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REPORT ON STEAM RAILROADS  
OF  
SAN JOSE, CALIFORNIA.

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CONTENTS.

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Page c.1

REPORT ON SAN JOSE AND VICINITY  
STEAM RAILROADS  
OF  
SAN JOSE, CALIFORNIA  
DECEMBER 15TH 1925.

.....	1
.....	3
.....	3
.....	4
.....	5
.....	6
.....	6
.....	6
.....	6
.....	11
.....	13
.....	15
.....	16
.....	19
.....	20
.....	23
.....	35
.....	34
.....	35
.....	35
.....	35
.....	35
.....	36
.....	36
.....	37
.....	38
.....	42
.....	42
.....	44
.....	46
.....	49
.....	49

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REPORT ON STEAM RAILROADS  
OF  
SAN JOSE, CALIFORNIA.

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Quantity of Daily Passenger Train Movements

Page  
20

Quantity of Daily Freight Train Movements

Plan C

CONTENTS.

	Page
GENERAL .....	1
FREIGHT TERMINALS .....	3
PASSENGER TERMINALS .....	3
INDUSTRIAL SERVICE AND DEVELOPMENT .....	4
REQUIREMENT OF THE CITY .....	5
RAILROAD OPERATING METHODS IN SAN JOSE AND VICINITY	
General .....	6
SOUTHERN PACIFIC RAILROAD..	
Description of Routes .....	6
Freight Traffic Movements .....	7
WESTERN PACIFIC RAILROAD .....	9
SUGGESTED CHANGES IN FREIGHT FACILITIES	
Classification Yards .....	11
Industrial Tracks .....	13
Team Tracks .....	15
Freight Station .....	16
PASSENGER TRAFFIC MOVEMENTS	
Southern Pacific Railroad .....	19
Passenger Stations .....	20
Union Passenger Station .....	23
THE FOURTH STREET PROBLEM .....	23
Alternate Plans Proposed .....	24
PLAN A .....	25
Passenger and Freight Terminals, Plan A .....	25
Advantages of Plan A .....	26
Disadvantages of Plan A .....	27
Description of Plan A .....	29
Tabulation of Streets affected by use of Plan A .....	32
PLAN B .....	35
Passenger and Freight Terminal Location	
under Plan B .....	36
Advantages of Plan B .....	36
Disadvantages of Plan B .....	37
Description of Plan B .....	38
PLAN C .....	41
Location of Passenger and Freight Stations	
with Plan C .....	42
Advantages of Plan C .....	42
Disadvantages of Plan C .....	44
Description of Plan C .....	46
OTHER PLANS PROPOSED .....	49
CONCLUSIONS AND RECOMMENDATIONS .....	49

LIST OF DRAWINGS.

Density of Daily Passenger Train Movements	Page 20
Density of Daily Passenger Train Movements Plan C	20
Railroad Map of Proposed Plans A, B & C	25
Sketch showing Relocation of Monterey Road	35
Profile of Plan A	35
Profile of Plan B	41
Profile of Plan C	49

in every respect as those in which rapid growth, where the expansion of commercial enterprises and residential sections has taken place with little or no regulation. Instead of well defined and segregated industrial districts, as found in San Jose clusters of factories, warehouses, oil and lumber yards and a great number of packing establishments located close up to the railroad tracks, along main lines, as they have always existed. The industries have closed in on the railroads, so to speak, thus encroaching greatly both their own expansion and that of the railroads.

It is a common fault of industries noted in San Jose to design their plants with insufficient track and platform space even for present requirements. There are also instances where the railroads have neglected to provide a right of way of adequate width on which to build and erect sidings or so as to permit the construction of additional tracks. In such cases these sidings and tracks are required to be constructed at the expense and

REPORT ON STEAM RAILROADS  
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SAN JOSE, CALIFORNIA.

grows in order to give satisfactory service and the industries are subject to a lack of continuity in their plant operations.

Had the industrial districts been well planned in

General.

advance and logically located in the first place, many of the problems now confronting this City and the railroads are similar in every respect to those in other cities of normal and rapid growth, where the expansion of industries, commercial enterprises and residential sections has taken place with little or no regulation.

It is a comparatively simple matter to iron out the difficulties attending through train operation and the handling of passenger traffic, but when these lines of travel penetrate sections of the City thickly settled with industries and residences such problems as grade crossing elimination, for example, become highly complicated and costly to perform.

Instead of well defined and segregated industrial districts, we find in San Jose clusters of factories, warehouses, coal and lumber yards and a great number of packing establishments located close up to the railroad tracks,

often main lines, as they have always existed. The industries have closed in on the railroads, so to speak, thus hindering greatly both their own expansion and that of the railroads.

It is a common fault of industries noted in San Jose to design their plants with insufficient track and platform space even for present requirements. There are also instances where the railroads have neglected to provide a right of way of adequate width on which to build second and third sidings as an aid to switching industries without blocking their main track. Because of these oversights the railroads are required to use an excessive number of switch engines and

crews in order to give satisfactory service and the industries are subject to a lack of continuity in their plant operations.

Had the industrial districts been well planned in advance and logically located in the first place, many of the problems now confronting this City and the railroads would never have arisen.

It is a comparatively simple matter to iron out the difficulties attending through train operation and the handling of passenger traffic, but when these lines of travel penetrate sections of the City thickly settled with industries and residences such problems as grade crossing elimination, for example, become highly complicated and costly to perform.

Investigations, hearings and reports made preceding this study have well established the fact that an improvement of existing conditions with respect to grade crossings especially is urgently needed and that a definite policy as to future requirements should be adopted. On these principles both the railroads and the City are in accord and the method of solution only appears to be in controversy.

It is the principal purpose of this report to present several plans for eliminating grade crossings with recommendations as/  
to the most

practicable method of solution considering the City's needs as a whole, its industries in particular, and the operating requirements of the railroads. Briefly, the questions to be considered are as follows:

Freight Terminals.

The Southern Pacific Railroad is confronted with the almost immediate necessity of improving its facilities for receiving, classifying and making up freight trains. The freight station where less than carload shipments are received and delivered, while of sufficient size, is poorly arranged and difficult of access. More and better disposed team tracks are desirable. A more convenient method for interchanging cars with the Western Pacific Railway should be considered.

So far as the Western Pacific Railroad is concerned its freight terminals are of such recent construction that little in the way of improvements can be suggested.

Passenger Terminals.

The Southern Pacific Railroad doubtless has under consideration a complete revision of its passenger terminal as both the station and its track layout are inadequate and illly designed for present traffic. If a new location is

sought, proper coordination with electric interurban and local service must be obtained. A special consideration is the fact that San Jose is the present terminus of suburban steam railroad service from San Francisco and Oakland.

Industrial Service and Development.

Industries furnish life and vitality to the social, financial and commercial structures of the civic body, and as they are dependent for existence upon the railroads, any move toward railroad revision should be toward the conservation of present industries and the propagation of others.

While the manufacturing industry of San Jose is now largely devoted to fruit packing and shipping, and allied lines, and is therefore seasonable in nature, there is no reason why other sorts of business cannot be developed and year around activity approximated. Owing to the close grouping of industries at critical points, special problems will arise in effecting desirable improvements without disturbing existing industries.

The railroads are interested in securing an untrammelled right of way for their through service and local operations so that they are put to the minimum of delay and expense in operating their trains through this competitive and fast growing district.

Requirements of the City.

The city's principal requirements are to secure freedom of movement for its interior street traffic, unimpeded residential growth, more industrial and commercial life and that essential closeness to the outside population that can be secured only by quick and reliable transportation.

The railroads' problems, if successfully solved, will go far toward fulfilling the city's ambition for the future. The question will arise, of course, as to just what items are most important from the standpoint of immediate exigency, what is best for the city as a whole rather than a particular district, and the extent of the city's responsibility for conditions as they exist as is sometimes reflected in the amount the city itself pays to secure the desired improvements.

Probably the need most obvious to the public eye is the elimination of grade crossings made by the Southern Pacific Railroad tracks from San Pedro Street to Fourth Street and along the latter as far as Keyes Street, together with certain other crossings in the western sections of the city.

The public is also interested in securing a passenger station commensurate in size and appearance with its importance as a community.

With these phases of the study (passenger station facilities and grade crossings) the individual citizen is familiar as he is in contact with them almost daily, but he is not much



concerned with freight houses, classification yards, industrial trackage, or the necessity of reducing dead engine movements although these things are probably of more vital importance to the growth and welfare of his community.

Railroad Operating Methods in San Jose and Vicinity.

General.

San Jose is a railroad center of major importance to Santa Clara County, Santa Cruz County and portions of San Mateo County. From it radiate five lines of the Southern Pacific, and a branch line of the Western Pacific Railway. In addition there are five principal electric interurban railroads reaching into it, and a highly developed system of paved highways surround the city. Owing to its strategic position in a district of extraordinary fertility and to its exceptional advantage in means of transportation, the city is assured of an ever-increasing and healthy growth. In 1910 the population of San Jose proper was 28,946; in 1920, 39,642; and at present is estimated at 44,000.

Southern Pacific Railroad.

Description of Routes.

From San Jose northward to San Francisco, a distance of 47 miles, there extends the double track main line, following in general the west shore of San Francisco Bay. On the east side of the Bay two lines connect San Jose

and Oakland (and lines east) one via Newark and Alvarado, and the other by the way of Niles. These join in a double track line from Elmhurst to Oakland.

Southwardly from San Jose extends the coastal line of the Southern Pacific to Los Angeles, distance 424 miles. This route is used relatively little for freight but is a heavy passenger road.

The fifth line of the Southern Pacific is to Santa Cruz, which is 34 miles by rail southwest of San Jose, on Monterey Bay.

All lines leading out of San Jose are single track with the exception of that to San Francisco. There appears to be no immediate necessity for additional main line trackage other than of the Coastal Division out of San Jose; separate tracks for suburban passenger service may later be required between San Jose and San Francisco, in order to segregate these trains from through passenger and freight trains.

#### Freight Traffic Movements.

Practically all freight trains entering San Jose are broken up here and classified, some for delivery to local industries, the freight houses, team tracks, interchange yard, repair shops, and others made up into complete trains for such points as San Francisco, Oakland, Niles, Tracy, Watsonville Junction, Redwood City and Santa Cruz.

The movement is one of continuous influx and outgo of the Miles Branch as far as Taylor Avenue. There are loaded and empty freight cars, from and to these various points. For handling yard and industrial switching some west of Polhemus Street. It will be observed that 30 engines and crews are necessary during the present Fall season. the industries are somewhat widely scattered, being in

practically four separate sections of the city. All of the work of classification and making up of trains, except some of that for the Santa Cruz division, is performed in the main freight yard lying between Polhemus and San Pedro Streets. Santa Cruz trains are made up in a small yard in Senter Street prolonged, and just east of Polhemus Street.

Interchange is effected with the Western Pacific Railroad at one point only, just south of the city limits about on line with Fourth Street extended. Here each railroad receives and delivers on a set of three transfer tracks.

The assembling of cars for local industries takes place in one section of the classification yard, although the Santa Cruz yard and several tracks on the Santa Cruz division in the vicinity of San Carlos Street (called the South Yard) are also used for this purpose. The principal industrial districts directly tributary to the Southern Pacific are along the Santa Cruz division from Cinnabar Street to Race Street; on each side of the yards from First Street to Guadalupe River; on the coast line division from Reed Street to the intersection with the Western Pacific; and along

the Niles Branch as far as Taylor Avenue. There are also a number of important industries on the main line west of Polhemus Street. It will be observed that the industries are somewhat widely scattered, being in practically four separate sections of the city.

The volume of freight traffic movement probably amounts to some 30 to 40 trains per day with a total of from 1600 to 1800 cars per day. This is not an extraordinarily great volume for the facilities at hand but the great diversity of classifications necessitates quick handling.

classification yard is located in East San Jose between WESTERN PACIFIC RAILROAD. Here trains San Jose is the terminus of the Western Pacific Railroad's branch from Niles, on the main line, 18 miles north of San Jose. It began operations in San Jose in 1922. Within the city it serves the principal industrial district in west San Jose and is gradually developing industries along its track.

Entering the city in the northeast corner, it extends southwardly and westwardly following closely but outside the city limits line on its east, south and west sides.

Except for a section between Minnesota Avenue and Coe Avenue on the South and another between William Street

and McKee Avenue to the east, it traverses a territory essentially industrial in character by reason of its topography, although at some distance both to the north and south of the track good residential districts, are developing.

Freight traffic operations consist in distribution of cars direct to industries, the freight stations on the Alameda, West San Jose, and that on Santa Clara <sup>Street</sup> Avenue at 27th Street, to the various team tracks along its line and in performing interchange with the Southern Pacific.

The classification yard is located in East San Jose between William Street and Coyote Creek. Here trains are made up daily, from 2 to 4 in number for movement to Niles where they are consolidated with main line traffic.

Industrial switching is performed at the Alameda freight station yard. There is an important group of spur tracks east of Sunol Street in the vicinity of San Salvador Street which are useful both for serving industries and assembling cars for this district.

The Western Pacific, although in operation for only a few years in San Jose, has with remarkable quickness made direct contact with the city's industrial and commercial districts and will undoubtedly prove to be an important factor in the city's future growth.

location of the roll-house, shop, clean out track and  
SUGGESTED CHANGES IN FREIGHT FACILITIES.

Classification Yards. of delays due to the necessity of

switching. The classification yard of the Southern Pacific is not well adapted for its purpose either from the standpoint of capacity or arrangement. Nor is there sufficient room in its present location to improve it satisfactorily, as one of its principal faults is the shortness of its train tracks. The west throat of the yard is at Polhemus Street and the switching lead to the yard is some distance west of Polhemus Street so that when the yard is being worked from this end, car and engine movements are almost continuous across this street. As a result this thoroughfare is avoided as much as possible by vehicular traffic, although it is an important highway into the city. A similar condition but less serious obtains at Stockton and Emery Streets. Toward the east end of the yard the situation is also unsatisfactory due to the crossing of the Guadalupe River, and the proximity of team tracks and coach tracks.

The operation of this yard is interfered with to some extent by main line passenger traffic. The movement of cars from and to the small yard of the Santa Cruz Division, which lies on the opposite side of the main line tracks, is an awkward one as it is across high speed traffic. The Pacific conditions appear to be entirely satisfactory

location of the round house, shop, clean out track and repair tracks also on the opposite side of the main line tracks is productive of delays due to the necessity of switching across the main lines.

It is doubtful if San Jose will within a definite length of time become a major classification point for the Bay District owing to the tremendous present and potential capacity of the Bay Shore yards of San Francisco, the Dunbarton cut off, and to the fact that it is not the gateway for a large volume of north and south bound freight. It is, however, well located to divert east and north bound freight from San Francisco, which originates south of and in the vicinity of San Jose, and also to make a preliminary classification of freight entering San Francisco from this district.

In view of its present inadequacy and the undoubted future necessity for greatly increased capacity, it is recommended that a new classification yard be constructed in another location preferably west of Newhall Street, or between that street and Santa Clara Station.

The present yard with some readjustment can then be used for many years for assembling cars to and from local industries, the freight stations, passenger train equipment, etc.

So far as the classification yard of the Western Pacific is concerned, conditions appear to be entirely satisfactory

and any additional capacity required can be arranged for easily.

Industrial Tracks.

Few cities have had the opportunity of planning its industrial development and unless this is done great efficiency in the handling of this class of freight is impossible to obtain. In San Jose there are areas particularly in the northern section of the City that could be set aside for industrial purposes exclusively and its track-

age so planned as to provide switching and trucking service comparatively free from that mutual interference which usually characterizes the uncontrolled location of manufacturing plants.

In San Jose as in other cities it is impracticable to alter radically existing conditions but it is believed that a considerable improvement in the method of handling industrial traffic could be made through the closer cooperation of the two railroads and the plant owners themselves. For example, where the industries are most congested as in West San Jose it is probable that more satisfactory results could be obtained if the switching of jointly served industries were done by one railroad or a separate, jointly owned terminal company. As the city grows and increases in importance the necessity for such an arrangement will become more apparent.



The establishment of switching yards in close proximity to the industrial groups themselves would be of help in providing reservoirs for the storage of empty and loaded cars inbound and for assembling cars from the plants. They would relieve the conditions at street grade crossings somewhat and also reduce the interference with main line traffic due to indiscriminate switching and manipulation of cars on and along the main tracks.

For the Southern Pacific such a local yard lying just South of Moor Park Avenue along the Santa Cruz division would be useful, especially if a connecting spur were built extending eastwardly to a connection with the Western Pacific about at Los Gatos Creek. Such a yard could also serve as an interchange yard with better results than under the present arrangement.

Eventually a similar yard will be required to serve the industries in North San Jose along the Southern Pacific Niles line. A location in the vicinity of Rosa Avenue is suggested.

A Western Pacific assembly yard could be built in that area between Sunol Street and Los Gatos Creek. A yard here could be jointly operated.

With the construction of a new classification yard to replace the present one of the Southern Pacific and the utilization to a greater extent of the latter yard for local service, and the construction of other yards above indicated, the handling of industrial freight would be greatly facilitated.

#### Team Tracks.

The team track in San Jose fulfills an important function as a great proportion of the freight handled is in car load lots.

The principal team track yard of the Southern Pacific Railroads consists of four tracks located just north of the passenger station, all of which are stub ended at North First Street and extend to San Pedro Street. There are also two additional tracks used for this purpose, extending westward from San Pedro Street. Other tracks serve a loading platform and a 20-ton Gantry crane. The yard as a whole is not compact and too little space has been provided between tracks for the manipulation of trucks and wagons. The driveway is not paved.

The location of this team yard is convenient to a large number of shippers but necessitates a rather long haul through busy streets for others. It is recommended that

The team driveway on the north side of the yard is 60 feet wide and accessible only from San Pedro Street.

The freight house, while of adequate size as yet another well equipped yard be located in west San Jose, say between Lenzen Avenue and Cinnabar Streets, and accessible to Stockton Avenue.

The Western Pacific has its principal team yard adjacent to its freight house on the Alameda in West San Jose; another is located at their 27th Street Station.

The Alameda yard is very well arranged and easily accessible. It should be enlarged within the near future as the business now handled there warrants it.

Other team tracks of the Western Pacific are in the vicinity of Fifth Street, South San Jose, and at various points along their line. Freight Station.

The freight house of the Southern Pacific Railroad is located west from San Pedro Street and just north of the main line tracks. It is a frame building on brick foundation, one story high, 50 feet wide and 610 feet long. At the west end there are two platforms, one 435 feet and the other 300 feet long with two railroad tracks between platforms. The platforms are 18 feet wide. The house track capacity is about 68 cars, there being 2 tracks along the freight house, which together take 44 cars. There are no trucking platforms on either the team or track side of the house. The team driveway on the north side of the house is 50 feet wide and accessible only from San Pedro Street.

The freight house, while of adequate size so far as floor space is concerned, is antiquated in its arrangement and requires an unnecessary amount of trucking. On account of the limited amount of space in this district, however, the present elongated form of station is necessary. Under a new arrangement a much more compact layout should be sought.

The location of a station in this district is convenient to the shippers but its arrangement handicaps its operation. In order to reach the driveway along the side where shipments are received and delivered, it is necessary for trucks and teams to cross some 8 or 10 tracks, including those used for main line passenger trains. San Pedro Street is frequently blocked by trains so that delays often result. Another disadvantage is that the driveway is without an outlet to the west so that no circulatory movement is possible. In fact it would not be easy to devise a freight station more difficult of approach.

The rearrangement of the San Pedro Street freight station probably must come with a general revision of the terminals in that district. In any event it should be so constructed that its team side faces Bassett Street or some similar thoroughfare newly provided if need be.

The freight station of the Western Pacific located on the Alameda, West San Jose, although of economical design is well adapted to its purpose.

The building is 35 feet wide and 240 feet long, with a covered platform extension 75 feet long. On the track side there is a trucking platform 8 feet wide. The two house tracks have a capacity of 16 cars. The team side of the freight house is along Bush Street, to which easy access is had from the Alameda. The station is modern in every respect and no suggestion is offered as to its improvement.

Union Freight Station.

It is unfortunate that the freight stations of the two railroads are so far apart. It would reduce trucking considerably if they were in the same district although it is not believed a union freight station in San Jose is practicable or desirable, although such an arrangement may appear so to the shipper. Where two or more lines are competitive and supplementary in their routing of freight, a union freight station may be considered. But in San Jose there is little movement of L.C.L. freight from one station to the other and that is handled easily by trucks.

The most desirable arrangement for San Jose is to have individual stations in close proximity to each other. As business increased, it is likely that the Southern Pacific can to advantage establish a modern station in West San Jose to serve that district.

PASSENGER TRAFFIC MOVEMENTS.

Southern Pacific Railroad.

Operating into and out of the Southern Pacific Passenger station on North First Street are 99 passenger trains daily, under the present schedule.

The traffic may be classified as follows:

Out Bound.

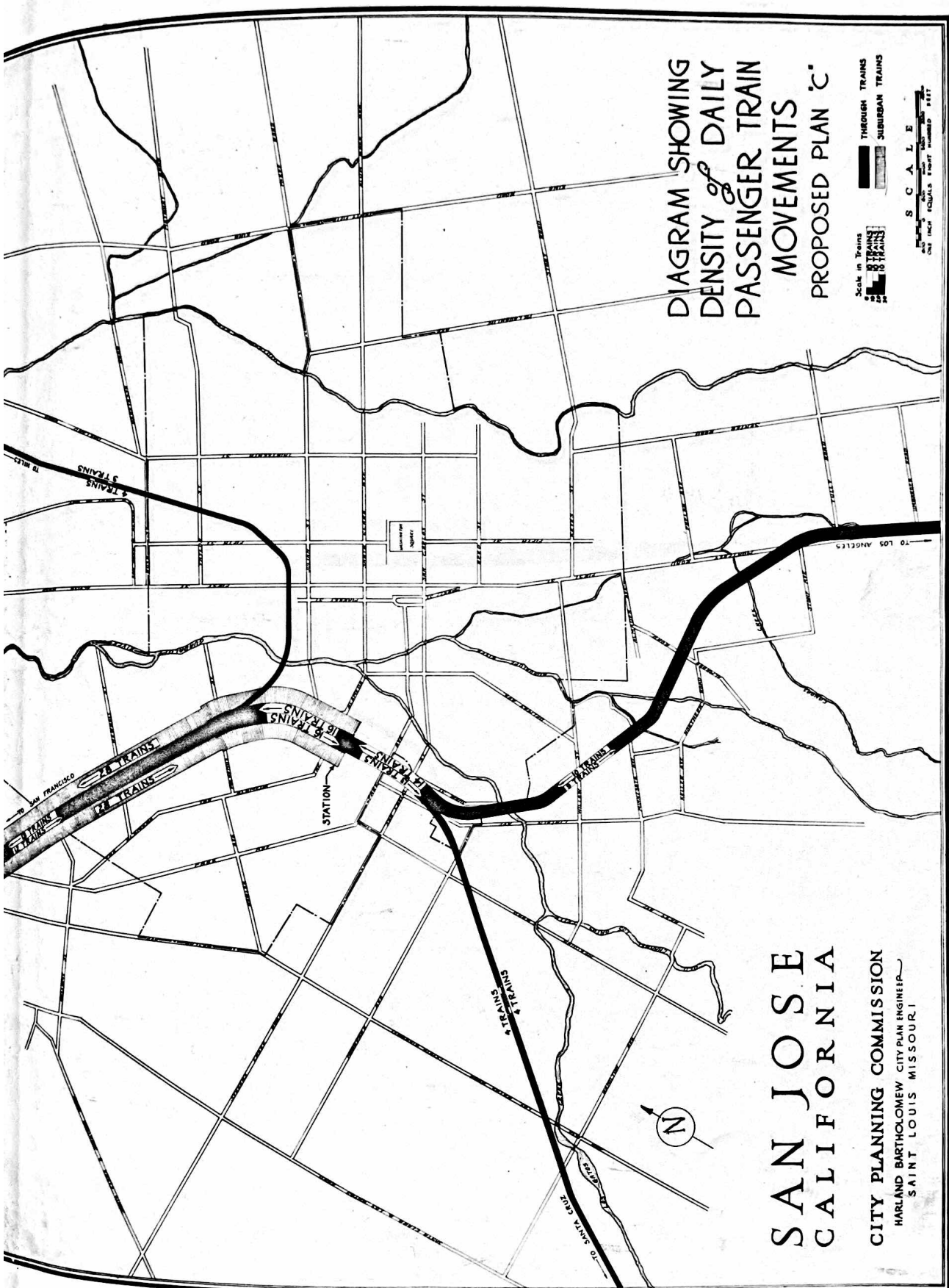
- 35 trains to San Francisco, using Route F out of city  
(via Santa Clara)
- 2 trains to Oakland using Route F out of city
- 2 trains to Oakland using Route N out of city (via North San Jose)
- 1 train to Niles using Route N out of city
- 4 trains to Los Angeles using Route L out of city (via 4th St.)
- 1 train to Salinas using Route L out of city
- 1 train to King City using Route L out of city
- 1 train to Pacific Grove using Route L out of city
- 2 trains to New Orleans and East using Route L out of city

Total out over Route F	37	trains
" " " " N	3	trains
" " " " L	9	trains (Fourth Street)
Total	<u>49</u>	

Inbound.

- 36 trains from San Francisco using Route F into city
- 4 trains from Oakland via Niles using Route N into city
- 4 trains from Los Angeles using Route L into city
- 2 trains from New Orleans East using Route L into city

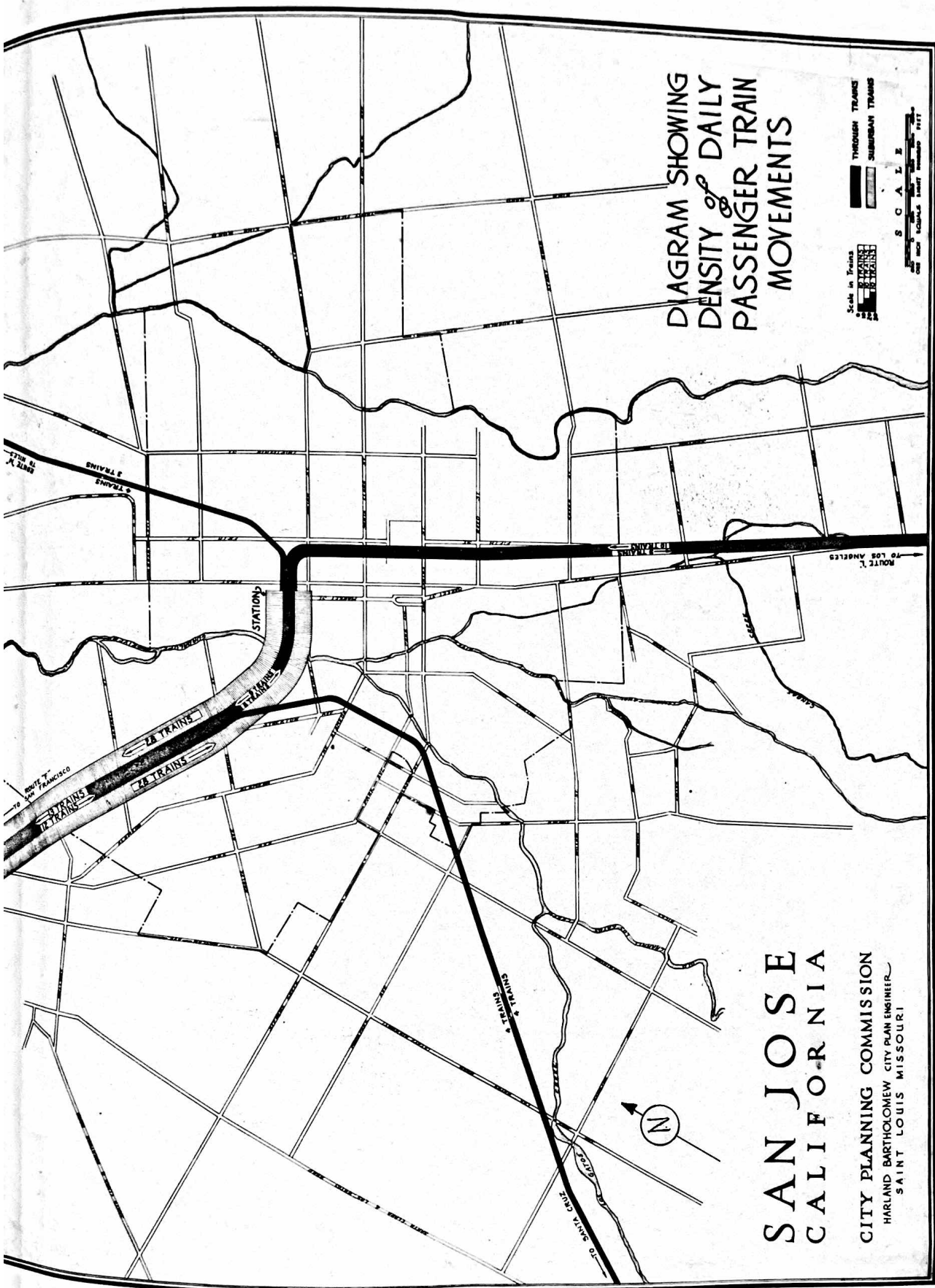
DIAGRAM SHOWING  
 DENSITY of DAILY  
 PASSENGER TRAIN  
 MOVEMENTS  
 PROPOSED PLAN 'C'



SAN JOSE  
 CALIFORNIA

CITY PLANNING COMMISSION  
 HARLAND BARTHOLOMEW CITY PLAN ENGINEER  
 SAINT LOUIS MISSOURI

DIAGRAM SHOWING  
DENSITY of DAILY  
PASSENGER TRAIN  
MOVEMENTS



SAN JOSE  
CALIFORNIA

CITY PLANNING COMMISSION  
HARLAND BARTHOLOMEW CITY PLAN ENGINEER  
SAINT LOUIS MISSOURI



- 1 train from Salinas using Route L into city
- 1 train from Pacific Grove using Route L into city
- 1 train from New Almaden using Route L into city
- 1 train from King City using Route L into city.

Total in over Route F 36 trains

Total in over Route N 4 trains

Total in over Route L 10 trains

Total ..... 50 trains

The above movements are illustrated by diagram

entitled "Density of Passenger Train Movements". Summarizing

above data it will be noted that a total of 73 trains  
the western route (F), 7 trains take the northern route (N),  
19 trains the Fourth Street route (L).

In addition to these, but using the Southern Pacific  
at San Jose and Santa Clara stations only, are from 3 to 4 trains  
ly over the Santa Cruz division, running between them and  
land and intermediate points. Passengers using the service  
transfer at Santa Clara for San Francisco and other points.

Western Pacific passenger service consists of one train  
rather gasoline motor car making the trip once each way daily  
from the station at 27th and Santa Clara Streets in East San Jose  
Miles.  
Passenger Stations.

The Southern Pacific passenger station is a one-story  
structure about 32 feet wide and 270 feet long. It is  
located along the north side of Bassett Street between North

First and Market Streets. Bassett Street at this point is about 70 feet wide between curbs, so that ample room is provided at present for vehicular approach.

The station has a covered train shed 70 feet wide and 306 feet long. Within the shed are two main line tracks about 20 feet center to center. The roof is supported by wooden trusses and posts. There is a concourse between the station building and train shed 18 feet wide and about 180 feet long.

In operation all local trains to and from San Francisco are made up here on the two main line tracks, and on a third track outside of the train shed and north of it. It is quite a problem to find storage room for the cars and there is no one set of tracks of sufficient capacity to handle the passenger equipment. Some five stub-ended tracks and one through track north of the station are used for the storage of some coaches and others are cared for in various sections of the yard. As there are some 99 train movements into and out of this station daily, it requires the utmost skill to keep the main line tracks clear for through movement and at the same time handle the local service.

Naturally during many hours of the day both North First Street and San Pedro are blocked by standing and passing trains. Some of the longer trains, while taking water from the tower just west of San Pedro Street, block both that street and First Street.

The present location of the Southern Pacific passenger station is ideal in many ways, particularly with reference to accessibility to the business district and it does not add appreciably to street traffic congestion except that caused by direct blockade. As now operated there is of course considerable delays to street traffic on First street and San Pedro Streets.

The present layout and capacity of station tracks, and the arrangement and appearance of the station building itself are inadequate and require practically a complete re-design. Wherever the new station is located, depending upon which program of improvement is adopted, it should be constructed with a special view toward handling suburban or commuter equipment with the maximum of ease and dispatch as this type of traffic constitutes by far its greatest business and will grow with time. Consideration should be given to future electrification of suburban traffic at least, between San Jose and San Francisco and the station so designed that this change can take place at a minimum cost.

The Western Pacific passenger station, located at 27th and Santa Clara Streets, is small but of neat design and entirely ample for present requirements. It would have been better to have located this passenger station and also the freight station, on the South side of Santa Clara Street so as to avoid unnecessary crossing of this busy street, by equipment and cars going to the classification yard and engine house at William Street.

Union Passenger Station.

In San Jose there is almost no necessity for a union passenger station. Certainly not from the railroads standpoint, as the Western Pacific could not begin to justify its share of the cost of such a station with its limited amount of traffic. Whether the Western Pacific will extend its line to other points and thus create a passenger business is of course problematical and until then no consideration may be given to a union passenger station.

The question of passenger station location, and indeed to a large extent that of freight terminals is intimately involved with the final adjustment of the Fourth Street situation.

#### THE FOURTH STREET PROBLEM.

That a problem exists as to the proper disposition of the Southern Pacific track in Fourth Street, is granted by all, including the railroad itself which some twenty years ago anticipated the situation and purchased the necessary right of way for relocating its track to by-pass the city to the South. The detour was never built, however, and in the interim the city developed a rapid suburban growth to the South and west so that the proposed route is now fairly well sur-

rounded, by residential and potential residential areas and is intersected by some 20 improved streets. Naturally a well established community such as this resents the intrusion of a railroad in its midst. On the other hand that part of the public along and in the vicinity of Fourth Street, and those utilizing its own streets have endured the presence of the railroad for about 50 years and now feel the need of relief. It is also the sentiment that the natural expansion of the business district eastward is hampered by the operation of trains on Fourth Street.

The railroad without doubt would prefer to remain in Fourth Street, operating at grade for the rest of its life, as the slight loss in time due to speed reduction through the city is inconsequential and any change it may make to materially better the situation will probably cost from one to five million dollars.

#### Alternate Plans Proposed.

In order to present the matter clearly, three separate plans will be discussed, each of which is practicable of accomplishment, but probably more costly than any hitherto contemplated.

Plan A provides elevated tracks on the proposed south detour line.

Plan B Proposes elevated tracks on present alignment in Fourth Street.

Plan C

Plan C. Provides for occupancy of a part of the Western Pacific Railroads South Side right of way or a new right of way parallel and adjoining the Western Pacific and utilization of a portion of the Southern Pacific's purchased detour right of way.

PLAN A.

Under plan A the original intention of the railroad would be followed out in so far as the route is concerned. However, if the right of way for this line was not already owned and had to be purchased today, the railroad would probably not consider such a project. As the right of way represents a heavy investment and a large proportion of the cost of the improvement, a plan for its use deserves careful consideration.

Only on three conditions would Plan A prove a satisfactory solution. These are:

1. Complete removal of track on Fourth Street between Julian and Reed Streets.
2. Detour line to be elevated between San Carlos and Mitchell Ave. so as to create no new grade crossings.
3. Elimination of crossings on the Alameda and San Carlos Street in West San Jose.

Passenger and Freight Terminals, Plan A.

With Plan A it would be highly desirable from an operating standpoint, though not entirely necessary, to locate the passenger station on the Alameda in the general vicinity of Stockton Avenue. However if the station is left where it is at North First Street the terminating trains which greatly predominate

would be as well off as at present, and only the 19 trains which now use Fourth Street would require a reverse movement to get into and out of the Station

A passenger station in West San Jose is undeniably rather remote from the business district as the City now stands. But in view of the rapid growth to the South and West, now taking place, the location has many advantages. It would be approximately one and one-fourth miles from the heart of the City, a distance not noticeable in a city of say 100,000 population.

The Freight Station would best remain in its present location, and with the removal of passenger traffic, it could be developed to any desired state of efficiency.

Advantages of Plan A.

- 9. The principal advantages of Plan A are as follows:
  1. Fourth Street grade crossings eliminated with no damages to abutting property, and a general beneficial effect upon the business district as a whole. Railroad traffic across North First Street reduced to switching movements and a few freight and passenger trains daily.
  2. No industries disturbed along the Fourth Street Route.
  3. Principal grade crossing eliminated in West San Jose.

*Advantages + disadvantages  
Plan A,*

-27-

4. Elevated track on detour line would prevent industrial development there and the consequent depreciation of property values.
5. City would probably be exempt from any portion of the cost of subways on the detour line as all such crossings would be the creation of the railroad.
6. Opportunity provided for redesign on modern lines of freight station and facilities at San Pedro Street.
7. Uninterrupted through movement of trains and permanent right of way secured.
8. Practically all construction work can be completed without interruption to traffic.
9. If desired the present passenger station can be used indefinitely by all trains until the new station is constructed.

Disadvantages of Plan A.

The principal disadvantages of Plan A are:

1. It permits a railroad to operate through residential districts with consequent deterioration of property in the immediate vicinity.
2. The passing of eighteen passenger trains per day together with a number of freight trains and switching movements that now use Fourth Street will





11. interfere with service to industries in West San Jose, an already congested district.
12. Another grade crossing with the Western Pacific Railway is created. this route, particularly
13. Subways or viaducts will be necessary to eliminate the crossings at Alameda and San Carlos Street, and the abutting damages will be very heavy. If those streets are subjected to local switching movements only, they could be left at grade for many years. several newly created crossings.
14. Removal of passenger station to location somewhat remote from principal business district.
15. Plan does not create new industrial opportunities for the railroad. *insufficiently* countered.
16. The line traverses some land with soft underlying strata which will make construction somewhat difficult.
17. Requires a readjustment of street car service if Plan "location of passenger station is changed.
18. Some of the streets crossed by the new line will have to be closed and others readjusted to streets parallel with the railroad, as it cannot be expected that the railroad would be required to bridge every street. *of Tully Road and Berkeley Road.*
19. About three quarters of the proposed line lies within the city limits of San Jose.

11. Additional tracks for handling interchange must be built.
12. Trains will be subjected to slow speed for a considerable part of this route, particularly from Polhemus Street to San Carlos Street.
13. Passengers will be carried through an area largely industrial and will not get a satisfactory impression of the City as a whole.
14. Flagmen and automatic signals will be required at several newly created crossings.
15. Plan practically prohibits the carrying out of a new major street plan for through street traffic from West San Jose into the business district on account of difficulties encountered in separating grades, especially along that portion of the track between San Carlos Street and Delmas Avenue.

#### Description of Plan A.

Plan "A" contemplates the use of the present tracks of the Santa Cruz branch of the Southern Pacific Railroad from Polhemus Street to San Carlos Street. From San Carlos Street the line occupies the unused right of way of the railroad, and connects into the present main line at about the intersection of Tully Road and Monterey Road.

In order to separate grades at the Alameda it will be necessary to raise the tracks about 3 feet at this street. Starting at Julian Street, the grade would rise at a rate of 0.5% as far as the Alameda, and then continue level to the present grade at San Fernando Street. The roadway of the Alameda will be depressed about fifteen feet to obtain the required overhead clearance.

In order to separate grades at San Carlos Street, it will be necessary to carry the street on a viaduct over the tracks; San Carlos street will also have to be realigned or straightened somewhat to afford a straight approach to the proposed viaduct. It is assumed that Park Avenue will remain at grade.

By referring to the accompanying profile it will be seen that with an ascending grade of 0.5% starting at San Carlos Street it will not be practicable to separate grades between San Carlos Street and Delmas Avenue except by means of excessive depression or elevation of street grades. At Delmas Avenue a separation of grades can be made by depressing the Street about seven feet. Between San Carlos and Delmas Avenue it will be necessary to raise the streets from two to nine feet so as to enable traffic to cross the railroad tracks at grade. This is one of the most serious objections to this plan.

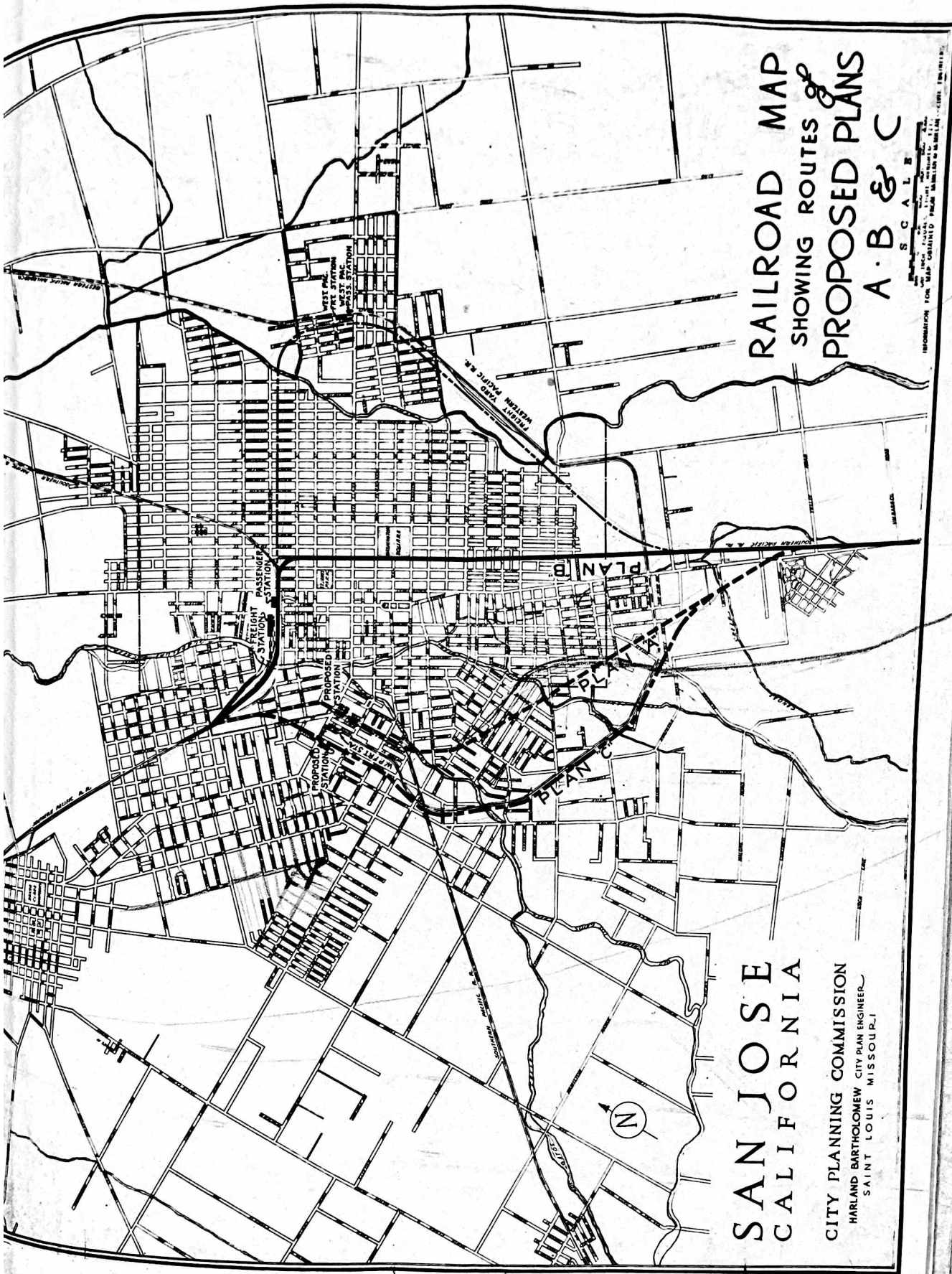
The difficulties and disadvantages of this plan have already been pointed out. It is evident that a very un-

The 0.5% ascending grade continues from Delmas Avenue to a point about 200 feet South of Goodyear Street and from here a 0.4% ascending grade will carry the Southern Pacific over the Western Pacific Railroad tracks at an elevation which will permit of a 22-foot overhead clearance over the Western Pacific. A level grade from here to Mitchell Avenue and a descending grade of 0.4% from Mitchell Avenue will bring the track to the level of the present main line at its crossing with Tully Road.

The type of structure between San Carlos Street and Tully Road would be earth embankment with subways where possible at the important intersecting streets. The minor streets and those major streets which intersect the proposed track at too flat an angle for subway construction would have to be realigned parallel to the track.

The accompanying table shows how this plan will affect the intersecting streets. One of the most important highway changes contemplates carrying Monterey Road along the east side of and parallel to the railroad starting from a point about 800 feet north of Stone Avenue, thus eliminating a crossing between this important highway and the railroad. Entrance into the cemetery at Stone Avenue and Monterey Road can be obtained by constructing a new road west of and parallel to the railroad from Mitchell Avenue to Stone Avenue.

The advantages and disadvantages of this plan have already been discussed. It is evident that a very un-



**SAN JOSE**  
**CALIFORNIA**

**CITY PLANNING COMMISSION**  
 HARLAND BARTHOLOMEW CITY PLAN ENGINEER  
 SAINT LOUIS MISSOURI

**RAILROAD MAP**  
 SHOWING ROUTES OF  
**PROPOSED PLANS**  
**A · B & C**

**SCALE**  
 1" = 1000'  
 INFORMATION FOR MAP CONSULTANTS: PLEASE SUBMIT TO THE CITY ENGINEER, SAN JOSE, CALIF., FOR REVIEW.

satisfactory situation in regard to the future elimination of grade crossings between San Carlos and Delmas street will result if this plan is adopted. It is also apparent that this line will be extremely expensive to construct owing to the high fill required, the numerous subways on skew and the rerouting of streets that will be required. It is therefore recommended that this plan be definitely abandoned.

TABULATION OF STREETS AFFECTED BY USE OF PLAN "A".

To be used in Conjunction with Major Street Report

STREET	TYPE OF CROSSING	STREET CHANGES
Polhemes St.	Grade Crossing	None - Install crossing gates
Lenzen Avenue	" "	Lower " " " " grade about 3 " "
Cinnabar St.	" "	" " " "
Julian St.	" "	None " " " "
The Alameda	Subway	Lower Street grade about 15 feet.
San Fernando St.	Grade Crossing	None - Install Crossing Gates.
Rark Avenue	" "	" " " "
San Carlos St.	Overhead Viaduct	Raise Street grade about 25 feet; change street alignment
Auzerais Avenue	Grade Crossing	Raise Street grade about 2 feet; install crossing gates.
William St. proposed connection	" "	New Street-Install crossing gates.

Home St.	Grade crossing	Raise street grade about 4 feet. Install crossing gates.
Harrison St.	Vacate	Change street alignment
Bird Avenue	Grade crossing	Raise street grade about 6 feet. Install crossing gates.
Jerome St.	Vacate	Change street alignment
Fuller Ave.	Grade Crossing	Raise street grade about 9 feet. Install crossing gates.
Delmas Avenue	Subway	Lower street grade 7 feet
Hull Ave.	Vacate	Change street alignment to parallel R.R. into Delmas Avenue.
Prevost St.	Subway	Lower street grade about 4 feet.
Atlanta Ave.	Vacate	Change street alignment
Willow St.	Subway	Lower Street grade about 3 feet.
Bartlett St.	Vacate	
Goodyear St.	Subway	None
McLellan Ave.		
Proposed Extension	Subway	New Street
Lick Avenue	Subway	None
Floyd St.	Vacate	*---
Palm St.	Vacate	Change street alignment into Almaden Avenue.
Almaden Ave.	Subway	None
Almaden Road	"	"
Epperly Ave.	"	"
Orchard St.		
Proposed Extension	Subway	New Street

Mitchell Ave.	Subway	None
Monterey Road	Vacate	Change alignment of Road to parallel R.R.
Tully Road	Grade Crossing	None - Install crossing gates or automatic alarm.



Plan B.

Plan B contemplates the retention by the railroad of the present route across North First Street and along Fourth Street. Only under the following conditions would this plan be acceptable.

1. Sufficient elevation of tracks so as to permit the elimination of the North First Street grade crossings and all grade crossings along Fourth Street from Julian Street to Keyes Street inclusive.
2. The elevation to be sufficient in amount so that street depression will not exceed four feet at the track.
3. An open type or ornamental concrete trestle to be used from the west line of Fourth Street at Julian Street to Reed Street.
4. Road ways to be left at sides for vehicular traffic.
5. Fourth Street to be made 100' wide if a double track structure is used.

Order to secure an under clearance of fifteen feet with a maximum street depression of four feet, the tracks would be elevated about 15 feet above present street level. The open type structure would permit of access from one side of Fourth Street to the other, at any point between St James Street and Reed Street. The type of structure suggested would permit of ornamentation and would be practically noiseless in operation.

Passenger and Freight Terminal Location under Plan B.

Under this plan the passenger station would remain approximately in its present location, but would require complete rearrangement, so as to retain suburban train operation at street grade, using the highline only for through movements.

The freight station would also be located in the same general vicinity but would require complete reconstruction. The team tracks now ending at First Street could probably have to be moved back to West of San Pedro Street.

Advantages of Plan B.

The Principal Advantages of Plan B are as follows:

1. Property values along Fourth Street will not be depressed but should be favorably affected.
2. Property values east and west of Fourth Street for an indeterminate distance will be favorably affected, on account of increased accessibility to the business district.
3. A comparatively small number of industries are affected especially if a single track elevated line is used.
4. All grade crossings along fourth street are eliminated with little abutting damages.
5. No new grade crossings are created.
6. Good opportunity provides for an efficient and modern passenger station in an ideal location.

7. No readjustment of local and interurban electric lines required.
8. Uninterrupted movement of trains over a permanent right of way secured.
9. Grade crossing elimination projects in West San Jose at Alameda, Park Avenue and San Carlos Street can be deferred.
10. Freight station can remain in present location.
11. Passengers over this route are carried through a well developed section of the City which has a certain advertising value.
12. A high rate of speed can be maintained by trains throughout the City.
13. No flagman and automatic danger signals at streets will be required.

Disadvantages of Plan B.

1. While the effect upon property values in the immediate vicinity of Fourth Street will be favorable, it will not be so marked as in the case of complete cessation of railroad operations in that street.
2. Certain industries particularly in the vicinity of North First Street including that in the Wye, and those along the tracks from Reed Street south; will be unfavorably affected.

3 4. There will be constant interference with and delays to both street and railroad traffic during construction.

4 5. While the maximum street depression is assumed at 4 feet, certain streets for example, where the railroad grade descends may require greater depression with consequent complications in construction.

5 6. No additional industrial areas are made available. *same under 4*

6 7. The Santa Cruz - Oakland passenger trains cannot conveniently enter the station. *earth fill.*

7 8. Freight and Passenger terminal reconstruction will be quite expensive as will also the elevated line of open type design.

more detailed description of Plan B follows:

10-Description of Plan B.

By referring to the accompanying profile, it will be seen that in order to secure the required overhead clearance at West Street and San Pedro Street, the present grade of the street will have to be raised, beginning at about Polhemus Street.

At this point it is proposed to start elevating at the rate

5%. This would apply to two main line through tracks only,

under this plan it is recommended that local traffic and traffic

of the northern branch to Niles be handled at existing level.

Polhemus Street to about the west property line of Fourth Street near Julian Street the fill would be on earth embankment and on embankment between retaining walls. Openings would be provided at San Pedro Street, First Street, Second Street and Third Street.

From the west property line of Fourth Street near Julian Street to Reed Street, it is proposed to use open concrete trestle construction. From Reed Street to Keyes Street the structure would be earth embankment between retaining walls, with subways at each intersecting street. From Keyes Street a descending grade of 0.45% brings the track to present level at its crossing with the Western Pacific road. This portion of the work would be on earth fill.

By referring to the "Typical Cross section of Elevated Structure" it will be noted that for an 80-ft. street, such as Keyes Street, ample room will be provided for two lines of traffic on each side of the elevated railroad structure, together with 10-foot sidewalks on each side of the street. If the street is increased to 100' width, four lines of traffic can be provided for on each side. At intersecting streets 80 feet wide, two openings are proposed, each 20 feet in the clear, with a support in the middle of the street. At 80-foot streets similar construction is used except that the sidewalks are made 18 ft. 6 in. wide. At intersecting streets 100 feet wide, such as San Carlos Street, there would be three openings provided, each 20 feet clear with two sidewalks 17 feet wide.

Plan C is an effort to eliminate as many as possible of the  
Rather expensive changes to certain industries will be  
quired if this plan is adopted. Among these are the cold  
orage plant on North First Street and several of the in-  
stries between Reed and Keyes Streets. In addition it would  
advisable to reduce the curvature of the track between  
uth Fourth Street and First Street. This will necessitate  
e removal of several residences and the purchase of add-  
ional right of way in this district.

As before mentioned the Niles track would be left un-  
sturbed at its present elevation. It is not believed  
at the traffic over this piece of track would justify its  
levation at the present time.

The principal advantages of this plan are that it does  
impose any more severe grades on the railroad than now  
tain. As a point of fact they are somewhat less severe.  
the profile is drawn on attached plan, no depression of  
streets would be required. However, in working out the details  
construction and estimates of cost it may prove desirable  
depress the streets somewhat, especially from San Carlos  
street southward. By providing the underclearance shown at  
l points it can be seen that for that portion of the elevated  
ack on open trestle both sides of the street are visible  
nd accessible from any direction. If it is desired, the  
nder portion of the structure can be used for the parking of  
utomobiles, a valuable consideration on account of the near-  
ess of 4th Street to the business district.

*Plan C*

Plan C is an effort to eliminate as many as possible of the  
ous defects of Plan A and yet to preserve all of the latter's  
antages. Its purpose is to remove the track from Fourth  
et without inflicting upon another district an unwanted  
road.

In order to avoid the West San Jose industrial district  
w line is proposed, paralleling Sunol Street to San Carlos,  
ce southward to a crossing of the Santa Cruz division,  
north of Lincoln Street. From this point it is proposed  
se either the right of way of the Western Pacific with a  
tly operated double track line or to occupy a separate  
t of way immediately south of the Western Pacific, to an  
rsection with the Southern Pacific property about 2000 feet  
of the Almaden Road. From here on the new line would con-  
to Plan A, using the purchased right of way of the Southern  
fic joining the main line at Luther Avenue. Under the  
owing conditions it is believed that Plan C would be a sa-  
actory solution.

1. Tracks to be elevated at once through West San Jose,  
so as to create no new railroad grade crossings in  
that district.
2. Track on Fourth Street would be removed as far as  
Reed Street.
3. The new south side line to form a double or three  
track system with the Western Pacific to operate tem-  
porarily at present grade, later to be constructed as  
an elevated line eliminating all important grade cross-  
ings of both railroads.

PLAN C.

Plan C is an effort to eliminate as many as possible of the obvious defects of Plan A and yet to preserve all of the latter's advantages. Its purpose is to remove the track from Fourth Street without inflicting upon another district an unwanted railroad.

In order to avoid the West San Jose industrial district a new line is proposed just west of and paralleling or occupying Sunol Street to San Carlos, thence Southward to a crossing of the Santa Cruz division, just north of Lincoln Street. From this point it is proposed to use either the right of way of the Western Pacific with a jointly operated double track line or to occupy a separate right of way immediately south of the Western Pacific, to an intersection with the Southern Pacific property about 2000 feet east of the Almaden Road. From here on the new line would conform to Plan A, using the purchased right of way of the Southern Pacific joining the main line at Luther. Under the following conditions it is believed that Plan C would be a satisfactory solution.

1. Tracks to be elevated through West San Jose, so as to create no new railroad grade crossings in that district.
2. Track on Fourth Street would be removed.
3. The new south side line to form a double track system with the Western Pacific to operate at present grade, or if this cannot be arranged, to be constructed as an elevated line eliminating at once all important grade crossings, so far as the Southern Pacific is concerned.



An uninterrupted free movement of trains is

The present grade crossings of the Alameda, Park Avenue and San Carlos Street, and others in this district would remain as they are but would be relieved of Santa Cruz Division passenger and freight trains and subject only to industrial switching movements. These are not so frequent as to justify the heavy expense of elimination at this time, especially as interference is largely seasonal in occurrence. Location of Passenger and Freight Stations with Plan C.

The passenger station would be located about as in Plan A, but a better opportunity is provided for securing a direct facing of the Alameda, which is wide and the most important east and west thoroughfare. As in the other plans, a through type of station is practicable, with the necessary special layout to care for suburban trains.

The freight terminal including freight house and team tracks would remain in their present location as in Plan A, although if desired it can be well placed in the West San Jose.

Advantages of Plan C. can be deferred.

The advantages of Plan C may be described as follows:

1. Fourth Street track is eliminated.
2. Aside from some adjustments in spur tracks, no important industry will be adversely affected.
3. No new grade crossings within city limits are created.
4. The proposed new track in West San Jose would be elevated and the city should not be required to pay any part of the cost of bridges at Street intersections.

5. An uninterrupted and free movement of trains is provided, over an exclusive right of way.
6. No additional crossing of the Western Pacific with the resulting necessity of augmented interlocking plant.
7. Certain train and switching movements now taking place along Senter Street and through the already congested West San Jose industrial district will be eliminated.
8. Practically all construction work can be completed without interfering with either street or railroad traffic.
9. If desired by the railroad the present passenger station may be used indefinitely while the new station is being built.
10. Opportunity is provided for the design of a new and modern freight station at San Pedro Street.
11. Grade crossing projects on the Alameda, Park Street and San Carlos Street can be deferred.
12. Additional areas suitable for industrial development will be made available for the Southern Pacific.
13. A more convenient method of interchanging cars between Western Pacific and Southern Pacific will result.
14. The new line will lie largely beyond the City Limits and San Jose.

Disadvantages of Plan C.

The disadvantages of Plan C are as follows:

1. The passenger station would be located in a less favorable position than under Plan B.
2. Requires a readjustment of Street car service to accommodate new location of station.
3. Passengers will be carried through an industrial area largely and will not get a satisfactory impression of the City as a whole.
4. The plan requires the condemnation of some valuable property in West San Jose and possibly the purchase of a large amount of right of way paralleling the Western Pacific unless the two roads can agree upon joint operation over the Western Pacific right of way for a portion of the distance.
5. The plan restricts the development of industries tributary to the Western Pacific and south of their tracks. *Note*
6. Property values in West San Jose along Sunol Street may be adversely affected, but probably more than offset by the location of the passenger station in this district.
7. A revision of the terminal yard of the Penninsular Electric Railroad on San Fernando Street, West San Jose will be required. *Carls?*
8. Some increase in the number of automatic signals and Flagmen at street intersections will be required until track elevation is completed.
9. Interfers seriously with the development of an efficient major street plan to serve the south and west sections

Description of Plan 23

Plan "23" consists of lines carrying the main line traffic of the adjoining San Jose through East San Jose, avoiding important grade crossings and maintaining industry tracks at East San Jose in their present location.

From Hedding Street the proposed line leaves the present main line at an ascending grade of .2%. It follows along the right of way of the Santa Cruz Division to which it joins at a point which brings it approximately along what is known as Park Avenue. From Park Avenue the line continues to San Carlos Street from which point it descends to the present elevation, at a point where it crosses the San Salvador Street.

Between Hedding Street and San Carlos Street the proposed line remains at grade as very little excavation is required to accomplish this. Between San Carlos Street and the proposed track will be a grade of .2% which will present grade separations with the Santa Cruz Division. It elevates all of the present tracks to the same level. This can be accomplished to a very great degree, as a result of the proposed grade. In fact all, within a distance of 100 feet, will be raised to the present grade of the Santa Cruz Division. Street and Guadalupe River. The proposed line will be parallel to the railroads as it crosses the street at Hedding Street.

### Description of Plan "C"

Plan "C" contemplates carrying the main line traffic the Southern Pacific through West San Jose, avoiding important grade crossings and maintaining industry tracks West San Jose in their present location.

From Hedding Street the proposed line leaves the present line at an ascending grade of .5%. It follows along the right of way of the Santa Cruz Division to about Lenzen Avenue from which point it swings southward along Sunol Street to Park Avenue. From Park Avenue the line continues level to Carlos Street from which point a .6% descending grade enables the proposed line to cross the Santa Cruz Division, at present elevation, at a point about 300 feet south of Salvador Street.

Between Hedding Street and Polhemus Street all crossings remain at grade as very little changes in street grades are required to accomplish this. At Polhemus Street, however, where the proposed track will be about 8 feet higher than at present, grade separation will be necessary. It is proposed to elevate all of the present tracks at Polhemus Street to the same level. This can be done without hampering the yard tracks to any great degree, as a 1% descending grade from Polhemus Street will, within a distance of but 800 feet, bring the tracks down to the present grade in the yards between Polhemus Street and Guadalupe River. This may be a decided advantage to the railroads as it will enable them to install a "Hump" at Polhemus Street.

Between Polhemus Street and Park Avenue street depressions of approximately three feet will permit the separation of grades at all street intersections. At San Carlos Street a street depression of about six feet is required. San Salvador Street will remain as at present, as in order to serve the industries in the vicinity of San Salvador Street, it is necessary that the present Santa Cruz Division tracks remain at grade.

From the intersection with the Santa Cruz Division the proposed tracks run parallel to and on the South side of those of the Western Pacific, as far as Almaden Road from which point they continue for about 2000 feet eastwardly to an intersection with the Southern Pacific property. From here the line occupies Southern Pacific property and joins the present main line at Tully Road.

Two schemes for this route are suggested. One consists of a double or three track system with the Western Pacific, operating at grade. Although this scheme would increase the hazards of the present street grade crossings of the Western Pacific, it is the only practical thing to do if joint operation with that railroad is agreed upon as the amount of business which the Western Pacific handles over their line at this time would not justify them in sharing the enormous expenditure involved in separating grades. Later, say within a period of Ten years in order to make this plan acceptable both roads should elevate so as to eliminate all crossings from Coe Avenue to Almaden Road inclusive.

The second scheme is for the Southern Pacific to acquire a separate right of way immediately south of the Western Pacific. Under either scheme the tracks of both roads will operate at grade from the intersection with the Santa Cruz branch to within about 300 feet of Los Gatos Creek from which point a .46% ascending grade will carry the tracks over Willow Street.

Between San Salvador and Coe Avenue all street intersections would remain at grade and Broadway Street will be deflected. A subway would eliminate the Coe Avenue crossing. By keeping the tracks at grade between San Salvador Street and Los Gatos Creek the Western Pacific industry tracks can be maintained in their present location.

A 0.2% ascending grade from Willow Street to Almaden Road and a 0.14% ascending grade from here to Mitchell Avenue will permit of grade separation at any and all crossings between these points. From Mitchell Avenue, a descending grade of .42% will bring the Southern Pacific to the grade of the present main line at Tully Road. The same street revisions for Monterey Road and Mitchell Avenue would be followed as outlined in Plan A.

This plan with the exception of the small stretch between San Salvador Street and Coe Avenue will permit of satisfactorily rearranging the Major Streets as the proposed tracks will be high enough to permit new streets to pass under them with the exception of those streets between San Salvador Street and Los Gatos Creek. Future grade separations north of Polhemus Street can be made without interfering with this scheme.

From the Almaden Road eastward, the Western Pacific may descend on a 0.7% grade to about its crossing with the Southern Pacific's present main track. Beyond this point it is not believed that either the street or railway traffic density would justify continued elevation, at least for many years. By a depression of 6' at Orchard Street at about 7' at Monterey Road, the grade crossings of these two important Major Streets can be eliminated.

Other Plans Proposed.

A fourth plan has been suggested which contemplates rerouting the Fourth Street tracks north of the city, as illustrated on the Railroad map. The new line would extend almost due eastward from North First Street, between Washington and Julian Streets paralleling these streets. About at its intersection with Coyote Creek it would swing southward and southwestwardly, paralleling the Western Pacific, and joining the present main line at about Phelan Avenue. In as much as such a route would traverse some 30 blocks of well established and thickly settled residential and business property, the acquisition of the necessary right of way would entail a tremendous expense. The tracks would of course have to be elevated and as it is a much longer route than any proposed, its comparative cost would be very great. The increased mileage would put a considerable burden on the railroad in cost of operation and this alone is sufficient cause for the rejection of this plan. In fact there is little in this plan to commend it from any standpoint.

CONCLUSIONS AND RECOMMENDATIONS.

In reviewing the findings of this investigation and comparing the points in favor of and against the several plans proposed, it appears that Plan B, and Plan C offer a practical solution of the Fourth Street problem.



Considering Plan C, it is believed that this plan will not satisfactorily meet the requirement of the City unless it provides for a jointly operated elevated line, or a parallel elevated line for both the Southern Pacific and the Western Pacific Railroads along the South and West sections of the City. If both railroads are left at grade on this detour route, very serious conditions will result at grade crossings due to the number of tracks, at least three in every case, and to the number of train and switching movements many of which would be concealed by passing trains. It is a well known fact that double track and three track crossings are much more dangerous and difficult to protect than those of single track only. On the other hand, if the Southern Pacific only were elevated, and the Western Pacific along side left at grade, the train movements of the latter would be concealed from those approaching from the South. It is therefore recommended that unless both railroads will agree within a reasonable time to construct either a jointly operated elevated line or parallel lines, at least from Los Gatos Creek to Almaden Road, this scheme be abandoned in favor of Plan B.

Probably the most potent arguments in favor of Plan B, elevation of track in Fourth Street, are that it disturbs existing conditions the least possible amount and requires the purchase of very little additional right of way. Although no estimates of cost have been made in connection

with the report, it is believed that Plan B will be less costly than either of the others and will require the shortest period of time to accomplish. The resale of the Southern Pacific right of way through the Southern section of the city should go a long way toward financing the cost of Plan B.

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