

Vice President's  
SEP 24 1920  
OFFICE

**UNIFICATION OF RAILWAY TERMINALS**  
AND  
**ELIMINATION OF GRADE CROSSINGS**  
IN LOS ANGELES

**REPORT**  
TO THE  
**MAYOR AND CITY COUNCIL OF LOS ANGELES**  
SEPTEMBER 6, 1920

By  
**SPECIAL COMMITTEE**

**PHILO J. BEVERIDGE  
FRED W. BLANCHARD  
MARCO H. HELLMAN  
HARRY HAWGOOD  
SAMUEL STORROW**

*Reports*

**REPORT**  
**OF THE**  
**ADVISORY COMMITTEE**  
**APPOINTED DECEMBER 8, 1919**  
**ON**  
**THE GRADE CROSSING**  
**AND**  
**TERMINAL PROGRESS REPORTS**  
**OF THE**  
**ENGINEERS OF THE STATE**  
**RAILROAD COMMISSION**

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September 6, 1920

Los Angeles, California,  
September 8th, 1920.

The Honorable Mayor, and  
The Public Utilities Committee of the Council,  
City of Los Angeles, Calif.

Gentlemen:—

Herewith we transmit to you our "Study of the Railroad Commissioners' Report", as requested by you.

Should there be any further matters in which we can assist you we are glad to place our services at your disposal in any matters pertaining to The Betterment of Los Angeles.

Sincerely yours,

H. HAWGOOD, Chairman  
SAMUEL STORROW, Secretary

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Los Angeles, California,  
September 6th, 1920.

Public Utilities Committee of the Council,  
City of Los Angeles,  
Los Angeles, California.

Gentlemen:—

Your Committee, appointed by your Resolution of December 8, 1919, having fully considered the matters submitted to them, now renders to you this, their formal report.

#### ORGANIZATION.

Your appointing Resolution reads as follows:

“That the Mayor be, and he is hereby, requested to appoint a Committee of five persons, two of whom shall be competent engineers, to make a study of said Railroad Commission’s Report and furnish to the Public Utilities Committee of the Council, in writing, the result of said study.”

The report above described as the Railroad Commission’s report is the report to the Railroad Commission of the State of California made to them by their Chief Engineer, Richard Sachse, dated by letter of transmittal to the Railroad Commission July 31, 1919, printed in Los Angeles, and issued to the parties interested on January 23rd, 1920!

The Sachse Report contains the following statement of the further action proposed by the Commission, and this was confirmed by the oral statement of Mr. Edgerton:—

“It is the Commission’s intention that \* \* \* the recommendations contained in the Report shall be revised and that finally the Commission shall make its decision and order.” (Sachse—20.)

The Committee appointed by the Mayor in accordance with your Resolution above set out was:—

Mr. Philo J. Beveridge,  
Mr. F. W. Blanchard,  
Mr. Marco Hellman,  
Mr. H. Hawgood,  
Mr. Samuel Storrow.

Messrs. Hawgood and Storrow are the engineer members and have been identified with engineering development of California and the southwest for more than thirty years. The other three members of the

Committee are men of wide and broad business training involving properties closely allied with the problems in the present instance.

This Committee organized by election of Mr. Hawgood as chairman and Mr. Storrow as secretary and got promptly to work studying the "Sachse Report" and the many allied comments thereon which came from all parties who felt that they were in some way or another concerned in the possible findings or recommendations which might grow out of the Sachse Report and the investigation of the problem by the Railroad Commission.

#### **THE PROBLEM.**

The problem in hand is the betterment in a permanent way of the terminal facilities in Los Angeles, including elimination of grade crossings between streets and steam railroads and electric railroads or any of them, with such rerouting of steam lines and electric lines and the reconstruction of streets and viaducts and any other allied matters as might be connected with the solution of this problem. (Sachse, 11, 19, 20, 21.)

## POINTS OF VIEW.

Your Committee have intended to make their study of the Sachse Report fit in with a thorough study of all the conditions of the problem and have tried to examine the entire situation in a broad and unbiased way, with full consideration of the likes and points of view of the many interests concerned, which may be considered as the view points of the following several different parties:—

- 1st. **The Railroad Corporation**, reflecting the attitude of non-resident directors of a corporation not personally interested in the up-building of the city;
- 2nd. **The Local or State Management** of the railroad corporation, jealous of any outside suggestion of how the property shall be developed or managed, and under continual pressure to maintain earnings and keep down expenses; and desirous always of benefiting each his own road, even at the expense of a competitor, and always at the expense of the shipper or passenger.
- 3rd. **The City**, interested in the long continued and long term development of the terminals and industrial properties and the convenience and benefits of its citizens, including corporate interests operating within its boundaries.
- 4th. **The Local Tax Payer**, who instinctively feels that the enormous railroad and terminal holdings are liable to be assessed at less than his own rate of assessment, and who resents being called upon to pay taxes for betterments in which he sometimes feels he is not vitally interested.
- 5th. **The Real Estate Owner**, who favors the plan that expends money for his benefit and opposes a plan which he does not feel will benefit his own property.
- 6th. **The Stockholder**, generally interested only in maximum return on his investment, with little regard to operation or welfare of the community.
- 7th. **The Bondholder**, frequently acting as a dog in the manger, tying up the uses and controls of the present properties in a way that often makes readjustments and reconstructions most difficult.
- 8th. **The Main Line Passenger**, favoring the road with the shortest running time, best equipment and best advertising, without much knowledge or regard to the location of the facilities.
- 9th. **The Interurban Passenger**, whose sole interest is usually low fares and quick access to the street location where he proposes to do business.

- 10th. **The Freight Shipper**, who in Los Angeles is generally interested mostly in fast truck delivery to convenient terminals and fast rail delivery; in direct competition with the handling of inter-urban freight by motor truck.
- 11th. **The Broad-minded Citizen**, who is interested primarily in the up-building of his city, with an eye to its beauty, effectiveness, convenience and ultimate growth.

It is clear that in this instance these eleven conflicting points of view require a very broad and honest and disinterested study of the problem to determine:—

- 1st. What are the defects of the present situation; (Pages 14, 18, et seq.)
- 2nd. What are the requirements of the correct solution; (Pages 21, 29 et seq.)
- 3rd. The choice between the several possibilities which fulfill the requirements and which add the greatest number of desirable features. (Page 14.)

It is clear that the requirements of the situation must be met. After the requirements are fulfilled the project which furnishes the greatest number of additional desirable features is the most meritorious.

Hitherto we have been required to consider all schemes from the point of view of voluntary cooperation of all the interested parties, particularly the extremely competitive railroads and sometimes complacent city. At the present time in the present problem we have a City Council strongly on record as desirous to bring about thorough treatment of the problem, (page 12), and the necessity for the full hearted cooperation of the competitive carriers is tempered by the fact that the Railroad Commission have full jurisdiction to make and enforce their order, (with the assistance of the City, page 51), and three of the four carriers have already asked for the privilege of building a joint union station (page 29, et seq), and the fourth carrier has stated a willingness to go into a union station, but objects to the location proposed by the other three. (Page 24.)

This whole terminal matter was brought to an active head by the bringing of several complaints before the Railroad Commission of the State of California known as "Los Angeles Railroad Grade Crossing and Terminal Investigation. Cases 970 et seq." (See "Jurisdiction" p. 51).

The City Council and the governing bodies of Los Angeles had for a long time been studying and working on the elimination of grade crossings in Los Angeles, and brought the matter to a definite position by a formal report which in due time became "Exhibit A" to the Complaint in Case 970 above quoted. This report was the first definite plan presented for the elimination of grade crossings and was made May 13,

1916, by Homer Hamlin, City Engineer, F. D. Howell, Chief Engineer of the Board of Public Utilities, and Samuel Storrow, Consulting Engineer. It was addressed to the Viaduct Committee of the City Council, who had appointed the above named engineers for the purpose of preparing a report. This report was adopted by the Viaduct Committee, who transmitted the same to the Council of the City of Los Angeles, with the following recommendations:—

**“That the report be adopted as a policy to be followed in the future and that the Council request the State Railroad Commission \* \* \* \* to carry out the plans submitted.”**

This letter of transmittal was signed by all the members of the Committee and on May 16, 1916, the report of the Viaduct Committee, with the Hamlin-Howell-Storrow report attached, was unanimously adopted by the Council and transmitted to the State Railroad Commission.

This position of the City has been most ably restated and reconfirmed along these same lines by the Resolution passed by the Council on August 30, 1920, with the order that this Resolution be transmitted to the Railroad Commission, wherein it is set out that the reports of Bion J. Arnold and other impartial engineers and experts who have examined the subject have advised in favor of a Union Passenger Terminal and the creation of joint freight terminals, and that the city planning is embarrassed, if not held up, until complete designs for this work have been decided upon:—

**“Therefore, Be It Resolved, That the State Railroad Commission be informed that it is the judgment of this Body that these matters should be decided upon as soon as possible, and that their decision, in accordance with the universal findings of the aforementioned engineering experts, should provide for the establishment of both Union Passenger and Freight Stations in the City of Los Angeles, and no other solution will satisfy this Council.”**

“In the present situation the property values and equity involved are so large and the interests so complicated as a result of long years of development, rearrangement, reconstruction, acute competition and lack of adequate municipal supervision, that the question immediately arises:

“Shall expediency and minimum cost govern or shall permanent development, based upon the lessons of the past and the unquestioned needs of the future, prevail.” (Sachse, 60; quotation from the Arnold Report on the rearrangement in Chicago.)

There can be no doubt that it is the intent of appointing this Advisory Committee that this problem should be looked at from the broad-

est, fairest possible point of view, and that this Committee feels that the requirements of a Union Station, from an engineering standpoint, and from certain of the other standpoints, have been well set out in the Sachse Report.



## CONCLUSIONS.

The Advisory Committee, having given much study to all the conditions and points of view of the problem, and to the extremely definite and lucid studies in the Sachse Report, and being familiar with the instructions and investigations of the Engineering Conference, and having been very fully advised by many people and by its own knowledge of the points of view heretofore set out, and being frequently in receipt of verbal and written communications from many public and semi-public organizations, has unanimously reached the following list of conclusions and recommendations:—

### CONCLUSIONS OF FACT.

1. Grade crossings in Los Angeles must be abolished in the center of the City at once, and ultimately throughout the city limits. This applies to both steam and interurban lines.
2. Ultimately all steam lines or interurban lines longitudinal in the streets must be eliminated.
3. The viaducts across the river must be rebuilt at approximately half their present grades, but without material, if any, increase of length end to end of approaches.
4. Electric interurban cars must continue in some way to operate longitudinally through the city.
5. Transfer shall be made, by which all interurban cars operate over an elongated terminal or circuit.
6. Interurban passengers must not be obliged to enter and leave cars at a single station, but rather at a series of stations, preferably no station being a stub station.
7. Convenience of the city, public and the railroads, requires a Union Passenger Station for all main line carriers, and that station should be entered by regular trains of all divisions of the interurban lines.
8. The physical requirements of area, accessibilities, city planning, and convenience of all parties, require that the Union Passenger Station shall be located at the north end of the city on or adjacent to the Plaza.
9. The plans outlined in the Sachse Report for a Union Station adjacent to the Plaza are approved and satisfactory; minor relocations, adjustments and redesignments may be studied to the end of less cost, if desired.
10. We are unanimously of the opinion that the Union Passenger Terminal should be located in the vicinity of the old Plaza, but we think that further study by the engineers and various interests concerned will develop a plan better harmonizing the many conflicts of opinion than the location set out on Page 363 of the Sachse Report.

(See also pages 15 and 52.)

## RECOMMENDATIONS FOR ACTION.

We recommend,—

- 1st. That the City Council reaffirm that the position taken by the City in this whole controversy is:—
  - (a) All grade crossings of steam or interurban cars over which such cars can operate must be eliminated by a design to be undertaken at once;
  - (b) That a Union Passenger Station, to be entered by all steam and interurban lines, shall be designed to be located in the north end of the City on or adjacent to the Plaza, in connection with the locating of all main line tracks for the steam lines depressed on both banks of the river, in general accord with the designs set out in the Sachse Report;
  - (c) That the interurban system be readjusted looking to the ultimate building of a circuit or elongated Terminal north and south through the City; and that in no event shall the interurban system lead into a single stub end station;
  - (d) That the railroads be encouraged to develop a series of L. C. L. freight stations, to which all roads shall have equal access;
  - (e) That the delivery of cars to industries properly located in the industrial district shall be encouraged in every way possible;
  - (f) That the system of viaducts across the river shall be redesigned according to the recommendations of the Sachse Report, as modified by the Engineering Conference.
- 2nd. That the City join with the State Railroad Commission in carrying out these plans at the earliest possible moment, with the suggestion to the State Railroad Commission that the continued study of problems necessary to prepare the designs for actual beginning of operations, will admit of minor modifications of the serial development and the installation of the several utilities in such way that the total cost can be reduced from the cost of the Plaza design of the Sachse Report; and to this end advise the study of minor modifications of the exact site to be occupied in the vicinity of the Plaza.

## THE SACHSE REPORT, ITS FINDINGS & RECOMMENDATIONS.

The State Railroad Commission instructed its engineers: —  
“to make a complete engineering investigation into the Los Angeles railroad grade crossings and freight and passenger terminal situation and report to the Commission on all the matters above referred to.” (Sachse, 11.)

This investigation by the engineers of the Railroad Commission sustained all the essential points of the Hamlin-Howell-Storrow Report, and was transmitted to the Railroad Commission in the so-called “Sachse Report” above referred to, and by you now referred to us, your Advisory Committee, for study and explanation; which is rendered necessary by the fact that the report is extremely technical in character and includes 587 finely-printed quarto pages, with many maps and drawings. After the Sachse Report had been rendered to the Commission and copies furnished to all the parties interested, (January 23, 1920), the Railroad Commission directed its engineers to call a conference of such engineers as might be appointed by the interested parties, for complete discussion of all the engineering problems, and after a series of meetings and discussions formulated a set of rules to govern the studies of this Engineering Conference, which by that time had been subdivided into a series of sub-committees for the purpose of individually studying the several parts of the Report. This Engineering Conference was instructed that it was not to report in favor of or against:—

- (a) The location of a Union Passenger Terminal;
- (b) The policy of establishing such a Terminal;
- (c) The apportionment of costs between the parties interested;
- (d) Traffic arrangements between the parties interested;
- (e) Methods of financing;

but that in all other matters the Engineering Conference was to consider all matters submitted in the Sachse Report and was given a free hand to advise thereon; to the end that the recommendations contained in the report shall be revised and that finally the Commission shall make its decision and order. (Sachse, 20.) The engineering members of this, your Advisory Committee, Messrs. Hawgood and Storrow, had the great advantage of being, one or another or both of them, on all the sub-committees, and therefore were able to keep well in touch with the situation as it developed under the discussions, or absence of discussions, of the various details of the Sachse Report.

The report of the Chief Engineer of the Railroad Commission was in accordance with the order of the Commission instructing him to make a complete engineering investigation into the Los Angeles railroad grade crossing and freight and passenger terminal situation. (Sachse 11.)

The report treats the problem from an engineering point of view, with frequent reference to historical, to city planning, and to financial aspects of the case.

The four subjects considered are:—(Sachse 12.)

- 1st. The possibility and design of grade crossing elimination;
- 2nd. The desirability, location and design for a Union Passenger Station;
- 3rd. The possibility for improvement in the freight situation;
- 4th. Interurban and city traffic.

The grade crossing elimination is the controlling engineering element in the entire report, and to a large extent governs the solution of the union terminal and freight problems. (Sachse 12.) The principles of grade crossing elimination adopted are to:—(Sachse 12.)

- 1st. Eliminate all important grade crossings on both banks of the Los Angeles River by depressing the railroad tracks along the river banks. Elevate the streets over and across both the railroads and the river by viaducts, which will thus be lower and on easier grades than those now existing;
- 2nd. Eliminate all through traffic from the tracks on Alameda Street, excepting only industrial switching to such of the industries situated along Alameda Street as cannot be served in any other way;
- 3rd. Accept the method proposed by the Santa Fe Railroad for the elimination of the grade crossings of 61 street, eight electric railway, and two steam railroad crossings; between Los Angeles and Pasadena;
- 4th. Eliminate the 28 grade crossings of the Salt Lake Railroad by requiring that road to operate over the proposed new arrangement of the Santa Fe.
- 5th. Eliminate certain other specified crossings, such as the Butte Street and others, by methods specified in each instance.

Mr. Sachse, in common with all the other engineers who have studied this matter, makes it clear that from the point of view of all the considerations governing the problem that there can be no solution along the five elements above stated excepting by the building of a Union Passenger Terminal and strongly hints that the solution will also require joint operation of whatever freight terminal facilities are constructed.

### THE ELIMINATION OF GRADE CROSSINGS.

The necessity for abolishing the grade crossings is so well known to all those in Los Angeles who have given thought to the matter that it is unnecessary to enlarge upon this crying need except to give a few significant figures in order that those who have no conception of the problem may realize the magnitude of the figures involved.

Traffic studies indicate that in 1918 about 65,000,000 people crossed the Los Angeles River and the tracks of the Santa Fe and Salt Lake adjacent to the river, and that the traffic crossing Alameda Street is about 20 per cent greater; or approximately 78,000,000 people per year crossing the tracks of the Southern Pacific on Alameda Street. These people are inconvenienced in two ways,—by the time loss and danger risk; it being estimated that on Seventh Street crossing gates have been found to be down as much as 19 per cent of the daylight hours; (this is in 1918, and the business is increasing.) (Sachse, 21.) The present railroad traffic over the grade crossings along the river bank amounts to at least 600 movements per 24 hours for the five existing grade crossings adjacent to the river bank; and on Alameda Street the count is shown (on page 200 of the Sachse Report) to be over 1800 engine movements over the 19 crossings counted; Mr. Sachse says (Sachse 23):—

“The average street north of the Arcade Station is crossed by 157 train movements each day, and the average street south of the station is crossed by 98 train movements. This means that 13 principal streets have an average of 3315 train movements daily.”

The crossing gates at Sixth and Seventh Streets, where the trains are about 60 per cent of the trains north of the Arcade Station, are down “over 15 per cent of the daylight hours.” (Sachse 23.)

Tables of the Actual Count of Traffic Crossing the Steam Tracks on Alameda Street and of Actual Count of Engine Movements are given, Two of Which Are Here Rearranged. (Sachse 197-200.)

### ALAMEDA STREET GRADE CROSSING TRAFFIC. (Annual Traffic)

Traffic Crossing the Tracks	North of Arcade Sta.	South of Arcade Sta.	Totals
People in Vehicles.....	20,465,000	9,214,000	29,679,000
Pedestrians and Bicycles.....	8,453,000	1,815,000	10,268,000
People on Cars.....	30,263,000	7,841,000	38,104,000
Totals per year.....	59,181,000	18,870,000	78,051,000
Average per Day.....	162,000	52,000	214,000

\*Average per 14-hour day, actual count, 6 a. m. to 8 p. m.

Engines Using Tracks	19 Crossings from Spring to Ninth Sts.		
Hauling Coaches, etc.....	347	155	502
Hauling Freight Cars.....	388	115	503
Light Engines.....	302	39	341
Total Engine Movements....	1037	309	1346
Average Minutes Apart.....	8/10 min.	2 7/10 min.	0.62 (37½ sec.)

The Engine Movement 8 p. m. to 6 a. m. is more.

\*From count of eleven days prior to U. S. Railroad Administration.

**VEHICLES CROSSING ALAMEDA STREET STEAM TRACKS.**

Counted at Nine Crossings, (Sachse 198.)  
Per Average Day.

	North of Arcade Sta.	South of Arcade Sta.	Totals
Automobiles.....	16,514	7,708	24,222
Trucks.....	9,589	4,238	13,827
Wagons.....	3,407	1,121	4,528
Motorcycles.....	755	302	1,057
Electric Cars or Trains.....	3,458	949	4,407
<b>Totals.....</b>	<b>33,723</b>	<b>14,318</b>	<b>48,041</b>

The greater part of these cross during 12 hours.

In order to eliminate these grade crossings two proposals were made:—

- 1st. That long, high viaducts be constructed from the west side of Alameda Street to the east side of the Salt Lake tracks east of the river; and it was the storm raised by this proposal that had much to do with the appointing of the Commission of engineers to assist the Viaduct Committee in May, 1916, resulting in the Hamlin-Howell-Storrow Report which brought back a proposal:—
- 2nd. That the viaduct across the tracks and river should be no longer than at present, and should be lowered to a grade that permitted about twice the present loads to be hauled over them, all to be accomplished by the device of concentrating and depressing all main steam tracks on the east and west banks of the river; which design has been modified and improved by Mr. Sachse. (See page 17, and Sachse 125, 137, 202, et al.)

Mr. Sachse recommends that for the time at least steam tracks be allowed to remain on Alameda Street, and that these tracks be used only for switching service to the industries which cannot be otherwise reached; but we add to this recommendation that this design should carry with it as an essential that the tracks on Alameda Street shall not connect with any station yards nor express yards nor switching yards nor team yards, but that all such facilities shall be reached by tracks going directly therefrom to the main lines on the river bank.

The construction of the proposed main line tracks on both banks of the river, and the construction of viaducts across the railroads and the river, includes the reconstruction of these viaducts at lower elevations, with lessened grades of approach. These designs were studied and worked up and are set out in the Sachse Report, pages 157 to 191. The Engineering Conference approved of all these designs, excepting that at Aliso Street it is advised that the bridge shall provide for the future carrying of vehicles and local street car traffic separated in grade from the Pacific Electric tracks. The Conference discussed the readjustment of the Alhambra Avenue crossing at the river, with the idea that at some future time a grade crossing viaduct should connect East Alhambra Avenue with North Broadway, and with the possible future connection through to Figueroa Street. The Committee also advised that in the design for the Plaza Station arrangement shall be made for the future building of a viaduct to carry North Spring Street over the tracks at Redondo Street when necessity requires.

Your Advisory Committee concurs with these findings of the Engineering Conference, and excepting as these recommendations and other recommendations of the Committee on Grade Crossing Elimination and on Passenger Terminals modifies the Sachse Report, recommends each and severally the designs of the Sachse Report for the reconstruction of the viaducts over the river and the building of depressed tracks on the banks thereon, as set out on pages 157 to 191.

(See pages 14, 15 and 52.)

## THE PASSENGER TERMINAL.

The Sachse Report makes a very exhaustive study of the desirability and the proposed locations of the Union Passenger Station, going into the question from every point of view, and arrives at the final conclusion with which we agree:—

“Taking all arguments into consideration, we feel convinced that a union station is desirable, provided it may be suitably located.” (Sachse 13 & 27.)

Your Committee in studying this subject have before it most vividly that the terminal situation and grade crossing dangers in Los Angeles have become intolerable and call for the expenditure of vast sums of money within the next few years. The choice is not between a small or no expenditure if the designs are not carried out, and a large expenditure if the designs are carried out, but, rather, between a carefully planned and adequate design capable of serial and continuous development and adapted to our needs for many years to come, rather than a wasteful expenditure of nearly the same amount in a series of individual and competitive designs causing wasteful duplication and no logical development of plans.

The Southern Pacific and Salt Lake railroads made Application 3346 for the approval of an agreement covering joint passenger terminal facilities. This application, in a slightly modified form, was before the City Council, to whom designs had been submitted by the railroads, at the time when the Railroad Commission took hold of the investigation. Application 2962 was for the Industrial Terminal Railway to develop a Joint Industrial Switching Terminal. Application 3037 was for the Salt Lake Railroad, who desired to establish fourteen additional grade crossings in order that they might reach into a proposed additional freight terminal on Alameda Street. There were also sundry other applications and requests from the railroads which had to do with changing the designs of the terminal situation in Los Angeles, and we must therefore fully face the fact that the railroads themselves propose to expend in competitive development an amount which would aggregate not far from the figures just quoted from the Sachse Report Mr. Sachse says on page 15:—

“While a capital expenditure of over \$32,000,000 seems large, it should be remembered that this money is to be expended over a term of years. In any event, whether the foregoing recommendations are adopted or not, very large capital expenditures aggregating probably in the neighborhood of the sum estimated by us will become necessary in the near future, if the transportation of Los Angeles is to keep pace with the growth and industrial and business development of the city.”

The Southern Pacific, the Salt Lake and the Pacific Electric have put forward a much heralded, but very vaguely and indefinitely described, design known as “The Titcomb Plan,” by which these three railroads, to the exclusion of the Santa Fe, (the only other remaining railroad) desire to introduce a Union Passenger Terminal for themselves alone; and it must be borne in mind that this working arrangement between these three railroads is in effect a unified terminal for passenger purposes, and when taken in connection with the requests for additional freight and team yard facilities of these three roads closely approaches a unified terminal for themselves for both passengers and freight. This working arrangement, if it could be carried out, would in effect be a union terminal for three of the four roads in Los Angeles, and a union terminal so arranged as to very greatly inconvenience the fourth road, and tie a fence of steel rails about that section of the City and effectually prevent the entrance therein of any competitive carrier. The exact cost of this Titcomb Plan is not and cannot be estimated because the plan has never been fully nor accurately explained by words or diagrams, and there seems to be no statement in existence as to:—

- 1st. Just what “The Titcomb Plan” proposes to do, item by item;
- 2nd. If permission were given to build this “Titcomb Plan” would the railroads obligate themselves to build such design and set it out in definite and specified form;
- 3rd. How the cost of viaducts and street adjustments would necessarily be met by the city.

The total cost estimate of the Sachse Plan for grade crossing elimination and passenger terminal has been worked out by Mr. Sachse and is set out in brief on page 15 as a total of \$32,233,445.00, on the basis of the prices in effect during 1918; and we believe in this matter of price that inasmuch as the total expenditure of \$32,000,000 will be spread over a series of years it does not much underestimate what in fact will be the total cost; and the more so because we have considered, and elsewhere in this report recommend, that careful consideration be given to the elimination of certain features, and to readjustments which will lessen the costs of others.

The desirability of a Union Passenger Station and, if it is found advisable to build such a station, the best location for such a structure, with its attendant utilities, is a problem at once simple and complex. Complex, because of the many apparent interests involved; but extremely simple when seen from a point of view far enough removed to get the true perspective of these varying interests, eliminating personal gain or pride, and going at the matter strictly from the point of view of true betterment of all interests concerned. Here again reference should be made to the list of Points of View given in the Report on page 10.

The confining of the main line transportation facilities to the banks of the Los Angeles River is the fundamental basis of the Sachse Plan for the inseparable "elimination of grade crossings and building of a union passenger station." The deliberate intent of the Arcade Plan is to build a viaduct from the river to the Arcade and thence to the tracks up and down Alameda Street, thus forming a barrier to access by vehicles, street cars or future railroads designing to reach the river or this industrial district or to effect communication between Boyle Heights and the center of the city; and this is one phase of what is meant by saying that transportation facilities should be confined to the banks of the Los Angeles River. We must not so encumber the banks of the river as to force any of the transportation lines away from the banks in order to get around the obstacles we build on the banks; and a Union Passenger Station at the Santa Fe, together with the Santa Fe freight facilities and the development of the freight facilities of the other carriers thereby forced towards the west, would be almost if not quite as effectual a barrier, and a departure from the building of transportation facilities on the river, as is the Titecomb Plan at the Arcade; whereas the Plaza Plan effectually and immediately eliminates from the river bank all matters which are not transportation, confining the river banks to the use and development for transportation purposes only and making the terminal facilities, which are an entirely different thing, a feature of an isolated unused and particularly fitting location, excepting only that the Sachse Plan develops minor antagonism with vehicles and street cars, which antagonism can be wholly eliminated by minor adjustments.

The present station sites in the city of Los Angeles can be kept in service only by immediate expenditure of great sums of money, especially if plans for grade crossing elimination, now so well worked out, are carried into effect. The Salt Lake road is under necessity of making very extensive improvements at once, and if the main line tracks are to be located on the east and west banks of the river the present Salt Lake station must be entirely rebuilt in another location, and the Salt Lake has made an arrangement with the Southern Pacific whereby the two have formally announced their desire to enter a Union Station, into which they also propose to take a track from the Pacific Electric.

The Santa Fe railroad is under the necessity of making extensive changes in its station and station yards, which at the present time are not in keeping with good railroad practice in a city of the importance of Los Angeles, and are distinctly below the standards set by the Santa Fe in much less important cities. The Santa Fe Railroad has stated its case recently by its attorney before the Railroad Commission, and heretofore by statements of the late Mr. Ripley to members of your Advisory Committee, that the Santa Fe is favorably disposed, upon order of the Railroad Commission, to entering a Union Station which was designed for the joint and equitable use of all the using railroads, and especially designed for the development of future traffic, and for this and other reasons consider the Plaza site preferable to the Arcade site.

The Southern Pacific is facing the necessity of clearing Alameda Street from the continuous and dangerous traffic over the crossings at

Third, Fourth and Sixth Streets and elsewhere, and must therefore expend a great amount of money to separate the grade crossings of its tracks and the streets (see page 23), unless it is able to land upon the city all or the greater part of this burden. The Alameda Street situation is fully set out in the Sachse Report, pages 193 to 215, et al.

The Pacific Electric has talked a good deal about changing the approach to its Sixth and Main Street Station in such way that all passengers for both the north and south division will be taken directly into the Main Street Station without opportunity to leave the cars along the routes entering the city. This is forcing its passengers to enter and leave the cars in conflicting routes on the one station already crowded, and in a section of the city also crowded by general street traffic.

"The present location of the three steam railroads with respect to one another is such that they could easily be brought into one depot: that is to say, at one or more points, the roads are close enough together that to connect them would require only the construction of short connecting tracks. This is in contradistinction to the situation in many other cities, where the roads enter from different points of the compass and where the main lines cannot be tied together without the construction of connecting tracks, either of a considerable length or through expensive property or by surmounting topographical difficulties." (Sachse, 247-248.)

A similar system of recommendation, namely, that a union passenger terminal was indicated for Los Angeles, was made in the Bion J. Arnold report and in the report of the engineers of the Viaduct Committee above referred to. It is urged in the following words:—

"These requirements (a separation of grade crossings) of course are susceptible to but one interpretation, namely, that the elimination of grade crossings by other than industrial deliveries and the maintenance of the minimum number of such grade crossings with joint use of trackage means a union terminal for Los Angeles, both passenger and freight, and it is only on this basis that the dangers of railroad grade crossings can be avoided and minimized and the best interests of the city at large and the railroads themselves can be conserved."

The desirability of a Union Passenger Station has been examined by Mr. Sachse with great care, and his opinion is well set out in his following conclusions:—

"Taking all arguments into consideration we feel convinced that a station is desirable, provided it may be suitably located." (Sachse, 27.)

"After a most exhaustive consideration of all arguments for and against a Union Passenger Station in Los Angeles we have come to the conclusion that the establishment of such a station is desirable, both from the standpoint of the public and from the standpoint of the railroads, that the cost is justified, and that the project can be financed." (Sachse, 13.)

"We believe that in the City of Los Angeles, more than almost any other city, a fine union passenger terminal is not only very desirable, but almost essential." (Sachse, 247.)

"In Los Angeles public necessity and convenience require the establishment of a Union Passenger Station." (Sachse, 250.)

The question of the improvement of union freight terminals requires a somewhat different treatment, because both the Southern Pacific and the Santa Fe are proposing to construct great freight yards well outside of the center of the city, and all the roads are asking for additional facilities for delivering less than carload lots of freight; and it is the opinion of your Committee that if the plan is carried out of concentrating the main lines in depressed tracks along the river banks, with low viaducts across such tracks over the river, and if a union passenger terminal is built adequate for a long time to come, that we may then let the freight situation stand in abeyance for the time being, with rather the tendency to grant all reasonable requests of facilities for delivering less than carload lots, provided that care is taken to reduce and ultimately eliminate all freight spurs laying longitudinally in the street; but it must be borne in mind at all times that everything must be done to prevent and minimize inconvenience, and especially cost, to the shippers and to the railroads.

#### THE LOCATION OF THE UNION PASSENGER TERMINAL

It is generally and publicly conceded by all parties in interest (excepting some of the railroads) that a Union Passenger Terminal is desirable, and the objecting railroads themselves have made application for a Joint Union Terminal to be entered by the Southern Pacific, Salt Lake and Pacific Electric. Application 3346 is the formal application of record, but the witnesses for the railroads, and the continuous propaganda of the railroad exponents, has greatly amplified this scheme and included an entrance for the Pacific Electric. The Pacific Electric has an application on file with the most vehement propaganda to support it that a Union Terminal for interurban cars is absolutely essential. Therefore, we take it as an accepted fact that the desirability of a Union Passenger Terminal is conceded by all, however much its detail of location and design are disputed by some, and that the only problem is where this site shall be chosen.

The site for a Union Passenger Terminal cannot be chosen at will, but must be selected after a thorough knowledge has been obtained and classified of the requirements of a Union Passenger Terminal in area, accessibility and facilities.

Mr. Sachse has laid down the rule that because overland trains are now frequently 13 cars it is necessary to have station platforms 1000 feet long. Yesterday we read in the paper that the Santa Fe was bringing out 14-car trains from Chicago, and their witness said these are common. These require 1200-foot platforms, and there is reason to believe that the certainty of electric traction will lengthen the trains, because the present experience of electric traction is that it is more powerful than steam traction and that longer trains are more convenient and cheaper to operate. This means that the station platforms must be from 1000 to 1200 feet long, exclusive of the space needed for the tracks to be developed from the throat of the yard up to these several platforms and onto other service tracks, and of the space needed for platforms and station facilities, including passenger, mail, express and baggage.

The width of the station yard is determined primarily by the number of platform tracks, which in good practice are put 42 feet between centers of passenger platforms, with a double track between platforms, and these double tracks 13 feet between centers. The total number of tracks needed for trains tributary to Los Angeles depends a good deal upon the amount of traffic which can be expected to occupy the station. At the present time the three main trains of the Southern Pacific are sometimes running a total of eight sections, and the three main trains of the Santa Fe are running about the same, and we are concerned not with the average, but with the greatest number that ever occurs. We must add to this the other existing trains now in operation, and also our best estimate of the probable development of future trains, and give careful thought to what is to occur when the surety of electric operation of the terminals has been carried into effect. Mr. Hawgood has made an extensive study of this matter and concludes that the number of trains figured by Mr. Sachse, shown on his diagram, (page 263), is in error, be-

cause it does not take due account of the effect of the war and of the reduced operation due to the United States Railroad Administration. Mr. Hawgood computes from data obtained from all directions that the line shown on the Sachse diagram (page 263,) and marked "Maximum Number Through Trains" is really the probable number of main line trains, which will be 180 daily in 1940, or twenty years from now; and that these trains will be frequently run in sections and other engine movements will make an equivalent of 200 trains daily in 1940. Our table on page 19 shows today a movement of 169 trains or passenger engines in and out of the present Arcade Station. The best engineering practice seems to show that 200 daily trains, taking account of the congestion of the morning and evening hours, call for from 17 to 20 tracks, with a 4-track throat and 4-track approach. This amount of trackage calls for a train shed having platform tracks 425 feet wide by 1200 feet long, and this is exclusive of the area needed for buildings, development of tracks in and out of the yard, mail, express, private car or other facilities. The probability is that the development of interurban traffic by electric operation, will greatly increase, rather than decrease, the traffic brought into the Union Passenger Terminal.

It is sufficient in this instance to quote from the Sachse Report (page 274) where Mr. Sachse shows that a stub terminal of 18 tracks, furnished with all other facilities, will be sufficient:—

"provided that the throat of the yard is fast and that the coach yard and mechanical facilities are not too far away;  
\* \* \* the tracks devoted to express purposes are not included in this number;"

and it is apparent that the tracks for baggage, mail and express are not included in this estimate.

In all the discussions of rail convenience and operations of a passenger station it must be borne in mind that the capacity must always be adapted to the maximum load of trains or passengers or crowds that it may be called upon to handle, and that very little interest can be taken in an average capacity, whether it be by the hour or day; so that the elaborate explanations of the Southern Pacific engineers that the Arcade site can be induced to accommodate 200 trains per day, provided the time table is so arranged that these trains enter and leave exactly upon the hour and minute of the time table so arranged as to bring in a second train exactly as the first leaves, are not interesting in the light of the known irregularity of the arrival and departure of trains and the known requirement that each important train is running in several sections and that each section requires several independent engine movements in and out of the station before that section is finally disposed of.

The Sachse Report is filled with requirements of a passenger terminal collected in some places into lists, such as the General List on page 273, and also the list of Mail Requirements on page 276, and the pros and cons of the several suggested sites,—

Arcade—284-288.  
Santa Fe—291-292.  
Plaza—295-297.  
Electric—110.  
Comparison of sites—388.  
Requirements of the Terminal—274-278.  
Engineering Conference Reports.

All these many requirements, and many others which have been fully established, together with the many additional suggestions from the point of view of the public using the station from one end, and the railroad using the station from the other, are well known to engineers and have been more or less fully discussed in the investigations leading up to the Sachse Report and to the report of the Engineering Conference and this report. We are now fully of the opinion that a Union Passenger Terminal adequate for Los Angeles requires an immediate area 500 feet wide by 3000 feet long, with a certainty of needed extension in width and, if convenient, in length.

The area and the shape of the station grounds having been roughly determined by the above system of calculation, amplified and adjusted by many cross references in the Sachse Report, we are at once brought face to face with the consideration of the three several sites proposed in the Sachse Report; with due regard to the unofficial, indefinite, and, we may say, inaccurate lack of detail surrounding the much talked about "Titcomb Plan," which is in the nature of a suggested possible amplification of the Southern Pacific plan set out in their Application 3346, and a modification or amplification of the Sachse readjustment of the Southern Pacific plan of a station yard as set out by diagram on page 341 of the Sachse Report. We have omitted from this discussion given in this report, but by no means from our consideration, the plans proposed for a union station at the present Santa Fe site, and we omit this discussion purposely from this report because we feel that the Santa Fe site does not measure up to requirements emphatically required by certain points of view heretofore mentioned.

We are thus brought face to face with the consideration not merely of the two remaining plans, namely:—the Plaza Plan and The Arcade Plan, but more truly to the consideration of these plans amplified beyond what has been set out in the Sachse Report into what might be called the possibilities of these two plans; in order to comply with the suggestion of the Railroad Commission that the object of the engineers' reports was to promote intelligent discussion so that

"the recommendation contained in the report shall be revised, and that finally the Commission shall make its decision and order." (Sachse, 20.)

Certain salient features mark the consideration of the two sites suggested. At the north end of the city we have the proximity of all the main lines of the steam carriers, together with the entrance of the northern division of the electric interurban and the concentration at or close to the Plaza of all the northern, eastern or western suburban highways, and the diagonal entrance into the same neighborhood of the



main city streets, making this at once a point of convenient access and distribution for all the interests concerned; and we are materially influenced by the opinions of the engineers not in the employ of the railroads who have given this matter study, that the north end of the city is at once and clearly the proper location for a Union Passenger Terminal; and the acceptance of this general location by the Santa Fe Railroad as against the Arcade site has already been referred to.

In considering the severance of the eastern part of the city (Boyle Heights) from the center and western part of the city, it is desirable to stop as much as possible the passage of steam trains through the intervening territory, and this again leads at once to the theory of stopping this traffic by diverting the major flow into a northern terminal; and this is particularly true in relation to the through traffic on Alameda Street, which, the report of the Engineering Conference shows, can be entirely stopped if the suggestion is followed of actually taking the tracks off of that section of Alameda Street next immediately south of the proposed Plaza Terminal. In this way the viaducts across the river and the approaches from both sides will reach the maximum of attractiveness and be an asset instead of eyesore to the city, with an actual reduction of the cost involved.

The building of any terminal near the center of the city at once involves the difficulty of adequate approach without grade crossings and the difficulty of extension when the inevitable time for extension arrives. The cross streets in the vicinity of the Arcade station require a certain amount of rearrangement to obtain better continuity, and the unconfirmed proposition of the "Titcomb Plan" for the rearrangement of Fourth Street, making it directly north of the present building of the Ice & Cold Storage Company, is a step in the right direction; but even this rearrangement of Fourth Street renders the Arcade area available for tracks, facilities and buildings a total length of 2150 feet by a width of 400 feet, or less than 20 acres, which is very greatly inadequate for the traffic involved and to be involved with the necessary facilities adapted to the needs of the next twenty years; and we feel that no design is worthy of considering or of inaugurating unless it contemplates how it is to be increased and handled, not in detail, but in general principles, for the next forty years.

Both the "Titcomb Plan" and the published Southern Pacific plan call for an elevated steam track on timber trestle from the river bank to the station, and for a considerable part of this length a second elevated track high above the steam track, on which third story the electric inter-urban cars will operate, and from which it is proposed that these cars shall descend by some heretofore unexplained method into the Arcade station or go onward to the second story of the Sixth and Main station. The northern end of this timber trestle is at Brooklyn Avenue and Pacific Electric right of way, with a branch from Sixth to Fourteenth at Alameda Street, and another from Sixth to Fifth Street at Alameda Street, and another from the east side of the river from Sixth to Ninth Street. This is a total of about 24,000 feet, (4½ miles) of timber trestle through, over, and across the center of the city. To state these facts is to condemn this dangerous monstrosity.

## BASIS OF COMPARISON OF SITES

In the comparison of one site with another and of one station building with another, or, in fact, in making any comparison between definite possibilities or designs, it is necessary that the various lists of requirements obligatory or desirable, and the various lists of advantages and disadvantages of the several sites and plans, together with the discussion of such matters in the testimony and before the Engineering Conference, should be collected from their present very widely scattered and sometimes indefinite statements and concentrated in the mind of whoever is making the comparison; and with this as a starting point all comparisons must pay strict regard to what is provided or omitted and to what is possible or impossible, both now and in the future, from all the several points of view set out on pages 10 and 11 and the requirements referred to on page 29 of this report, together with an accurate estimate of costs or savings involved by omitting or adding the various items one by one; and it can be at once seen that this is a very complex technical problem because each of the several view points mentioned has a tendency to lay more stress on this, that or the other supply or deficiency, according to the personal bias of the mind considering the matter. A glance at the various reports and papers filed with this Advisory Committee by the different parties or organizations who have given the matter consideration shows at once that the personal convenience of the parties offering the suggestion rather than the greatest good to the greatest number, or any other moral and business measure, has sometimes been the guiding element. The objections filed by some of the carriers under letter of August 13, 1920, copy of which has been forwarded to this Committee, are in almost every case objections to elements of design advised by the Engineering Conference from the point of view of convenience to the city and the public and the passengers, on the ground that, without regard to the merit of such suggestions, they are not helps to the financial profit of the operating roads. This is a very clear statement of the view points mentioned in Paragraph 2 on Page 10. Another set of objections has been distance to certain existing hotels, which is clearly too small an element to be considered as more than temporary.

Your Committee, having fully accepted the principle of depressing the tracks along the river bank with the viaducts, essentially as set out in the Sachse Report, as the correct solution for immediate construction for the relief of grade crossings, and having accepted as an essential part of this system of grade crossing elimination that all the railroads will therefore be required to enter a Union Passenger Terminal, has then been confronted by the single problem of where this Terminal can best be located, and in this way has, we believe, eliminated all personal feeling in respect to any details of the location or design.

All the requirements of a Union Passenger Station which have been presented or inferred or denied in the testimony or in the communications presented to this Committee have been carefully studied, and an estimate has been made to determine the additional costs to be added to either of the two sites under consideration, in order that both sites shall provide:—

- 1st. The same facilities at the present time;
- 2nd. The same facilities at the end of twenty years;
- 3rd. The same apparent possibilities of growth along the lines in which experience has shown large terminal facilities have a tendency to expand.

We were very much surprised to find that, given the same facilities at both locations at the present moment, the cost of the Plaza location is less than the cost of the Arcade location, with the further suggestion in the testimony of Mr. Sachse, before the Commission, that if it should be desirable, a material lessening of the Plaza cost could be introduced in the design without curtailment of the facilities, but rather by readjustment of certain non-operative features. And it is the further feeling on the part of your Committee that Mr. Sachse suggests in his testimony, rather lightly veiled, a hint that he considers it possible to make minor modifications in the location as well as in the design for the purpose of eliminating the cost of certain elements, which cost he believes is fully justified for the results obtained, but which cost is also avoidable by substituting some possibly satisfactory but less attractive detail of both design and location.

In arriving at the estimated cost of the Titcomb Plan in comparison with the official Southern Pacific Plan we were hampered because no complete design has been submitted of the "Titcomb Plan," and the sketches and details in the printed propaganda are extremely indefinite:—

- 1st. As to what are the structural elements of the Titcomb design, both in general and in detail, of location, type and material;
- 2nd. Just how the cost of these several structures are to be divided between the interested parties, including the city; and,
- 3rd. Just who should be called upon to pay the consequential damages.

Our estimate of the cost has been made by using the unit figures prepared by the Joint Engineering Conference and used by the Joint Engineering Conference in arriving at the cost of the Sachse plan for both the Arcade and the Plaza; and we have thus prepared for our own use an estimate of the cost of providing exactly similar facilities, with minor modifications due to the differences of each site, and so we have arrived at our conclusion, that a properly constructed Union Passenger Terminal, with all facilities described or referred to in the Sachse Report, can be built at the Plaza on the Sachse location or on a slightly modified location, for less money, immediate and future, than would be required to furnish the same facilities on the Arcade site, either by amplifying the original Southern Pacific design or the so-called "Titcomb Plan" or the Sachse Arcade design.

The Plaza site is the only site which furnishes a fully workable coach yard in direct contact with the station in such way that the future growth of the station and station tracks will never interfere with the coach yard.

At the Arcade site it will always be necessary that engines and empty express or mail cars be brought into the station and out again over Alameda Street, as at present, or over the elevated viaduct from the east side of the river and the coach yards to be built thereon more than a mile away and over tracks already crowded.

After due and careful consideration of each and all and every of the suggestions that have been put before us both by interested parties and by disinterested parties, by parties representing one interest or the other, we have come to the following conclusions:—

- 1st. That the Arcade project as set out in the application of the Southern Pacific and as amplified by the verbal explanations of the witnesses and propagandists of "The Titcomb Plan," is wholly inadequate to the needs of Los Angeles because of the retention of tracks along or across important streets, of deficient area, distance from train facilities, inadequate accessibility by vehicles and street cars, and the inability to cure these defects at any cost apparently within the realms of possibility;
- 2nd. The scheme as presented for the development of the Arcade site can be compared with the schemes presented for the Union Passenger Terminal at the Plaza in respect to cost only after similar facilities, now and hereafter, are provided; which is very far from being the case of the designs as now presented to the public; and in this matter particular reference is made to the Appendix to this report prepared by Mr. Hawgood, setting forth in somewhat more technical terms the basis of comparison of the two sites, by which it is shown that similar utilities at the Arcade will cost more than at the Plaza; and,
- 3rd. It is our opinion that the facilities furnished at the Plaza are much superior from every point of view than the more expensive costs at the Arcade.

It is of course clear that there will continue to be competition between the several carriers as to trains connecting with common points, and that therefore trains and sections of trains with light engine movements will tend to concentrate and congest the station at certain times, and that the greater the intensity of traffic due to excursions or otherwise, the greater will be this irregularity and the greater the congestion; and that it is our duty now to anticipate a certain amount of this and see that the design of the station and its possible extensions is such that it can grow as these difficulties grow; and this presupposes that certain tracks in the station will to some degree be allotted to the several carriers in order that overlaps or irregularities in their train schedules and train operations will, in the least possible degree, cause inconvenience between one carrier and another.

A very important element to be considered in all terminal study in Los Angeles is the certainty of ultimate electric operation of all terminal facilities, both passenger and freight, and the opportunity so furnished

for much more intimate contact between the Union Terminals and the districts and industries to be served, both passenger and freight, than can be carried out under steam and mixed operation. The Plaza station lends itself to an **elongated or circuit terminal** by surface or subway better than any other location suggested. It is clear that the **subway will be not for vehicles or local cars, but for interurban and main line cars**, with such portions of the local cars as have, for that district at least, outgrown their local character and become suburban or interurban. (Page 46.) In other words, the subway must be planned and operated so that stops will not be made at every crossing street, but only at certain fixed intervals of several blocks, as has been universally the practice wherever subways are employed. And we must recognize that this interurban traffic is the feeding line, both of passenger and freight, for the steam carriers, and that the present Pacific Electric has practically become the sole system of local trains feeding Los Angeles, because the local trains of the steam carriers are rapidly becoming less and less and give promise of prompt extinction, whereas **the interurban traffic is increasing by leaps and bounds, and is held back only by inadequate development**; so that its excess, not now taken care of in the interurban cars, is struggling for entrance into the city over the **many lines of interurban busses and privately owned automobiles and the many trucks of freight** that daily enter and leave the city; and we are forced to believe that this interurban traffic, or suburban traffic, or traffic between one end and the other of our much elongated city, will very greatly increase with the development of the harbor district and the development of the suburban districts, which, by annexation to Los Angeles and the use of Owens River water, are certain to make great strides forward in population, with its attendant transportation, both freight and passenger, whenever that traffic facility is furnished. For all these reasons it is clear that **the interurban and suburban traffic must have simple and prompt circulation** through a circuit system, on one part of which shall be the main passenger stations and the main freight stations of the main line carriers, and we feel that this system is best met by a Union Passenger Station at the north end of the city.

The present volume of the Pacific Electric business at the foot of the **Pacific Electric incline** in San Pedro Street near Sixth Street is such that incoming southern division trains and outgoing northern division trains pass over the frog at the grade crossing of these two tracks during the rush hours with intervals sometimes as close as fifteen seconds, and frequently **trains have to wait** until the train ahead has cleared this frog; in addition to which incoming trains of the southern division and the incoming trains of the northern division have to get into step with each other on the track rising on the incline to the station. This is the present condition with the present restricted traffic of the Pacific Electric, and at a point similar to the arrangement proposed in the "Titcomb Plan" for the passage of all electric trains and cars of the northern and southern division; whereas, at the present time, a material amount of traffic is delivered through the Main Street entrance to the station. These figures are based upon actual count, and for the purpose of this study time tables

or theoretical averages per hour or per day are of no importance, because the critical capacity of the proposed system is its **capacity at the time of the greatest rush** that may come to it in the time of crowded excursions; and since this **present arrangement is already overcrowded** to the point of frequently delaying trains, it is clear that it is wholly unsatisfactory for expensive construction because it is not adapted to carry the constantly increasing loads of the future.

[ **The future development** of interurban traffic, including suburban cars in Los Angeles, **will call for a circuit subway**, although it is not clear just when this subway will be necessary. ] It will surely result in a great development of business whenever built, and therefore is justifiable as a plan to be worked out at once. The cost of this subway is **no part whatever of the solution of steam terminal needs**, but rather a part of an increased development of the interurban system, which merely happens as a coincidence to be owned by one of the steam lines, and for which it serves as the most important feeder, both passenger, express and freight.

## STREET TRAFFIC AT THE UNION TERMINAL

In locating the new Terminal at or adjoining the Plaza we have given a great deal of thought to the showing in the Sachse Report of the existing and future traffic over the streets in that neighborhood, and also have studied very carefully all that has been said or written about the city or suburban traffic which will tend now or hereafter to flow past the vicinity of the Plaza; and we feel that the Sachse Plan takes adequate account of the streams of street traffic which now exist, together with the alteration of such traffic that will occur as time goes on and as the freight shipping facilities of the northern end of the city give place to the more purely passenger facilities. (Sachse, 99 to 118, 300, 386, et al.) The opening of Alhambra Avenue, which we have elsewhere (page —) in this report stated, is an important part of the Plaza plan, and the building of the New Plaza and, the Broadway Sub-Tunnel, etc., furnish opportunities for the readjustment of the main arteries of vehicle traffic in the vicinity of the Plaza, along the lines of the civic betterment organizations already mentioned, and others, and along the lines discussed at the Engineering Conference, to a greater and better degree and better adapted to continuous development in the vicinity of the Plaza than elsewhere, and will always tend to develop city and suburban traffic in such way as to feed it more uniformly and regularly to its desired destinations without congestion than can ever be the case with any of the other sites considered.

We must always endeavor to increase the attractiveness of Los Angeles as a business center as well as a residential city, not merely to obtain permanent residents coming to us from outside cities, but also as a daily place of business for what we have hardly yet started to develop, namely,—a thickly settled commuters' suburban residential district, with a series of towns or cities ranging around us and extending to the limit of highspeed electric or automobile transportation.

The more closely we analyze the map and the very enlightening traffic studies contained in the Sachse Report, the more thoroughly we are convinced that the Plaza plan, together with the readjustment of streets proposed in the Sachse Report and by the Engineering Conference and the other changes suggested, is more than able to furnish a continuously growing and improving method of handling the traffic to, through, and about the north end of the city and the Plaza Station.

As to the sentimental point involved in the use of the Plaza by a public utility, we must bear in mind that the present Plaza does no more, if at all, than touch the area occupied by the original Plaza. (See page 43.)

## TABLE ON PAGE 388 (SACHSE REPORT) FOR "WEIGHING OF IMPORTANT FACTORS"

On page 388 of the Sachse Report there is a table which has led to very great controversy, varying from enthusiastic support to trivial ridicule, according to the point of view of the speaker. We attach great weight to this table for its showing as a whole, but only after regrouping the various headings into a simpler and more easily grasped statement.

We have already referred to the many requirements and desirable elements. (See page 29.) A full knowledge of these, as possessed by or absent from one or another or each and all of the sites, is necessary to the exercise of fair and unbiased judgment, and yet each and all of these various requirements are colored by the point of view of each contestant so frequently referred to in this report and set out on page 10. If we are to judge the comparison of sites solely from the one single standpoint we must necessarily get a different decision than if we consider them from any other side of the circle of requirements. The adaptability from the railroad standpoint and the adaptability from the city standpoint may not be at all alike, and yet must necessarily have many points in common; so that the various elements of comparison given in Mr. Sachse's table, (Page 388) may be divided in the following alphabetically arranged descriptive groups:—

Accessibility.

Adequacy.

City Planning.

Freight Facilities.

General Considerations.

Grade Crossing Elimination.

Operation of Trains.

Rapid Transit.

Mr. Sachse has sub-divided these groups into a number of sub-headings, as, for instance, Accessibility is divided into the following several heads:—

- " 3—Adaptability to ultimate rapid transit;
- " 8—Accessibility by surface lines;
- " 9—Adaptability to baggage, mail and express collection and distribution;
- " 12—Convenience to hotel and business district;
- " 13—Accessibility by automobile;
- " 15—Results to freight draying;"

whereas he has not divided City Planning into any heads; and then to these several classes he has given the proportional weight, as follows:—

Total weight of all factors used in comparing sites, assumed as 100%;

Weight of City Planning—11½%;

Accessibility, in its several subdivisions—27%;

Value and adaptability of Plaza Site is 152% of Arcade Site.

We have regrouped this table on pages 388-9, as above outlined, giving to the several features the weights and ratings we believe correct, and obtain the following percentage results:—

Alphabetical Grouping	% of Importance	Relative Values in % of Total		
		Plaza Site	Arcade Site	
		% of Total Value	% of Value at Plaza Site	% of Total Value
Accessibility.....	16.4	15.9	92	14.9
Adequacy of Area and Shape.....	21.4	23.2	50	11.6
City Planning.....	8.6	9.3	60	5.6
Freight Facilities.....	7.9	8.5	89	7.6
General.....	8.6	9.1	37	3.3
Grade Crossing Elimination.....	7.1	6.2	50	3.1
Rapid Transit.....	7.1	6.2	85	5.25
Train Operation.....	22.9	21.6	70	15.1
Total.....	100.			
Relative Value.....		100%	66.4%	

Value of Plaza Site is 151% of Arcade Site

If the above table is regrouped on purely selfish transportation features by omitting items 3, 5 and 6, the totals come out as follows:—

Plaza Site—Relative Value, 100% or 140% of Arcade Site;

Arcade Site—Relative Value, 72%.

Whichever of the stated angles of view is taken the Plaza Site shows a very great preponderance of advantages over all other sites, even with almost arbitrary differences of personal opinion adapted to the furtherance of this, that or the other selfish desire of the proposer. This tabulation is intended to show merely the **relative value of the several designs in their fulfillment of the requirements** of a Union Passenger Terminal, or, in commercial parlance, "the ability to deliver the goods." The detail of cost is elsewhere set out; it is sufficient to say here that the result of our studies is that with equal facilities being provided on the several sites **the Plaza is in first cost and in ultimate cost the cheaper**, irrespective of the fact that delivery of the goods (meeting of the requirements) and the quality of the goods themselves is better at the Plaza than elsewhere. It is perfectly clear, for instance, that **adequacy of site is an absolute essential**, without which no project is worthy of a moment's consideration.

The question of adequacy of the site for the Union Passenger Terminal rests mainly on the question of **how far ahead should we forecast** the needs of the transportation and the needs of the terminal facilities in Los Angeles, and this must be subdivided into how much of the design we shall build immediately and how much of the design we shall postpone for later construction.

We agree with Mr. Sachse, and with other engineers who have studied the project, that in planning for the terminal facilities of Los Angeles we must prepare a **scheme of development** which can be begun now and go on growing for many years to come, and that we must not hedge any part of the city with a ring of steel inside of or outside of, or across which, we have strangled opportunities of growth. We believe that it is proper for the scheme to contemplate a design of terminal facilities for a great many years to come with fairly definite main **elements of this development for fifty years**, and with an absolute requirement of sufficient construction for **twenty years** after the first general construction has been completed.

The forecast given in the report, by design and description, pages 261 et seq., and scattered about here and there through many parts of the report, is stated at **not less than twenty years**, with the suggestion that this is a **minimum figure**, but that the same type and character of growth may be expected to go on afterwards. In this we concur excepting that we consider that the **growth of the interurban passengers** of transportation systems and elongated or circular subways will be a most important factor in the proper development of the city and is closely associated with questions now under discussion; and we believe further that the calculation of the number of through trains set out on page 263 is seriously in error because it gives undue weight to the schedules of the United States Railroad Administration and to the effect of war conditions so very noticeable in our western traffic, and does not give due consideration to electric operation of main lines and terminals and to the operating of trains in sections and as special trains. For these and other reasons we are adopting the conclusions of the Engineering Conference

set out on Page 13 of the Sub-Committee's report on a Union Passenger Terminal, as follows:—

**'It is the sense of the majority of this Committee that in designing a Union Passenger Depot for Los Angeles the capacity be based on a minimum of 150 trains per day by the end of the year 1930, 200 trains per day by the end of the year 1940,'**

these being time table or schedule trains which must be increased in number to correspond with light engine movement, coach movements and trains operating in sections. In making this recommendation we have before us the protest of the Southern Pacific et al under date of August 13, 1920, wherein they state that their representatives (members of the Engineering Conference) did not take part in the discussion of these subjects at the Conference, nor hear the discussions, nor vote thereon, and now wish to register a delayed vote against the above statement of requirements as to general design, time limits, and train capacities; but we still adhere to our findings, with due regard to the difference between working out a plan capable of future growth and working out a plan incapable of future growth, with respect to immediate and future obtaining of property and the building of improvements now and hereafter, because the very object of this protest seems to carry with it strong reasons for our conclusions above stated.

The acquisition of any site which would in a comparatively short time prove inadequate for traffic demands, and which would not furnish a simple and pre-arranged system of expansion, would prove a serious and costly error. The City of Los Angeles has vigorously entered into the manufacturing field and the development of its harbor, with the consequent development of its city and suburban districts. It is emerging from its infancy into the principal city of the Pacific and one of the first ten cities of the United States, and we must take a broad view of the terminal requirements of such a metropolis; and the exercise of common prudence, in a business sense, means provisions for future expansion along the lines of past experience here and elsewhere. The only sound policy is to build for the immediate future, step by step, along the integral parts of an ultimate plan; as has been so fully set out in the general requirements adopted in codified form by the Engineering Conference Committee and set out, as previously stated in many parts of the Sachse Report. (See list, this report, Pages 19 et al.)

Los Angeles has established the general principle that for the city of Los Angeles and for separating grade crossings the streets will rise and pass over the rails by a system of viaducts, excepting in single exceptional cases, and has now announced itself most forcibly in favor of the scheme so logically adopted by all the engineers, that in addition to the raising of streets by viaducts there shall be a corresponding lowering of the tracks, so as to physically prevent grade crossings. (See pages 11, 12, 13,) This type of separation being now firmly established and partially built, it becomes at once an element which will rapidly end in irrepressible

conflict if we permit any crossings of main thoroughfares by elevated railroad tracks, and certainly it will multiply this danger very greatly if we pile on top of this elevated steam viaduct a still higher viaduct carrying electric cars, and then at some later time endeavor to pass through this almost military entanglement an unobstructed line of traffic for a future street or future railroad. This same method of reasoning, as to the principles laid down for the separation of grades in Los Angeles, namely,—that railroad viaducts must not cross important streets, but that the important streets shall be carried over the tracks on viaducts, precludes serious contemplation of a two-story or three-story terminal anywhere in Los Angeles having any similarity to the Grand Central Station in New York, and thus carries with it the requirement that whatever site is located now shall be capable of full and adequate expansion as time goes on.

## CITY PLANNING.

The element of city planning, city pride, architectural effect and development of a civic center, has been referred to a great deal in all discussions, and is a feature in the Sachse Report, but as much in one station as in another. The Sachse Report sets forth a design of station copied from the station at Washington, D. C., and sets forth some details of location and construction which Mr. Sachse says are, in his opinion, fully justified by the importance and opportunities of the city of Los Angeles. In that opinion we agree. He has not overstepped the mark, and the amount of money which he estimates as desirably spent along these lines is not excessive; but we are satisfied that if it should be the desire of all parties concerned to carry out the principles of the Sachse Design for the Plaza location that Mr. Sachse himself could incorporate these principles into a cheaper construction, even though he feels that the importance of the problem and the opportunities justify the figures he has given.

The best city planning and civic development is as well determined in its principles as any other department of engineering, but is not as well known to the public, merely because it is a branch of engineering having but a very limited practice, and therefore its principles have not been well codified in text books and pamphlets, but are scattered over a very much greater list of writings.

One of the first principles of city planning is that the various zones or districts of the city should be well segregated, and yet must be connected by thoroughfares of traffic inherent to each district; and this leads to the combination of circular and radial thoroughfares so beautifully illustrated as a part of the original design of Washington, D. C., and as a part of the reconstruction, at tremendous expense, of cities like London and Paris. A central park or plaza, surrounded by the public buildings, so well worked out in San Francisco, or a long avenue or boulevard, which is the more common type of development, is at once adapted to a selection of sites and agricultural features and local transportation facilities adapted to the class of people who frequent these utilities, and who are distinct from the type of traffic belonging to wholesale or manufacturing districts. It has been proposed that Los Angeles should develop a civic center along the lines suggested above, but a good many of the proponents of these schemes have been influenced by the ownership, either by themselves or associates, or the city, or by the lack of such ownership, into an attempt to develop this or that or the other particular site because of its expediency or profit, thus endeavoring to deflect a general principle well understood by all students of city planning into an argument in favor of one or another preconceived scheme. Your Committee has frequently checked itself from this method of reasoning, which is along the lines of the least resistance and insisted upon an unprejudiced survey of what the city needs, from the point of view of all its several interests, but with proper regard to, and yet not over-estimating, the desires of the individual interests involved. It is of the utmost importance that when the city of Los Angeles undertakes to carry out

a plan for the betterment of the city, the development of a civic center and city planning, that it be a well thought out and far-sighted plan along the strongest and broadest lines and be consistent with the proper cost of the results to be obtained.

Certain sentimental elements must always enter city planning, and if the existing Plaza in front of the Old Church had been the original Plaza, or the central plot around which the Spanish Pueblo was laid out, there might be a certain weight given to that sentiment. The present Plaza does not occupy one foot of the area of the original Plaza, the extreme southeasterly corner of which was at about the extreme northwesterly corner of the present Plaza, extending well behind the Old Church. It has been stated by the propagandists that conditions of the grant and dedication of the Plaza on September 4, 1781, prohibit its use for railroad purposes; which, in view of the date, 1781, long before the building of the first railroad, seems a most extraordinary foresight on the part of the dedicators; and even so, the march of modern conditions has frequently called for the alteration and readjustment of restrictions of original grants; besides which, as we have just stated, the present Plaza is not the original Plaza, and the hysteric cry to leave undisturbed what is not the relic of a historic past, is somewhat far-fetched and visionary, especially when put forward by and to perpetuate competitive systems of terminals as requested by one group of railroads in Los Angeles.

With the sustaining of the power of the Railroad Commission as a tribunal fully authorized to investigate and to issue enforceable orders, and with due regard to this change of conditions and the growth of interurban business and other changes, we desire to include as a part of this report the principles ably elucidated by Mr. Bion J. Arnold and Mr. C. M. Robinson, but care must be taken in studying these reports to keep the mind clear for the principles rather than the details involved, and not to misunderstand a few words so as to pervert the real meaning. The unequivocal recommendation of the Plaza site for the Union Passenger Terminal, coming, as it does, with the weight of Mr. Arnold's experience behind it, cannot be disregarded, and is finally summed up in the following paragraph:

"It does not take a lengthy study of the plan of the city and its transportation requirements to discover there is one site which is adapted to fulfill the requirements of a grand central depot and transfer station, and this location is in the immediate vicinity of the Plaza." (Report of Bion J. Arnold, October, 1911; Sachse, 305 et al.)

The material difference between the Arnold Plan and the Railroad Commission's engineer's plan is that the former planned a station on the east side of the Plaza, facing west, and the latter on the north side, facing south, with, of course, the Arnold Plan on the existing Plaza and the Sachse Plan on the proposed New Plaza.

In the vicinity of the Plaza and extending thence toward the retail districts of the city is already a very considerable development of a site and beginning of a splendid Civic and Administration Center—the Court House, the Hall of Records, Post Office, Custom House, the site bought for the new City Hall, the project of J. S. Dodge Civic Center plan presented to the Mayor and Council, December, 1919, the plans of the Temple Block by the Civic Center League, the plans of the Fifth Street Association for the Art and Culture, and so on; which will develop in this location a monumental group of buildings clustered about the same highways, streets, thoroughfares and transportation facilities that are a necessary part of a Union Terminal Station and that will operate conjointly for the Civic Center and the Union Terminal without interfering the one with the other, but each taking advantage of the opportunities presented by the existence of others in the same vicinity.

#### FREIGHT FACILITIES

A study of the freight facilities, both historically as to how the present conditions grew into existence, and as to the continual requests of the several railroads for further extensions along the same lines, and as to the experience of other cities, leads us to believe that the recommendations condensed into the statement of the Sachse Report (page 13), for freight facilities, are the correct solution of the difficulties, excepting that we recommend as to paragraph 4, page 13, that there should not be established a single union freight station for less than carload freight, but that the City should encourage the building of several L. C. L. freight stations throughout its present and future area, including the Harbor District and the San Fernando District, which freight facilities should be for joint operation of all present and future railroads, but that no new freight station or yard shall be fed by main line tracks crossing or laid on important streets at grade. (See this Report, page 26.)



## SUBWAY SYSTEM IN LOS ANGELES

We recommend that the Council associate itself, through its engineers associated with a committee of engineers appointed by the Council, with the Railroad Commission and the engineers of the Railroad Commission for the further study and preparation of **tentative plans for a subway adapted to interurban and suburban traffic**, which study should carry with it the preparation of a scheme for operation, taking conditions as they are now and ending with the completely operated subway, if such is advisable, showing, step by step, what can and should be done, with an estimate of costs thereon and suggestion as to financial schemes for construction.

Until surface traffic congestion over all the possible north and south thoroughfares makes a subway a necessity, the northern and southern divisions of the Pacific Electric can be routed over Aliso Street, San Pedro Street, or other streets or private rights of way, and since the re-routing of the Los Angeles Railway cars can be even further improved, it is possible to dispense with the immediate construction of a subway; although it would seem at the present moment that a subway is ultimately necessary to relieve surface traffic, but the need is not now immediately in sight, and when the necessity does arise the subways will be **developed as a system and not as an isolated line.** The present custom is for a subway to relieve the streets of some of the "heavy-car traffic" and not of the light traffic; in other words, to develop a high-speed through service and not a service that stops at every corner; it should be adapted to the convenience of suburban and interurban passengers who desire to get on or off the trains not at a single station that may happen to be convenient for the operation of the cars, but at several **stations more convenient to the passengers' ultimate destination.**

The importance of the subway, as seen by the engineers of the Railroad Commission, is shown by their having incorporated it in each of the plans presented, the thought being that **this subway is essential to Los Angeles**, the time of construction being when all available lines of surface traffic become overcrowded.

## COSTS

The grand totals at the foot of the cost estimates in both the Sachse Report and the Conference Report do not represent the costs of equal facilities at each site and therefore are not a fair comparison between the costs of different sites. The Sachse Plaza Plan is designed for modern fireproof buildings, with 22 platform tracks and with full and complete systems of all that goes with such a station, and that many passenger platform tracks; while the Arcade site provides only 12 platform tracks (with an even less proportion of the appurtenances), fed from the main line by an inclined throat necessarily slower than the Plaza throat; so that a fair comparison of the facilities offered would be to compare the full Arcade site of 12 tracks with the building of a 10-track station at the Plaza; or, in the reverse, to raise the Arcade site to more than 22 tracks, which cannot be done, even if such a station could be fed by the greatest possible increase of the inclined throat. There is also at the Plaza a direct connection with the subway, which cannot be obtained at the Arcade at any cost, and there is at the Plaza site the open park into which all the main diagonal streets and suburban roads center. The Commission engineers estimate this Arcade Plaza would add \$1,982,251.00 to be added to the Arcade total, and more express facilities must be added to the estimate of the Arcade, which the engineers estimate at \$73,300. There should also be added to the estimate of the Arcade the additional cost of fire-proof trestles in place of the proposed wooden structures; and the Arcade is by no means of modern design.

These corrections being made, it is found that for a 12-platform track capacity at each place, the Union Passenger Terminal and approaches at the Plaza site would cost \$6,328,161 and at the Arcade site \$4,812,278, and for 22 tracks at each place:

Plaza Site.....	\$6,568,261
Arcade Site.....	\$6,052,378

At the Plaza there would be added only the cost for tracks and platforms, while at the Arcade there would also be land to buy on which to lay the tracks.

These figures apply purely to the passenger facilities.

In the grand totals of the report there is included for each site the sum of \$6,700,000.00 for **grade crossing elimination between Los Angeles and Pasadena**. It is quite proper that this sum should appear in the broad study of the subject given in the Report, but it **has no connection whatever with the problem of terminals in the City** and should be set apart very distinctly; otherwise the impression will go abroad that the terminals would cost nearly seven million dollars more than is really the case.

To further clarify the matter, the cost of elevating the Pacific Electric Southern Division tracks from Wall Street to Fourteenth Street, with addition for substituting permanent materials for wood, should be placed under the head of Grade Crossing Elimination. The work would be done

*cf Sachse p. 298 Until Subway  
Arcade Plaza no benefit.*

to lift the tracks off the streets, which can be done, or left undone, without any effect on station costs.

With these and cognate matters in mind the following tabulation of equal facility costs has been tabulated.

The unit prices are those of the Commission engineers as of 1917. As previously noted, it would be irrational to use the peak prices of March, 1920.

**UNION PASSENGER TERMINAL COSTS FOR EQUAL CAPACITY.**

<b>Capacity: 12 Platform Tracks</b>	<b>PLAZA</b>	<b>ARCADE</b>
Union Passenger Station and Approach		
Tracks .....	\$ 6,328,161	\$ 4,812,278
Freight Facilities .....	6,040,150	6,040,150
Additional Tracks .....	401,144	388,853
<b>TOTALS .....</b>	<b>\$12,769,455</b>	<b>\$11,241,281</b>
<b>Capacity: 22 Platform Tracks</b>		
Items as above, for 12 platform tracks .....	\$12,769,455	\$11,241,281
10 additional platform tracks .....	240,100	240,100
Land for additional platform tracks .....	nil	1,000,000
<b>TOTALS .....</b>	<b>\$13,009,555</b>	<b>\$12,481,381</b>
<b>Rapid Transit Associated With Above Elevated: Alameda Street to Brooklyn Avenue .....</b>	nil	\$ 1,328,923
<b>Main Street Subway and Approach, common to all sites; to be built when actual need demands .....</b>	\$ 5,552,406	\$ 5,552,406
<b>Rapid Transit, Grade Elimination Pacific Electric, Wall to 14th Street .....</b>	2,228,340	2,228,340
<b>TOTALS .....</b>	<b>\$ 7,780,746</b>	<b>\$ 9,109,669</b>
<b>GRAND TOTALS OF TERMINALS .....</b>	<b>\$20,890,301</b>	<b>\$21,591,050</b>
Ultimate		
Relative Value of Terminals .....	100%	66%

**GRADE CROSSING ELIMINATION AND UNION PASSENGER TERMINAL.**

	<b>PLAZA</b>	<b>ARCADE</b>
<b>TOTAL FOR TERMINALS (above) .....</b>	<b>\$20,890,301</b>	<b>\$21,591,050</b>
Grade Crossing Elimination in City Proper (N. Main and Redondo Street Viaduct included in both cases for reasons given)	\$ 5,453,707	\$ 5,519,315
<b>GRAND TOTAL FOR ALL WORK SHOWN ON PLANS, PERTAINING TO TERMINALS .....</b>	<b>\$26,343,008</b>	<b>\$27,110,365</b>

Grade Crossing Elimination between Los Angeles and Pasadena . \$6,700,000.  
(Note.—Of this the Pacific Electric crossing of Mission Road at Rosehill has already been completed.)

## NOTES ON COSTS

Unit costs of material and labor are constantly changing, but not all at the same rate, and no matter what design is selected and built **the cost will be spread over a series of years**; and in work of this kind unexpected opportunities frequently occur to make desirable changes of design or to take advantage of special opportunities. At the present time the costs of material seem on the whole to be distinctly decreasing, although deliveries are very irregular. The cost of common labor is showing a decided tendency to drop; the cost of skilled labor is holding about the same, although the efficiency is still slightly decreasing. There seems to be a very strong feeling that the average cost of construction, including all kinds of material and labor, will distinctly and markedly drop in the next few years, but may never get down again to as low as before the war, although it is probable that it will get back again so as to render **the total cost of any design** carried out to be **substantially the same as estimates of the Sachse Report.**

**The rate of expenditure** of money for any design would be slow, both for the land required and for the structures, and a number of structures could be omitted until the needs therefor should grow. The Engineering Conference advised the total elimination of the Macy Street viaduct across the Plaza yard and the inclined subway under the Plaza throat.

Comparison of cost of grade elimination **must be made in the same way as the comparisons of the costs of stations, by seeing that similar conditions are complied with in whatever design is adopted**, but inasmuch as your Advisory Committee are so unqualifiedly in favor of the river bank location for the main carriers, and of the ultimate total elimination of traffic from Alameda Street, and the selection of a location near the Plaza for the Union Passenger Station, we do not feel that a discussion of the minor rearrangement of the cost of grade crossing elimination is called for at the present time of unsettled prices.

## JURISDICTION OF THE RAILROAD COMMISSION

Reference has already been made to the extremely important fundamental position of the present time, namely, that the consideration of the whole problem can now be undertaken in broader and more effective way than ever before, and certainly in much broader way than was possible at the time of the Robinson Report of 1909, or the Arnold Report of 1911, or even than the Howell-Hamlin-Storrow Report of 1916, because the jurisdiction of the Railroad Commission over the matters at interest was kindly but firmly disputed by the City of Los Angeles, and this denial received the support of the attorneys of the railroads in their statements before the Railroad Commission at the earlier hearings, so that the whole question of jurisdiction was taken before the Supreme Court of the State of California, who, on June 11, 1917, made its decision, in which the following words are used:

“It is ordered that the Railroad Commission proceed to consider and determine, upon the merits, the complaints made to it by the plaintiffs herein, and that a writ of mandate be issued to it in accordance herewith.” (L. A. No. 5028; also L. A. 5029.)

The City of Los Angeles continued to deny, and filed a petition for rehearing, which was dismissed on July 10, 1917; and thus the City of Los Angeles has really by this technical dispute of the jurisdiction of the Railroad Commission increased the power of the City, so that the legal position of the City Attorney at that time, acting as a defendant to the complainants, was really to substantiate an important fundamental condition for going ahead with the work which the City Council had so frequently and so strongly advocated; and the whole matter has thus been placed in the hands of an **impartial tribunal of ample power, fully able to hear and digest at its true value all evidence of schemes or suggestions or recommendations brought before it, as well as having full power, and power more than of courts, to obtain any other information it may desire, and to take action on its own initiative, and issue enforceable orders,**

Should it ever be shown in court that the terminal problem in Los Angeles is not a local but a Federal problem, the same system of reasoning vests the above plenary power in the Federal tribunal and **the principle is sustained, that the City and the Public are “parties in interest” quite as much as the railroads, and that the going ahead with the project of “Grade Crossing Elimination and Unified Terminals in Los Angeles” is not dependent upon the initiative and voluntarily associated co-operation of the railroads or any parties.** The power to stagnate the development of the City is not in the hands of any corporation.

## FINAL RECOMMENDATION

We desire to repeat again our recommendation given on Page 15, to which we refer for the details of these several recommendations. More briefly stated, we recommend:—

- 1st. The immediate abolition of grade crossings by carrying out the design of depressed tracks along the river banks, and the building of a Union Passenger Station at the Plaza, and the development of a multiple system of L. C. L. freight terminals, in general accord with the design set out in this Report; and,
- 2nd. That the City join with and continue to cooperate with the State Railroad Commission in carrying out the plans for the above mentioned designs, as set out in the Report of the Chief Engineer of the Railroad Commission, accompanying his letter of transmittal of July 31, 1919.

Respectfully submitted,

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H. HAWGOOD  
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