *Consultant*
William M. Jeffers, *Consultant*
Harry Morrison, *Group Secretary*

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Rail Rapid Transit is a Must...

FREEWAYS ARE BASIC

Until the freeway program was assured, the future of transportation in the Los Angeles metropolitan area was dark. Despite valiant efforts by our City and County officials, and large purchases of equipment by our transit companies, street traffic is strangling

the normal pulse of the area. Freeways will move thousands of automobiles and persons per hour with great savings in time and money—but in this area we count our problems in millions. Freeways are basic. They are imperative to the growth of the city.

With buses moving thousands more on freeways, a normal area with a normal population and a normal rate of growth might be able to alleviate its transportation problems for many years. The Los Angeles area is not normal; it is unique.

OUR GROWTH IS PHENOMENAL

The migration of people into the Los Angeles metropolitan area is unparalleled in the history of the world. We are growing at the rate of about 10,500 persons per month. We are absorbing the equivalent of a new city each year.

We now have 4,000,000 in the metropolitan area. The population here, experts say, will be from 6 to 7 million by 1960. This means that where there are now 2 cars, there will be 3; where there are now 6 buses within a block,

there will be 9; where there are now 10 people waiting for a streetcar, there will be 15. Autos, buses, and streetcars can hardly move the people who live here now. They will be stalled in the years to come.

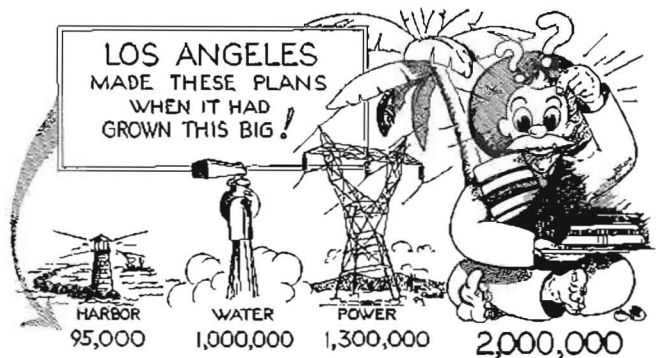
ONLY RAILS CAN DO THE JOB

Automobiles on 3 lanes of a freeway will move 7,000 persons per hour in one direction figuring 1.7 persons per car. Buses operating at 20-second intervals will move about 10,000 persons per hour. A rail line in the center of that freeway inserted at a fractional additional cost, will move 30,000 persons per hour. Auto capacity is limited because it is impossible to find places for all the cars to park. Bus capacity is much greater but they also congest the streets in which they usually must operate after they leave the freeways. Rail capacity is practically unlimited because cars can run in trains, and the trains can run in subways. Bus and train passengers have no parking problem.



THIS MEANS PLANNING

Rapid transit systems do not grow on trees. Neither do harbors, great water systems, or power. They all require planning. No great populous area can exist without a harbor, water, power, and transportation. Harbor, water and power facilities have been built but a blueprint for rail rapid transit is still needed. The community must plan and act now or the sleeping giant will never truly waken.



FOR A BETTER PLACE TO LIVE AND WORK

Our people *must* have rail rapid transit to take full advantage of the still limitless area where we make our homes. It is every man's desire to have a plot of ground free from the grind of factory and office. He wants to make

his family secure. He wants time to play and he has pride in his own fire-side. Rail rapid transit will develop many new communities and will enhance the growth of old. Our people need not huddle in the shadow of office

buildings nor gather close to the factories. Rail rapid transit will make it possible for us to live where we like and work where we please.

The Proposed New System...

ECONOMY—The most economical construction for a rail rapid transit system in the metropolitan area is in the center strip of the planned freeways. None of the highway-user taxes will be used to pay for any of the cost of the system.

DESIGN—Each dual-purpose freeway with facilities for autos and rails will be designed to specifications approved by the State Division of Highways. All safety features in the most modern freeway will be incorporated into these highways. The wider center strip for rail operation will, in fact, be an added safety feature and the rails will not interfere in any way with automobile traffic.

ROUTES—Rail lines are recommended where ultimate patronage will justify the cost of installation. This system can be expanded, if necessary. Bus lines will operate on the outer reaches of freeways, connecting to the terminals of the rail lines as finally determined.

Bus lines may operate from intervening areas and supplement rail service to major centers. They may also operate on other radial and crosstown freeways where they can provide service more effectively or where patronage does not warrant rail service.

Rail operation is recommended on the following freeways:

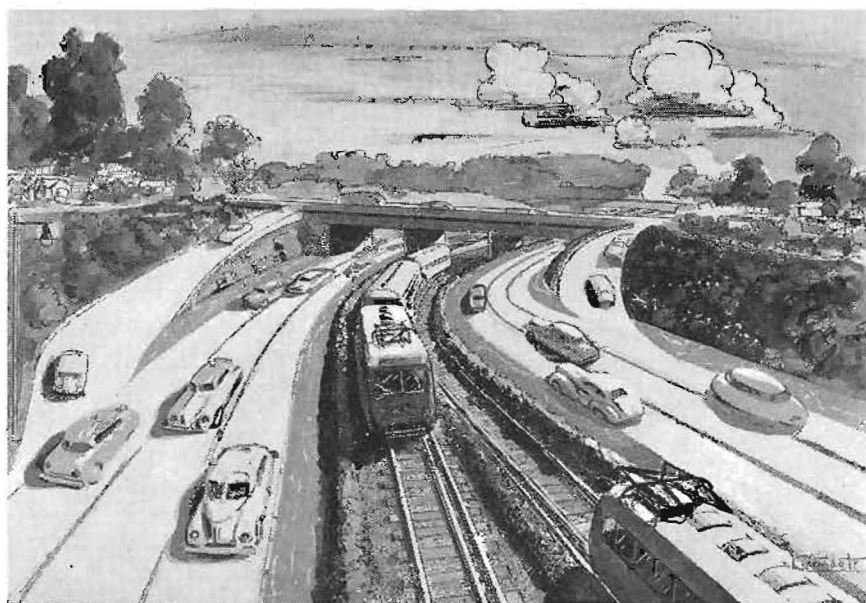
1. Santa Monica Parkway.
2. Olympic Parkway—While this operation is shown as a rail line, future conditions will determine whether it should be developed as a rail or bus rapid transit route.
3. Inglewood Parkway.
4. Harbor Parkway.
5. Ramona Parkway.

6. East By-Pass.

7. In portions of the Hollywood Parkway as follows:

The ideal route to Hollywood and to the San Fernando Valley is from the Hill St. Terminal in a subway to a

point about 1000 feet west of Glendale Blvd. on the Hollywood Parkway, thence along the parkway to about Harold Way, thence off the parkway in private right-of-way and cut-and-cover subway along Selma Street to the site of the proposed Crenshaw



Typical operation in an expressway... Note safety features of space for disabled autos and wide strip between opposing automobile lanes.



Typical station... Surface transit will feed rail rapid transit for fast operation.

Parkway, thence north to Cahuenga Pass in private right-of-way, or in the Crenshaw Parkway, if available.

If present construction precludes use of the Hollywood Parkway east of Vermont Ave., the rail lines should run in a subway from the Hill St. Terminal to the intersection of the Santa Monica and Hollywood Parkways, unless they can be placed in the Santa Monica Parkway without delaying completion of the rail route.

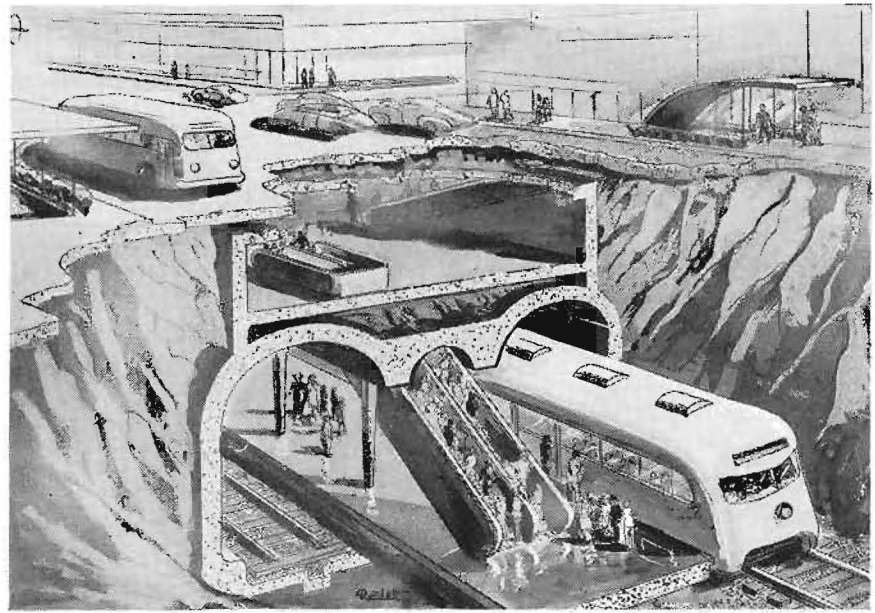
Alternate routes are either more expensive, offer less service to the public, or would delay rail construction.

The following routes will be operated in private right-of-way:

1. To Long Beach and San Pedro. This route will initially connect with the East By-Pass and may ultimately connect with the Harbor Parkway at Imperial Blvd.
2. To Bellflower, via the Santa Ana line connecting into the East By-Pass.
3. To Pasadena and Monrovia. This route will connect to the East By-Pass and may ultimately run into the Hill St. Subway.
4. To Burbank and Glendale, operating into the Hill St. Subway.

The routes operated in private right-of-way will be immeasurably improved by grade separations and train-controlled traffic signals.

DOWNTOWN LOS ANGELES—With the above facilities in the freeways and in private right-of-way it will be necessary to provide adequate terminal and distribution facilities in



Cross-section of downtown subway . . . Stations will be about 2 blocks apart.

the downtown area. The minimum should be substantially as recommended in 1945 by Charles E. DeLeuw, employed as a consultant by the City of Los Angeles to study the transportation requirements of the Los Angeles metropolitan area. This includes:

1. A rail line in the East By-Pass to the 6th and Main St. Terminal from Aliso St. on the north to Washington Blvd. on the south.
2. A subway in Broadway from the vicinity of Ord St. to the vicinity of 14th St. with connections into East 1st St., into Main St. via Broadway Pl., to the Harbor and Inglewood Parkways and possibly to the Olympic Parkway.
3. Expansion of the Hill St. Subway Terminal to provide additional capacity.

4. Pedestrian subways connecting the Broadway subway to Hill and Spring Sts. at each station.

Increased flexibility of operation and improved distribution of passengers would result from an additional subway under Hill St. which would have connections to the Hill St. Terminal and might be connected to either, or possibly both, the freeways at the southerly side of the business district and the rapid transit routes to the north and east.

The estimated cost of such facilities has been included in the amounts which it is believed should be covered by over-all financing powers of the district. They should be included in thorough studies to be made by independent engineers before the final construction plan is determined upon.

Equipment will be Fast and Modern...

SPEED—Speed is a requisite for a successful rapid transit system. It is measured not so much in miles per hour as it is in the number of minutes it takes to move passengers from one point to another. The number of minutes is determined by the speed of the car, its acceleration and deceleration rates, the number of stops, and the ease with which it may be loaded or unloaded. The ideal car for Los Angeles should be designed for a top speed of about 50 miles an hour.

ACCELERATION—The car will be able to increase its speed by about $3\frac{1}{2}$ miles an hour every second. This means that it will be able to get up to top speeds very quickly. Despite this rapid acceleration, the getaway will be

smooth and free from jerking.

LOADING—The car is designed for rapid, safe, loading and unloading from either high- or low-level platforms.

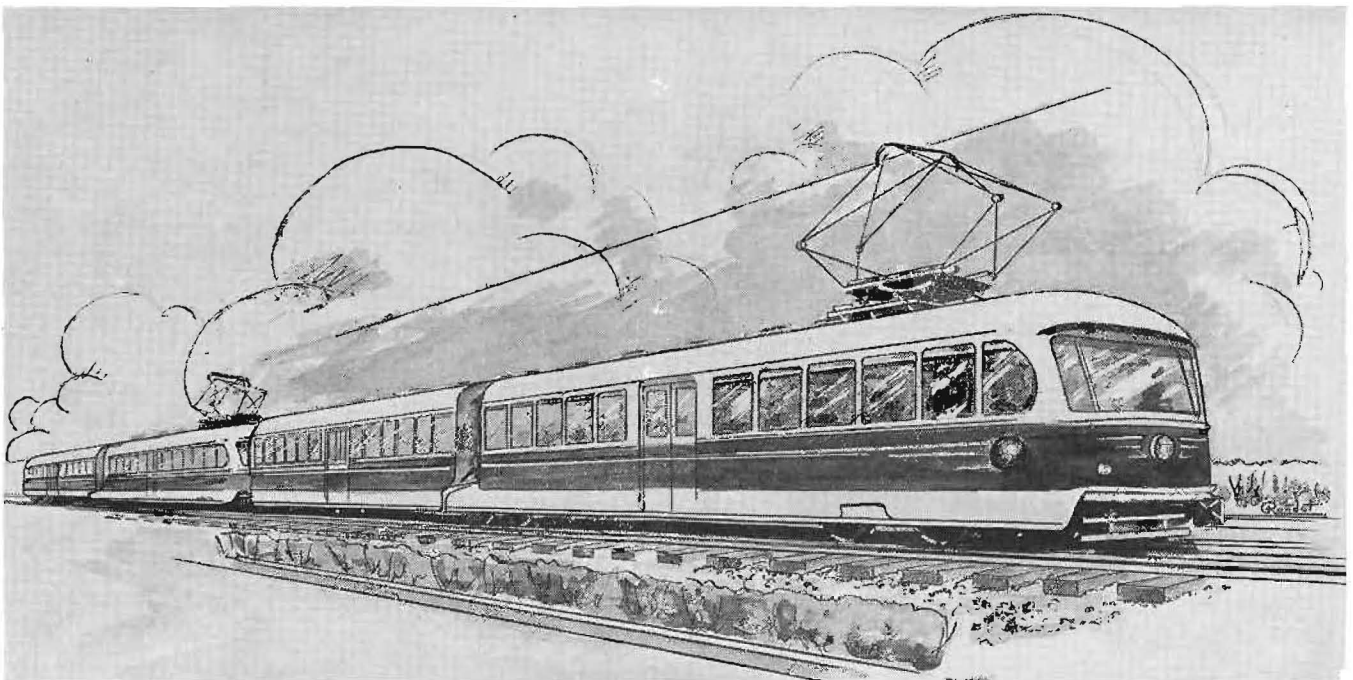
SAFETY—The doors will have “sensitive edges” to avoid passenger injuries. The car’s low center of gravity, its structural design, the wider aisles, and safety glass will reduce the risk of injury.

Wide vision windshields and rapid braking will reduce the risk of accidents.

COMFORT AND QUIETNESS—The wheels on these modern cars will be built with rubber inserts. They will

be relatively noiseless. Throughout the car there will be a lavish use of rubber mountings. The resilient wheels take up road shock. Coil springs and stabilizers will tend to eliminate excessive and sharp swaying. The cars will have improved ventilation systems, and high intensity lighting for ease in reading. The cars will be wider than most of those now in use and the seats will be larger and more comfortable.

APPEARANCE—The cars will be streamlined and may be articulated. They can be connected to operate in trains. The cars will be of the low-floor type. Results of latest experiments in the use of colors to ease rider fatigue will be incorporated in car interiors.



Two-car articulated units can be operated in trains to provide a seat for every passenger.

Benefits will be General...

To the Rider:

1. *The person who lives within walking distance of a rapid transit station.*

BECAUSE—He has easy access to the rapid transit service. His riding time will be cut tremendously.

2. *The person who will ride a surface transit vehicle to the rapid transit station.*

BECAUSE—The total time of the surface and the rapid transit ride will be a great deal less than the present transit time. When the rapid transit lines are installed, new feeder services are bound to develop where the need arises.

3. *The average person who has one car and has been forced to use that car for his transportation.*

BECAUSE—With the regular schedules which rail rapid transit makes possible he can be driven to and from the train with no waiting time. He will find that the time it takes him to ride the rapid transit will generally be less than the time it takes him to drive and park his car. This means that his car can be left at home for his family.

4. *The person who will continue to use a surface transit vehicle.*

BECAUSE—Surface congestion will be reduced. The running time will be less for surface cars, especially those entering a downtown subway.

5. *The person who must continue to use an automobile—the salesman, the buyer, or professional man.*

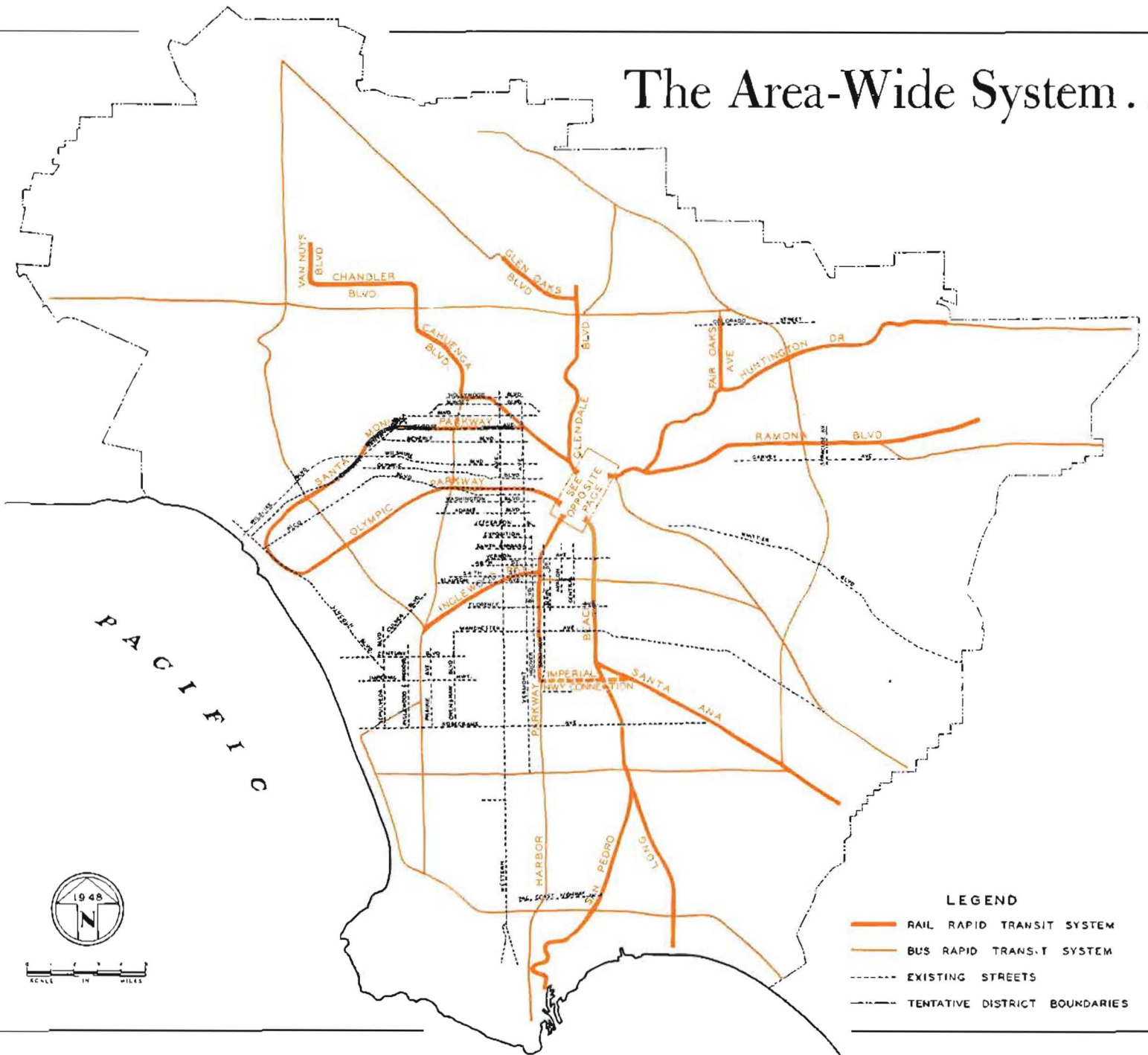
BECAUSE—Those who do not have to use automobiles will be attracted to rail rapid transit service. This will make driving easier and will reduce competition for available parking space in congested areas.

To the Community and its Citizens:

Rail rapid transit will make it possible for more people to live in the community, thus increasing the community wealth. Trading areas will be expanded. Property values will be stabilized both in business and residential sections. Rapid transit makes a safer ride possible for both transit and automobile rider. When the people of the community find they are able to ride to and from their work for $\frac{1}{2}$ the cost of driving, the savings are available for better living. Its constant availability at low cost makes rail rapid transit extremely important even to occasional users. *And, because of its almost unlimited capacity, a rail rapid transit system is an invaluable necessity during times of national emergency.*

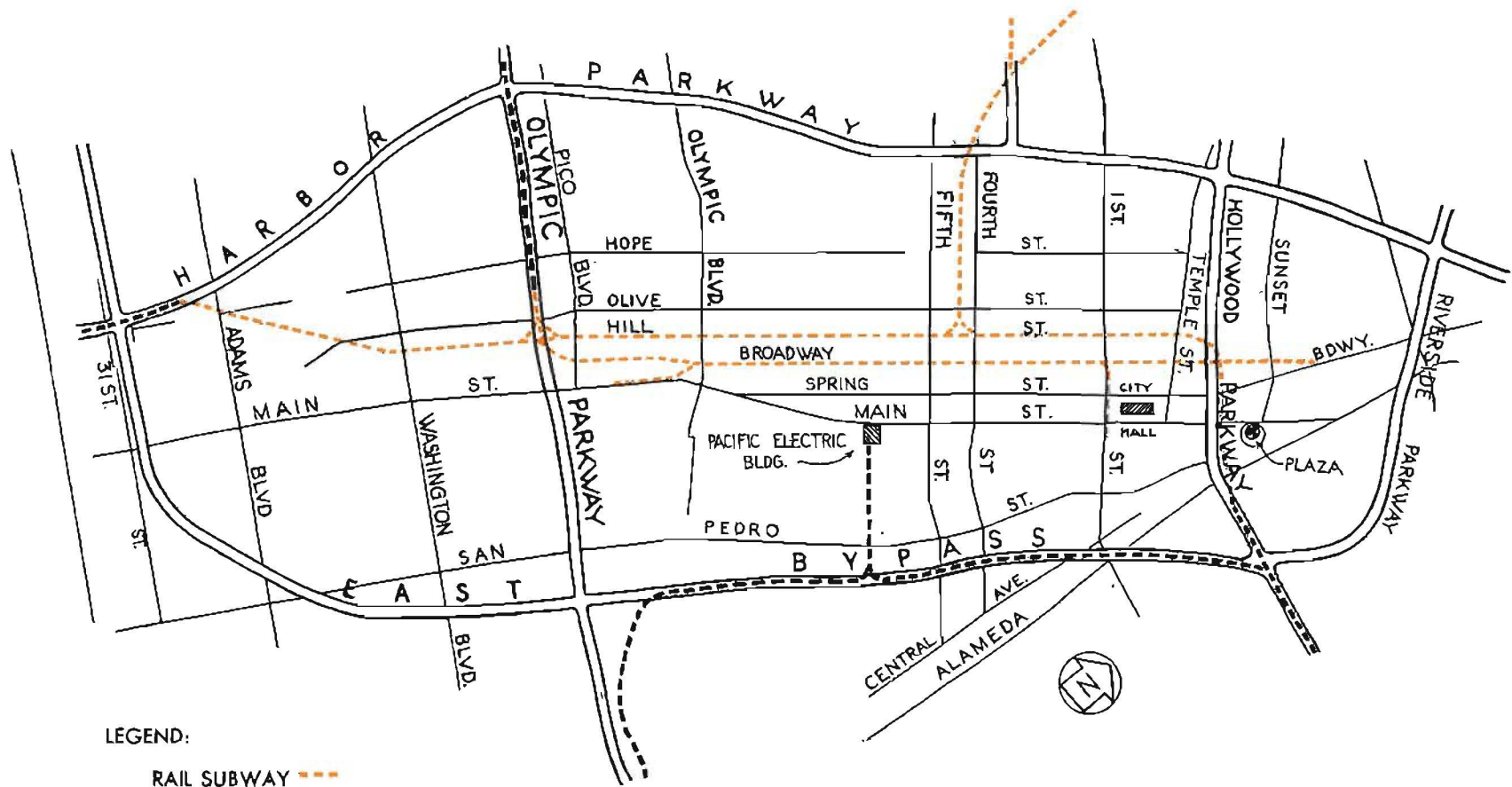
The Area-Wide System...

9



- LEGEND**
- RAIL RAPID TRANSIT SYSTEM
 - BUS RAPID TRANSIT SYSTEM
 - - - - EXISTING STREETS
 - · · · TENTATIVE DISTRICT BOUNDARIES

The Rail Distribution System...



LEGEND:

RAIL SUBWAY - - -

RAIL RAPID TRANSIT ROUTES - - -

Here are the Time Savings . . .

These schedules are based on peak running times from the Los Angeles downtown area for purposes of comparison. Time savings between intermediate points are in proportion.



	Present Rail	Present Bus	Proposed Rail	Rail Savings
Hollywood (local)	40	..	15	25
(express)	36	..	10	26
N. Hollywood (local)	66	..	30	36
(express)	59	50	19	40
Van Nuys (local)	91	..	45	46
(express)	88	71	34	54
Beverly Hills	59	39	17	42
Santa Monica	70	72	30	40
Culver City	43	39	18	25
Venice	58	..	28	30
Manchester & Market (Inglewood)	57	..	19	38
Imperial & Figueroa	50	17	33
Watts	24	..	14	10
San Pedro	67	..	43	24
Long Beach	63	..	40	23
Bellflower	54	..	30	24
Baldwin Park	67	..	33	34
Oneonta Junction	33	..	15	18
Pasadena	51	..	22	29
Monrovia	58	..	36	22
Glendale	32	30	22	10
Burbank	56	47	36	20

Here's what the System will Cost...

The following costs were determined after detailed study by the RTAG and its engineers. The cost breakdown is based on right-of-way; construction other than track, including subways and stations; and track, roadway and signals. It is difficult to allocate costs of any single part of the whole system, since each portion of the system depends on the other parts of the system for its efficiency and benefit to the community. These estimates are based on present-day costs, with the usual allowance for engineering. Cost of 580 two-car articulated units has not been included, since the Metropolitan Rapid Transit District need not finance this equipment, although the charges for financing the equipment are included on page 10—The Balance

Sheet. The number of cars was based on a seat per passenger during the peak hours of travel.

It will possibly be necessary to make

adjustments to existing operators to cover capital losses caused by installation of rail rapid transit service. This adjustment is shown as a separate item.

Right-of-way	\$ 49,379,000
Construction, other than track, including stations...	222,414,000
Track, roadway, and signals	27,892,000
Capital adjustment	10,000,000
<i>TOTAL</i>	<i>\$309,685,000</i>

Patronage and Revenues...

Figures for patronage are based on ultimate desirable population in the metropolitan area as shown by the latest studies of the County Regional Planning Commission. These studies showed, not only the amount of population, but its ultimate distribution. The estimated patronage was the basis for the ultimate rail rapid transit system, as recommended.

Rail lines were laid out on a map in the various freeways proposed to be built in the area, and in private right-of-way. Agreement was reached as to the amount of patronage each line would serve. This agreement was based on experience, past traffic checks and faster service on the basis of a seat per passenger. Final decision as to the lines to be recommended was based on whether the patronage thus

determined would justify the installation of rails.

It was determined that a fare equivalent to about 2½ cents a mile was reasonable and would meet the financial requirements of the system. This was applied as a 15-cent fare in the inner

zone with free transfers, and with a 10-cent additional fare for each additional zone of about four miles.

The estimated patronage and revenues for each line are shown in the table below. Lines with long portions of identical track are grouped.

Route	Annual Patronage	Annual Revenue
Hollywood—San Fernando Valley...	36,700,000	\$11,310,000
Santa Monica	26,100,000	7,200,000
Olympic	23,000,000	4,850,000
Harbor—Inglewood	50,100,000	10,620,000
Long Beach—San Pedro—Santa Ana..	25,800,000	8,380,000
Ramona	17,100,000	5,140,000
Pasadena—Monrovia	23,800,000	7,400,000
Glendale—Burbank	17,900,000	4,250,000
<i>ANNUAL TOTALS</i>	<i>220,500,000</i>	<i>\$59,150,000</i>

The Balance Sheet

The annual operating statement at the right shows that the rail rapid transit system as planned, and based on the ultimate patronage, would be economically feasible. The annual revenues have been broken down in the section PATRONAGE AND REVENUES.

This is what comes in:



Gross Passenger Revenue \$59,150,000

Less Revenue Collected for other
operators supplying connect-
ing service 7,700,000
\$51,450,000

This is what goes out:



Track Maintenance \$ 2,159,000



Equipment Maintenance 2,766,000



Power 1,750,000



Traffic 191,000



Transportation 8,430,000



Administration & Insurance . . . 5,232,000



Depreciation & Amortization . . 11,092,000



Taxes 12,180,000



Operating rents (net) 2,000,000



Interest 5,650,000

TOTAL COSTS \$51,450,000

The Financing . . .

Recommendations for financing a proposed rail rapid transit system were made by a finance committee composed of City, County, and State representatives, private investment men, and lawyers. These recommendations are the bases for the drafting of legislation.

THE MONEY

Funds for a rail rapid transit line must come from some source other than highway-user taxes, even though the lines are placed within the roadways of a freeway. For a venture of this magnitude, bonds must be

issued. The issuing authority should be a Metropolitan Rapid Transit District patterned somewhat after the Metropolitan Water District.

ORGANIZATION

The first step in organizing a district would be a petition of a small number of signers or it could be initiated by the Board of Supervisors. Notices should be posted and full hearings given. Approval would be by a majority of the votes cast, plus a majority

of the units in the proposed district, counting each city as a unit, and the unincorporated territory as a unit. The District would be administered by an appointed board of directors.

POWERS

The District would be empowered to acquire property by lease, purchase or condemnation; to construct improvements; and to levy a limited tax for administrative expense, the maximum not to exceed 5 cents

on each \$100.00 of assessed value. It would have the power to take over rights-of-way purchased by the City, County or State and pay for such rights-of-way.

TAXES

It is believed that the District should have the power to recommend a tax levy only to pay any portion of principal or interest which is not paid from revenue. Taxes could, therefore, not be levied for the purpose of making up any operating deficits of the

companies which would operate the lines. Taxes would be levied similar to a school district. The budget would be set by the Board of Directors. The amount of any levy would be collected by the County authorities and deposited in the County treasury.

INDEBTEDNESS

The district should have the power to issue bonds and incur indebtedness only upon

approval by a vote of the people.

LEASES

These should run a sufficient time for the operating company to amortize its rolling stock, but the term should be as short as is consistent with that purpose.

ing company or companies in order to prevent the use of obsolete equipment or the purchase of equipment of a type which will not carry out actual, speedy and safe transit.

The leases must contain provisions which would insure rapid transit. The board of directors should have the power to approve operating regulations or schedules and to approve all equipment used by the operat-

The leases should be drawn on such a basis that the principal and interest of the bonds issued by the district will be paid from revenues.

This is Accomplished So Far...

NEED The need for rail rapid transit has been clearly demonstrated to the satisfaction of all who have studied it throughout the years. The latest statement is that of the California State Public Utilities Commission in a report dated June 16, 1947. The report said, in part:

"The most important conclusion one can draw is that, unless provision is made for rail rapid transit lines in these freeways, where they are needed today, Los Angeles will, in all probability never have a rapid transit system."
"It is estimated that rail rapid transit in a

freeway can be provided at approximately 15% to 20% additional to the cost of the freeway, alone, while separate rapid transit system, whether on private right-of-way, elevated structure, or in a subway under city streets, would cost several times this amount.

"In other words, Los Angeles can today obtain a rapid transit system for a fractional part of what one will cost in the future. *Any delay or procrastination will be fatal and plans must be made now to build the rapid transit system simultaneously with the freeway system.*"

SYSTEM A rail rapid transit system is recommended and agreed to by the Rapid Transit Action Group. This system includes rail lines in the Santa Monica, Olympic, Inglewood and Harbor and Pomona Parkways, and the East By-Pass, although it was agreed that future conditions would determine whether the Olympic line would be operated as a rail or bus rapid transit route. It includes rail operation in portions of the Hollywood Parkway for an ideal route to Hollywood and the San Fernando Valley. It also includes operation on existing private right-of-way from Glendale, Burbank, Long Beach, San Pedro, Bellflower, Baldwin Park, Pasadena and Monrovia. All of these lines would lead into

a downtown distribution system.

It is recommended that financing be planned so as to provide sufficient capital for the construction of the entire system.

This recommendation assumes the operation of bus routes on radial and crosstown freeways serving areas between the rail lines. It also assumes operation of buses connecting to the terminals of rail lines on some freeways, the operation of buses on the same freeways with rail operation, where desirable, and the development of surface feeder services to the rail rapid transit operation.

BENEFITS The benefits to the people of the community will be general—to those who will be able to walk to stations on the rail lines, to those who will ride to the rail lines by surface transit vehicle or by automobile, to those who will continue to use surface transportation, and to those who will continue to use their cars.

Riding time will be materially cut. The cost will be far less than the cost of driving and parking a car. Rail rapid transit is the one big improvement that can be made that will attract thousands of automobile riders to mass transportation. This will reduce congestion and will enable thousands to reach their destinations quickly, comfortably and economically.

COSTS The investment cost of the entire system is estimated at \$310,000,000. This includes the cost of additional right-of-way, additional construction cost in freeways, improvements to private

right-of-way, cost of subways, track and roadway, stations, and terminals and signal equipment. Annual costs will be about \$51,450,000.

REVENUES The annual operating revenues are based on an estimated fare of 2½ cents a mile, collected by zones. The boundaries of the zones beyond the

inner zone are about four miles apart. These fares would meet the estimated operating costs.

FINANCING A plan for necessary legislation has been proposed. All the additional costs of providing rail rapid transit in freeways would be borne by other than highway-user taxes. A district, called

the Metropolitan Rapid Transit District, should be formed to carry out the rapid transit needs of the community.

But This is Yet to be Done . . .

LEGISLATIVE ACTION

It is imperative that legislation be prepared for and passed by the 1948 State Legislature that will permit the formation of a financing district for rail rapid transit service in the Los Angeles metropolitan area. This legislation must be passed this year to permit the district to acquire right-of-way within the freeways where construction is now imminent. This is particularly true of the Hollywood Parkway.

Through the commendable cooperation of the State Division of Highways, the letting of certain key contracts has been delayed to permit rapid transit installation. This delay cannot extend beyond May, 1949. This makes it imperative that the District be formed and bonds sold prior to that time so that funds can be available for the purchase of the right-of-way and the additional construction costs.

ADDITIONAL STUDIES

This agreement on routes, costs, revenues and financing by the RTAG is the result of many months' work and detailed study. It is, however, only the first step in obtaining rail rapid tran-

sit. This work should be checked by other competent engineering authorities before bonds are issued by a district.

DISTRICT ORGANIZATION

As soon as the Legislature authorizes its organization, a Metropolitan Rapid Transit District should be formed. Further studies should be carried on at the negotiating stage to determine exactly how this additional right-of-way and the distribution system here proposed can be operated.

All of these negotiations and further

work should be the responsibility of the District. The people of the community should demand that this District be formed as soon as possible and should agree to the adequate financing and the conferring of powers on the District so that it can treat with operating companies that could give an adequate rail rapid transit service to the community.

SALE OF BONDS

As soon as firm agreements are reached with operating companies, after routes, costs and revenues are further studied and affirmed, bonds

could be issued. The District then can commence the acquisition of right-of-way, and enter into the necessary contracts for the building of the system.

Then We Can Have Rail Rapid Transit NOW



The Work of These Men Was Invaluable...

Finance Committee

Roger Arnebergh, Asst. City Atty.
Ray Chesebro, City Attorney
Harold B. Cutler, Security-First
National Bank
J. E. Fishburn, Bank of America

Harold W. Kennedy, County
Counsel
R. H. Moulton, R. H. Moulton Co.
David Lamon, Blythe & Company
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Robert Russell, Bd. of Pub. Ut.

F. W. Spencer, Pacific Electric
George F. Squires, Pacific Electric
W. B. Swan, General Electric

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Osborn Carlson, City Planning
Commission

Hugo Winter, City Engineer's
Office

Planners and Researchers

Arthur F. Ager, Public Utilities
Commission
L. H. Appel, Pacific Electric

David Canning, L.A. Transit Lines
John Commons, Regional Planning
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W. J. Macfadyen, Chamber of
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C. R. Montgomery, Dept. Pub. Wks.

Fred L. Mowder, L.A. Traffic Assn.
Wm. H. Neal, Deputy City Atty.
Ed Rondot, City Planning Comm.
Henry V. Wall, City Planning
Comm.