AN INTERNAL HARBOR SYSTEM FOR CHICAGO.

BY ALBERT H. SCHERZER.

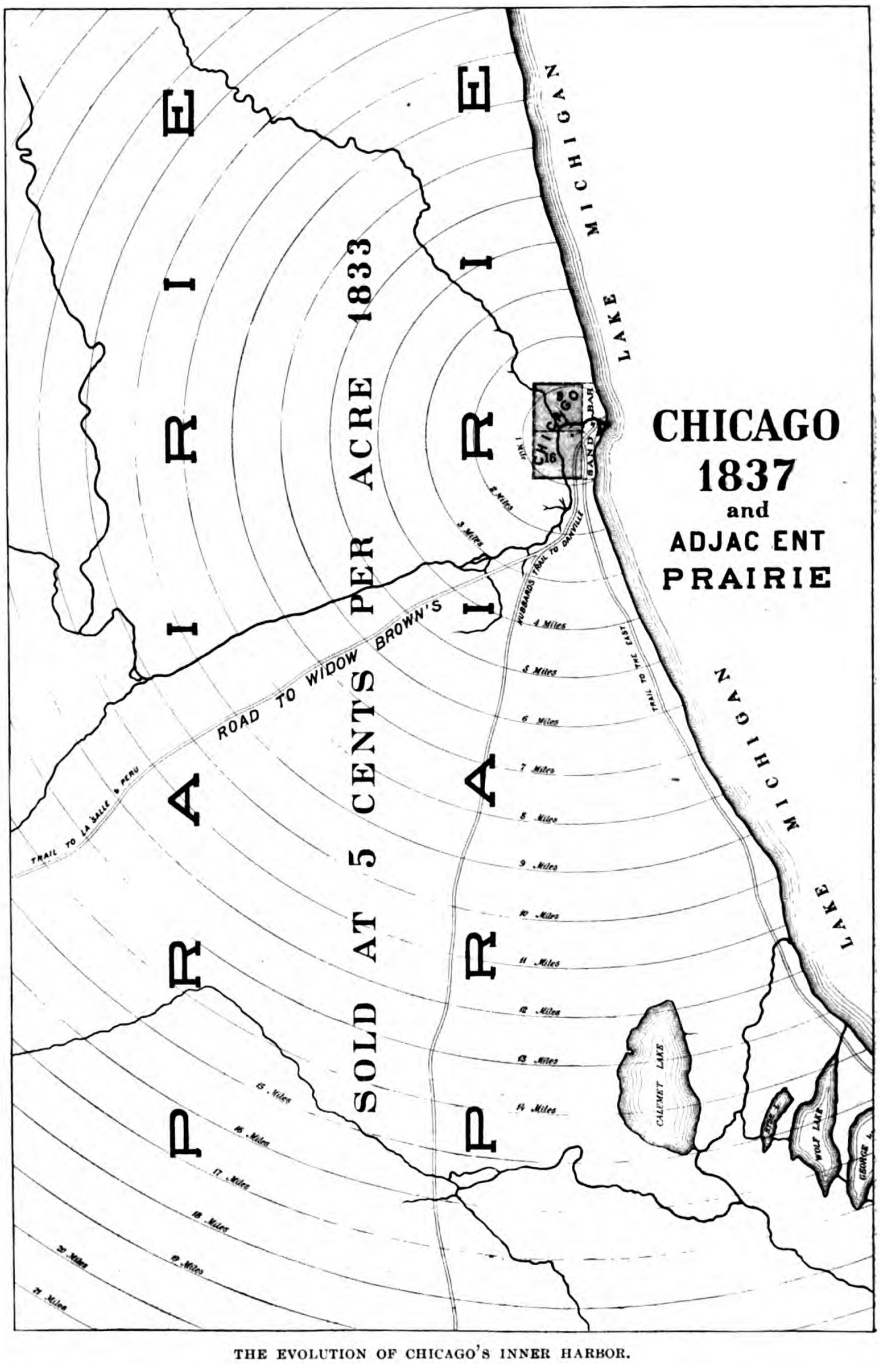
The large lake vessels now carrying the bulk of the commerce of the great lakes are prevented from entering the harbor of Chicago, because the river is obstructed by about 30 swing bridges, whose centre piers and pier protections absolutely block the passage of the modern lake carrier. The Sanitary District of Chicago is now required to maintain a flow of 300,000 cubic feet of water per minute through the drainage and ship canal. This flow is supplied from Lake Michigan and must pass through the Chicago River into the drainage and ship canal.

The highway swing bridge at Taylor street and the railroad swing bridge from the Grand Central station, between Taylor and Twelfth streets, formed an obstruction to the passage of the required volume of water that could only be obviated by the removal of these bridges and the substitution therefor of bridges having their supporting piers on shore, or the construction of an extensive by-pass system under very valuable railroad and warehouse property. The board of trustees of the Sanitary District, after a very careful study and consideration of the problem, decided to remove the two swing bridges mentioned and construct two Scherzer rolling lift bridges. Their decision was largely influenced by the fact that the report of the chief engineer showed a saving of $95,000 in favor of the rolling lift bridges, as against the building of the by-pass, and the further fact that the building of the rolling lift bridges would remove all obstructions to the passage of vessels at this point, while the by-pass would be of no benefit whatever to navigation. In removing these two obstructions, the Sanitary District, with the co-operation of the authorities of the city of Chicago, inaugurated a policy which contemplates the earliest possible removal of all the swing bridges now obstructing the Chicago River, and the substitution therefor of the most modern type of bridge.

In pursuance of this policy, it was decided to remove at once the swing bridges at State, Randolph, Harrison, Polk, Eighteenth, Main and Canal streets, and replace all of them with rolling lift bridges, the Scherzer Company furnishing the designs, plans, specifications, supervision of construction, etc., of the same. These and other contemplated improvements, when completed, will enable the largest lake vessels to go direct to and moor at the various manufacturing plants, docks, warehouses and railroad terminals located along the 40 miles of river front on the Chicago River.

The serious delays to traffic across the river, caused by the old swing bridges, will be eliminated, as the bridges to be provided will open and close rapidly, and the required openings will be much less frequent, on account of the increased size and decreased number of vessels passing through the bridges. The present small boats, with small cargoes and frequent trips, will be replaced by the large, modern, economical steel vessel, and the largest vessels will be enabled to move rapidly, because a wide and unobstructed channel will be provided in the middle of the river. The average cargo and total tonnage of the port of Chicago will increase enormously.

Upon the opening of the present drainage and ship canal for navigation, more than 56 miles of additional dock frontage will be available and added to Chicago's already enormous harbor, and open a vast area of low-priced real estate for the location of new manufacturing plants, directly accessible by the largest vessels, and also located within the greatest and most perfect railroad distributing centre in the world, thus enabling Chicago not only to maintain its supremacy as the greatest marine port in the world, but also making Chicago the richest, largest and most economical manufacturing, industrial and transportation centre in the world. Had

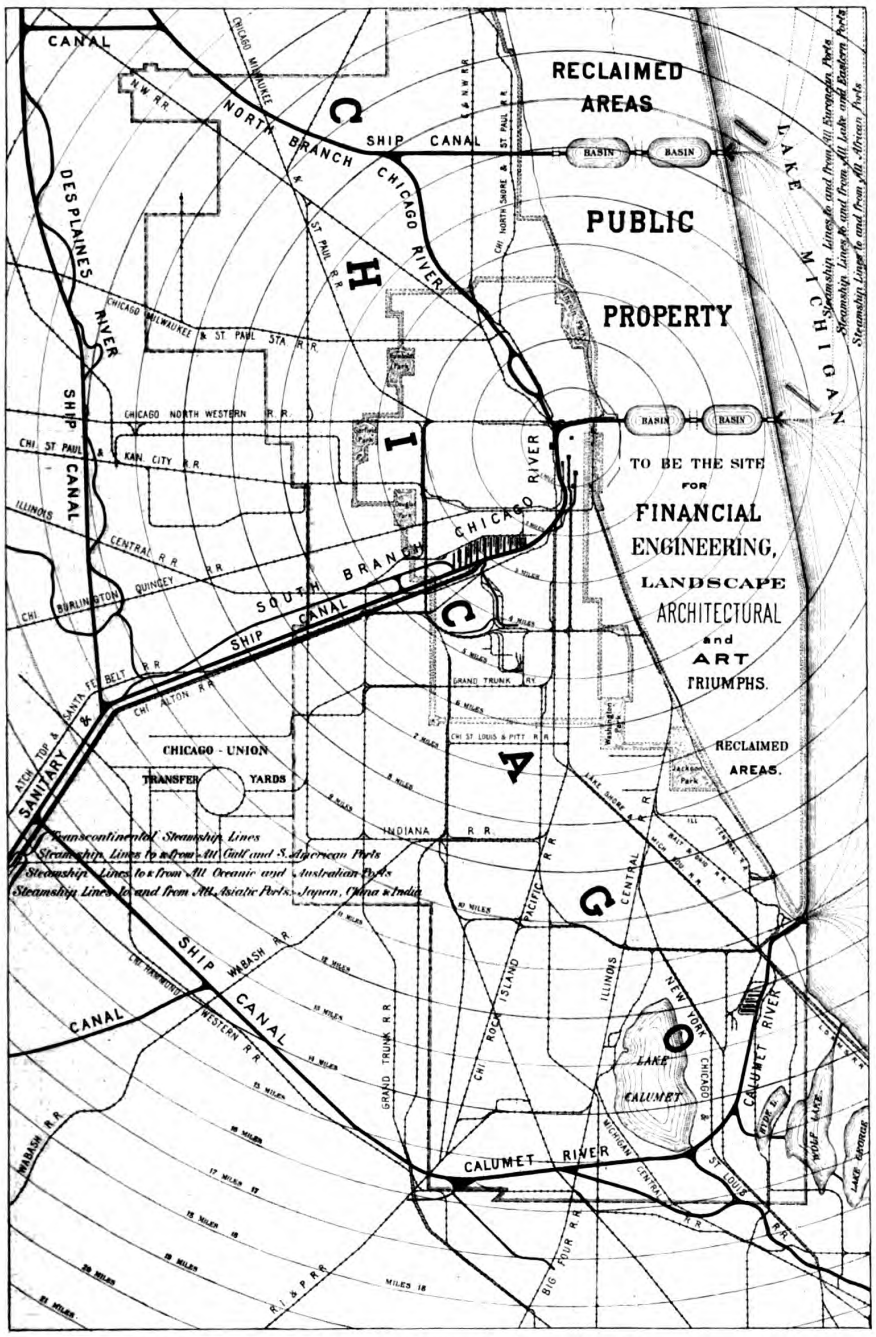


THE EVOLUTION OF CHICAGO'S INNER HARBOR.

this wise policy not been inaugurated, and were the Chicago River closed to navigation, and the docks built along the lake front of the city, forming an outer harbor far removed from the present manufacturing plants, warehouses and railroad terminals, which could not be removed to the lake front owing to the limited area and enormous value of real estate adjacent to the lake front, it is self-evident that the growth and progress of Chicago would have been seriously crippled, and commerce and manufacturing driven to more progressive cities, where the large modern vessel could go direct, by means of an internal harbor system, to the manufacturing plants, warehouses and railroad terminals, located on low-priced real estate.

Of supreme importance is the fact that the adopted policy will forever conserve the natural beauty of the lake front of Chicago, and enable the creation of beautiful parks, with islands, lagoons and sites for magnificent public institutions, reclaimed by a gradual filling of the submerged lands throughout the entire length of the city, if desired, to a width of one, two, three, four or more miles, as the population and needs of the city increase.

These great benefits can be obtained without expense to the taxpayers of the city of Chicago, as the cost of reclaiming the land is trifling compared to the value of the real estate created. The lake front of Chicago has a length of about 21 miles, measured from Evanston to the Calumet River. The water is very shallow near the shore, and gradually increases in depth, reaching a depth of only about 35 feet at a distance of 4 miles from the shore. Here the breakwaters should be built to prepare the Chicago harbor for the large vessels which will soon seek entrance. The engineering problems involved in dredging, filling and reclaiming this land for a distance of 4 miles from the shore present no great difficulties, as much larger feats have been accomplished at Venice and throughout Holland during the Middle Ages.



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Within the above area, 84 square miles, or 2,000,000,000 square feet, of land can be created. If only one-half of this area is sold at the low average of $1 per quare foot, more than $1,000,000,000 will be realized; and the remaining area will be 14 times as great as all the present Chicago parks, both large and small, and of incalculable value. In Holland, many expensive, difficult and larger reclamations have been made for agricultural purposes only.

The two maps accompanying this article represent the past and present Chicago and the future possibilities of Chicago, and illustrate the internal harbor system formed by the Chicago River, the north and south branch and the drainage and ship canal, to be enlarged by the extension of the Calumet River to the drainage and ship canal, and a connection between the north branch and the lake, with a possible extension from the north branch to the drainage and ship canal in the direction of the Desplaines River. The entire system forms a belt line of ship canals with three outlets to the lake.

All present vested interests at Chicago will be greatly benefited under this plan, as this internal harbor system is the natural evolution, improvement and extension of present facilities. The three inlets from the lake will be necessary to dispose of all the sewage of Chicago and provide the full waterflow required by law in the drainage canal, and will eliminate the present undesirable current in the Chicago River.

Following upon the gigantic achievements of the municipal administrations and the progressive people of Chicago during her very brief past existence, with the enormously increased resources of the present time, this undertaking is not too great for the accomplishment and realization of Chicago early in the twentieth century. If Chicago's natural beauty were not developed, its wealthy inhabitants would seek residence elsewhere, and its earnings would be drained by absentee landlords.

Chicago will take advantage of all her great opportunities, and, by developing them on a large and comprehensive plan,

attract the wealth, art, culture and refinement of the world, and Chicago will not only be the greatest manufacturing, industrial and transportation centre, but will also be the most beautiful city in existence.

Other progressive cities have recognized the secret underlying Chicago's commercial success, and the fact that the internal harbor system is the most scientific, economical and perfect system for water and railroad transportation and distribution, and are as rapidly as possible following in her footsteps, and are developing internal harbor facilities to transport and distribute their commerce, without lighterage and other charges, by the most scientific, economical and perfect known system.

SOME RESOURCES OF CHICAGO.

1. Two million intelligent, progressive and public-spirited inhabitants.
2. Practically the centre of population of the United States.
3. The largest food distributing centre of the world.
4. Healthy, stimulating and temperate climate.
5. Inexhaustible supply of fresh, pure water.
6. Centre of vast coal regions.
7. The largest, nearest and most accessible centre, by water or rail, to the largest and purest iron ore deposits in the world.
8. Economical water transportation, with the largest number of vessels and total tonnage of any marine port in the world.
9. Most economical and perfect railroad transportation facilities, being the terminus of the largest mileage and having the greatest tonnage in the world.
10. Greatest manufacturing and distributing centre in the world.
11. The centre of unlimited supplies of high-class economical building material, Portland and natural cement, sand, clay, limestone, granite and hard and soft lumber.
12. Large areas of level, dry land, available for industrial and residential growth, westward, southward and northward.
13. An incomparable expanse of lake frontage, with a vast area of slightly submerged land eastward, easily reclaimed, and of inestimable value for parks, boulevards and economical sites for public institutions, buildings, monuments and world's fairs.

CHICAGO'S DESTINY.

1. If the past ratio of increase of population is maintained, Chicago will be the largest city in the world within thirty years.
2. If the policy which has made Chicago great is maintained, Chicago will have, not only the greatest and most perfect railroad facilities, but it will also have the most economical and perfect water transportation and distribution facilities in the world. It will be the centre of traffic for the largest vessels, not only of the great lakes, but also from the Atlantic, Pacific and other oceans.
3. The unrivaled resources and facilities concentrated at Chicago will make Chicago the centre for building and distributing naval and merchant vessels. Chicago will also be the centre of the manufacture and distribution of the mined, manufactured and agricultural products demanded by the world, and all nations will contribute to Chicago's wealth and prosperity.
4. The reclamation and improvement of the submerged lands on the lake front of Chicago will make the city of Chicago not only the largest landowner, with an income therefrom sufficient to defray the cost of all public expenses and improvements, but will also contribute to make Chicago the wealthiest, most progressive, attractive and beautiful city in the world.

Railway Construction in Texas.

Mr. R. A. Thompson, engineer of the Texas Railroad Commission, Austin, Tex., furnishes The Railway Age with the following information in regard to railway building in that State:

The following statement of railway mileage constructed in Texas during the year 1900 is compiled from the most authentic sources at my command. The statements are from the railway engineers in greater number of cases. You will observe that the mileage constructed this year, 272.7 approximate, is the greatest in one year since 1889, according to our records. The prospects for the next few years are very flattering, and I have estimated substantial projects at 837 miles, 325 miles of which might be considered as under actual construction. Other railway projects chartered and projected with considerable assurance that they will build in the next few years amount to 992 miles. Surveys have been made for a large portion of the latter.

The ninth annual report of the railroad commission of Texas for year ending on June 30, 1900, will show an actual increase over the previous year of 165 miles, but this includes a decrease of 78.3 miles (track of the Rio Grande Northern, 26.3 miles, and the Texas Western, 52 miles, having been taken up and road dismantled), therefore actual increase (road constructed during that period) was 243.3 miles.

Mileage as shown by report of railroad commission on June

	Miles.
Mileage as shown by report of railroad commission on June 30, 1899	9,702.07
Mileage shown by report of railroad commission on June 30, 1900	9,867.07
Net increase	165.00
Add 26.3 miles for R. G. N. and 52 miles for T. W., both having been taken up during year	78.3
Actual increase	243.3

Since June 30, 1900, the following mileage has been constructed, of which the commission has taken cognizance:

	Miles.
Gulf Beaumont & Great Northern	6.0
Cane Belt	15.0
New York Texas & Mexican	18.5
Texas & New Orleans	23.0
Missouri Kansas & Texas	7.0
Calvert Waco & Brazos Valley	52.2
Jefferson & Northwestern	10.0
	131.7
Railway mileage in Texas, as given in report of railroad commission for June 30, 1900	9,867.07
Angelina & Neches River Railroad	9.00
Texas & Southeastern	14.00
Total mileage in Texas on January 1, 1901	10,021.77

The above mentioned lines and those included in the reports of the railroad commission include only those railways that are chartered organizations, and are recognized as such under the laws of the State of Texas. There are probably 50 miles of tram and lumber roads in the State that are operated as private property, and though of standard gauge cannot be considered as railways in the true sense of the word.

The following is a statement of the miles of railway constructed in Texas from January 1 to December 31, 1900:

	Miles.
Texas & Southeastern	8.0
Gulf Beaumont & Great Northern, Rogan north	6.0
Beaumont Wharf & Terminal, in Beaumont	0.6
Cane Belt Railroad, 15 miles north and 15 miles south of Wharton	30.0
New York Texas & Mexican, Wharton to Van Vleck	30.5
Texas & New Orleans, Cedar to Athens, 24.6, and Rockland to Nacogdoches, 47.8	72.4
Missouri Kansas & Texas, Jefferson to State line, 29.5, and San Marcos west, 7.0	36.5
Calvert Waco & Brazos Valley, Lewis to Bryan, 22.5, and Calvert to Marlin, 29.7	52.2
Emporia & Gulf, Emporia to Crooker	15.0
Texas & Louisiana, on line east of Lufkin	6.5
Jefferson & Northwestern, on line northwest of Jefferson	10.0
Texas & Northeastern, Village to Wicks	5.0
Total	272.7

Railway mileage projected for immediate construction in Texas, and are what may be considered as substantial projects:

	Miles.
Gulf Beaumont & Great Northern	72.0
Cane Belt	50.0
Texas & New Orleans	93.0
Missouri Kansas & Texas	43.0
Calvert Waco & Brazos Valley (I. & G. N. Rd.)	180.0
Emporia & Gulf	5.0
Texas & Louisiana	5.0
St. Louis Southwestern	44.0
Choctaw Oklahoma & Gulf	100.0
Gulf Colorado & Santa Fe	50.0
Gulf & Brazos Valley	75.0
Chicago Rock Island & Mexican	110.0
Jefferson & Northwestern	10.0
Total	837.0

In addition to the above the following mileage is projected, but are not as yet what might be considered as substantial projects:

	Miles.
Kansas City Mexico & Orient	500
San Antonio & Brownsville	275
Chicago Weatherford & Brazos Valley	32
Port Arthur & Houston	90
Union Central	50
Lufkin & Crockett	45
Total	992