Transit Plan

Preface

"Transit" is the term used to designate the various types of public conveyances for the transportation of people within a city and its environs. In Duluth, transit service consists of street car and bus lines. In very large cities there may be also subways, elevated lines, surface express lines; these latter being called "rapid transit."

The purpose of the transit study under the city plan is to evolve a comprehensive scheme for future routes, which in so far as possible, should be co-ordinated with the major streets. Many of the recommendations contained in this report are dependent upon the execution of certain street connections and extensions. Since indirect routings in transit systems often are due to inadequate or poorly arranged streets, the development of a correlated plan for wide, direct and continuous thoroughfares will greatly facilitate the building of a more efficient and economical transit system.

The rapid growth and changing conditions within our urban areas have naturally affected transit operation and it is now necessary that railway companies effect every measure of economy. With possibly a few exceptions, the existing railway companies in most cities have resulted from the consolidation of several competing companies and the lines of these different pioneer organizations were usually developed with one thought foremost in mind—that of revenue. As a consequence the early promoters selected those routes which appeared to be the most remunerative and there was little regard for the community's interest as a whole. As cities began to expand the inevitable resulted. Many areas were found to have an overlapping or duplication of service while others were totally without transit facilities.

To remedy these conditions and encourage the natural expansion of urban centers it was found that the unification of all facilities was necessary so that all areas could be furnished with reasonable service by a single company for a single fare.

It was not long after the general principle of unification of electric lines had been accepted until a new form of competition entered the field of urban transportation, that of the motor bus. In the early stages this new service was permitted to operate more or less unregulated, which proved to work a great hardship upon the earnings and stability of the electric railway companies. Experience during the past several years, however, has developed some interesting facts concerning the practicability of the bus as a public carrier. First, it is absolutely essential that bus operation be regulated and if duplication of service and economic waste are to be avoided, it is imperative that the local bus lines be operated by the transit company. Just as it was found necessary to unify the electric lines in years past so is it now important that all local transit facilities be under the control and operation of one company.

As a supplemental service to the electric lines the bus has considerable merit. In undeveloped or sparsely populated areas the bus has an economic advantage in that the initial cost of installation is considerably less than that of the electric line. Very often, too, they can be used to advantage as a complete line where travel is light. Many railway operators throughout the country have appreciated these advantages and there are now nearly three hundred companies operating more than five thousand busses in conjunction with electric lines.

To effect greater efficiency and economy it is important that railway companies take a broader view of future transit requirements and plan in advance for them. For instance there should be a comprehensive predetermined plan designating the location of all future routes. With such a plan as a guide all changes and extensions can be made with reasonable assurance that each improvement will become a part of an orderly system. Coincident with the execution of the transit plan continual studies should be made with a view toward determining the adaptability of the various types of carriers such as one-man and two-man cars and busses, to the different routes. The following pages contain studies and discussions of existing physical conditions and recommendations for future improvements.

History of Duluth Street Railway Company

The Duluth Street Railway Company was incorporated October 17, 1881 and received its franchise from the State Legislature on November 17th of the same year. Prior to the passage by the legislature the franchise act had been discussed by the Duluth Village Council and with certain amendments agreed to between the incorporators and the aldermen, the Village Council had recommended to the State Legislature that it be adopted.

The franchise provided that the first mile of track should be put in operation on or before November 17, 1882. This track, consisting of light strap rails laid on pine stringers, extended along Superior St. from about 8th Ave. W. to about 3rd Ave. E. The first cars operated were very light and small and were drawn by mules. The Village Council consented to a suspension of operation during the winter of 1882-3 and continuous operation did not begin before the spring of 1883. Up until 1890 only about four miles of track had been put in service, but during the "boom" between 1890 and 1892 the street railways grew from four to almost thirty miles of line.

On April 21, 1890, electrification of the street railway was authorized by the City Council and between that date and 1892 all of the lines were electrified. The 7th Ave. inclined railway was built and the surface lines of the company extended. Electric lines were also built to Lester Park, Woodland, and Duluth Heights by the land companies interested in those developments. All lines were operated by the Duluth Street Railway Company.

For the first few years of operation as a horse car system with only four miles of track the company was fairly successful. But the enormous expenditures necessitated by the electrification and extension of lines, followed as they were by the business depression of 1893, placed a load upon the company that it could not withstand. Following the expansion of 1892, the depression of 1893 struck Duluth full force about August, reducing the company's revenue about one-half. Expensive electrical equipment that had been installed remained idle for many years. A reduction in the wages of employes necessary to enable the company to meet expenses was followed by a strike of all the employes and the resignation of the general manager.

In 1898 the company went into receivership. In the meantime, through the efforts of several enterprising individuals, the Duluth-Superior Traction Company was organized for the purpose of building a bridge between Duluth and Superior and acquiring and operating the street railway properties of both cities as one system.

The Superior Rapid Transit Railway Company had also been operated by receivers for several years prior to 1900. In 1897 the Duluth- Superior bridge was built and on August 13, 1900, the street railway properties of both cities began operation as one system owned by the Duluth-Superior Traction Company and operated by the Duluth Street Railway Company. The lines which had been built by and operated for the land companies were also acquired about this time and became a part of the street railway system. Subsequently the property of the Park Point Street Railway Company was acquired so that at present all the street railway service at the Head of the Lakes is given by one operator, The Duluth Street Railway Company.

During the decade ending with 1900, the street railway mileage in Duluth was increased to about 36 miles and with the addition of the lines owned by the land companies in Duluth and 26 miles of street railway in Superior, the total mileage in 1900 was 74.80, of which 48.80 were in Duluth and 26 in Superior.

During the decade ending with 1910, the mileage in Duluth was increased from 48.80 to 54.96, while that in Superior was decreased from 26 to 23.53, making a total mileage of 78.49.

In the decade ending with 1920, the Duluth mileage was increased from 54.96 to 76.77, the Superior mileage from 23.53 to 27.32 and the total from 78.49 to 104.09.

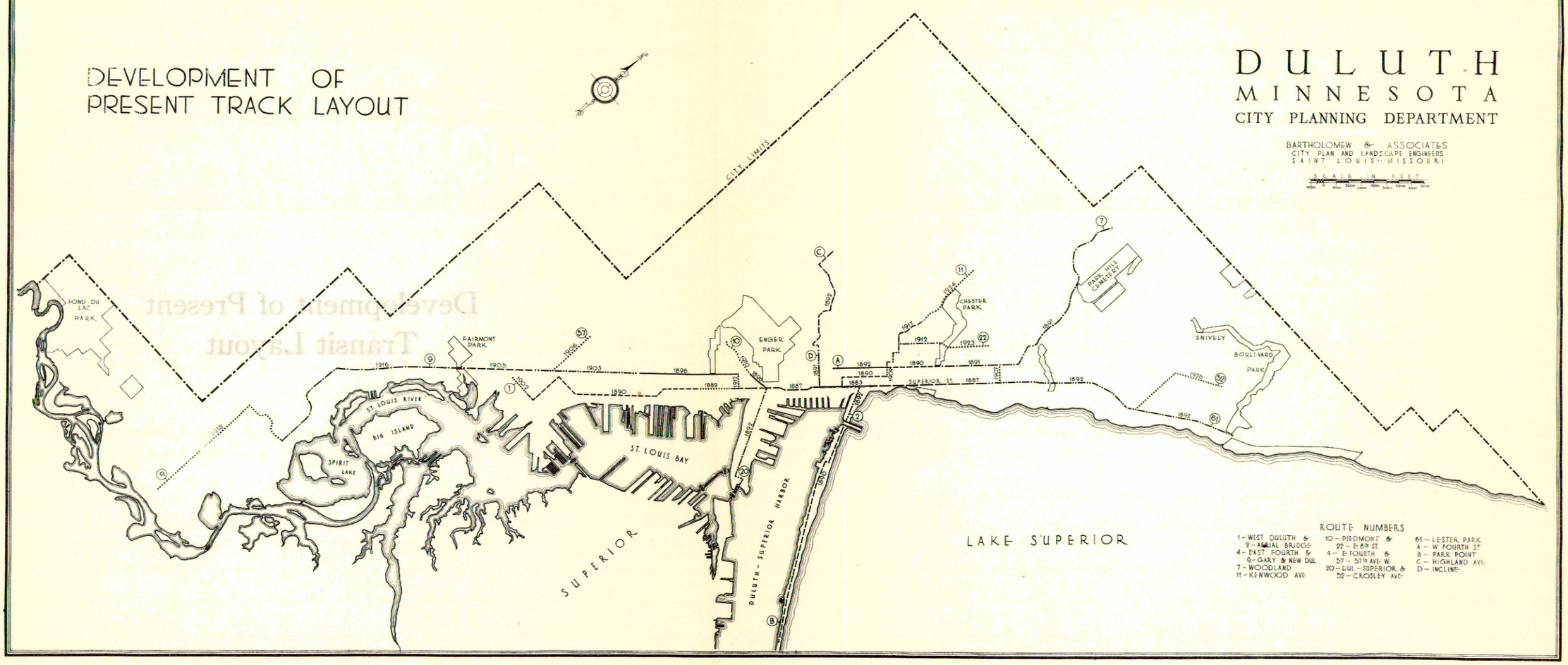
Development of Present Transit Layout

DEVELOPMENT OF PRESENT TRACK LAYOUT

DULUTH
MINNESOTA
CITY PLANNING DEPARTMENT

BARTHOLOMEW & ASSOCIATES
CITY PLAN AND LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

SCALE IN FEET
1000 0 1000 2000 3000 4000 5000 6000



ROUTE NUMBERS

1 - WEST DULUTH &
9 - AERIAL BRIDGE
4 - EAST FOURTH &
9 - GARY & NEW DUL.
7 - WOODLAND
11 - KENWOOD AVE.
10 - PIEDMONT &
22 - E. 6TH ST.
4 - E. FOURTH &
57 - 57TH AVE. W.
20 - DUL. - SUPERIOR &
52 - CROSLEY AVE.
61 - LESTER PARK
A - W. FOURTH ST.
B - PARK POINT
C - HIGHLAND AVE.
D - INCLINE

Development of Present Transit Layout

Before considering the present plan of operation in Duluth it is of interest first to review the evolution of the existing layout. Plate Number One opposite shows graphically the extension of tracks made from time to time and supplementing this a list of the salient facts occuring during the development of the railways in Duluth is given below. The plan and list both give the date and location of every track improvement made since the inception of the Duluth Railway in 1882.

Summary of the Development of the Duluth Street Railway Company

1882—Nov. 17—Horse Car on Superior from 8th Ave. W. to 3rd Ave. E.
1887—Oct. 31—Double track on Superior St. from 22nd Ave. E. to 23rd Ave. W.
1897—Nov. 30—Double track on Superior St. from 23rd Ave. W. to 28th Ave. W.
1890—Nov. 8—Electric cars put in operation from 22nd Ave. E. to 28th Ave. W.
1890—Dec. 21—East 4th St. from Line, 3rd Ave. and Superior St. to 14th Ave. E. and 4th St., put in operation.
1891—Apr. 28—Woodland Line from 14th Ave. E., and 4th, to Austin St. opened.
1891—Dec. 2—Incline Railway put in operation on 7th Ave. W.
1891— —Track extended from 28th Ave. W. on Superior St. to Central Ave.
1892—Sept. 25—Garfield Ave. and Lake Ave. lines put in operation.
1892—Dec. 17—Lakeside line from 22nd Ave. E., to 61st Ave. E. put in operation.
1892—Oct. 3—Highland Ave. line put in operation.
1892—Nov. 4—West 4th St. line opened from 6th Ave. E., to 4th Ave. W.
1893—Sept. 1—Carmen strike—Compromised.
1896—July 1—West 3rd St. Line, from Garfield Ave. to 39th Ave. W. and 3rd St. opened.
1897—July 13—Duluth Superior bridge opened.
1898—July 7—Duluth St. Railway Company went into receivership.
1900—Aug. 13—Duluth Street Railway Company and Duluth Superior Traction Company consolidated and reorganized.
1901—July 1—Woodland Line purchased from Motor Line Improvement Company.
1902— —Garfield Ave. Viaduct constructed and line located thereon.
1902— Line built near point of rocks, connecting Superior St. and Michigan.
1902—Jan. 1—Incline Railway rebuilt with motor car and counterweight put in operation.
1902—Oct. —Double track on W. Duluth line from 57th, to 62nd Ave. W.
1903—Aug. 15—West 3rd St. line extended from 39th to 60th Ave. W. single track.
1905—Oct. 1—Single track extended, on W. 3rd St. from 60th, to 71st Ave. W.
1906—Aug. 11—Draw span of Duluth Superior bridge knocked into bay by Steamer Troy.
1906—Oct. 15—57th Ave. W. from 3rd St. to Medina St. put in operation.
1907—Sept. 13—First power received from G. N. Power Company.
1907—Aug. 19—Double track line on 24th Ave. E., from Superior St. to 4th.
1908—Sept. 27—Duluth Superior bridge reopened.
1909—June 22—Double track line on 5th Ave. E., from 2nd to 4th St.
1909—Aug. 18—Double track extended from 2nd to 5th Ave. E., on W. 4th St.
1909—Oct. —Double track extended from 39th Ave. W., to 57th on W. 3rd.
1910—June 1—Piedmont Ave. extension from 19th Ave. W., and 3rd St., to 23rd and 10th St.
1911—July —West 3rd St.—double track extended from 54th to 60th Ave. W.
1912— —Double track laid on 21st Ave. W. from Superior to 3rd St.
1912—Nov. 1—East 7th St. extension, from 5th Ave. E. and 4th St., to 13th Ave. E. and 9th St., put in operation.
1915—Mar. 14—First jitney bus appeared on streets of Duluth.
1916—June 12—Morgan Park line put in operation.
1917—July 1—Park Point line operation assumed by Duluth Street Railway Company.
1917—Sept. 1—Park Point property acquired. Fare reduced to five cents.
1917—Oct. 10—Kenwood Ave. line put in operation, from 7th Ave. E., and 9th St., to 11th Ave. E., and 14th St.
1918—Jan. 1—New Duluth line opened, from Morgan Park loop to McCuen St.
1918—Oct. 12—Duluth approach to Duluth-Superior bridge burned—reopened November 7th and 20th, 1918.
1920—June 21—Duluth six cent fare ordinance defeated by voters.
1920—July 21—Defeat of six cent ordinance resulted in one day strike of employees.
1920—Oct. 4—Second Duluth six cent fare ordinance defeated by voters.
1921—Sept. 1—Six cent fare in Duluth in effect.
1921—Sept. 10—Six cent fare discontinued by order of Duluth District Court.
1922—Aug. 1—Six cent fare put in effect.
1923—Sept. 1—East 9th Line extension to 8th St. and Kent Road put in operation.

SUMMARY OF THE DEVELOPMENT OF THE DULUTH STREET RAILWAY COMPANY

1924—June 16—Election on Duluth Bus ordinance—eliminating busses by vote. Busses resumed operation June 23rd by temporary restraining order by Judge Fesler. Decision of Judge Grannis stopped operation of busses July 16th.

1924—Aug. 3—Duluth local busses started running from 9th Ave. E., to Oliver.

1924—Aug. 23—Duluth-Oliver busses suspended operation.

1924—Sept. 1—Kenwood extension—Boulevard to St. Marie St. in operation.

1924—Nov. 21—Duluth-Superior Bridge Co. replaced span of Duluth-Superior bridge knocked into bay by Str. M. S. Farr—no through service.

1924—Dec. 18—Morley Heights bus service from Woodland Ave. street car line begun; operation by Duluth Coach Company.

1924—Dec. 19—Duluth Superior cars resumed operation over bridge (Tug discontinued.)

1924—Dec. 22—Duluth Superior busses in operation over Garfield Ave. bridge.

1924—Dec. 29—Judge Booth of Federal Court hands down decision sustaining six cent fare in Duluth. Final decree filed 1-27-25.

1925—Jan. 28—Calvary Road bus service begun, from end of Woodland car line.

1926—Jan. 1—Fond du Lac bus line started between end of Gary-New Duluth street car line and Chamber's Grove.

1926—May 20—Arnold Road given bus service by extending the route of Calvary Road busses.

1927—July 20—Arrowhead bus line started, running between Arrowhead Bridge and 3rd Ave. E.

Existing Transit Lines, Areas and Population Served.

On the plate opposite is shown the routes of each local line, car and bus, together with the distribution of population and areas served. Areas within one-quarter mile of transit lines, which is equivalent to a five minute walk, are considered to be adequately served and are termed effective service areas. Those areas without service are indicated by cross-hatching.

Approximately 87 per cent of the city's population is within the effective service areas which latter comprise about 29 per cent of the city's area of 62.5 square miles. In the unserved areas the greatest densities occur on the hill-side north of the central business district and in West Duluth north of Grand Ave. The need of transit facilities in these districts is obvious.

Note how the population has distributed itself along the water front and also the various undeveloped areas to the northwest. Obviously topography has been the controlling factor in influencing the direction of the city's growth. Car lines have been extended parallel to the water front from the east to the west for a distance of 18.5 miles while the expansion of facilities in other directions has been comparatively limited.

The day is not far distant when the city will be forced to spread up into the high-lands and fortunately this territory is admirably adapted to good residential development. The chief difficulty has been to find reasonably negotiable grades for access to these areas. Such routes are suggested on the proposed comprehensive plan which has, so far as possible, been co-ordinated with the major street layout. The routings of existing lines are given below:

ROUTES 1 - 2.

West Duluth and Aerial Bridge.

On Raleigh St. from 62nd, to Central, to Ramsey, to Oneota, to Jenswold, to Superior, to Michigan at point of rocks, to Superior, to Lake Ave., to Canal bridge or Morse St.

ROUTES 4 - 9.

East 4th Gary and New Duluth.

On Commonwealth Ave. from McCuen to W. Boulevard, to 4th St. (Morgan Park), to 93rd, to Grand, to W. 3rd, to 21st Ave., to Superior, to Michigan at point of rocks, to Superior, to 3rd Ave., to 2nd St., to 57th Ave., to 4th St., to 24th Ave. E.

ROUTE 7.

Woodland.

On Superior St. from 8th Ave. W., to 24th E., to 4th St., to Wallace, to Woodland, to Austin St.

ROUTE 10 - 22.

Piedmont and E. 8th St.

On Piedmont Ave., from W. 10th St., to Superior, to Michigan, at point of rocks, to Superior, to 3rd Ave. W., to 2nd St., to 5th Ave. E., to 5th St., to 6th Ave., to 7th St., to 7th Ave. E., to 9th St., to 13th Ave. E., to 8th St., to Kent Road.

ROUTE 11.

Kenwood Avenue.

On Superior St. from 8th Ave. W., to 3rd Ave. W., to 2nd St., to 5th Ave. E., to 5th St., to 6th Ave., to 7th St., to 7th Ave., to 11th St., to Kenwood, to St. Marie St.

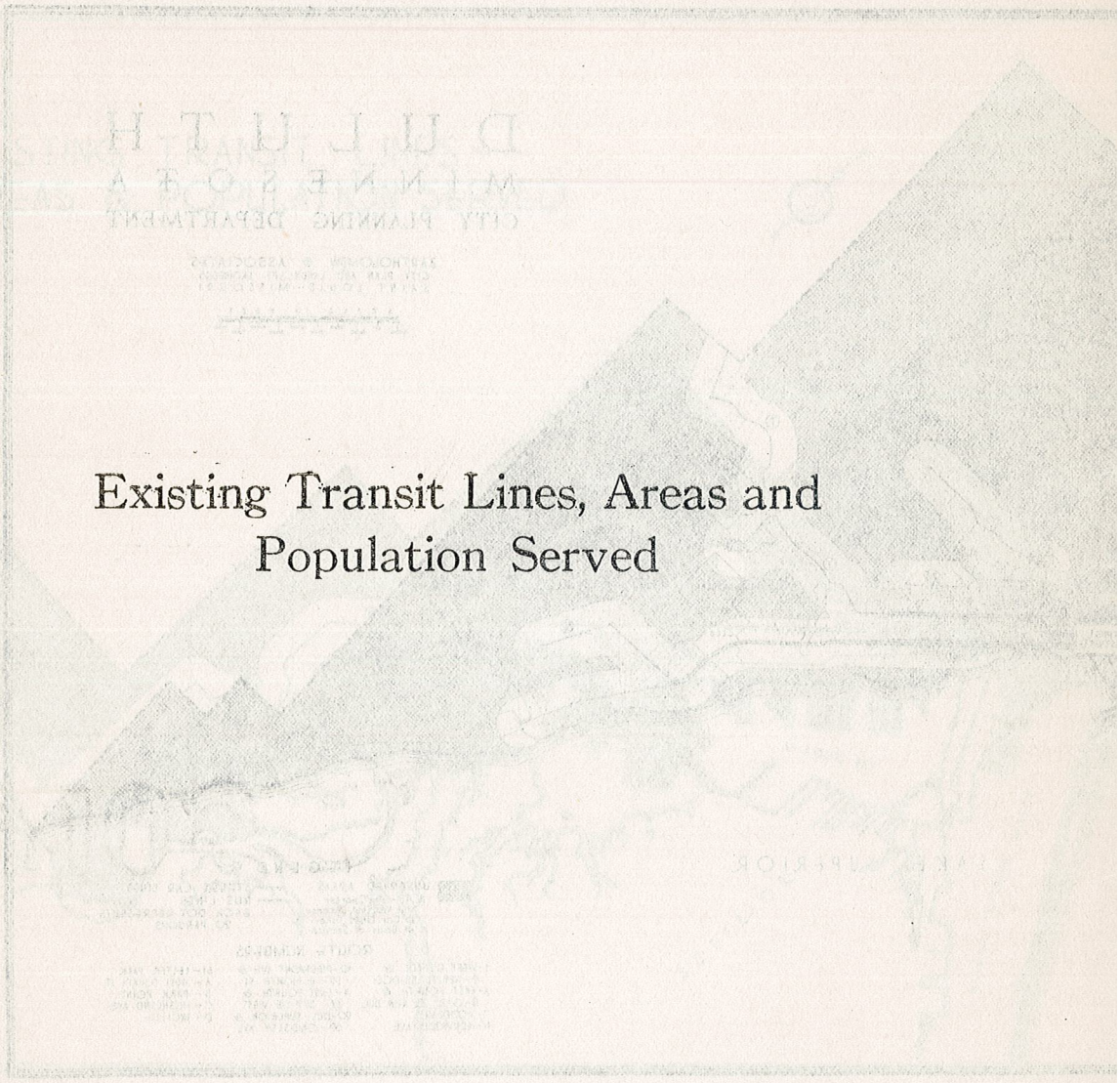
ROUTE 4 - 57.

East 4th and 57th Avenue W.

On 4th St. from 24th E., to 5th Ave. E., to 2nd St., to 3rd Ave. W., to Superior, to Michigan at point of rocks, to Superior, to 21st Ave. W., to 3rd St., to Grand Ave., to 57th W., to Medina St.

(Continued on Page 48)

Existing Transit Lines, Areas and Population Served

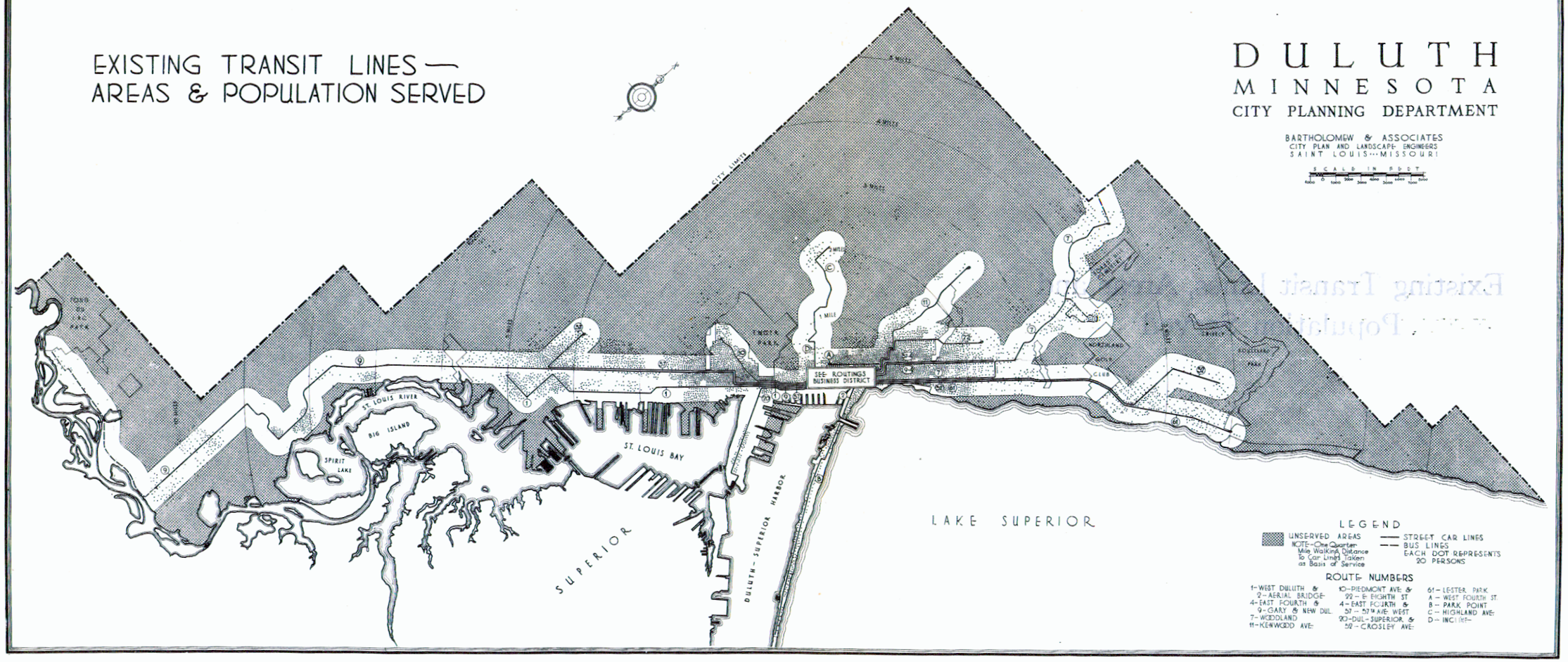


EXISTING TRANSIT LINES — AREAS & POPULATION SERVED

DULUTH
MINNESOTA
CITY PLANNING DEPARTMENT

BARTHOLOMEW & ASSOCIATES
CITY PLAN AND LANDSCAPE ENGINEERS
SAINT LOUIS···MISSOURI

SCALE IN FEET
4000 0 1000 2000 3000 4000 5000 6000



LEGEND

UNSERVED AREAS
NOTE—One Quarter Mile Walking Distance To Car Lines Taken as Basis of Service

STREET CAR LINES
BUS LINES
EACH DOT REPRESENTS 20 PERSONS

ROUTE NUMBERS

1—WEST DULUTH &
2—AERIAL BRIDGE
4—EAST FOURTH &
9—GARY & NEW DUL.
7—WOODLAND
11—KENWOOD AVE.
10—PIEDMONT AVE. &
92—E. EIGHTH ST.
4—EAST FOURTH &
52—52ND AVE. WEST
20—DUL.—SUPERIOR, &
59—CROSLEY AVE.
61—LESTER PARK
A—WEST FOURTH ST.
B—PARK POINT
C—HIGHLAND AVE.
D—INCLINE—

SUMMARY OF TRANSIT DATA — EXISTING LINES

CITY PLANNING DEPARTMENT — DULUTH MINNESOTA

BARTHOLOMEW & ASSOCIATES · · · · CITY PLAN AND LANDSCAPE ENGINEERS · · · · SAINT LOUIS - MISSOURI

NO. OF LINE	NAME OF LINE	LENGTH IN MILES	TOTAL PASSENGERS CARRIED PER DAY	NUMBER OF TRIPS PER DAY			SCHEDULE TIME FOR TYPICAL TRIP						SCHEDULE SPEED IN MILES PER HOUR		HEADWAY IN MINUTES			
							LEAVES	AT	ARRIVES	AT	ARRIVES	AT	IN BUSINESS DISTRICT	BEYOND BUS DISTRICT	MAXIMUM	NON-RUSH	MINIMUM	MINIMUM FOR COMBINED LINES
1 2	WEST DULUTH & AERIAL BRIDGE	6.35	4,868 4,710	W. S.	ONEOTA LAKE AVE.	95 95	62ND & RALEIGH	4.03	3RD. & SUPERIOR	4.32	AERIAL BRIDGE	4.38	6.58	15.58	20	10	6⅔	
4 9	EAST 4TH. GARY & NEW DUL.	15.01	6,942 7,294	E. W	FOURTH ST. GRAND AVE.	60 60	McCUEN ST	4.13	3RD & SUPERIOR	5.08	24TH & FOURTH ST.	5.24	6.58	17.57	20	20	20	3½
4 57	EAST 4TH. & 57TH AVE. WEST	8.09	5,102 5,235	E. W.	FOURTH ST. GRAND & 57TH.	60 60	57TH & MEDINA	4.09	3RD. & SUPERIOR	4.38	24TH & FOURTH ST.	4.54	6.58	13.92	20	20	20	
7	WOODLAND	6.26	2,674 3,093	IN OUT	WOODLAND AVE. WOODLAND AVE.	71 71	AUSTIN ST.	4.11	3RD. & SUPERIOR	4.41	AUSTIN ST.	5.19	6.58	12.97	20	20	10	
10 22	PIEDMONT & EAST 8TH. ST.	5.01	3,702 4,404	W E	PIEDMONT AVE. E. 9TH. & E. 8TH.	69 69	8TH. & KENT ROAD	4.11	3RD & SUPERIOR	4.30	10TH. & PIEDMONT	4.45	6.58	11.15	20	20	7½	
11	KENWOOD AVE.	3.62	1,102 1,629	IN OUT	KENWOOD AVE. KENWOOD AVE.	60 60	KENWOOD & ST. MARIE	4.00	3RD. & SUPERIOR	4.20	KENWOOD & ST. MARIE	4.53	6.58	11.22	20	20	10	
61	LESTER PARK	6.59	2,288 2057	IN OUT	SUPERIOR ST. SUPERIOR ST.	67 67	LESTER PARK LOOP	4.11	3RD. & SUPERIOR	4.40	LESTER PARK LOOP	5.17	6.58	13.53	20	20	10	5
20 52	DULUTH-SUPERIOR & CROSLEY AVE.	9.35	4,785 4,776	W E	GARFIELD AVE. CROSLEY AVE.	63 63	DUL.-SUP BRIDGE	2.54	3RD. & SUPERIOR	3.11	52ND. & CROSLEY	3.42	6.58	12.90	20	20	7⅓	
A	WEST 4TH. ST.	0.93	115 205	E W	FOURTH ST. FOURTH ST.	48 48	5TH. AVE. E. & FOURTH ST.	4.19	5TH. AVE. W. & FOURTH ST.	4.25	5TH. AVE. E. & FOURTH ST.	4.36		9.68	20	20	20	
B	PARK POINT	3.3	560 559	IN OUT	MINNESOTA AVE. MINNESOTA AVE.	56 56	43RD ST.	4.08	AERIAL BRIDGE	4.25	43RD. ST.	4.45		11.71	20	20	20	
C	HIGHLAND AVE.	1.86	525 605	IN OUT	HIGHLAND AVE. HIGHLAND AVE.	43 43	LOCUST ST.	4.24	INCLINE	4.34	LOCUST ST.	4.53		13.32	30	30	15	
D	INCLINE	0.56	1,323 745	UP DOWN	7TH AVE W. 7TH AVE W.	78 78	8TH ST.	4.35	SUPERIOR ST.	4.43	8TH. ST.	4.58		4.22	15	15	10	

TIME OF TRIP FOR THRU ROUTES FIGURED BETWEEN OPPOSITE ENDS OF LINE.
TIME OF TRIP FOR LINES LOOPING IN BUSINESS DISTRICT REPRESENTS ROUND TRIP.
ALL TIME SHOWN IN P.M. HOURS.

"THRU ROUTES" INDICATED BY TWO NUMBERS.
"LOOP ROUTES" INDICATED BY ONE NUMBER.
MINIMUM HEADWAY OF ONE MINUTE ALONG SUPERIOR STREET BETWEEN 3RD & 8TH. AVE. WEST.

(Continued from Page 46)

ROUTE 20 – 3, 20 – 24.

20 – 3.

Duluth-Superior.

From interstate bridge, to Pine, to Garfield, to Superior, to Michigan at Point of Rocks, to Superior, to 3rd Ave.

20 – 24. Same as 20 – 3 except line continues east on Superior to 24th.

20 – 52.

Crosley Avenue.

Same as 20 – 24 except line continues east on Superior to 45th, to Crosley Ave., to 52nd.

ROUTE 61.

Lester Park.

On Superior St. from 8th Ave. W., to 61st Ave. E.

ROUTE A.

West 4th Street.

On 4th St. from 5th Ave. E., to 5th Ave. W.

ROUTE B.

Park Point.

On Lake Ave. from 8th St., to 14th, to Minnesota Ave., to 43rd St.

ROUTE C.

Highland Avenue.

On 7th Ave. W., from 8th St., to 9th St., to Winona Ave., to Highland, to Orange St., to Highland, to Locust St.

ROUTE D.

Incline Railway.

On 7th Ave. W., from Superior St. to 8th St.

BUS LINES

Fond du Lac.

On Commonwealth Ave., from McCuen St., to Fond du Lac Road, to Chamber's Grove.

Arrowhead Bridge.

On LeSure St. from Arrowhead bridge, to 50th Ave., to 51st Ave., to Roosevelt St., to Central Ave., to Grand Ave., to Chestnut St., to 31st Ave. W., to Superior St., to 3rd Ave. E.

Morely Heights.

On Oxford St. from Woodland Ave., to Vermillion Road, to Kenilworth, to Sussex, to Leicester, to Morley Parkway, to Spear, to Livingston, to Oxford, to Woodland.

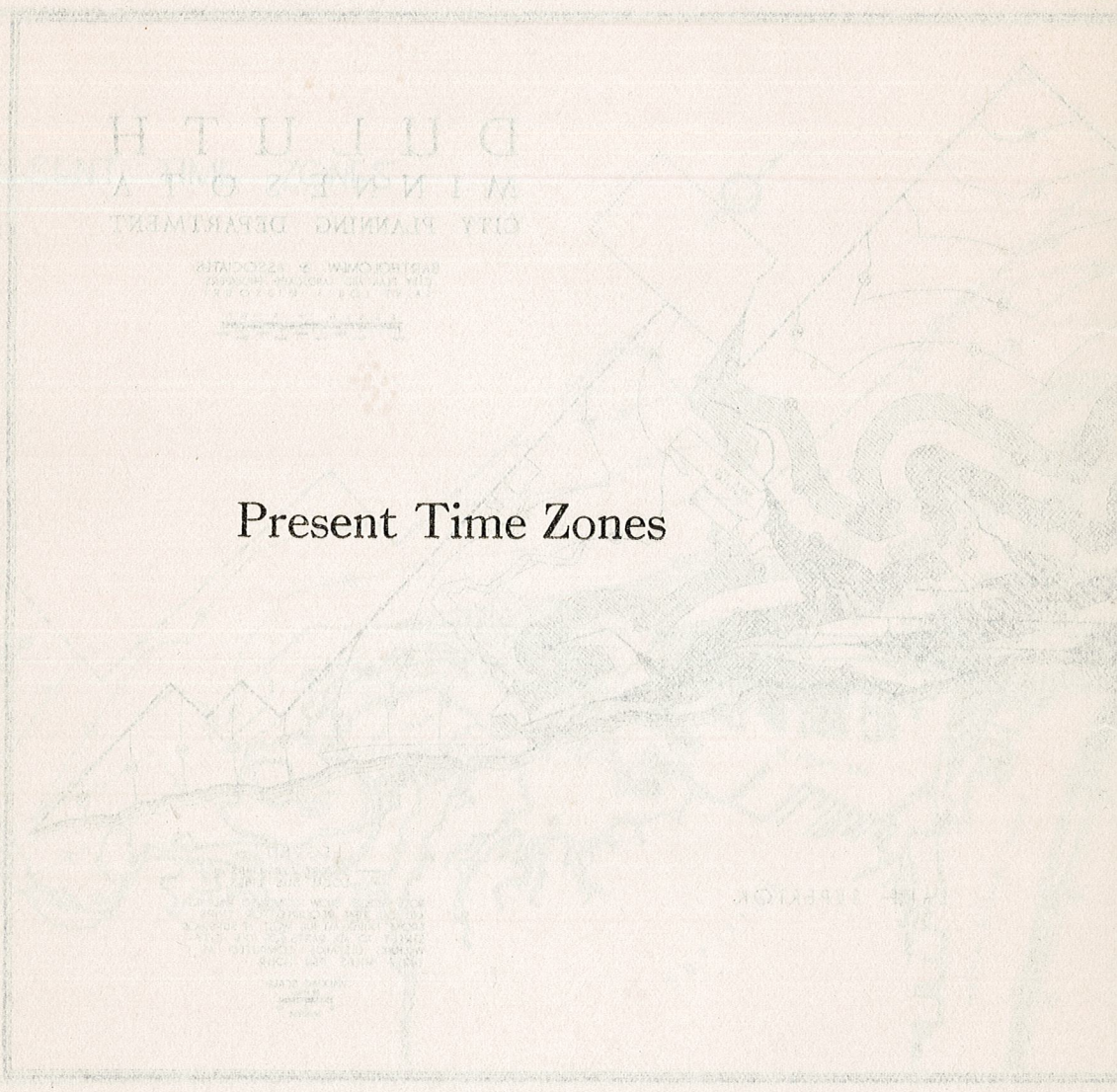
Calvary-Arnold.

On Calvary Road from Woodland Ave., to Howard-Gnesen Road, to Tischer Road, to Arnold Road, to Calvary Road, to Woodland Ave.

Present Time Zones

Plate Three.

The time required to reach different parts of the city from the intersection of 3rd Ave. W. and Superior St. are indicated on this plan. The time of travel along the different lines has been computed from the Railway Company's schedule, and walking time is assumed at three miles per hour. The heavily shaded area in the central district represents the five minute zone and indicates the distance which can be reached in riding, or riding and walking combined, in five minutes or less from 3rd Ave. W. and Superior St. Other zones show time required to reach different sections of the city. The extent of the areas served in a given time usually depends on the speed and directness of the routes. The effect of steep grades on the speed and directness of routes is evident from the greater time involved in north-south movement as compared to east-west movement. To the north the 35 minute zone extends approximately three miles from the central district while to the east or west it reaches out about seven miles. The proposed routing plan would bring considerable area now unserved, within the 35 minute zone.



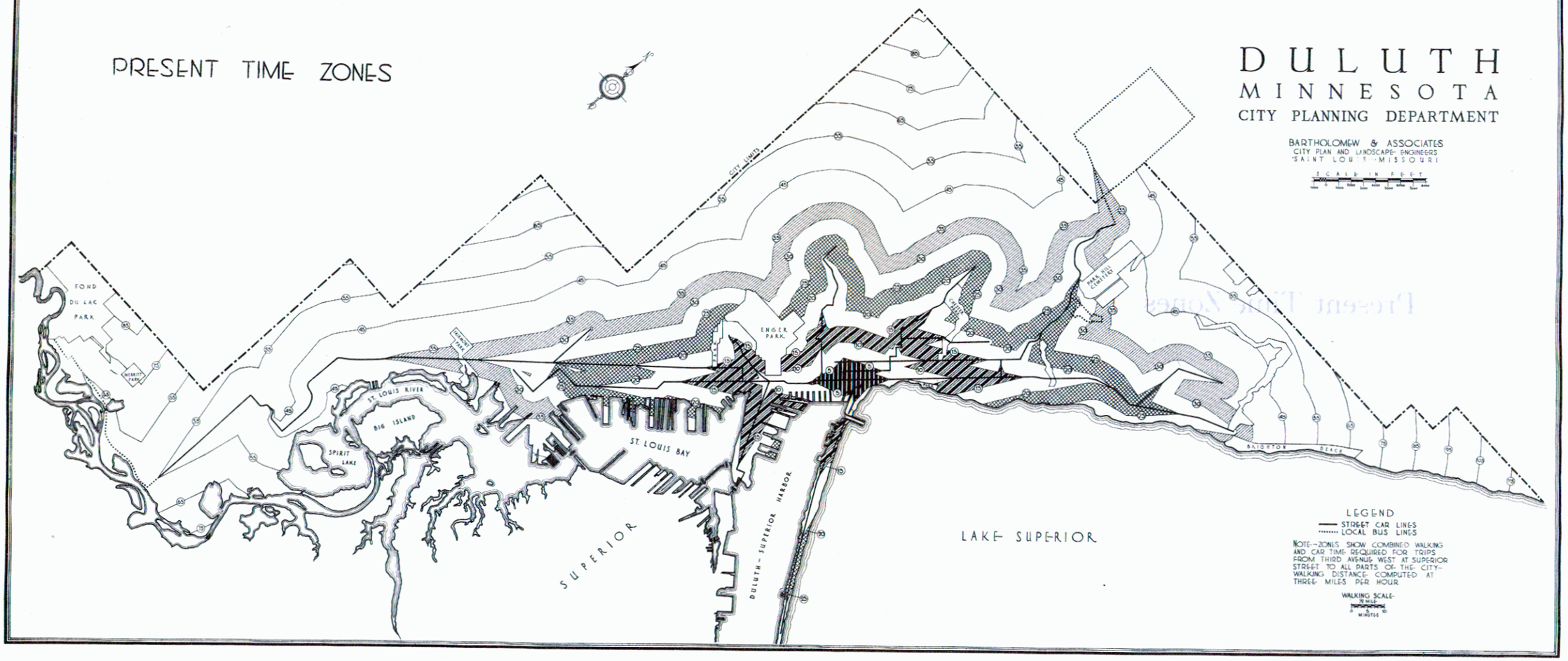
Present Time Zones

PRESENT TIME ZONES

DULUTH
MINNESOTA
CITY PLANNING DEPARTMENT

BARTHOLOMEW & ASSOCIATES
CITY PLAN AND LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

SCALE IN FEET
0 1000 2000



LEGEND
— STREET CAR LINES
..... LOCAL BUS LINES

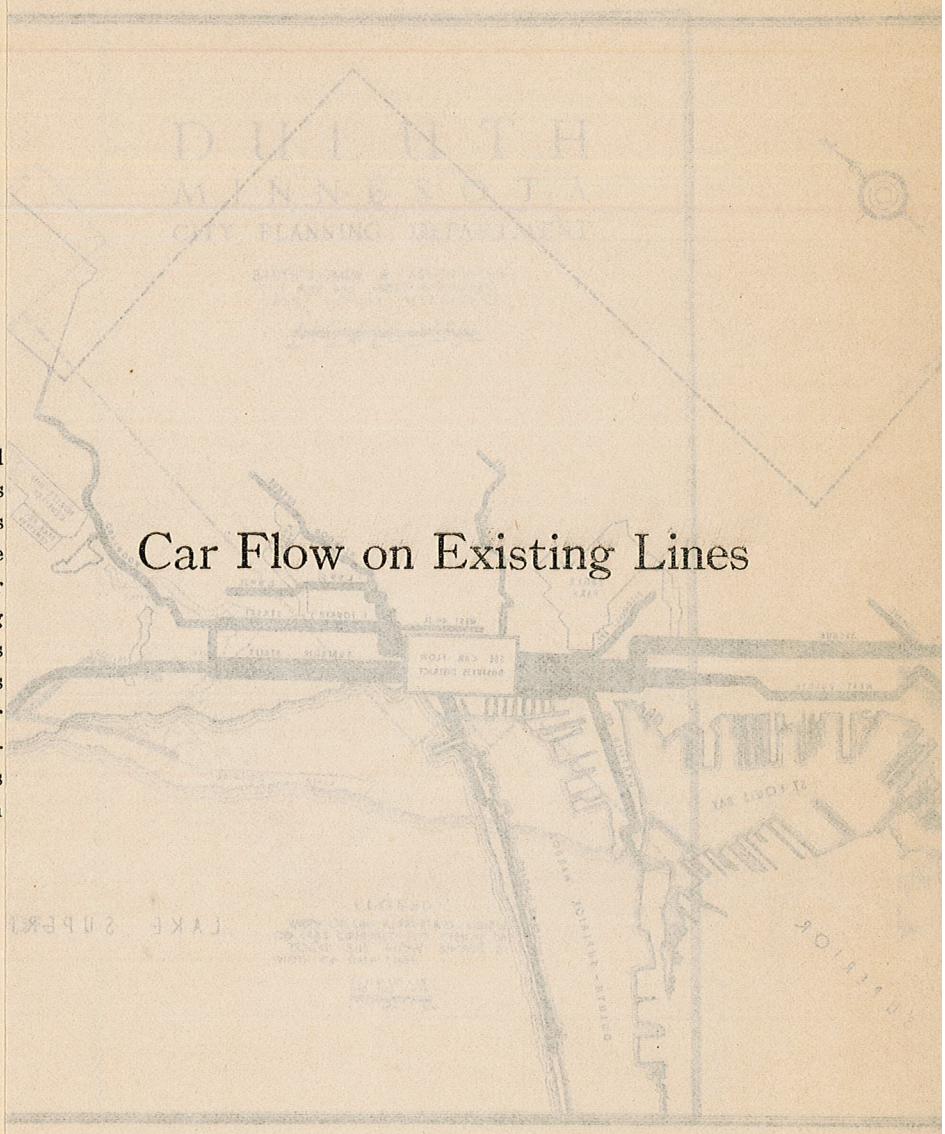
NOTE—ZONES SHOW COMBINED WALKING AND CAR TIME REQUIRED FOR TRIPS FROM THIRD AVENUE WEST AT SUPERIOR STREET TO ALL PARTS OF THE CITY—WALKING DISTANCE COMPUTED AT THREE MILES PER HOUR

WALKING SCALE—
1 MILE
0 20 40
MINUTES

Car Flow on Existing Lines

Plate Four.

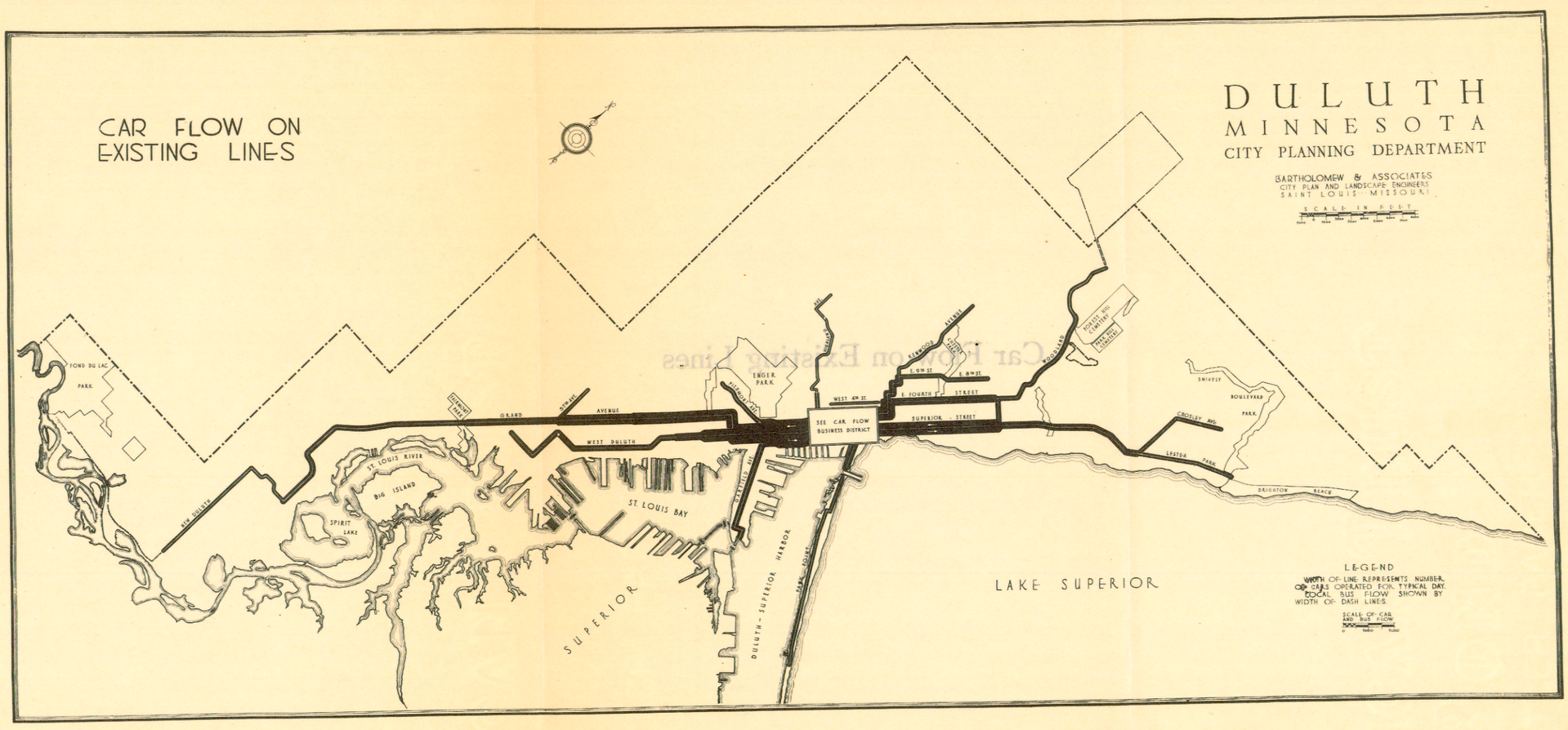
The number of cars operated over each route on a typical day is shown here by width of line. Busses are shown by dash lines. It will be seen that the relative volume of car flow is fairly uniform in the outlaying districts and where the various lines converge near the central business district there is naturally a greater concentration of service. This, however, is not objectionable as it tends to encourage short-haul traffic which is a good revenue producer.

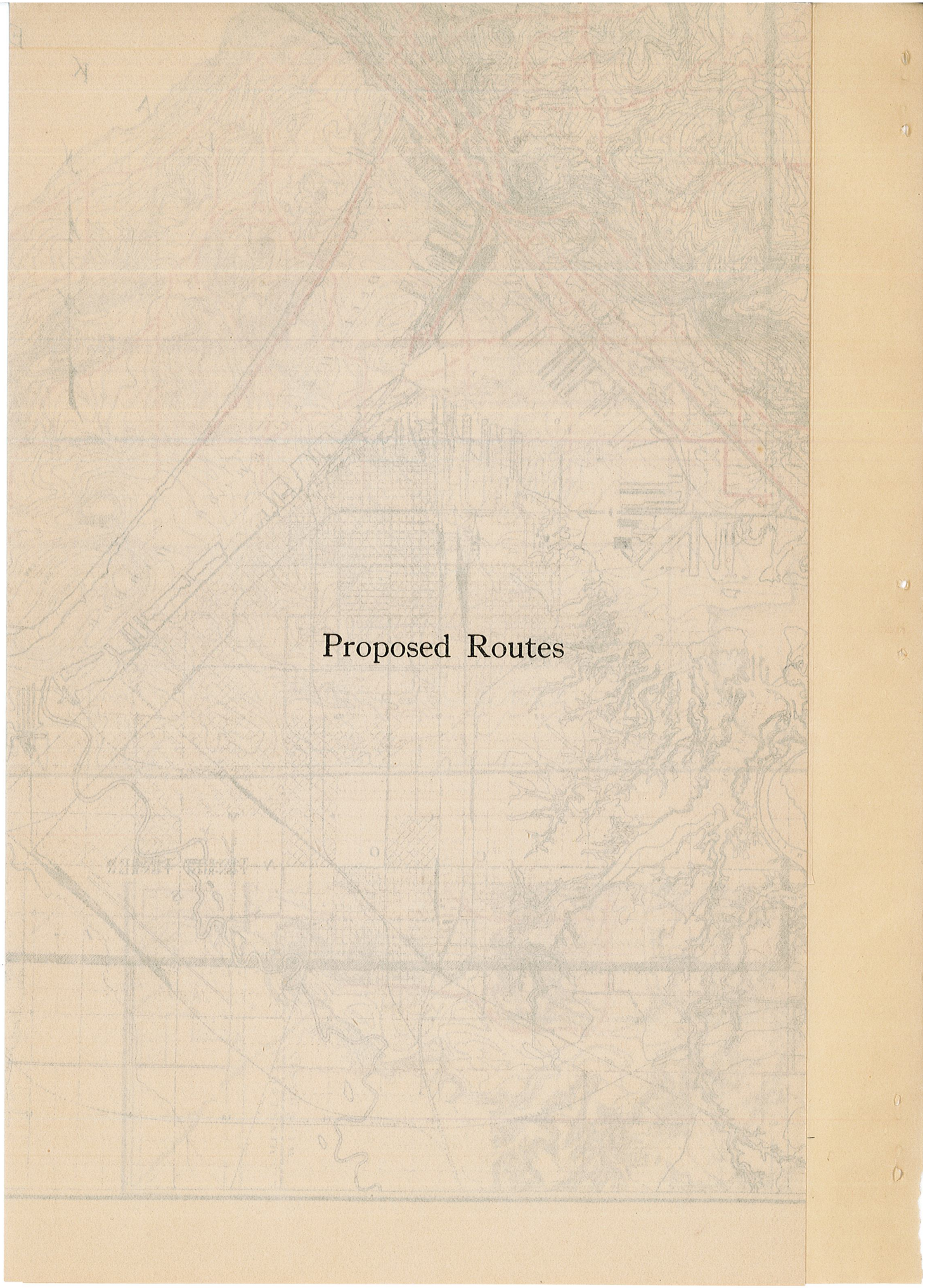


Car Flow on Existing Lines

Plate Four.

The number of cars operated over each route on a typical day is shown here by width of line. Busses are shown by dash lines. It will be seen that the relative volume of car flow is fairly uniform in the outlaying districts and where the various lines converge near the central business district there is naturally a greater concentration of service. This, however, is not objectionable as it tends to encourage short-haul traffic which is a good revenue producer.





Proposed Routes

TOPOGRAPHIC
MAP OF
DULUTH AND VICINITY
CITY PLANNING DEPARTMENT
DULUTH MINNESOTA

SCALE 1" = 2000 AUGUST 1926

SCALE OF FEET

TOPOGRAPHY FROM U.S. GEOLOGICAL SURVEY
DULUTH — SUPERIOR QUADRANGLE

SHOWING LOCATION OF PROPOSED TRANSIT ROUTES

LEGEND
- EXISTING ROUTES
- PROPOSED ROUTES
- ABANDONED

LAKE SUPERIOR

PIKE LAKE

ST. LOUIS BAY

DULUTH — SUPERIOR HARBOR

SPIRIT LAKE

PARK

CARLTON COUNTY

ST. LOUIS COUNTY

MINNESOTA

WISCONSIN

Proposed Transit Routes and Topography

Plate Five.

Transit Routes with Approximate Grades

Plate Six.

In the proposed comprehensive routing plan for Duluth the present layout necessarily has been used as the basis or nucleus for the larger system. In fact it will be seen from Plate Number Five that no major changes are recommended in the present arrangement. The chief problem in Duluth is one of providing for the expansion of facilities up into the highlands so as to encourage a gradual and orderly rounding out of the city's development. The principal obstacle of course has been the abrupt grades to the north and the plan here proposed suggests routes obtainable on comparatively reasonable grades.

It has been the aim in all cases to keep the new routes on grades not exceeding 7 per cent. With few exceptions this has been done, as will be seen from Plate Number Six showing the grades on all lines.

The basis of the enlarged plan is to bring the principal leads from the north into each side of the business district, this being necessary in order to obtain negotiable grades. With electric lines entering the business district from the northwest and northeast, supplemented with bus lines on the highlands, much good territory could be brought into use.

On Plate Number Five is shown the existing routes to be retained, those to be abandoned and the new routes proposed. No attempt has been made to suggest the type of service to be used in all instances in the future. Whether they are to be electric or bus lines is a matter that should be determined in each case as extensions are required. The changes proposed are shown upon the accompanying map and below is a list of suggested improvements. The execution of those projects will of necessity extend over a period of years but it is well to have a definite predetermined program with a view toward gradually improving the service as conditions will demand. The items that follow are not intended to be listed in the sequence of their importance as the order in which they are undertaken will depend upon the benefits to be derived, their cost and the ability of the railway company to finance them.

A Program for Improvement of Transit Facilities In Accordance With The Proposed Comprehensive Routing Plan.

1. PROPOSED CAR LOOPS IN BUSINESS DISTRICT.
   (A) Washington Ave. south of Superior St., now unimproved and 100 feet in width.

   As a permanent loop this would serve cars from the west which need to loop in the Business District and would eliminate the Wye at 3rd Ave. E., and consequently remove the traffic interference at this point.

   (B) Loop in area between Superior St. and Michigan and between 8th Ave. W. and 12th Ave. W.

   Cars operated from the eastern section of the city to the business district could be looped here. Operation of cars on present loop at 8th Ave. W. and Superior St. should be discontinued. This would simplify traffic movement at the intersection of Mesaba Ave. and Superior St. and also free Superior St. for any improvement through the Point of Rocks.

   Both of these loops should permit of of short looping, i. e., turning back on each side of the Business District without passing through it.

2. PROPOSED W. EIGHTH STREET LINE. FROM WEST SUPERIOR ST., AT THIRTY-FOURTH AVE. W., ON NEW DIAGONAL TO THIRTY-NINTH AVE. AND GRAND, TO EIGHTH ST., TO NO. 1 HIGHWAY, TO NEW MAJOR STREET CONNECTION WITH PROCTOR.

   Service along this line could be started with bus operation connecting with Superior St. cars at 34th Ave. W. This would serve the built-up district along W. 8th St., open new areas along No. 1 Highway and also furnish service to Proctor. This entire line would have a maximum grade of six per cent.

3. PROPOSED OBSERVATION HILL ROUTE. FROM TWELFTH AVE. WEST AND FIRST ST. TO ENGER PARK AND DULUTH HEIGHTS.

   This route would follow the proposed major street extension. Though the alignment is somewhat roundabout because of length necessary to obtain reasonable grade, it would afford desirable and much needed access to the lower levels, opening a large territory for development, and giving access to Enger park. It would serve branch routes to the Swan Lake, Maple Grove, Trinity and Hermantown roads making possible the development of many acres of upper level land. The future usefulness of the incline railway is problematical and could best be determined after this line has been constructed and put into operation.

4. PROPOSED E. SEVENTH AND W. SIXTH ST. ROUTE. BUS LINE SERVICE IS HERE RECOMMENDED ON SEVENTH ST. FROM A CONNECTION WITH THE PRESENT CAR LINE AT SEVENTH AVE. E., TO FIRST AVE. W., THENCE TO SIXTH ST., TO A CONNECTION WITH THE OBSERVATION HILL ROUTE AT TENTH AVE. W.

   This would operate as a shuttle line between car lines and serve a densely populated district at present without facilities. It should also relieve a certain amount of transferring in the congested district between the lines on the east and west. Use of the bus here makes it possible to shift the service to a higher level street whenever desirable.

5. PROPOSED SNIVELY ROAD LINE. A TRANSIT ROUTE IS SUGGESTED FROM A CONNECTION WITH THE WOODLAND LINE, ON THE SNIVELY ROAD TO THE JEAN DULUTH ROAD, TO THE CITY LIMITS.

   This could well be bus service in the first instance.

6. PROPOSED ROUTE E. EIGHTH ST. TO HOWARD GNESEN ROAD. THIS SUGGESTED TRANSIT ROUTE IS LOCATED ON A PROPOSED MAJOR STREET FROM THE END OF THE PRESENT E. EIGHTH ST. CAR LINE THROUGH NORTONDALE SUBDIVISION.

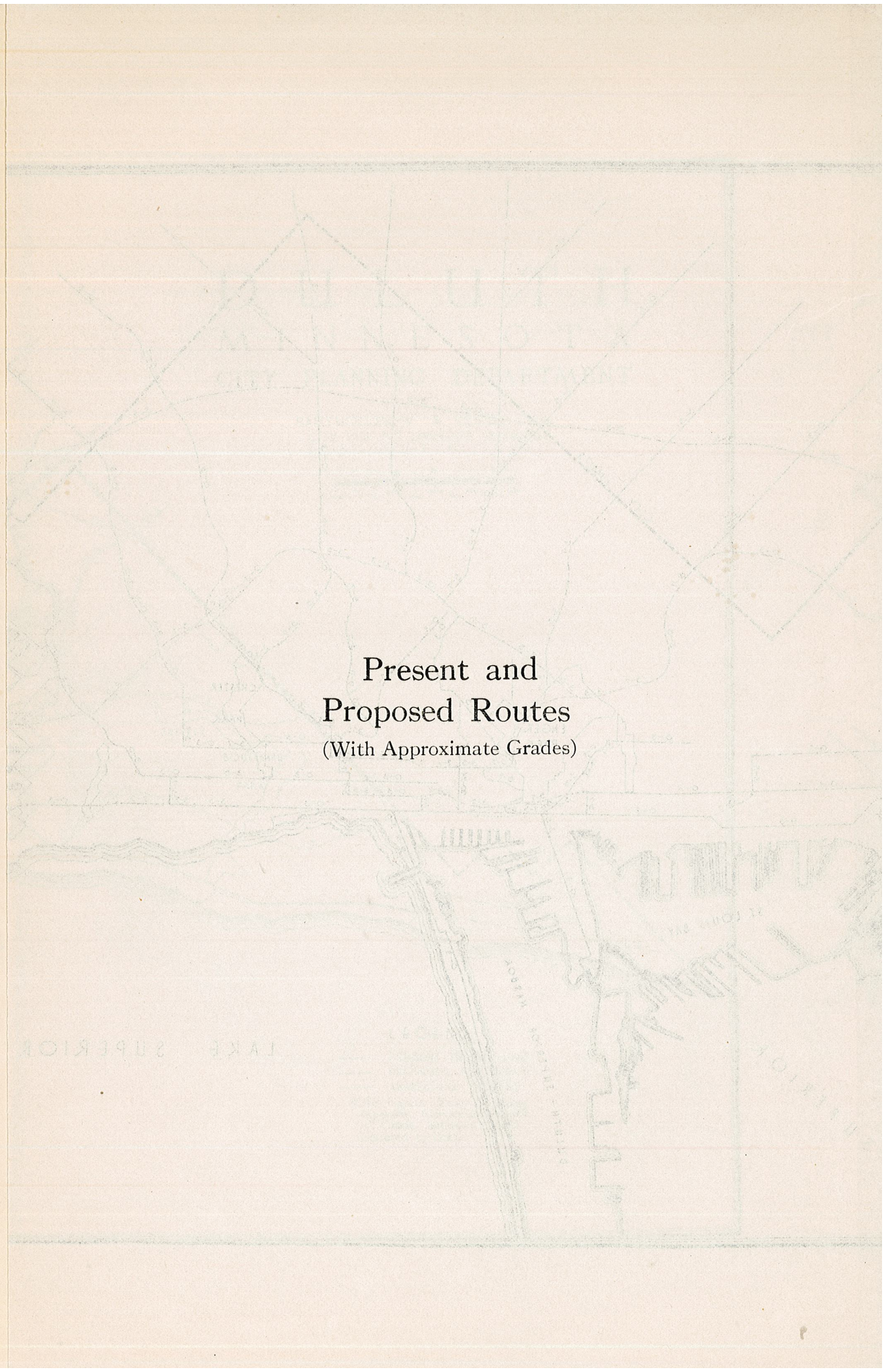
7. PROPOSED ROUTE ON RICE LAKE ROAD. FROM A CONNECTION WITH THE KENWOOD AVE. LINE AT CHESTER PARK, TO THE RICE LAKE ROAD AND ON RICE LAKE ROAD, TO THE CITY LIMITS.

8. PROPOSED MILLER TRUNK ROUTE. FROM BUSINESS DISTRICT ON SECOND ST., TO SIXTH AVE. E., TO CENTRAL ENTRANCE, TO CITY LIMITS.

   This could be operated as a bus line to serve the area immediately north of the central business district and Duluth Heights. It is unfortunate that the Miller Trunk Highway was not given sufficient width to permit of the accommodation of electric car lines. Its comparatively direct connection with the business district and easy gradient, makes it highly desirable for a principal transit entry into the central district. Hence it is urgently recommended that if sufficient width can be obtained that the Miller Trunk Highway eventually be used as an electric car line route.

9. PROPOSED CONNECTION BETWEEN GRAND AVE. AND SECOND ST. FROM SECOND ST., AT THIRD AVE. W., TO FIRST ST. AT NINTH AVE. W., TO THIRD ST. AND TWENTY-FIRST AVE. W.

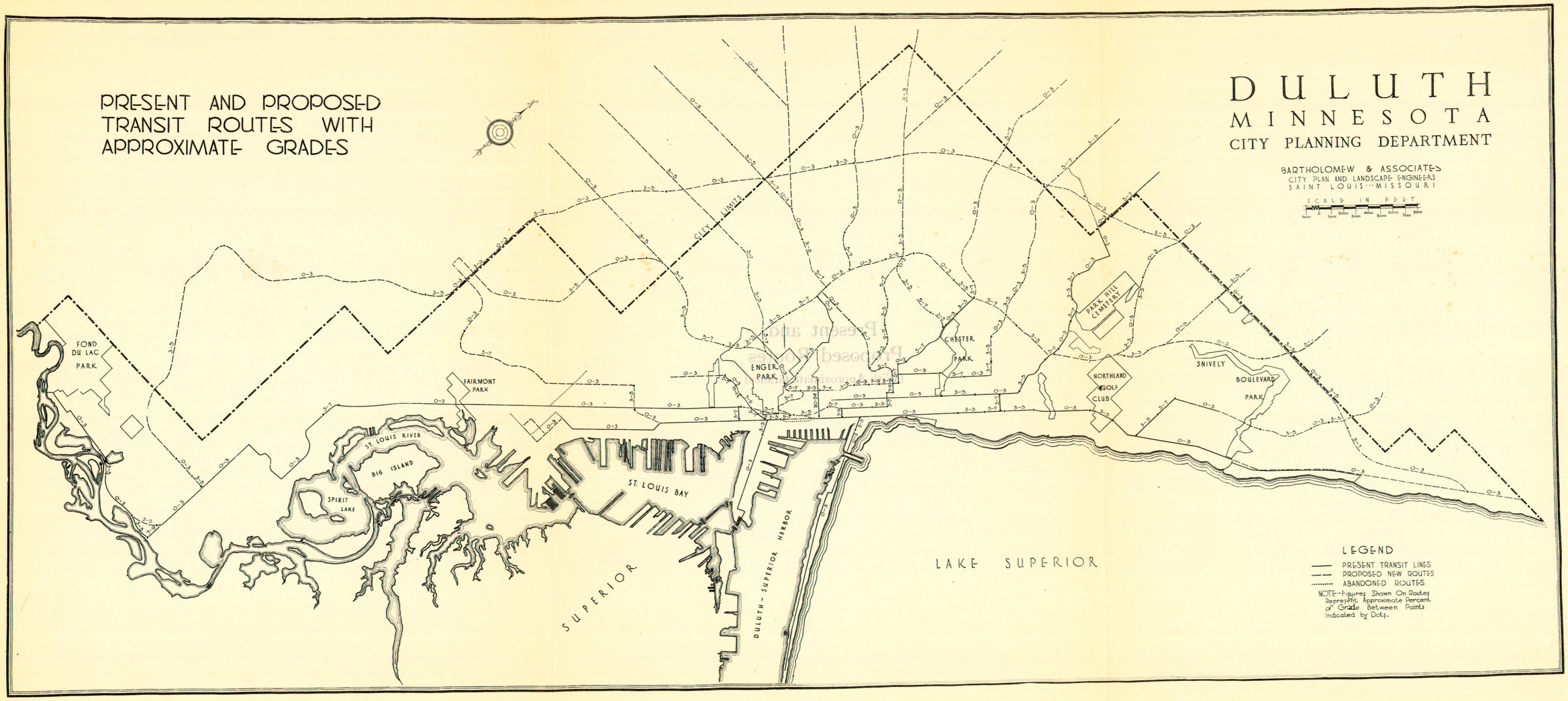
   A proposed double track is recommended from 3rd Ave. W. and 2nd St. to 12th Ave. W., and 1st St. to connect with the Observation Hill Route. A single track from 12th Ave. to 21st Ave. and 3rd St. to connect with the Grand Ave. line is suggested as an emergency track to relieve Superior St. in case of traffic blockade. Later a double track may be necessary throughout this connection.



Present and Proposed Routes

(With Approximate Grades)

PRESENT AND PROPOSED TRANSIT ROUTES WITH APPROXIMATE GRADES



LEGEND

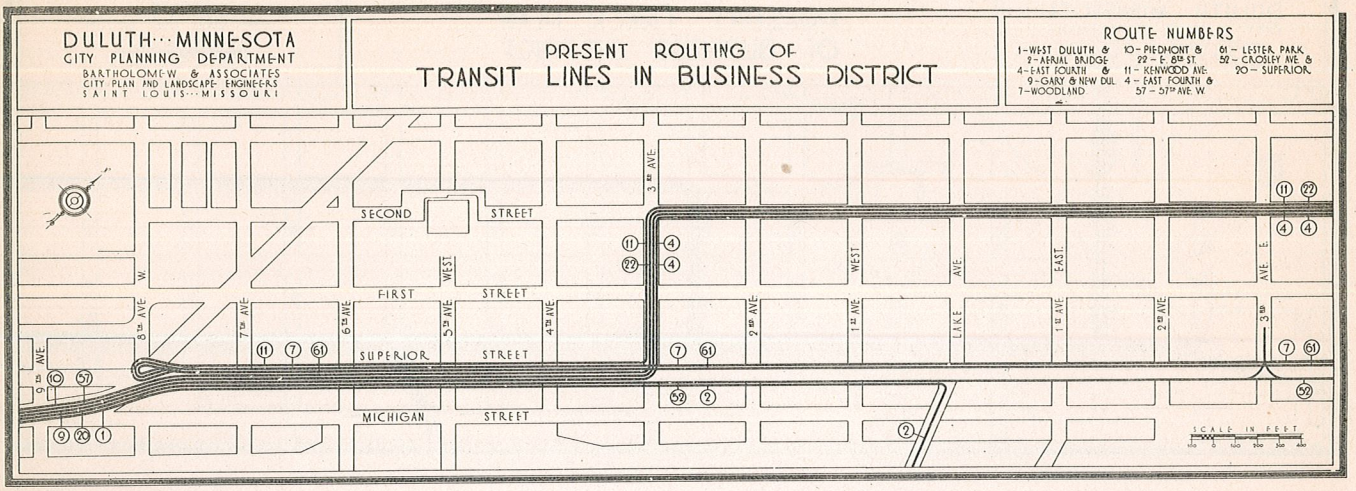
- PRESENT TRANSIT LINES
- PROPOSED NEW ROUTES
- ..... ABANDONED ROUTES

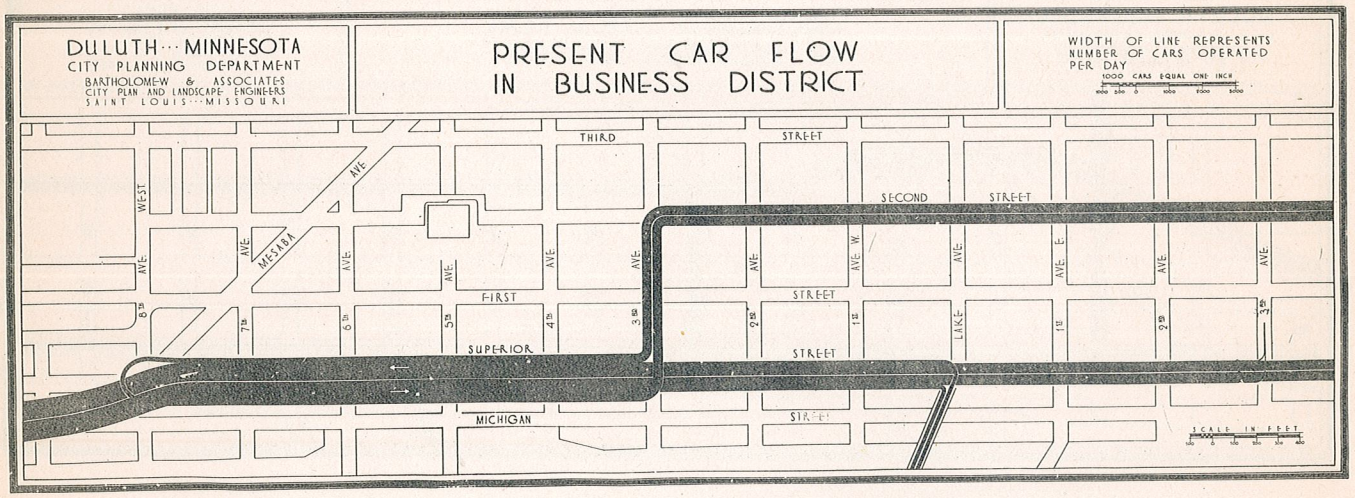
NOTE-Figures Shown On Routes Represent Approximate Percent of Grade Between Points Indicated by Dots.

DULUTH
MINNESOTA
CITY PLANNING DEPARTMENT

BARTHOLOMEW & ASSOCIATES
CITY PLAN AND LANDSCAPE ENGINEERS
SAINT LOUIS ··· MISSOURI

SCALE IN FEET





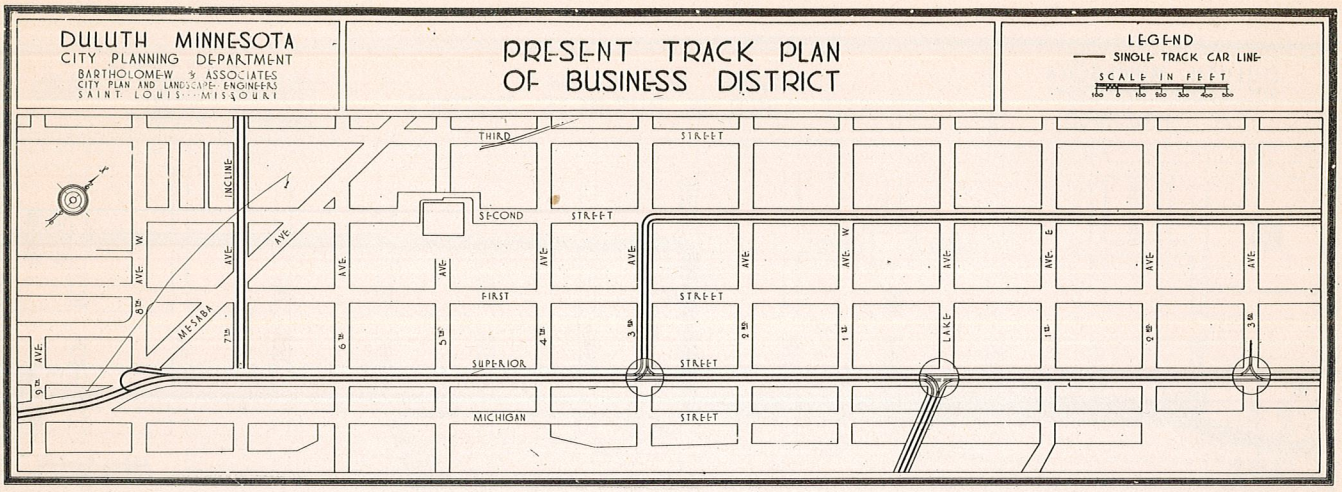
Business District

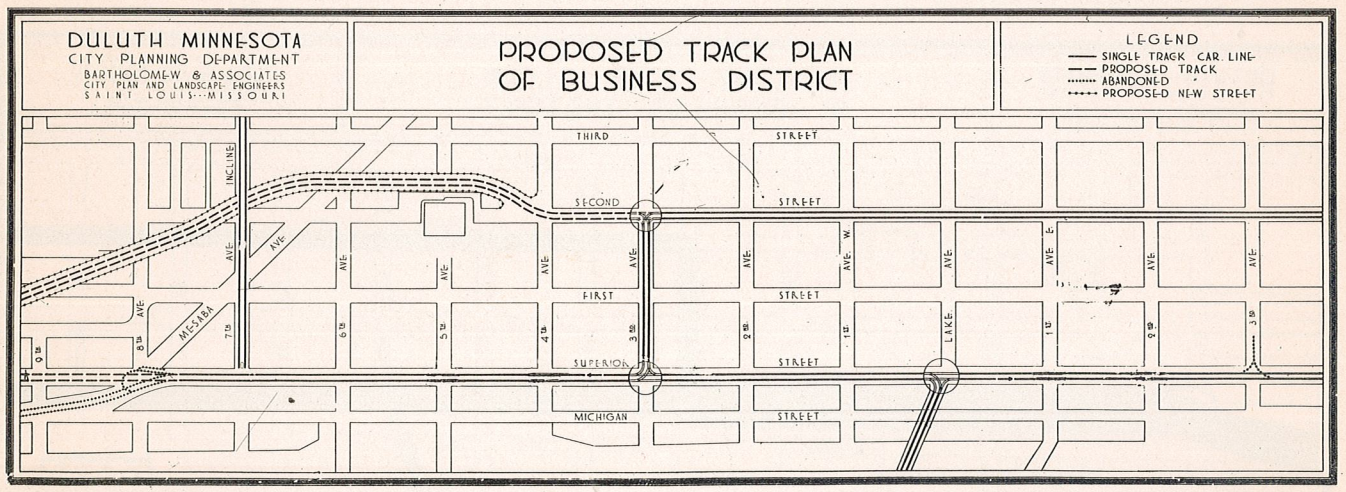
Plates Seven and Eight.

7. PRESENT ROUTES AND CAR FLOW.
8. PRESENT AND PROPOSED TRACK PLAN.

Traffic congestion in the business districts of most cities, particularly the larger ones, has made it extremely difficult for railway companies to maintain street car schedules. In the outlying districts it is possible for cars to move at a rate of speed of from ten to twelve miles per hour; but in the central business districts where there is a concentration of street car, vehicular and pedestrian traffic the speed is usually reduced to five miles per hour or less. Therefore, the object of a transit study for the central congested area should be to simplify railway operation and relieve so far as possible the interference with vehicular traffic.

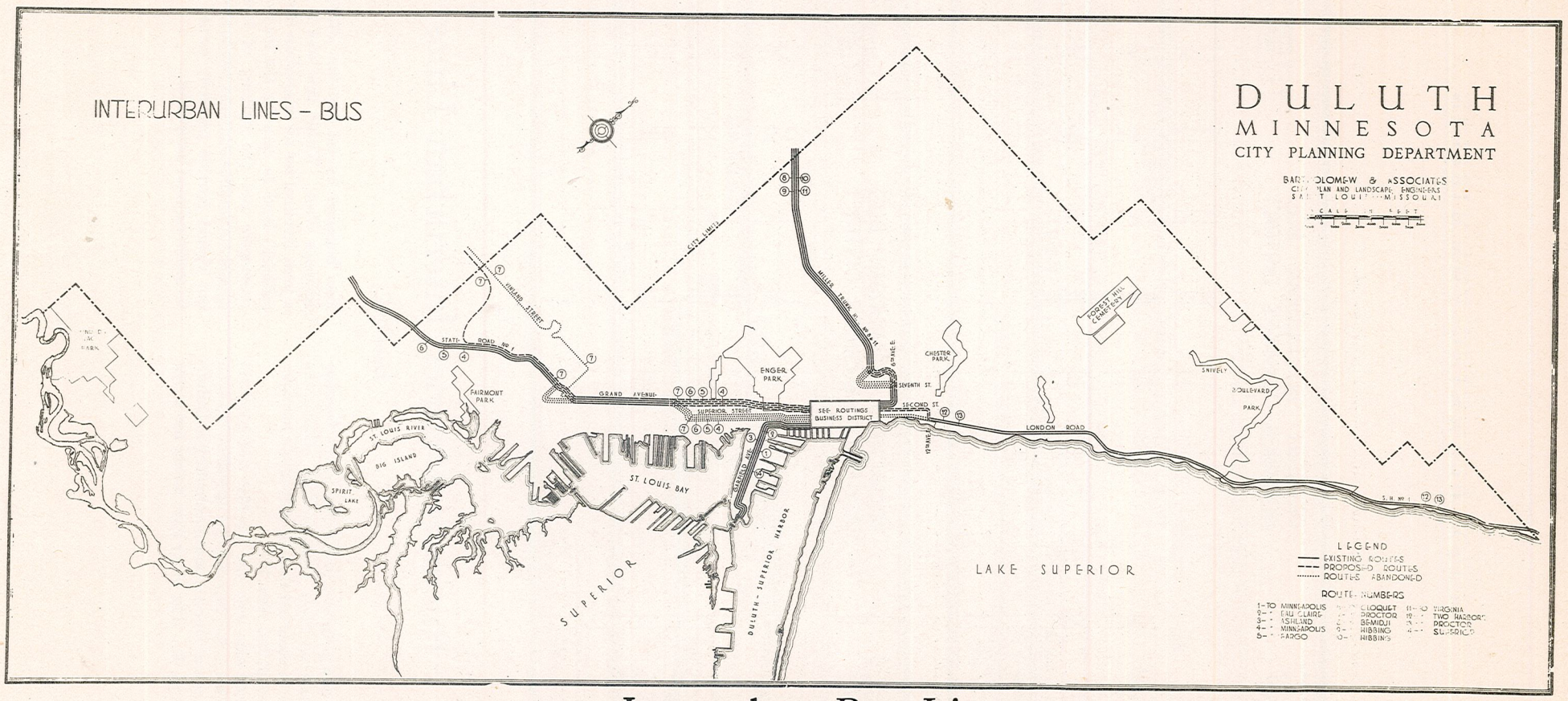
The chief criticism of operation in the central area in Duluth is that all lines are concentrated on Superior St. west of 3rd Ave. W. Fortunately, however, the railway company is employing the principle of "through routing" on most of its lines. Where this method is practiced, it is more satisfactory than the old practice of "looping" cars in the central district. It benefits both the city and the railway company in that it reduces the time and travel of street cars in the business district and consequently reduces congestion on the streets.





Both the present routing of street cars in the business district and the number of cars operated over each route for a typical day are illustrated on Plate Number Seven. From these plans it will be seen that Superior St. carries all the car lines in the business district. Compared with other cities, however, the routes in the business district are simple in that there is no great interference due to numerous right and left turns.

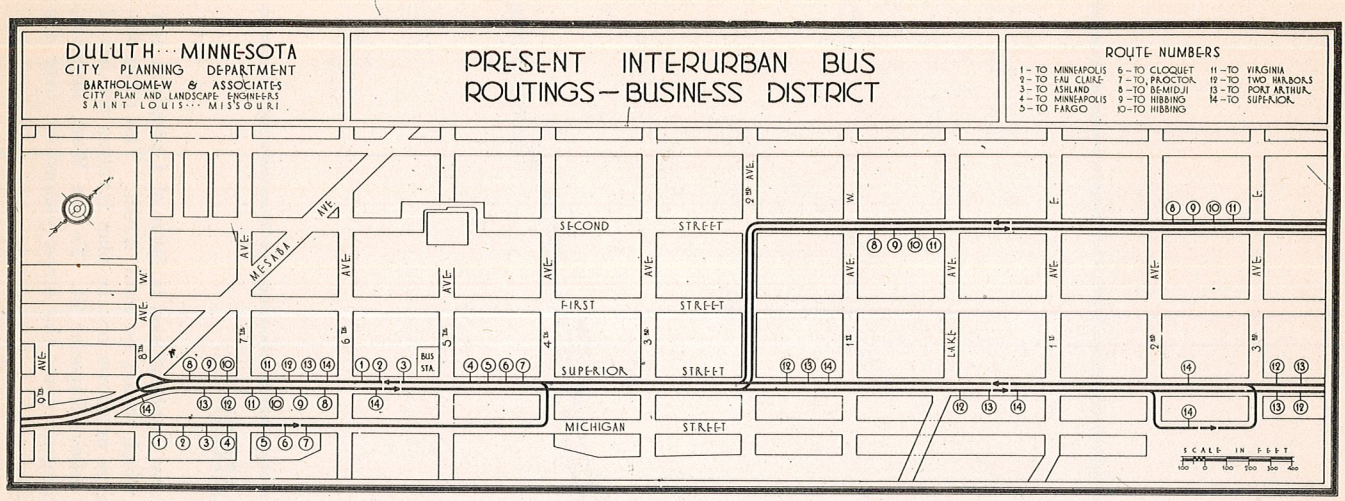
The principal changes suggested for the business district are shown on the proposed track plan, Plate Number Eight. A new connection is shown along Second St. west of 3rd Ave. W. This project, however, is dependent upon the development of the proposed new major street. It is quite obvious that Superior St. cannot for long accommodate all the car lines that eventually will be needed. Further the construction of a line on 2nd St. would exert a good influence toward encouraging the natural expansion of the business district. The most desirable arrangement for a transit layout in the congested district is to have every alternate street free from car lines so as to relieve interference with and expedite different kinds of traffic. This would be possible in Duluth by keeping the car lines on Superior St. and 2nd St., leaving 1st St. open for vehicular traffic.

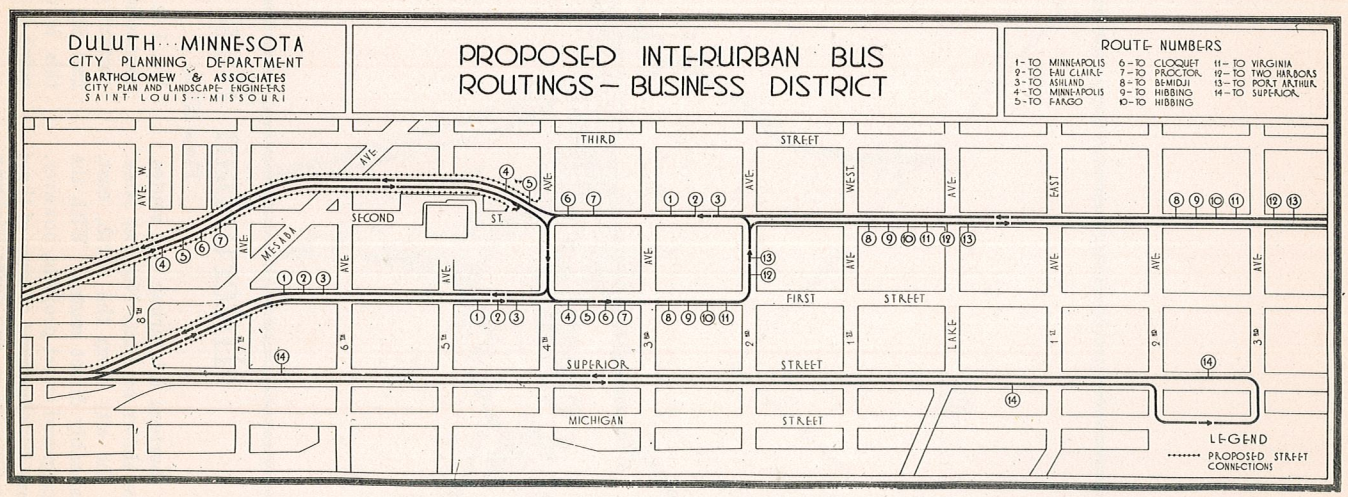


Interurban Bus Lines

Plate Nine.

Duluth is served by fourteen interurban bus routes, the locations of which are shown on Plate Number Nine. The different lines enter the city from the north, east, south and west over reasonably direct routes. With the consummation of certain proposed street projects, however, it will be possible to improve the alignment of some of these lines. The abrupt turn at Grand Ave. and State Highway No. 1 is shown as abandoned in favor of a proposed new connection which would be more direct. The other important change as shown on the plan involves the use of 2nd St. to relieve Superior St. To the West, however, this is contingent upon the street connection over the point of rocks.





Business District Interurban Lines

Plate Ten.

Both present and proposed bus routes in the business district are indicated on Plate Number Ten. Under the present plan it will be observed that all interurban bus lines use Superior St. west of 2nd Ave. W.

On the proposed plan only one bus line would remain on Superior St. This is the Superior line operating between the cities of Superior and Duluth, and terminating in Duluth at a loop on 3rd Ave. E. The other lines would use a new loop bounded by 1st and 2nd Streets and 2nd and 4th Avenues West. Within this area it is recommended that a joint terminal for all interurban bus lines be located with sufficient land to care for the loading and discharging of passengers and the parking of busses. Bus companies should not be allowed to use public streets for these purposes but should provide privately owned terminal facilities as do steam railroad companies.

Statement of Policy

In the general consideration of the extension of transit facilities one outstanding fact should be kept in mind. It is this: Whenever we construct a street railway line that does not earn its keep—its interest on cost, depreciation, maintenance, operation, taxes, etc.—we load upon the profitable parts of the system the burden of not only earning their own profit, but also that of carrying that portion of costs of the unprofitable lines which is in excess of the earnings of those lines. Therefore, by unprofitable extensions we are bringing closer the day when street car fares must rise, or we are putting off the time when, perhaps, they may be lowered.

Duluth now has unprofitable street railway extensions. They are unfair to the general public, however convenient they may be for the more or less sparsely settled territory they accommodate. We recognize fully the fact that people living in many parts of the city not now accommodated by transit facilities, desire them, and we want to see these citizens receive service, whenever it is possible for them to have it. Service in such districts is often practicable either temporarily or permanently by use of busses.

Speaking generally and with the viewpoint of Duluth's present uneconomical city layout, its spread of population over an area several times that justified by the present population, the City Planning Commission is not in favor of the incurrence of the heavy expenditure necessary to extend transit facilities into territory that is not at the time of consideration thereof, or will not soon become, profitable in itself, or that cannot be shown to have a definite and material value as a feeder area.

Such recommendations as have been made heretofore in this report are all to be considered in the light of this statement of general principles of fundamental policy.