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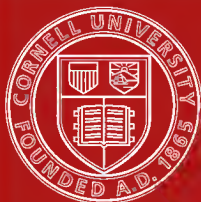
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State of New York.

Supreme Court.

Tompkins County.

THE CITY OF ITHACA

v.

ITHACA WATER WORKS CO., et al.

BRIEF FOR THE DEFENDANTS
SUBMITTED TO THE COMMISSIONERS

December 13, 1906.

BY

NATHAN MATTHEWS.

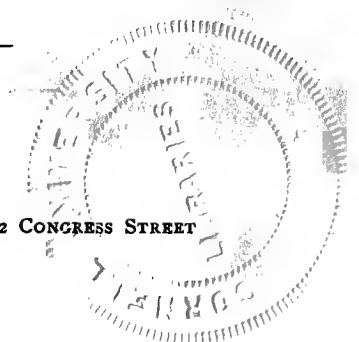
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Of Counsel for the Defendants.

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NOTE.—In the references to the volumes of typewritten evidence Roman numerals indicate the volume, Arabic numerals the page.

I.

THE CHRONOLOGY OF THE CASE.

1821. Incorporation of the village of Ithaca. Ch. 229.
1853. The company's charter. Ch. 465; Dft's Ex. 1; Appendix I.
1855. Laws, Ch. 151, exempting the company from the provisions of the Revised Statutes directing that corporations must be organized within one year after the granting of their charters, and re-enacting the charter of 1853. Dft's Ex. 2; Appendix II.
- 854-73. The village maintained a small system of cisterns and pipes for fire purposes, obtaining its water from the Halsey mill pond on Six Mile Creek. Pl's Ex. 196, 197, 198 *passim*.
1868. Incorporation of another "Ithaca Water Works Company," by Charles M. Titus and others. Laws, 1868, Ch. 58; Pl's Ex. 136. Nothing was ever done under this charter. XXIV. 7-10.
1870. Before the company was organized and the charter utilized, a vote was taken, May 17, under the provisions of Laws of 1870, Ch. 133, on the question whether the village should establish a water supply and issue bonds for the purpose. The proposition was defeated by a vote of 431 to 88. I. 25, 45, 46.
- 1871, September 7. Offer by the Tremans, on behalf of the Ithaca Water Works Company (the defendant in this suit), to lay mains and supply water for hydrants. Pl's Ex. 198, p. 82.
- 1872, November 21. The village advertises for bids for supplying water.

The company organized under the Treman Brothers, and the works begun, a supply being developed from the Van Orman dam on Buttermilk Creek. I. 5, 6, 24, 34.

January 16. The trustees of the village vote to petition the legislature for authority to buy the "rights and franchises of the Ithaca Water Works Company" for \$60,000, or "such other water rights and franchises as may be deemed necessary." XXIV. 139; Pl's Ex. 198, p. 193. This plan was evidently abandoned; and the company went on with its works, completing the same in the summer of 1873. Pl's Ex. 198, p. 250. A hydrant contract was made with the city May 15 (Dft's Ex. 57, p. 1); water first diverted from Buttermilk Creek; and on September 2 the works were tested by the fire department. Dft's Ex. 57, p. 1. From 1873 to 1892 the company obtained its entire supply from this source.

The Scott, or upper, dam on Buttermilk Creek built. I. 8, 36. Also the reservoir on South Hill. I. 8.

Acquisition of property on Enfield Creek. Dft's Ex. 6. No water ever supplied from this source.

Incorporation of Ithaca as a city. Ch. 212, Dft's Ex. 111.

Van Natta Mill property on Six Mile Creek acquired, to meet the increasing demand for water supply and fire protection on East Hill. I. 10, 40.

The Cascadilla Water Company organized by F. C. Cornell and others. Pl's Ex. 135. It was intended to get a supply from Cascadilla Creek at the point now occupied by Campbell Brothers' dam. This company proposed to divide the field with the Ithaca Water Works Company, but the Common Council rejected the application as shown below, and nothing further came of this attempt at competition. XXIV. 68.

Pumping station built on the site of the Van Natta mill, and the waters of Six Mile Creek used to supplement the supply from Buttermilk Creek. I. 13, 14, 27. This joint use of the two streams continued till 1903.

A report of a committee of the Common Council on June 21 shows that on July 20, 1892, leave had been granted to the Cascadilla Water Company to lay mains in the streets of Ithaca, that nothing had since been done by that company, and that the request of the company to have the city divided into districts, one to be supplied by each company,

was "manifestly against public interest." Dft's Ex. 57, pp. 12, 13.

July 12, new five-year contract between the city and the Ithaca Water Works Company for hydrants. Dft's Ex. 57, pp. 13, 14.

- 1893-4. Mains on East Hill laid. I. 11.
1894. East Hill stand-pipe built. I. 39, 40.
- 1898, September 24. Six-year contract with the city respecting hydrants and rates, I. 19, 20; Dft's Ex. 9; Dft's Ex. 57, pp. 17-19.
- 1900, February 7. Message of Mayor to Common Council urging better fire protection on South, East, and West Hills. Dft's Ex. 57, p. 20.
- February 16. Company offers to sell its works to the city for \$350,000. I. 47; Ex. 57, p. 21.
- March 6. Special election to determine whether the city should "purchase the plant of the Ithaca Water Works Company on the best terms possible." Ex. 57, p. 23a. The proposition was defeated by a majority of 18. Ex. 57, p. 23a; I. 25.
- 1901, November 1. The company sold by the Treman family to Mr. Morris for \$100,000, subject to a mortgage of July 1, 1891, for \$250,000—\$350,000 in all; the entire purchase money being covered by a new mortgage for that amount. Organization of a holding company, the Ithaca Light and Water Company (XXI. 21; Plt's Ex. 170), for the purpose of holding the stocks and mortgages of the Ithaca Water Works Company and the Ithaca Gas Light Company, and issuing its own stock and bonds against the combined properties of the water and gas companies. See Dft's Ex. 89 and 90.
- November 27. Prof. Williams, of Cornell University, retained by the company to investigate the situation and to advise as to the best way of developing the system. V. 15, 103.
- 1902, January 21. Mr. Williams report made; published January 27 in the Ithaca Journal. V. 20-22, 103.
- February 4. The company's plans explained to the city authorities by Mr. Williams and counsel. V. 23, 103, 104.
- March 5. Special election to determine whether the city should "acquire its water-works system, both for fire purposes and

the use of its inhabitants." Ex. 57, p. 28. The proposition was defeated by 718 to 583. I. 25, and Ex. 57, p. 28.

The company immediately placed orders for the 24-inch pipe line, advertised for bids for pumping machinery, and began the purchase of land for the reservoir (V. 29, 30); and on August 25 a new contract for ten years (Dft's Ex. 10; Appendix III.) was entered into with the city, after the company's plans for the 90-foot dam, reservoir, and pumping plant had been presented and explained by Mr. Williams to the Common Council at a regular meeting. V. 31.

This contract provided that the company should install a large number of hydrants, and also,

"as rapidly as possible, a high pressure service for domestic use on high levels, a system of fire pumps to increase the efficiency of the fire protection, an impounding reservoir of ample capacity for the requirements of the city and its inhabitants for more than ten years, which, when completed and in operation, will deliver without decrease of pressure four fire streams through one hundred feet of best two and one-half inch of rubbered lined hose, and a one and one-eighth inch nozzle upon the roof of the Cascadilla School, and within four months of the date of this contract to deliver two like streams upon the roof of the Cascadilla School," etc.

This contract provided for a reduction of dwelling-house rates, and fixed the hydrant rentals at \$40 per annum each.

September 9. A contract (Dft's Ex. 74) made with Tucker & Vinton, for the construction of the dam; work begun September 11. V. 40, 83.

Most of the mains and the 100 hydrants required by the contract with the city were laid this year, and the pumping machinery was also contracted for. I. 93-96; III. 75-77.

Total amount expended on construction by the new management to Nov. 1, 1902, was \$52,325. See below, p. 122.

December. Satisfactory test of fire pressure as per contract of August 25. VI. 161, 162.

1903, January 21. Typhoid fever outbreak—lasted into April. V. 41, 104. Conferences between the company, the university authorities, and representative men (V. 43, 44) were followed,

February 18, by a new contract with the city, advocated before the Common Council by the president of Cornell University and others, (Ex. 57, pp. 32, 53; Appendix IV.), which provided that the clauses of the contract of Aug. 25, 1902, providing for certain reductions in rates, should be struck out

“in pursuance of the promise of the Ithaca Water Works Company to promptly build and maintain a suitable filtering plant for the purpose of filtering all water distributed by it, and this resolution is to go into effect when the Ithaca Water Works Company furnishes such filtered water throughout its system.”

March 2. Special election on the question “Shall the city own its own water works?”; the vote being 1,335 yeas to 30 nays. V. 47; Ex. 57, p. 33.

Plans for the filtration plant were at once prepared, and adopted March 12; land was bought the same day; and work was begun March 27. V. 86.

April 1. A new mortgage (Dft's Ex. 91) for \$200,000 issued by the company.

On April 15 Ch. 181 of the Laws of 1903 (Appendix V.) was enacted, requiring the city to take the company's plant, franchises, water rights, and other property.

Organization of the Ithaca Water Board April 27.

August 20. The filter put in operation (V. 86); and the dam was finished September 1. III. 79. From Sept. 1, 1903, to Jan. 1, 1905, the city was furnished exclusively with filtered water from Six Mile Creek, the supply from Buttermilk Creek water being entirely discontinued.

August. — Contract of Ithaca Water Board to purchase or rent the Illston wells. XXVII—,

December 1. Company issued third mortgage (Dft's Ex. 92) for \$50,000, making \$600,000 in all.

Most of the bonds issued April 1 and December 1 were taken, either outright or as collateral, by Cornell University, which had agreed to assist the company financially in introducing a filtered water supply. Summers, XXI, 100-104.

Total expenditures for construction Nov. 1, 1902, to Nov. 1, 1903, \$184,912. See below p. 122.

904. Development of Clinton Street wells by the Ithaca Water Board.
 December 21. Condemnation proceedings begun by the city.
 Property turned over by the company and received by the city December 31. Dft's Ex. 6, 11, and 12.
- 905, January 1. City began the operation of the plant, relying for its supply partly on the Six Mile Creek plant and partly on an artesian well supply which had been installed on Clinton Street during the year 1904.
- February 14. Resolution of the Board of Health, rescinding its former orders that the water should be boiled. Dft's Ex. 11a.
- March–November. Development of Williams Springs: test wells driven in March (XV. 564); permanent wells sunk in March (XXVIII. —), or in May or June (XII. 503); pipe line laid in September (XV. 571); land not acquired till after July 17, pipe line easement not till after July 31 (XXVII. —); water turned on Nov. 20 (XXVII. —), and used jointly with the Clinton Street and Six Mile Creek supplies. XII. 494; XXVII, — and XXVIII.
- June 3. Enactment of Laws of 1905, Ch. 723, creating a State Water Supply Commission.
- June 21. Cloud-burst (XV. 509), wrecking the 24-inch pipe line and carrying away part of the temporary cushion dam.
- July 13. State Water Supply Commission appointed. XXVII. —.
- July 17. Proceedings of Ithaca Water Board show that up to this date no contract had been entered into for the purchase of Williams Spring. See also meetings of June 23 and June 26. XXVII. —. Minutes of July 31 show that the Williams Spring pipe line easement was not acquired till after this date. See also minutes of July 3, July 10, July 24, and Nov. 6. XXVII. —.
- December 7. The filter plant shut down (XXIV. 96); since which date the city has been supplied wholly from Clinton Street and Williams Springs.
- 906, February. The pumps at Williams Springs set in operation. XII. 496, 497.

Pumps at Williams Springs found to be drawing surface water, February 25.

Chamot XII. 455-458.

Getman XII. 520-522;

Dennis XII. 473-477.

XVIII. 79.

April. Sealing apparatus installed so as to prevent the pumping of anything but the natural flow of the springs. Getman, XVIII. 79, 112-118.

August. Williams Springs ceased to overflow and the seal removed. Break-down of the system installed to exclude surface waters. XXIV. 52-54.

II.

THE PROPERTY TO BE VALUED.

By § 3 of Ch. 181 of the Acts of 1903 (Appendix V.) the city of Ithaca was directed to acquire by purchase or condemnation

“all the plant, franchise, water rights, lands, pipes, mains, reservoirs, hydrants and other property essential and appurtenant to a water supply which belonged to the Ithaca Water Works Company before the organization of the Ithaca Light and Water Company, and also such as has been added for the purpose of a better water supply by either of said companies since their organization; together with such improvements as shall be added prior to September first, nineteen hundred and three, but such improvements hereafter to be added before said date, shall consist only of the filtration plant now in progress of construction by said water company, the dam not to exceed thirty feet in height for the use of the said filtration plant, the necessary and proper pumps, pipes and connections and other appurtenances to said filtration plant. The said water board shall acquire such property by purchase, provided that the price thereof shall be agreed upon between the owners of the property sought to be acquired, and the said water board, but upon failure so to agree the said water board is authorized and required to condemn such property under the law of eminent domain and in that manner vest the title of such property in the said City of Ithaca.”

The property in question was turned over to the city and received for Dec. 31, 1904. Deft's Ex. 6, 11, 12. It consisted of the following items, briefly described:—

A. *Physical Plant:*

1. Land, dam (30 feet high), pipe line, pumping station, and miscellaneous property on Six Mile Creek, constituting a supply plant capable of furnishing 3,000,000 gallons daily of filtered water, and by enlarging the filter basins 5,000,000 daily.

2. Distribution system, consisting of about 32 miles of main, 226 hydrants, 370 meters, and the usual connections.

3. Land, dams, and pipe line on Buttermilk Creek.
4. Land on Enfield Creek.
5. Miscellaneous property.

B. *Water Rights:*

1. Various mill privileges on the three creeks.
2. The rights given by § 8 of the company's charter, Laws of 1853, Ch. 465 (re-enacted by Laws, 1855, Ch. 151), which reads:—

“§ 8. For the purpose of supplying said village of Ithaca with pure and wholesome water, said company may purchase, take and hold any real estate necessary for the purpose, and by their directors, agents, servants, or other persons employed may enter upon the lands of any person or persons which may be necessary for said purpose, and may *take the water from any springs, ponds, fountains or streams, and divert and convey the same or any part thereof to said village*, and may lay and construct any pipes, conduits, aqueducts, wells, reservoirs or other works of machinery necessary or proper for said purpose, upon any lands so entered upon, purchased, taken or held; said corporation may, as aforesaid, enter upon any lands, streets, highways, roads, lanes or public squares, through which they may deem it proper to carry the water from said springs, fountains, ponds, streams, wells and reservoirs, and lay and construct any pipes, conduits, aqueducts, or other works for that purpose, leaving the said lands, streets, roads, lanes and public squares in the same condition as nearly as may be as they were before said entry.”

3. The rights acquired, or capable of being acquired, under this section of the charter by merely filing a map, and condemnation proceedings, as provided in §§ 9–12 in the waters of Buttermilk, Enfield, and Six Mile Creeks.

C. *Franchises:*

1. The general right to purvey and sell water to the inhabitants of Ithaca granted by §§ 8 and 16 of the company's charter. § 8 is given above. § 16 provides, in addition to the clause relating to fire supply noted below, that the company may enter into contracts for the sale, use, and distribution of water.

This franchise appears to be perpetual or unlimited in duration, but not exclusive.

2. The special right conferred by § 16 of the charter to furnish water to the city for fire purposes on terms reached by agreement or judicial award. This section reads:—

“§ 16. Said company shall furnish water to the trustees of said village for extinguishing fires, upon such terms as may be agreed upon between said trustees and the company, and in case they cannot agree, either said trustees or said company may apply to the Supreme Court or county court, as provided in Section 10 of this act, for the appointment of three commissioners, who shall prescribe the terms upon which water shall be furnished, and said company shall furnish water upon the terms so prescribed, for the term of three years, at the expiration of which time a new commission may be applied for by either the trustees or the company, and thereafter, once in three years, a like application may be made.”

This franchise is perpetual or unlimited in duration, and appears also to be exclusive.

3. The right to divert the waters of running streams (including Six Mile Creek) given by § 8 of the charter, and enumerated above among the company's “water rights,” may also be regarded as a franchise, inasmuch as it emanates from the legislature, and probably could not be founded on the grant or consent of the lower riparian owners, even if all of them joined.

This right, considered as a franchise, is, in its nature, unlimited and exclusive,—at least to the extent necessary to enable the company to fulfil the purposes of its charter and supply the community with water.

All these franchises, whatever be their scope and limitations, while originally resting on legislative grant and revocable before acceptance and expenditure by the company, became, upon the organization of the company and the construction and operation of the works contemplated by the charter, vested and irrevocable rights of property.

D. *Contracts:*

The contract of Aug. 25, 1902 (App. III.), as modified by the contract of Feb. 18, 1903 (App. IV.).

III.

RULES OF LAW APPLICABLE TO THE VALUATION.

1. *The Date of Valuation.*

The plant is presumably to be valued as of the date when it, together with its profits and expenses, passed into the ownership and possession of the city. This was Dec. 31, 1904; and all the witnesses on both sides have made their estimates of value upon this assumption.

If, however, as matter of law, the plant should be valued as of the date of the hearings in the case, this would make no difference in the amount of the award; for, according to the undisputed testimony, the value of the company's property was as great when the testimony was heard as on Jan 1, 1905.

Allen, VIII. 123.

Hazen, VII. 65.

Kuichling, XI. 7.

The last-named witness thinks that the value increases as time goes on; the others see no difference for the short period in question.

While the property is to be valued as of Jan. 1, 1905, the legal rights of the parties are to be determined as of a date immediately prior to the passage of the Act of 1903; it being a fundamental principle of the law of eminent domain that the value of the property taken is neither to be enhanced nor diminished by the fact that the legislature has authorized its condemnation. See below, p. 63.

2. *The Company's Franchises.*

The franchises of the company in this case consisted of: (1) the right to take property and water by eminent domain conferred by Sec. 8; (2) the general franchise to supply the city with water, lay mains in the streets for that purpose, and make contracts for the sale of water, conferred by Secs. 8 and 16; and (3) the special franchise or privilege conferred by Sec. 16 to supply the village with water for fire protection purposes.

Until the company accepted these franchises and expended money upon their faith and credit, they were doubtless revocable at the will of the legislature without compensation to the company,

Pearsall v. Great Northern R.R., 161 U. S. 646, 673-4.

Adirondack R.R. v. New York, 160 N. Y. 225, 247;

but after acceptance and expenditure they became vested rights of property only revocable by the legislature, under the State and Federal Constitutions, upon the payment of just compensation; that is to say, by condemnation. Unless expressly stated in the charter, a franchise is not exclusive so as to prevent the legislature from granting a similar franchise to another company or municipality; but all franchises, whether exclusive or not, having once ripened into property by acceptance and expenditure, are irrevocable, except by condemnation, and are to be valued on that basis.

Lewis, Eminent Domain, secs. 135, 484, and cases cited.

Joyce, Damages, sec. 2195, and cases cited.

Randolph, Em. Domain, §86.

Dartmouth College v. Woodward, 4 Wheaton, 518.

Monongahela Nav. Co. v. United States, 148 U. S.

312, 328, 337, 344-5.

Pearsall v. Great Northern R.R., 161 U. S. 646, 661-662.

Adirondack R.R. v. New York, 160 N. Y. 225, 243; 176

U. S. 335, 350.

Rochester &c. Water Co. v. Rochester, 176 N. Y. 36,

49, 50.

Bank of Connecticut v. Tennessee, 163 U. S. 416, 425.

Walla Walla Water Co. v. Walla Walla, 172 U. S., 9.

Gardner Water Co. v. Gardner, 185 Mass. 190.

The company, having been organized under its charter in 1872, and having expended many hundred thousand dollars upon the faith and credit of its provisions, is entitled to the full benefit of this rule.

It follows, therefore, that the right to acquire water sources and other property by eminent domain, and the general right to distribute and sell water in the city of Ithaca, are franchises, which, though non-exclusive in character, are, nevertheless, ir-repealable, except by condemnation, and are to be valued on that basis.

In this State, contrary to the rule in some other jurisdictions, the right to use and occupy the public streets with structures such as pipes, rails, etc., is regarded as a vested right of property ir-repealable except by condemnation.

People v. O'Brien, 111 N. Y. 1, 34, 41, 55.

Rochester &c. Water Co. v. Rochester, 176 N. Y. 36.

As to the special franchise contained in Sec. 16 of the company's charter to furnish water for fire purposes, it would seem that this franchise was of a somewhat different character, and in substance contemplated the grant to the company of a perpetual and exclusive right to furnish water "for extinguishing fires" upon such terms as might be agreed upon, or, in default of the agreement, fixed by judicial action. The act says that the company "shall" furnish water upon these terms, and does not expressly state that the village shall purchase water upon these terms; but the provision that if the parties cannot agree upon the price either the trustees of the village or the company may apply to the court for the appointment of a commission, "who shall prescribe the terms upon which water shall be furnished," seems to indicate that both parties are to be bound by this provision of the charter. This conclusion is further fortified by the subsequent provision that such a determination shall last for a period of three years, at the expiration of which time a new commission may be applied for by either the trustees or the company, and "thereafter once in three years a like application may be made." These provisions seem to contemplate a perpetual relation between the company and the village, under which the

company shall be obliged to furnish and the village obliged to pay for all the water required for fire protection purposes at such rates as may be reached by agreement or judicial determination.

A franchise nearly identical * with that under consideration was inserted in the charter of the Syracuse Water Company, Laws of 1849, Ch. 224, § 16, and it was held in

Syracuse Water Co. v. Syracuse, 116 N. Y. 167,

that (as conceded in the case at bar) this clause was not an exclusive franchise or charter to supply the entire community with water, and that the city could not be enjoined by virtue of this section from establishing a water supply system of its own if authorized by the legislature to do so; but the court intimates that this section was good as far as it went, and might be a valuable contract or franchise. See pp. 180, 182. This value was not, of course, an issue in proceedings in equity for an injunction.

This franchise, being exclusive and perpetual, cannot be impaired by the legislature or the city without full compensation, and, when taken by eminent domain, is to be valued on this basis.

Farnham, Waters, § 154d.

The Binghamton Bridge, 3 Wall. 51.

N. O. Gas Co. v. Louisiana Gas Co., 115 U. S. 650.

N. O. Water W. Co. v. Rivers, 115 U. S. 674.

N. O. Water W. Co. v. St. Tammany W. W. Co., 120 U. S. 64.

It is submitted, therefore, that this particular limited franchise is to be valued upon the assumption that it is perpetual and exclusive; but, in view of the contention raised by the city in regard to this clause of the charter, the company requests that the amount allowed by the commissioners for this franchise be specified in a separate item of the award, so that, if there be error in the commissioners' ruling upon the construction of this provision, the award may be rectified without a retrial of the entire case.

* The Syracuse company was only to furnish water "when requested" by the city. In our case the city has no option.

3. *The Company's Water Rights.*

The company was given by Sec. 8 of its charter the right to "take the water from any springs, ponds, fountains, or streams and divert and convey the same, or any part thereof, to said village," etc.

This right of diversion was exercised by the company, first at Buttermilk Creek, and subsequently, between 1892 and 1905, on Six Mile Creek. For eleven of these thirteen years the company's supply was drawn partly from Buttermilk and partly from Six Mile Creek; but after the completion of the filter plant in 1903 the company drew entirely from Six Mile Creek, and this stream was the sole available source of supply for the filtered water provided for by the contract of Feb. 18, 1903.

The right to divert or "take" the waters of Six Mile Creek was given by the legislature to the Ithaca Water Works Company in Sec. 8 of the company's charter by virtue of the words quoted above.

Sec. 9 of the charter, however, provided "that before entering, taking, or using any land or water for the purpose of this act" the company should cause a map or survey "of the lands intended to be taken" to be filed in the office of the county clerk; sec. 10-11 provides that, unless the company can agree with the "owners or occupants of any lands or water intended to be taken," it may commence condemnation proceedings; and sec. 12 states that upon payment of the compensation awarded in these proceedings the company may enter upon all the "lands, water, and real estate" thus paid for, and hold the same forever. It remains to consider the meaning of these clauses and the effect of the failure of the company to take action under them.

Assuming that these sections were intended as a protection to the lower riparian owners, to enable them to secure compensation for the diversion of water by the company, the only effect of the failure to comply with these requirements is that the claims of these owners for compensation for diversion have not been extinguished.

On the other hand, it is to be borne in mind that the company's right to file the map, and begin condemnation proceedings and

thus bar the claims of the riparian owners, was a vested irrevocable right of property, and could be exercised by the company at any time without interference from anybody.

Pocantico Water Co. v. Bird, 130 N. Y. 249, and cases *supra*, p. 16.

It is true that this right had not been exercised by the company before the transfer of its property to the city on Dec. 31, 1904; but it might have been performed at any time, and the valuation in this case is clearly to be made in view of the legal right of the company to thus perfect its water rights.

There can be no practical difference, so far as the valuation is concerned, between a title which has been perfected by payment and a title which can be perfected at any time except, of course, that, if the rights of the lower riparian owners have not been barred, the company and its successors in title are still liable to compensate the riparian owners for the losses, if any, sustained by them through the diversion of the water.

The right of the company, therefore, to divert the waters of Six Mile Creek for a public water supply in Ithaca, whether regarded as an inchoate water right or as a franchise to acquire a water right, is to be valued at its full worth, taken in connection with the plant installed by the company, less the estimated amount necessary to be paid to the riparian owners below as compensation for the diversion.

While there is little authority upon this point, we apprehend that there can be no reasonable doubt of the correctness of the company's contention. It is a very common thing for water companies to omit some of the technical requirements of their charters when it is not considered that the damages recoverable would be more than a nominal sum. This was doubtless the case with the Ithaca Water Works Company. There were no mills on the stream below the dam, and had not been for many years. The company built its first plant and commenced to divert the waters of the creek in 1892, and nobody made any claim for damages for over ten years.

It is well settled that, if in such cases a lower riparian owner brings a bill in equity to restrain the company from further diversion, he cannot obtain an injunction, if the company pays full compensation for the diversion as ascertained in the suit; and the payment operates as a final bar just as if it had been made in condemnation proceedings.

Lewis, Em. Dom., § 645a.

Henderson v. N. Y. C. Co., 78 N. Y. 423.

Pappenheim v. Met. El. Ry., 128 N. Y. 436, 444-445.

Peck v. Schenectady Ry. Co., 170 N. Y. 298.

Mead v. N. Y. El. Ry. Co., 24 N. Y. Supp. 908.

Ackerman v. True, 56 App. Div. 54, 56-57.

Kansas, etc., R.R. v. Payne, 49 Fed. 114, 119.

Chattanooga R.R. v. Jones, 80 Ga. 264.

Baltimore, etc., R.R. v. Bouvier, 62 Atl. 868, 881.

New York City v. Pine, 185 U. S. 93, 104.

See also

Bass v. Met. West Side El. Ry. Co., 82 Fed. 857.

Browning v. Camden, etc., Co., 4 N. J. Eq. 47, 58.

It would be different if the company had no right of condemnation.

Gardner v. Newbury, 2 Johns. Ch. 162.

Pappenheim v. Met. Ry. Co., 128 N. Y. 436, 445.

Peck v. Schenectady Ry. Co., 170 N. Y. 298, 308.

Ackerman v. True, 56 App. Div. 54, 57.

Brown v. Ontario, 81 App. Div. 273, 274.

Cobb v. Illinois, etc., Co., 68 Ill. 233.

Village of Dwight v. Hayes, 150 Ill. 273,

unless there has been laches or some equivalent excuse, in which case an injunction will be denied even if the company has no right of condemnation.

New York City v. Pine, 185 U. S. 93, 98.

Penrhyn Slate Co. v. Granville, etc., Co., 181 N. Y. 80, 87.

So, if a company to which the power of eminent domain has been granted makes an unlawful or fruitless entry, it may subsequently perfect its title by complying with the statute.

- Lewis, Em. Dom., §§ 507, 633, 649.
Matter of Prospect Park, etc., R.R., 67 N. Y. 371.
Village of St. Johnsville v. Smith, 184 N. Y. 341.
In re Metropolitan El. Ry. Co., 12 N. Y. S. 502 (Sup. Ct. Sp. Term, 1889).
Met. El. Ry. Co. v. Dominick, 55 Hun. 198.
State v. Baltimore, etc., R.R., 53 Atl. 1040 (N. J., 1906).
Ingraham v. Water Co., 82 Me. 335.
Evans v. Santana Co., 81 Tex. 632.
Moore v. Bel Air Water & Light Co., 79 Md. 391.
Secombe v. R.R. Co., 23 Wall. 108, 118.
Searl v. School District, 133 U. S. 553.

And a company having a general power to acquire water sources by condemnation may make successive appropriations of the same or different sources, so far as may be necessary to carry out the purposes and duties of its charter.

- Lewis, Em. Dom., § 259.
 Farnham, Waters, § 155d.
Water Com'rs v. Lawrence, 3d ed., ch. 552.
Johnson v. Utica Water Works Co., 67 Barb. 415.
West Springfield Aqueduct Co. v. Springfield, 167 Mass. 128, 135.
Burnett v. Commonwealth, 169 Mass. 417.

It thus clearly appears that the company's right to take by condemnation the waters of Six Mile Creek was what may be termed an inchoate right of diversion, and, whether regarded in this light or as a franchise, was after entry, expenditure, and operation in good faith for thirteen years a vested and valuable right of property.

The difficulty presented by the failure of the company to perfect its right of diversion is purely imaginary. It had a large and valuable plant on Six Mile Creek; and it is clearly immaterial whether we say the company had an uncompleted right of diversion or no right of diversion at all. For it had on any theory the irrepealable right to acquire a right of diversion in condemnation proceedings, and the value of its physical plant, taken in connection with the possession of this statutory right, is evidently the same, whether we call this privilege an incomplete right of diversion or something else. The value of the company's plant and statutory rights in or to the waters of Six Mile Creek is in either case the value of the whole as a water supply system less the estimated cost to bar the rights of the lower riparian owners.

The claims for damages, however, have not been extinguished, and must be taken into account by the commissioners; the estimated amount of them being deducted from what the award would otherwise be.

A similar question is presented by the alleged failure of the company to acquire all the easements necessary for the location of the 24-inch pipe line. The company had, however, the right at any time to acquire the outstanding lands, if any, by eminent domain; and the utmost effect on the value of the pipe line and the land and easements owned by the company of the failure or omission to begin condemnation proceedings to acquire the remaining land would be a reduction from the value of the pipe line of the estimated cost to perfect the title.

See the requests for rulings, *infra*, Appendix VIII.

4. *The Contracts between the Company and the City.*

From time to time the company and the city entered into contracts for hydrant service, the first being in 1873, and the last in 1902. By the last-named contract (Dft's Ex. 10, *supra*, p. 9) the company agreed to improve its fire service by the construction of an entirely new plant on Six Mile Creek. A still later contract, that of Feb. 18, 1903 (*supra*, p. 10), provided for the construction of an expensive system of filtration. The contract of 1902 provided that the company should make a slight reduction in the rates then being charged to private consumers; and the contract of 1903 provided that, when the company was ready to furnish the city with filtered water, the rates should be restored.

These contracts have a bearing upon the valuation in that the contract of Aug. 25, 1902, as modified in 1903, was for ten years, and on Jan. 1, 1905, it still had seven and one-half years to run. There can be no question that this contract between the company and the city was an absolutely valid contract so far at least as the matter of the hydrant rentals was concerned; and the result is that no reduction of hydrant rentals could be made without the consent of the company until the year 1912.

It is difficult to see how these contracts have any further legal bearing on the value of the company's property, except that, taken in connection with the terms of Sec. 3 of the Act of 1903, it would seem that the city was bound to pay for the work which was under construction at the date of the passage of this act in pursuance of the contracts of 1902 and 1903, irrespective of the question whether these costly additions had been brought to the point of profit; that is, no matter whether or not the company on the day of valuation was deriving a fair return on the cost or value of these improvements, as well as upon the value of its original plant.

The city, however, is understood to make the remarkable contention that the provision in the contract of 1903 that the rates which had been reduced by the contract of 1902 should be restored upon the readiness of the company to furnish the more expensive filtered water to the city was void. The ground of this contention, as stated by counsel during the hearings, is that the provision

in the contract of 1902 was for the benefit of the consumers, and that the Common Council of 1903 had no right to vary the terms of this contract without the consent of the consumers.

We are unable to see the force of this contention.

In the first place, the probability is that all the clauses in these contracts relating to the prices to be charged to private consumers were invalid; the reason being that the Common Council itself had no right to fix the rates, and, therefore, had no right to enter into a contract specifying the rates which were to be charged by the company to private consumers.

Re Board of Com'rs of White Plains, 176 N. Y. 239.

If, however, the city had the power to make any one of these contracts, it had the power to make them all. If it had authority to make any stipulation concerning private rates in 1902, it had the right to modify these stipulations in consideration of the furnishing of a better quality of water. Moreover, the argument proves altogether too much, for, if the city has no right to increase rates once fixed by contract, it has in like manner no right to reduce them. There can be no doubt, we think, that, if the Common Council had any jurisdiction whatever in the premises,—that is, if any contract relating to private rates were valid,—the city, being the contracting party, whether acting as trustee for the consumers or not, had the right with the consent of the company to modify the terms of the contract.

The value of the contract of Aug. 25, 1902, for supply of water to the hydrants until Aug. 25, 1912, at \$40 per hydrant, is therefore to be included in the award.

Farnham, *Waters*, §§ 154d, 162b.

Long Island Water Supply v. Brooklyn, 143 N. Y. 596;
166 U. S. 685.

Walla Walla Water Co. v. Walla Walla, 172 U. S. 1.

5. *The Possibility of Competition.*

The probabilities with respect to the possibility of competition must, of course, be given due weight in estimating the value of any property, particularly the property of a public service company which includes franchises in the public ways.

As stated by Farnham on Waters, I., § 155f:

“whether or not the franchises were exclusive and how far it (the company) was without competition, as well as the period for which they were to endure, are to be taken into consideration.”

A leading case upon this point is

Long Island Water Supply Co. v. Brooklyn, 143 N. Y. 596 and 166 U. S. 685.

This was a case exactly on all fours with the case at bar, in so far as the company had a general water supply franchise not exclusive in terms, and had entered into certain contracts with the city for hydrant service. The only difference is that in the Long Island case there was no special privilege such as is found in Sec. 16 of the charter of the Ithaca Water Works Company with respect to the supply for fire purposes. Waiving this difference for the moment, it appears that in other respects the cases stand on a strict parity.

In the Long Island case the company claimed that it was entitled to a valuation reached by capitalization of earnings or otherwise, upon the basis that by virtue of its contracts and franchises it had a perpetual and exclusive right to supply water to the city of Brooklyn. The commissioners rejected this contention, and valued the property (see 166 U. S. p. 696),

“upon the assumptions (1) that at present the water company alone has the right publicly to purvey water in the Twenty-sixth Ward; (2) that the exclusiveness now incident to its right may at any time be taken from it by the legislature, or by local authorities acting under legislation; but (3) that neither the legislature nor local authorities would, in determining whether to take from the company

the exclusiveness of its right, fail to have such due regard as is demanded by ample and fair public policy, to the past investments, risks and services of the company and to the reasonably just expectations which those who have invested money in its work had in mind when so investing."

Under this ruling the commissioners found that the tangible property of the company was worth \$370,000, and the franchises, contracts, and other intangible or incorporeal rights were worth \$200,000, and made a total award of \$570,000. See the award, *infra*, p. 197.

This action of the commissioners was sustained by the New York Court of Appeals and by the Supreme Court of the United States; and we need not seek for other authority than this case, arising in this State and having the sanction of both the Court of Appeals and the United States Supreme Court, for the proposition that, while a non-exclusive franchise is not to be valued on the theory that it is exclusive, it is, nevertheless, competent and necessary to take into account the probability that neither the legislature nor the city will, in fact, act in such a manner as to deprive the company of the fair value of its property and franchises without the reasonable compensation to be secured in condemnation proceedings.

Additional authority to the point that the probability or improbability of legislative or municipal action may be considered, in so far as it fairly affects the market value of the property and non-exclusive franchises of a public service company, is to be found in

Moulton v. Newburyport, 137 Mass. 163, 167.

West Springfield Aq. Co. v. Springfield, 167 Mass. 128, 135.

Gardner Water Co. v. Gardner, 185 Mass. 190, 192.

Kennebec Water Dist. v. Waterville, 97 Me. 185, 207.

It only remains to consider just what the possibilities of competition were in this particular case.

a. *Competition from private corporations.*

It may be assumed that under the general laws of the State it was competent for a certain number of private individuals to organize a water company, and for the Common Council of the

City of Ithaca to grant to that company the right to open the streets and parallel the mains of the Ithaca Water Works Company.

No issue of law, therefore, is presented by this point; the sole question being the practical one whether the city would be likely to authorize a private company to enter in competition with an established concern, and, if so, whether the new company was likely to be able to raise the money necessary, and was likely to actually install a competing plant; that is, whether this possibility of competition from private sources was a practical danger or not. This question will be considered below, p. 160.

A company was, in fact, organized under the general law under the title of the Cascadilla Water Company (see Pl's Ex. 135), and procured the consent of the Common Council in 1892; but nothing more was ever done by this company. See *supra*, p. 7.

The legislature might also by special charter authorize a competing company to enter the field; and this was done by Ch. 58 of the Laws of 1868 (Pl's Ex. 136), incorporating another company under the same name, "Ithaca Water Works Company." Nothing was ever done under this charter. See *supra*, p. 6.

It is also contended that under the General Laws of 1895, Ch. 630, Cornell University had the right to supply the city with water.

If any person or corporation acquired the right of competition, the city would apparently still be bound to take water for municipal uses from the Ithaca Water Works Company; but, so far as the company's general franchise to sell water in Ithaca is concerned, anybody who could get the necessary authority from the legislature or the Common Council could compete if he had the money and cared to risk it.

b. *Municipal competition.*

As the general franchise of the company was not exclusive, the legislature had, of course, at any time the right to authorize the city of Ithaca to establish a competing system.*

Syracuse Water Co. v. Syracuse, 116 N. Y. 167.

Long Island Water Supply Co. v. Brooklyn, 143 N. Y. 596; 166 U. S. 685.

Skaneateles Water Co. v. Skaneateles, 161 N. Y. 154.

*Subject to the special provisions of the company's charter referred to, p. 32

Whether or not it had done so prior to the passage of the Act of 1903 is disputed.

The village of Ithaca was established in 1821, and in the consolidated village charter of June 4, 1853, there is a provision in Title 3, sec. 3, subdivision 25, that the trustees may "provide for supplying the village with water by means of pipes." The General Law of 1875, Ch. 181, authorized villages to "acquire, construct, and maintain a public water supply" with power to acquire property by condemnation, to raise money by the issue of bonds, etc., etc. In 1888 the village became a city by virtue of Ch. 212 of the laws of that year. Title 3, sec. 7, subdivision 17, provides that the Common Council shall have "full power to establish, regulate, and construct pipes, reservoirs, and hydrants, and to provide for supplying the city with water by means of pipes." Title 8, sec. 7, of this charter provides that the city shall succeed to the rights and liabilities of the village. By Ch. 346 of the Laws of 1893 the above provision in the city charter was re-enacted and amended by prohibiting the city from making contracts for the supply of water hydrants after the year 1893 without first inviting sealed proposals, and by providing that such contracts should be awarded to the lowest responsible bidder.

So far as we have been able to discover, the foregoing are the only statutes upon which it can be contended that the city of Ithaca had prior to the passage of Ch. 181 of the Laws of 1893 any right to establish a system of public water supply upon municipal account; and it is understood that the city claims that it had this right at that time, not only under the special provision found in Title 3, sec. 7, subdivision 17, of the charter of 1888, but also by virtue of the general village water supply law of 1875.

The company maintains, on the other hand, that neither of these contentions is well founded.

(1) As to the special provision of the charter of 1888.

It is difficult to believe that the legislature intended by these few lines to authorize the city to establish a complete system of public water supply for the use of its inhabitants as well as for fire service and other municipal purposes. The custom of the legislature, when it has clearly intended to authorize the estab-

lishment of a public water supply system, whether private or public, has always been, first, to grant this privilege in clear and unmistakable terms, and, secondly, to endow the grantee of the franchise with the necessary powers of eminent domain, without which, in ordinary cases at least, it would be impossible to acquire a supply of water. In the case of municipalities, moreover, it has always been the custom of the legislature, when authorizing them to maintain a public water supply system, to provide for the construction and management of the works by means of a board especially elected or appointed for the purpose, and to confer upon the city the right to issue bonds for the amount needed to procure the works. It will be observed that none of these provisions are present in the Act of 1888. This statute contains no specific reference to the supply or sale of water to the inhabitants of Ithaca, nor is there anything in it giving the power of eminent domain, nor can any provision be found for the issue of city bonds. In view of these considerations it seems probable that the court would hold that it was not the intention of the legislature, either by the charter of 1888 or in the consolidated village charter of 1873, which contains even still more meagre provisions, to do anything more than to authorize the city to hire or contract for water to supply the hydrants, and to either hire the hydrants or to install them and the necessary pipes and reservoirs itself. In other words, it seems a fair contention that the scope of these two acts was merely to authorize the city of Ithaca to establish a system of hydrants for protection against fire to build, if it saw fit, the necessary reservoirs and pipes, and to hire or buy the water from whatsoever source it could obtain it by private contract.

(2) As to the general village law of 1875.

It would seem fairly clear that the city lost whatever rights the village may have had under this law when it was incorporated as a city in 1888. The law was evidently passed for the benefit of villages as distinguished from cities, and the legislature has never seen fit to authorize cities generally to establish a public water supply. Each city which has desired to do so has been obliged to procure a special franchise from the legislature. It would seem that the legislature intended to draw a sharp distinction between

villages and cities; and that, therefore, the city would not inherit the rights of the village in this regard without a specific provision to this effect in the charter. This conclusion is emphasized by the fact that, if it is held that the city inherited the right of the village under the general law of 1875 to establish a public water supply, none of the machinery or detailed powers bestowed on villages were applicable to Ithaca after its incorporation as a city. It seems reasonably certain, for instance, that the provisions of the village law relating to the appointment of a board for the construction and administration of the works would not pass to the city, because the machinery of government is framed upon an entirely different plan in the case of the city from that which is found in the constitution of villages in this State. We apprehend, therefore, that the city could not after the Act of 1888 have taken advantage of the general village law of 1875.

c. The effect of the special provision of Sec. 16 of the company's charter relating to the supply of water in Ithaca for fire protection.

The village was given the right by the consolidated charter of June 4, 1853, to provide for supplying the village with water by means of pipes; but the company's charter, having been enacted on June 25, three weeks later, superseded this provision and apparently conferred upon the Ithaca Water Works Company, when organized, the sole right to perform this branch of the water supply business in Ithaca; and the subsequent enactment of the general village law of 1875 and of the city charter of 1888 could, so far as inconsistent with the charter rights of the company, have no effect thereon.

If, therefore, the legal effect of the company's charter of 1853 was to give it the exclusive right to furnish water to the village for fire purposes, all that the city could possibly secure in the way of a public water supply franchise, either under the general village law of 1875 or the charter of 1888, or any other act that the legislature might choose to pass, would be the privilege of supplying water to private citizens.

d. Competition as to water sources.

The right given to the Ithaca Water Works Company by Sec. 8 of its charter to take the waters of any stream for the

purpose of supplying Ithaca and its inhabitants with water was, as shown, *supra*, p. 17, a vested property right, inviolable by the legislature; but it would doubtless be restricted to the amount of water reasonably necessary for the purpose, and the legislature could probably grant to the city, or to some other private company, without regard to the Ithaca Water Works Company, the right to take any waters not needed by that company for this purpose.

Applying this rule to Six Mile Creek, the legislature could probably authorize some other corporation to take the surplus waters of this stream; *i.e.*, so much thereof as would not interfere with the quantity then or thereafter required by the Ithaca Water Works Company for the supply of Ithaca.

We do not see how this theoretically possible, but practically impossible, contingency can affect the valuation in this case.

In no event would a rival corporation, private or municipal, be permitted to interfere with the right, unperfected though it was, of the Ithaca Water Works Company to divert the waters of Six Mile Creek except by eminent domain.

Pocantico Water Co. v. Bird, 130 N. Y. 249.

e. The right to acquire the property of the Ithaca Water Works Company.

If the city or any competing private company should desire to make use of any part of the property of the Ithaca Water Works Company pumping plant, water sources, or distribution system, it could only do so by agreement with the company or by virtue of some special act of eminent domain which the legislature might see fit to pass.

The company's property, having been acquired and being used for a public purpose, could not be taken from it by virtue of any general law authorizing the establishment of competing works, nor under any general grant of the power of eminent domain.

Mills, Em. Dom., §46.

Lewis, Em. Domain, §§ 267, 271, 276, 643.

Farnham, Waters, § 155b.

Ex parte Manhattan Co., 22 Wend. 653.

Matter of Buffalo, 68 N. Y. 167.

Suburban R. T. Co. v. New York, 128 N. Y. 510.

Pocantico Water Works Co. v. Bird, 130 N. Y. 249,
258, 259.

Western Union Tel. Co. v. Penn. R.R., 123 Fed. 33, 37.

New Haven Water Co. v. Wallingford., 72 Conn. 293.

State v. Jersey City, 58 N. J. L. 262.

There was nothing in any law prior to the act of 1903 which authorized the city or any one else to acquire the whole or any part of the property, franchises, or water rights of the Ithaca Water Works Company, except (and even this is doubtful) upon such terms as the company might agree to.

To enable the city to acquire these works by eminent domain, a new and express statutory authority was required, and that was furnished by Ch. 181 of the Laws of 1903, Appendix V., *infra*, p. 183.

See the requests for rulings, *infra*, Appendix VIII.

6. *The Rules of Valuation.*

a. Value for the most valuable use.

The general rule in condemnation cases is that the property taken is to be valued for its most valuable use, that is, at its highest value for any purpose to which it is fairly adapted. Evidence may be received of the various uses to which the property is adapted, and of the most profitable plan or method of using it. The "reasonable probabilities of the future" are to be considered in so far as they affect the use and value of the property; and the landowner is not confined to the value of his property in the condition it was in when taken from him.

Lewis, Em. Dom., §§ 478, 479.

Sedgwick, Damages, §§ 1085, 1171.

Joyce, Damages, § 2185.

Randolph, Em. Dom., §§ 246.

Sutherland, Damages, § 1074 and cases cited.

Mills, Em. Dom., § 173.

Matter of Furman Street, 17 Wend. 649, 670.

Dwight v. Com'rs, 11 Cush. 201, 204.

Eastern R.R. Co. v. B. & M. R.R., 111 Mass. 125, 132.

Drury v. Midlund, 127 Mass. 571, 582.

Blaney v. Salem, 160 Mass. 303, 304.

Dana v. Boston, 176 Mass. 97, 99.

Boom Co. v. Patterson, 98 U. S. 403, 407-408.

Haslam v. Railroad, 64 Ill. 353, 355-356.

Nahant v. United States, 136 Fed. 273, 284.

Portland v. Rochester R.R. v. Deering, 78 Me. 61, 66.

Applications of this rule in water supply cases are found in:—

- Ripley v. Gt. Northern Ry.*, L. R. 10 Ch. App. 435, 438.
Trent-Stoughton v. Barbados W. S. Co., 1893, A. C. 502.
Gardner v. Brookline, 127 Mass. 358, 362.
Moulton v. Newburyport Water Co., 137 Mass. 163, 167.
Harvard v. West Randolph, 64 Ver. 41, 44.
Stafford v. Providence, 10 R. I. 567, 570.
Trustees of Village, etc. v. Dennett, 2 Hun, 669.
Application of Com. of Public Works, 85 Hun, 424.
City of Ely v. Conan, 91 Minn. 127, 131.
Alloway v. Nashville, 88 Tenn. 510, 514.
San Diego Land Co. v. Neale, 78 Cal. 63, 68, 69.
Spring Valley Water Works v. Drinkhouse, 92 Cal. 528, 533, 534.

b. The cost of improvement and completion.

It follows that the commissioners must take into account the estimated cost of improvement, development, or completion, to the extent that the evidence offered indicates a reasonable and profitable use to which to devote the property in question.

- N. Y. & W. R.R. v. Canal Co.*, 27 Hun, 116, 119, 121.
Maynard v. Northampton, 157 Mass. 218, 219.
Williams v. Boston, 190 Mass. 541.

c. The value of property which has, strictly speaking, no market value.

Where property has no market value in the strict sense of the term,—that is, where it is of such a nature as not to be the subject of such frequent sales as to give it a current price,—the ordinary rule in eminent domain and other cases where the full value of property is involved, that the measure of compensation is the market value of the property, fails of application. In such cases it is the intrinsic value of the property or its value to the owner. In fact, both rules are merely applications of the general principle that the measure of damages in condemnation cases is the largest value of the property taken for any use to which it is adapted. In the case of ordinary property, which can be replaced at its market value, the market or selling price is the measure of recovery; but, where the property has no selling or market value in the strict sense, the value to the owner, if that is the greatest value that it has for any purpose, is the measure of damages.

Authorities in support of this distinction are too numerous to cite, and we will mention only the following from the New York reports:—

CASE.	SUBJECT-MATTER.
<i>Suydam v. Jenkins</i> , 3 Sandf. 614.	Personal property.
<i>Starkey v. Kelley</i> , 50 N. Y. 676.	Carpets.
<i>Fairfax v. N. Y. Central, etc., R.R.</i> , 73 N. Y. 167.	Personal baggage.
<i>Scattergood v. Wood</i> , 14 Hun, 269; 79 N. Y. 263.	A peculiar machine.
<i>Watson v. Cowdrey</i> , 23 Hun, 169.	Abstract of title.
<i>Jones v. Morgan</i> , 90 N. Y. 4.	Furniture.
<i>Heald v. MacGowan</i> , 15 Daly, 233; 117 N. Y. 643.	An electrotype plate.
<i>Leoncini v. Post</i> , 37 N. Y. St. 225.	Manuscript.
<i>Lovell v. Shea</i> , 18 N. Y. Sup. 193, 195.	Book plates.
<i>Simpson v. N. Y., N. H. & H. R.R.</i> , 38 N. Y. S. 341.	Personal baggage.
<i>Johnston v. Albany Dry Goods Co.</i> , 43 N. Y. S. 164.	Fixtures.

The foregoing happen to be cases of trover, replevin, etc.; but the same principle applies to condemnation proceedings:—

- Matter of State Reservation at Niagara*, 16 Abbott's N. C. 159, 197; *Ibid.* 395, 418; *aff'd* 102 N. Y. 734.
Beale v. Boston, 163 Mass. 53, 55.
Boston Belting Co. v. Boston, 183 Mass. 254, 258.

In re Rugheimer, 36 Fed. 376, 377.

Five Tracts of Land v. United States, 101 Fed. 661, 665.

Chicago & N. W. R.R. v. C. & E. R.R., 112 Ill. 589,
607, 608.

Depuis v. Railroad, 115 Ill. 97, 99.

Sanitary Dist. of Chicago, 75 N. E. 248, 251, 252.

Montgomery Co. v. Schuylkill Bridge, 110 Pa. St. 54,
59-60.

In the Boston Belting Co. case the court says (p. 258):—

“The general rule concerning the assessment of damages in cases like this is [to award a sum which represents] the decline in the market value of the property because of the acts complained of. There is, however, an important exception to this general rule. Where property is so peculiarly fitted for the needs or desires of the owner that it would be difficult, if not impossible, to procure a purchaser for it at a fair intrinsic price, the damage is measured by the effect of the acts in question upon the intrinsic worth of the article to the owner and the inquiry resolves itself into an estimate of the cost of procuring an equivalent for the owner for what has been taken away or damaged.”

And see

Halé, Damages, p. 182.

Sedgwick, Damages, §243.

62 Am. St. Rep., note 791, 792.

Sutherland, Damages, § 1117.

This rule is of no consequence in the case at bar, except to meet the city's contention that property can have no greater value than that indicated by its earning capacity. Even if, as is by no means the case (see below, p. 95), the earning capacity of the property fairly computed was insufficient to pay a fair return on the investment required for the improvements of 1902-03, still these improvements enabled the company to furnish and the community to enjoy a water supply of great purity; and the new filtered water had an intrinsic value, both to the seller and the buyer, irrespective of the question whether the rates collected for its use were sufficiently high to make the investment a profitable one.

If the property in question were a church, a schoolhouse, a library, a college building, etc., no one would contend that the

absence of earning capacity would permit the city to acquire it at less than its fair actual or reproductive cost. So of any property having, like a high-class water supply sold at rates too low for a fair commercial profit, an intrinsic value in excess of its market value. So of a municipal water system sustained by taxation where no rates are charged, and there is consequently no income at all, or take the case of a public or private sewer system, operated without annual charge to the abutters. It is always the highest value for any use that must be paid, and in cases where the income is deficient or wholly absent and the property has therefore no selling value commensurate with its intrinsic value, other tests or standards than market value must be resorted to.

In a water supply case we should be driven under such circumstances to rely on the cost of reproduction for the physical plant and the cost of substitution for the water sources. See *infra*, pp. 57-59, 127.

d. Earning capacity.

The earning capacity of the property in question is always an important, and usually the chief, element or test of value.

Where the subject of valuation is physical property with no franchises, it is the net income of the property by way of rent, that is, the "rental value," which is to be considered in connection with the other evidence in the case in determining the value of the property.

In the case of ordinary land and buildings the estimated income or rental value thereof, as distinguished from the profits derived from the business carried on upon the premises, is admissible.

Lewis, Em. Dom., § 487.

Rochester & Syracuse R.R. v. Bedlong, 6 How. Pr. 467, 468.

Matter of State Reservation, 16 Abbott's N. C. 159, 199; *ib.* 395; *aff'd* 102 N. Y. 734.

Matter of Mayor of New York, 74 App. Div. 343, 346; *aff'd* 172 N. Y. 653.

In Re Armory, 76 N. Y. Suppl. 766, 769.

Rogers v. Bemus, 69 Pa. St. 432, 435.

Bryant v. Water Co., 190 Pa. 366, 369-370.

Whitney v. Boston, 98 Mass. 312, 315.

Lincoln v. Commonwealth, 164 Mass. 368, 380.

Williams v. Boston, 190 Mass. 541, 551.

As said by the court in the case first cited at page 468:—

"the opinions of witnesses competent to form a proper judgment in regard to the value of the property for the purpose of selling or renting or living, . . . has always been regarded as pertinent evidence."

Where the earning capacity is dependent upon the use of franchises as well as physical plant, as in the case of the property of a public service company, such as a water, gas, electric light, or street railway company, the question whether the earning capacity of the entire property—that is, the probable net income of the company—can be considered depends upon whether the franchises are to be included in the valuation or excluded.

Where the franchises are not to be included in the valuation, evidence of the earning capacity, past or future, of the company

from its property and franchises and water rights would clearly be inadmissible as a basis for the valuation, and perhaps incompetent for any purpose.

- Farnham, Waters, § 149a.
Stockton & Middlesborough Water Board v. Kirkleathan Legal Board, 1893 A. C. 44.
Edinboro Street Tramways Co. v. Edinboro, 94 A. C. 456.
London Street Tramways Co. v. London County Council, 942 Q. B. 189, and 94 A. C. 490.
National Water Works v. Kansas City, 62 Fed. 853.
Newburyport Water Company v. Newburyport, 168 Mass. 541.
Gloucester Water Supply Co. v. Gloucester, 179 Mass. 365.
Spring City Gas Light Co. v. Pa. R.R., 167 Pa. 6.

Where, however, the valuation includes the franchises of the company, as well as its physical property, then the income or earning capacity of the whole is competent as evidence of the value of the entire property. This is the common case where the property of a public service company is taken by condemnation proceedings.

- Randolph, Eminent Domain, § 244.
 Lewis, Em. Dom., § 487.
Monongahela Navigation Co. v. U. S., 148 U. S. 312, 328.
Kingsland v. Mayor of New York, 110 N. Y. 569, 584.
Langdon v. Mayor of New York, 59 Hun, 434, 437.
Montgomery County v. Schuylkill Bridge Co., 110 Pa. 54, 59.
Miffin Bridge Co. v. Juniata County, 144 Pa. 365, 374-375.
Turnpike v. Clarion County, 172 Pa. 243, 250.
Turnpike v. Traction Company, 174 Pa. 273, 275-276, 283.
West Chester County v. Chester, 182 Pa. 40, 48.
Columbia Bridge Co. v. Geisse, 38 N. J. L. 39, 43-44.
Doherty County v. Tift, 75 Ga. 815, 817-818.
Blackwood v. Tanner, 66 S. W. 500, 501.

In the case at bar the act of 1903 expressly directs the city to acquire the franchises, as well as the physical plant, of the Ithaca Water Works Company, and, as these franchises are to be included in the valuation, it is competent and necessary to consider the earning capacity of the company's entire property; that is, the net income of the company derived or derivable from physical plant, incorporeal rights of property, and statutory franchises.

By earning capacity is not meant, of course, the actual net income of the company during any given year, even the year immediately preceding the date of valuation, because the income for that or any particular year may have been greater or less than is fairly to be expected in the future.

So far as earning capacity is a test of value, it is the earning capacity fairly to be foreseen in the near future, not the actual earnings of the past, which are understood; for what the owner holds his property for, and what the purchaser pays for, is not what the plant has earned in the past, but what it is fairly capable of earning in the future. To use the expression of the English authorities, it is the "maintainable income" of the company which is to be considered; that is to say, the probable net income to be enjoyed in the future, taking all the conditions and probabilities of the situation into account.

As said in

Matter of Mayor of New York, 74 App. D. 343, 346;
aff'd 172 N. Y. 653,

the value of the property taken is to be ascertained

"by its location, the improvements made thereon, and its prospective earning capacity in view of the use to which it may be put."

In

Gardner Water Co. v. Gardner, 185 Mass. 190,

the commissioners, as appears from the statement on pp. 191-192 that they considered the effect on the company's gross receipts of possible action by the state to reduce rates or authorize competition, and more fully from their report—a copy of which has been

handed to the commissioners in the case at bar—took into account the probable earnings of the company in the future.

In

Long Island Water Supply Co. v. Brooklyn, 143 N. Y.
596,

the court approved (as did also the Supreme Court of the United States in 166 U. S. 685) a valuation by the commissioners which was based, as appears from the report, on the probable net income of the company in the future. The award contained an item of \$200,000 for franchises, contracts, and other intangible rights, which included

“the present value of the net profits above all charges which in our opinion the water company would with reasonable certainty earn in the future if its property were not to be taken from it”;

and the commissioners then cite (see below, p. 202) the various considerations and data which they took into account in estimating the earning capacity in the future,—considerations and evidence almost identical with those offered for the company in the case at bar, and discussed below in Chapters V., VI., VII. and VIII.

In the leading case of

Monongahela v. U. S., 148 U. S. 312,

the court says (p. 328):—

“The value, therefore, is not determined by the mere cost of construction, but more by what the completed structure brings in the way of earnings to its owner”;

and it appears from pp. 318, 319, that the offer of proof, the rejection of which was held to have been erroneous, included evidence of the prospective increase of income "in a short time," and that the value of the company's property was a certain sum "predicated upon present and prospective tolls."

In

Omaha Horse Ry. Co. v. Cable Tramway Co., 32 Fed. 727; aff'd 140 U. S. 674,

a case of injury by eminent domain to the franchise of a cable company, Mr. Justice Brewer says (p. 732) "The difficulty of accurately estimating the damages rests not alone upon the present condition, but depends also upon the facts that the future is an element which must be taken into consideration." In referring to the difficulty of taking the probabilities of the future into account, he says, (p. 733), "The lack of certainty in the measure of damages is no reason for refusing compensation."

As said in

Gearhart v. Water Co., 202 Pa. 292, 296-297,

the inquiry should be directed to the "probable returns from an investment in land because of the use which may be made of it."

In an Ohio case,

Cincinnati v. Scarborough, 5 Law Bulletin, 677,

expert opinions of future earning capacity were received, the court saying that evidence of this sort was "the only means through which the jury could be properly informed in the premises."

So in

Avondale v. Cincinnati & Avondale Co., 18 Law Bulletin, 308,

where part of a turnpike was taken, evidence was introduced bearing upon the various contingencies which would probably affect the net future income or rent. The court mentions various circumstances which might affect the future income of the company, such as the probable amount of traffic, future rates of toll, etc., and told the jury to capitalize the probable future net income from the part of the road taken, and to consider the result in reaching their verdict.

So where the property taken is ordinary land, and the rental value is in question, it is the probable future rents that are to be considered, not merely the actual rents received in the past.

Ripley v. Great Northern R.R., 10 Chancery, 435.

Brown v. Commissioners, 15 App. Cases, 240.

Allis & Co. v. Columbia Mill Co., 65 Fed. 52.

Matter of State Reservation, 16 Abbott N. C. 159;
affirmed 102 N. Y. 734.

Gearhart v. Water Co., 202 Pa. 292, 297.

Westchester County v. Westchester, 182 Pa. 40.

Matter of Mayor of N. Y., Ap. Div. 343; 172 N. Y. 653.

As stated in

Sutherland, Damages, § 1074, p. 3144,

reference may be had in these cases not only to the existing business, but also to the business that may be "reasonably expected in the immediate future."

Many other authorities might be cited, but we will call attention only to two cases in which this subject has been most carefully considered.

In

Turnpike v. Cincinnati, 6 Ohio N. P. 233; 9 Ohio
Dec. 259,

which was a case involving the condemnation of a turnpike, the court says that

“in order to determine the capital investment of the turnpike company in this portion of the pike, it will be necessary for you to ascertain as nearly as possible the future net income on this seven-eighths of a mile of pike. To do that, you can first ascertain the net average income of the whole road at the present time. Secondly, the average future net income of the entire road as nearly as possible. Third, the average future net income on this particular seven-eighths portion herein appropriated. To aid you on this branch, evidence has been introduced as to the present rates and amounts of tolls collected on the whole road at gate number 2, the Duck creek gate which is on the seven-eighths mile of pike, and several other toll gates during the last ten years; also as to the expense incident to the management of the business of the company during that time. In estimating the expense of the management you should ascertain what under the circumstances would be a fair and reasonable sum to allow for repairs of the road, and its bridges and appurtenances, in order that its property may retain its proper earning power for the future. If the road, bridges, and appurtenances were not kept in proper condition and repair, its patronage would decrease and its earning power become less. Or, on the other hand, too much might be put in repairs or betterments upon this road and bridges and appurtenances, and leave little for dividends to stockholders, and this would not allow proper income for the capital invested. Your object, therefore, should be to fix a fair and reasonable average sum for such repairs, betterments, and expenses of management of the road, annually, to keep the property in proper condition. This expense for repairs, betterments and expense of the management should be fixed with reference to the future, taking into consideration the condition of this portion of the turnpike, whether good or bad. . . .

“If the toll income which has been testified to as having been received during the last ten years for the whole sixteen or seventeen miles of turnpike, or for this particular strip of seven-eighths of a mile, would be the income in the future, there would not be much difficulty in arriving at a reasonable conclusion. There is no certainty, however, that the net income in the future will be the same as in the past. It may be more or less, depending upon a variety of circumstances. The future income may depend upon the character and number of vehicles using the pike; the rates of tolls, which may be changed by law or reduced by other circumstances; the danger, if any, of another road or street having been or being built in the future near or alongside of the portion of the road in question, so as to parallel it, or by new cross streets or cross-roads which could be made in the future to connect with this part of the turnpike, and serve to compete with it in travel, or give facilities for persons travelling it to avoid paying tolls. You should also consider whether the revenue of the pike will thereby be decreased or the road become entirely valueless, because the receipts of such road’s tolls would not justify the expense of keeping the turnpike in repair. Also whether this part of the road is subject to floods or overflows; and, if so, how often, and what effect they have on the roads. In determining this question you should take into consideration what has been said by the witnesses about Delta or Columbian Avenue, its grade, width, condition, and proximity to the city as compared with this seven-eighths of a mile of the Wooster turn pike; whether or not it does now, or would in the future, offer a more convenient or better route than the Wooster turnpike; also the testimony as to whether or not a practicable road could be and would be built in the future in the several locations described to you; namely, adjoining the hill and north of the railroad tracks and over the ridge lying south of the Wooster pike and any other road which may have been indicated to you, and what effect, if any, these would have upon the value of this seven-eighths of a mile of the Wooster turnpike road. If in your opinions it would have no effect, then there should be no decrease in the receipts of toll on that account. If, however, in the judgment of the jury either of such future roads likely to be built would have such an effect, then a proper reduction should be made from the tolls of the future. If the jury believe that such parallel roads in the future might or would be

built, and take away all of the tolls of this seven-eighths of a mile of the Wooster turnpike or to so large an extent that it would no longer be profitable to run this seven-eighths of a mile as a turnpike, then, of course, on that basis it would have little or no value, as the jury may determine. . . . Having agreed upon this figure as representing the net annual income for the future of this particular seven-eighths of a mile, you have then ascertained the basis of determining the compensation to be allowed excepting only the rate per cent. at which such income should be capitalized."

Kennebeck Water District v. Waterville, 97 Me. 185, in which the court, after enumerating the various lines of evidence open to the respective parties, says on page 218:—

"Subject to the suggestions we have made under defendants' request 11, their request 13 is approved, and the instruction should be given. It is as follows: 'That in estimating said franchises and the present and future net earning power included therein the appraisers should duly weigh the nature and extent of these franchises, rights and privileges, whether the same are perpetual or otherwise; also, so far as proved, the rights of the Maine Water Company under all existing contracts and the value thereof the extent of existing business and of the net incomes or revenues now derived or derivable therefrom, the existing demand for new and additional services, and for the development and increase of said business, incomes and revenues, the past, and probable future, growth or decay of the territory now served or capable of being served under said franchises, in population, in wealth, and in needs and uses for water to be supplied by some water system, and the past, and probable future, increase or decrease in said net incomes and revenues as affected by these or other surrounding conditions; also the fact that by said taking said Water Company will be wholly and forever deprived of all said franchises, rights, privileges, earning power, incomes and revenues, and that it is the duty of said appraisers to make, in their sound judgment, just and full compensation to said Water Company for all the same.'"

In discussing the question of capitalizing the earning capacity thus ascertained, the court declines to accept this process as a conclusive test of the value of the company's property and franchises, but says, (p. 221),

“By this we do not mean to say that, while not a test [that is, a conclusive test], the present and probable future earnings at reasonable rates are not properly to be considered in determining value.”

No judicial dissent from this proposition can be found, it is believed, in any adjudicated case. Its denial would be equivalent to holding that the chief element in the value of any property was to be entirely ignored.

There may, perhaps, be some difference of opinion as to the extent to which evidence may fairly be received of the probable earnings of the more or less remote future. To entirely predicate the present value of the property upon the estimated earnings of twenty or thirty years hence would be an absurdity, in fact just as absurd as to confine the value of the property to the capitalized value of the earnings of any given year in the past. In some cases direct evidence has been received of estimated earnings during a long period in the future. In other cases the witnesses have not been permitted to put in computations as to future earning capacity, except as among the reasons for their valuation. These questions are all matters of evidence, and the decision of them probably rests in the discretion of the trial court.

These considerations apply to estimates of earning capacity in the more or less remote future. There can be no doubt, we submit, that estimates of the earning capacity of the property in the immediate future, as soon as the plant is completed and put in successful operation, are of the greatest importance in determining the value of the property and franchises of the company, and are legally competent evidence.

Where, as in the case at bar, the property is designed for a certain purpose, and has been developed or improved for that purpose, but the work is not quite complete, there is a peculiar propriety, in fact necessity, in considering the best plans or methods by which to complete the plant, the reasonable cost to do so, and the effect of doing so on the income of the property.

See the recent case of

Williams v. Boston, 190 Mass. 541,

where, in a case of damage to property by an act of eminent domain, the plaintiff was allowed to show the cost to complete the building and its income or rental value when completed; the court saying, p. 551:—

“We are of opinion that the testimony of the value of the building as planned and finished, the rental value of the two and the cost of completing the building (the latter taken in connection with the testimony that completing the building was the best thing to be done, and that the cost so incurred was reasonable) were all admissible in the discretion of the presiding judge for the purposes explained in the charge, upon the issue under sec. 4, to wit, what was the value of the land and unfinished building before the enactment of the act.”

This decision goes far beyond the contention of the company in the case at bar, for there (*Williams v. Boston*, p. 542) only a small part of the building had been erected.

There is no inconsistency between the company's contention and the principle that you cannot value property by reason of what you could get out of it if something were done with it which has not been done at all. For instance, it is well settled that in valuing land you cannot take into account the profits to be expected from the land and a building which might be, but has not been, erected or begun on the premises.

Burt v. Wigglesworth, 117 Mass. 302, 306.

Sixth Ave. Ry. v. Met. Ry., 9 N. Y. Supp. 207, 209.

In such cases the expected profits do not flow from the property as it stands, in any reasonable sense, but from something which has no existence at all; that is, from a building which has not even been begun. Where, however, the property consists of land and buildings which are nearly completed or completed and partially occupied, a valuation dependent upon the cost of completion and the income when completed is evidently a valuation of the property in question, and not a valuation of something which has no existence at all.

There is also a line of decisions holding that in an action of trespass, where damages only for a temporary injury are claimed, the award must be reached by a consideration of the property exactly as it stood during the period when the damages were running.

Tallman v. Met. El. Ry., 121 N. Y. 119.

Sixth Ave. R.R. v. Met. R.R., 9 N. Y. Suppl. 207.

Spencer v. Kilmer, 151 N. Y. 390.

Reisert v. New York, 69 Ap. D. 302.

Clark v. Railroad, 145 Pa. 438.

These, however, are not condemnation cases; and, as pointed out in the case in 151 N. Y. at p. 401, the fee value of the property is not in question.

The question is perhaps one of degree, because cases might be suggested which are on the border line, as, for instance, the case of land occupied by the foundations of a building only. We apprehend that in a doubtful case of this kind the trial court has discretion to say whether evidence of the cost of completion and of the rental value, when completed, shall be admitted or not.

In the case at bar, however, no such difficulty is presented, because the plant in question was a completed water supply system, to which additions had been undertaken for the purpose of increasing the volume and quality of the supply, and these additions had been nearly, but not quite completed. The income or the business of the company in like manner was an established factor bearing a reasonable relation to the cost of the work down to the period when these additions and improvements were begun; but it could not fairly be expected that the full earning capacity of the plant as enlarged and improved would be reached until the additions were completed, and the effect thereof upon the business of the company had been realized.

The case at bar, to use again the simple illustration of land and buildings, would seem to be strictly analogous to the case of a lot of land occupied in part by a building which had been completed and rented for many years, to which an extensive addition had been planned and nearly completed, but some parts of the contemplated changes and addition, as, for instance, in regard to the elevators, machinery, etc., had not yet been installed as contemplated; and for these reasons the gross income of the building had not reached its normal point, nor had the operating expenses been reduced to their normal figure.

As stated by Mills, Eminent Domain, § 173:—

“The correct rule is the value of the property for sale, in view of the uses to which it may be put, and not simply its productiveness to the owner in the condition in which he has seen fit to leave it. The value should be based on the uses to which men of ordinary prudence, economy, and wisdom

would devote the property, if it was their own property. The owner is entitled to whatever the property is worth to him or any one else, for any purpose to which it is adapted, but the special uses or purposes must be real, and not speculative or imaginary.”

It goes without saying, of course, that the earning capacity of the plant, as estimated by experts, or determined by the commissioners for themselves upon all the evidence in the case, is not conclusive as to the value of the company's property and franchises. It is necessary to take into account all the other facts and conditions of the situation as disclosed by the evidence, and the final result may be that the commissioners will find a value more than that indicated by earning capacity, or less.

Capitalization is, of course, the only way to translate earning capacity into present values; but here, again, in determining both the income and the rate of capitalization, consideration must be given to the other evidence in the case, and a larger or smaller rate selected for the purpose according as the commissioners interpret the evidence. Moreover, the capitalization of earning capacity is not to be regarded, any more than any other line of evidence, as a conclusive test of value. See *supra*, pp. 45-48. As said by the court in *Bryant v. Water Co.*, 190 Pa. 366, 369-370:—

“You are not bound to say that, because a property rents for a certain yearly amount, you are to capitalize that at 6 per cent., or at any other per cent., as a fixed basis for determining the value; but it is proper for you to take it into consideration as one element aiding you in fixing the value of the property.”

It has been frequently asserted by counsel for the city during the course of the hearings that the expert witnesses for the company have based their valuations upon the capitalized value of the estimated earning capacity of the property and franchises of the company. This is absolutely untrue. All the witnesses who have taken earning capacity into account have made estimates of what it ought to be immediately on completion of the plant, and have also considered what it would probably be in the future in view of the growth of the community and of the water supply business in Ithaca; and they have translated the figures thus obtained into present values by capitalization. In no single case, however, has a witness for the company given as his total valuation of the company's property and franchises the result of any process of capitalization based on estimates of earning capacity. In every instance other considerations have come in to affect the final valuation. The witnesses for the company have done exactly

what they ought to have done according to the decisions of the courts and the dictates of common sense. They have made estimates of earning capacity to the best of their ability; they have ascertained what these figures indicate when capitalized; they have taken account of all the other conditions and elements of the problem, so far as they could see them; and then, taking all these considerations, including the earning capacity and its capital equivalent, into account, they have stated what they thought, on the whole, was the fair value of the property and franchises of the company.

The cases cited in the interlocutory brief presented by the city last March are either cases of contract, which have nothing to do with eminent domain; or cases of ordinary land in which it has been attempted to show the profits of the business conducted on the premises, which has nothing to do with the earning capacity or rental value of the land itself; or cases where an effort was made to show the earning capacity of buildings and improvements not yet commenced. And none of them were cases involving the franchises of a public service company.

The witnesses for the city generally confine their attention to the earnings of the past few years while the plant was being reconstructed and refused to take into account the possible, probable, and certain increase in net income on completion of the works, as well as the probable growth of income thereafter.

This is a fundamentally erroneous mode of valuation, and vitiates all the opinions of value founded upon it.

See the requests for rulings, *infra*, Appendix VIII.

e. Actual cost.

The value of the physical plant is also important, not because it is often, or perhaps ever, equivalent to the total valuation of the plant and franchises of a public service company, but because if there should be a great divergence between the value of the plant and franchises, as indicated by a capitalization of earning capacity, and the value of the physical plant and other ordinary rights of property considered by themselves, there would be reason to suspect the accuracy of the calculations upon which the estimates of earning capacity depended.*

Actual cost, therefore, is valuable as indicating the value of the physical plant to the extent that such value is important in the case.

The value of this test depends largely, of course, upon the date of the construction. The actual cost of a plant built twenty or thirty years ago has, perhaps, no bearing upon its present value; but the actual cost of work fairly, honestly, and economically constructed within a year or two of the date of the valuation ought to be a very close approximation to its present value.

Lewis, Em. Domain, § 444.

Am. & Eng. Ency., 2d ed., p. 1155.

Mills, Em. Dom., § 168.

Cripps, Compensation, p. 109.

Rork v. Kings Co. El. Ry. Co., 22 App. Div. 511, 513.

Cheever v. Ins. Co., 86 App. Div. 328.

Campbell v. Woodsworth, 20 N. Y. 499.

Beach v. Raritan Co., 37 N. Y. 457.

Gill v. McNamee Co., 42 N. Y. 44.

Hoffman v. Comer, 76 N. Y. 121.

Knickerbocker Life Ins. Co. v. Nelson, 78 N. Y. 137.

In *Guiterman v. Liverpool S.S. Co.*, 83 N. Y. 358.

Jones v. Morgan, 90 N. Y. 4.

Matter of Johnston, 144 N. Y. 563.

Matter of N. Y., W. S. & B. R.R., 37 Hun, 317.

Matter of Dept. of Public Parks, 53 Hun, 280, 302.

Dixon v. Buck, 42 Barb. 70, 74.

* In such a case, for instance, the estimated rates might appear to be too high.

- Glaser v. Home Ins. Co.*, 93 N. Y. Sup. 524
Clement v. Brit. Am. Ins. Co., 141 Mass. 298, 301.
Roberts v. Boston, 149 Mass. 346.
Wall v. Platt, 169 Mass. 398.
Manning v. Lowell, 173 Mass. 100.
White v. Boston, 186 Mass. 65, 66.
Peabody v. N. Y., etc., R.R., 187 Mass. 489, 491.
Lanquist v. Chicago, 200 Ill. 69, 72.
Guyandotte Co. v. Buskirk, 50 S. W. 521, 527.
Central R.R. v. Assessors, 49 N. J. L. 1.
St. Louis R.R. v. Smith, 42 Ark.
Denton v. Smith, 28 N. W. 160.
Kilsea v. Fletcher, 48 N. H. 282.
Nelson v. 1st National Bank, 69 Fed. 798, 805.
Streatham, etc., v. Commissioners, 52 J. P. 615.
National Water Works Co. v. Kansas City, 62 Fed. 853.
Kennebec Water District v. Waterville, 97 Me. 185, 207,
 214-215.
Brunswick Water District v. Maine Water Co., 99 Me.
 371, 382.

And see the brief submitted to the commissioners in the case at bar March 16, 1906.

f. Reproductive cost.

While the actual cost within a reasonable period of the date of valuation is probably the best test of the value of the physical part of the plant, it does not frequently happen that evidence of this sort is procurable, and it very seldom happens that the entire plant has been so recently constructed that the actual cost of the whole of it is obtainable, or valuable if obtained.

Under these circumstances the test of reproductive cost is commonly resorted to, meaning estimates of the reasonable cost to duplicate the plant on the day of valuation, deducting a reasonable sum for the depreciation of the existing plant from its new condition due to wear and tear or other causes.

Reproductive cost, while useful as a test of the value of the physical plant in these cases, is by no means conclusive, even as to that part of the valuation, and takes no account at all of the value of incorporeal rights of property, such as water rights, which may have cost little or nothing years before, or which may have been obtained by free grant from the State, and in like manner reproductive cost does not include the value of the company's franchises. Reproductive cost is not, as the witnesses for the city seem to assume, the sole and conclusive test in this or any case, but is simply one factor to be taken into account with the other evidence in the case in determining the value of the entire property and franchises of the company.

In

Montgomery County v. Schuylkill Bridge Co., 110 Pa.
St. 54, 58, 59,

a proceeding under act to declare a bridge belonging to defendant a county bridge and to open same to the public, the court said:—

“The defendant [below] contended, as appears by their eleventh point, ‘the measure of damages is the cost of the construction of a new bridge at the time of the taking by the county, similar to the present one, diminished by an amount in proportion to such cost equal to the depreciation of the old bridge from wear and decay.’ The learned judge very properly declined to affirm this point. The vice of it consists in the

fact that it substituted one of the elements of damages for the measure of damages itself. The bridge structure—the stone, iron, and wood—was but a portion of the property owned by the bridge company, and taken by the county. There were franchises of the company, including the right to take toll; and these were as effectually taken as was the bridge itself. Hence to measure the damages by the mere cost of building the bridge would be to deprive the company of any compensation for the destruction of its franchises.”

In

Clement v. Insurance Co., 141 Mass. 298,

an insurance case, the court says (p. 301) that the cost to manufacture the goods was admissible,

“not as a test, but as one of the elements to aid the jury in determining the fair market value of the goods.”

In

Gloucester Water Supply Co. v. Gloucester, 179 Mass. 379,

a case involving no franchises, the court says (p. 382):—

“It is plain that the real, commercial, market value of the property of the water company is, or may be, in fact, greater than ‘the cost of duplication, less depreciation, of the different features of the physical plant.’ ”

Other decisions to the same effect—that the cost of reproduction less depreciation is not to be regarded as the sole or conclusive measure of damages, even in cases where physical property alone is under valuation—are:—

Central R.R. v. Assessors, 49 N. J. L. 1, 6.

Burke v. Railroad, 7 Heisk. 451, 465.

Watt v. Railroad, 23 Nev. 173.

J. T. & K. Railroad v. Railroad, 27 Fla. 1, 136–137.

Kennebec Water Dist. v. Waterville, 97 Me. 185, 214–215.

To confine the valuation to the reproductive cost of the company’s physical plant, as is done by the witnesses for the company, would be illegal, even if no franchises or water rights were involved unless the statute expressly provided that this should be done. It is doubly wrong when, as here, not only a physical plant is involved, but also franchises and water rights, to which in the nature of things the test of reproductive cost can have no application.

g. The cost of substitution.

It frequently happens that both actual cost and reproductive cost fail to indicate the real value of the company's property considered irrespective of franchises. A manufacturing plant, for instance, might cost more to reproduce than it did when it was originally bought; but, owing to the advancement in the art, it might be worth considerably less, as measured by the cost to procure and install a plant of different but modern type and of equal capacity and efficiency. Hence, in many cases involving merely the valuation of a manufacturing plant, it is necessary to resort to the cost of substitution as a test, though not by itself a conclusive test, of the value of the plant. One of the witnesses in this case values the pumping plant in this way. See Coffin, IX. 9-10.

Then there is a class of cases in which both actual cost and reproductive cost fail altogether to furnish any test of value, such as water power cases; that is, cases where damages are claimed for the diversion of water. The actual cost of the turbines and other machinery is in no sense indicative of the damage sustained, nor would the cost of reproduction be any more valuable in this regard. In such cases, resort is always had to the cost of substitution; that is to say, to the cost of procuring, developing, and operating a steam plant of equal capacity with the water plant which has been impaired in value by the diversion of the water.

- Butler Hard Rubber Co. v. Newark*, 61 N. J. L. 32.
Sparks Mfg. Co. v. Newton, 57 N. J. Eq. 367.
Winnepiseogee Co. v. Gilford, 64 N. H. 337.
Hottell v. Farmers' Protective Association, 25 Col. 67.
R.R. & Coal Co. v. Switzer, 117 Ill. 399.
Lakeside Mfg. Co. v. Worcester, 186 Mass. 552.
Irving v. Borough of Media, 194 Pa. 648.

So in other water diversion cases. See

- Boston Belting Co. v. Boston*, 183 Mass. 254.
Lakeside Manufacturing Co. v. Worcester, 186 Mass.
 552, 557.

For the application of this test of value in taxation and insurance cases see

People v. Kalbfleish, 25 App. D. 432; aff'd 156 N. Y. 678.

Enix v. Iowa C. R.R., 83 N. W. 805.

It is also applied in the rate cases. See

Capital City Gas Co. v. Des Moines, 72 Fed. 818.

The same principle is frequently applied to water supply cases, at least so far as the supply part of the plant is concerned; that is to say, to the dams, reservoirs, pumping plant, and water sources which together constitute a supply plant capable of delivering a given quantity of water daily into the distributing mains of the system.

In

Newburyport Water Co. v. Newburyport, 168 Mass. 541, the commissioners considered the cost of an alternative supply, although no franchise was involved. They say (p. 545):—

“It appeared upon the evidence presented that there was only one other practicable source of supply that could be availed of to supply the city and its inhabitants with the same quantity of water that had been supplied by the company, and some question was made as to the quality coming from this source. We heard evidence offered as to the probable cost of creating and maintaining a water right at this source to take the place of the water right used by the company, and, with the other elements above referred to, have taken this evidence into consideration in passing upon the value of the water right conveyed to the city.”

Gloucester Water Supply Co. v. Gloucester, 179 Mass. 365, was a similar case, and the commissioners were upheld in considering, as their report shows, both the reproductive cost of the company's physical plant and

“the cost of creating and maintaining a supply of water like in amount and quality for use at the distributing plant from two other practicable sources.”

See also

Trustees of College Point v. Dennett, 5 N.Y. Sup. Ct. 217.

where in proceedings to acquire an easement in a pond of water, testimony was offered as showing the value of the pond as a source of water supply for cities or villages that but one other pond suitable for such supply existed within a radius of six miles. This was objected to and excluded, but the court said, p. 218:—

“We think the commissioners erred in rejecting the evidence offered by the land owners, as to there being no other pond, except the one in question, within a radius of six miles, which could be made a source of supply for cities or villages. It was not offered for the purpose of showing that the applicants improperly selected the pond in question, but upon the question of value.”

The cost of substitution in this particular class of cases is the best test of the value of the company's supply plant, including water sources, and has been resorted to with more or less care by most of the expert witnesses in this case.

It is, of course, not conclusive. No single test is.

Boston Belting Co. v. Boston, 183 Mass. 254, 259.

Kennebec Water Dist. v. Waterville, 97 Me. 185, 214–215.

As Hering says, to ascertain the cost of an alternative supply is the common method of valuing a supply system, and “should be considered always.” In some cases you would get a prohibitory cost, and therefore a worthless test; but “within reasonable limits of cost” and “under ordinary circumstances” this is the “fair way” to get at the value of a water source and plant, and is the method generally adopted by him. XXV. 80–84. See also *De Varona*, XXIII, 226.

See below, p. 127.

h. Going concern value.

Some of the witnesses in the case, whether on one side or the other, have testified to what they call the "going concern value" of the company's plant.

Counsel for the company believe, however, that the going concern value which these witnesses have in mind is nothing more nor less than a partial franchise value, being dependent, as they explain, upon the business of the company as well as upon the physical plant. It, therefore, has no proper relation, we believe, to the physical property of the company.

There is, however, another definition of going concern value which relates to the physical plant, and that alone. This is the value inherent in a manufacturing or other business property due to the fact that it is an assembled plant which has been in operation, and the efficiency of which can be ascertained by records or investigation. Such a plant may, by reason of this opportunity for determining its actual efficiency, have a commercial value in excess of the actual cost or reproductive cost of its several parts. Going concern value, thus defined, is an inherent element in the value of the physical plant, and has nothing to do with water rights or franchises. It is, of course, not large, being only the percentage, probably small, which a purchaser would be able and willing to pay for an assembled, going plant, irrespective of its earnings, in excess of the actual or estimated cost to reproduce it.

An illustration of "going concern" value in the sense here contended for is furnished by the case of

In re Mayor of New York, etc., 57 N. Y. Sup. 657, 659, in which a disused but not dismantled part of a gas works kept in good order as a reserve plant was held to be a "going plant."

See also

Newburyport Water Co. v. Newburyport, 168 Mass. 541,

a case where no franchise value was to be included; but the court upheld an award which allowed \$40,000 out of \$275,000 for the fact

“that the plant was a going concern and in full operation, one that had been tested by experience and with which the city could begin the immediate prosecution of the business of supplying water to the established connections for domestic and municipal purposes (including in the latter hydrant service), and upon an examination of these facts are of opinion that the property had a greater value for the purposes of its use by the city by reason thereof, than if the plant had not been in full operation, and that this should be considered in passing upon the value of the entire plant. This enhancement we have fixed upon as adding to the value of the property the sum of \$40,000. In passing upon the same, we have not made the income derived from the business its element or basis, or any other factor than that above stated.” p. 545.

In

Gloucester Water Supply Co. v. Gloucester, 179 Mass.
365,

also a case in which franchises and earning capacity were excluded from the valuation, the court sustained an award which allowed \$75,000 out of \$600,000 because, as the commissioners say,

“the cost of duplication, less depreciation, of the different features of the physical plant . . . does not represent a fair valuation of this plant, welded together, not only fit and prepared to do business, but having brought that business into such a condition that there is an enhanced value created thereby, so that the city is purchasing it, without considering its income or right to do business, but having the power to carry it on on its own account, should pay more for the property as such than as if this consideration did not obtain. This is a value that we have found to be seventy-five thousand dollars (\$75,000) that has been imported into the plant which seems to us as much a part of the property valuation as any other part of it.” p. 383.

If the commissioners should see fit, in the course of valuing the company's property and franchises, to determine the value of the company's physical plant as a separate item, the company requests that they make an allowance for “going concern” value, defined as hereinbefore set forth, and put this allowance in a separate item.

i. The possibility of interference with rates.

The possibility of competition, as has already been shown, should be taken into account in determining the value of the company's property and franchises considered as a whole. See *supra*, pp. 27-28.

This is also true of the possibility of legislative interference with the rates collected by the company.

No corporation not enjoying the benefit of special rates fixed in its charter has a right to expect anything more in the long run than reasonable rates for the water or other commodity or service which it furnishes; and the company may be forced, either by a direct act of the legislature or by the municipality, with the consent of the legislature, or by judicial process, to fix and maintain reasonable rates.

On the other hand, the company enjoys an absolute protection under the state and federal Constitutions against the fixing of rates by state or municipal authority at such a figure as amounts to a confiscation of its property. In substance, the company must make reasonable rates, but is constitutionally entitled, on the other hand, to maintain reasonable rates.

For the authorities on this subject see

Farnham, *Waters*, § 162d.

Harvard Law Review, December, 1901, and January, 1902.

Kennebec Water Dist. v. Waterville, 97 Me. 185.

Water Dist. v. Water Co., 99 Me. 371.

These considerations, pro and con, are to be borne in mind in fixing the value of the property and franchises of a public service company.

j. The effect to be given to the Act of 1903.

It is a fundamental principle of the law of eminent domain that no effect can be given, either by way of enhancing or depreciating the value of the property taken, to the possibility that it may be taken under the authority of the state or to the act under which it was, in fact, taken.

All private property is held subject to the right of the state to take it over upon public account on the payment of full compensation, and to permit this possibility to be used to depreciate the value of property thus condemned would be practically to deny to the property owner the benefit of his constitutional right to have full compensation in such cases.

Lewis, Em. Dom., § 501.

Randolph, Em. Dom., §§ 248, 285.

Farnham, Waters, § 155f.

Poppenheim v. M. E. Ry Co., 128 N. Y. 436, 449.

Giesy v. Railroad, 4 Oh. St. 308, 332.

Monongahela Navigation Co. v. United States, 148 U. S. 312.

Kennebec Water Dist. v. Waterville, 97 Me. 185, 218.

Nor can the land-owner ask to have his valuation enhanced by consideration of the fact that it has been taken over for a public use, the effect of which may have been beneficial to all the property in the neighborhood, including his own.

Water Comrs. v. Lawrence, 3 Edw. Ch. 552, 558.

Matter of Munson, 29 Hun. 325, 339.

Dorgan v. Boston, 12 Allen, 223, 231.

May v. Boston, 158 Mass. 21, 29.*

Teele v. Boston, 165 Mass. 88, 92.

Kerr v. Commissioners, 117 U. S. 379, 385, 387.

San Diego Land Co. v. Neale, 88 Cal. 50, 55.

The valuation is to be made in this case, so far as the possibility of condemnation or the act of 1903 go, just as if that possibility had not existed or the act of condemnation had never been passed.

This is, undoubtedly, the general rule; but possibly it may be claimed in the case at bar that an exception should be made as

to some of the property specified in section 3 of the Act of 1903. The company has accepted this act as it stands, and has, therefore, lost all right to contest its validity, if obnoxious to any principle of constitutional law.

Taking the act as it stands, we find that the city is directed to acquire, either by purchase or condemnation, all the property, water rights, and franchises of the company which belonged to it before the organization of the Ithaca Light and Water Company (that is, before Nov. 1, 1901), and all the property added for the purpose of a better water supply by either of the companies between that date and the passage of the act; that is to say, all the property held by either company for water supply purposes on April 15, 1903,

“together with such improvements as shall be added prior to Sept. 1, 1903, but such improvements hereafter to be added before said date shall consist only of the filtration plant now in process of construction by said water company, the dam not to exceed thirty feet in height for the use of said filtration plant, the necessary and proper pumps, pipes, and connections, and other appurtenances to said filtration plant.”

To the extent that this clause limits the rights of the company as they would otherwise have existed in an ordinary condemnation statute, consideration must be given to it as controlling the valuation in this case. If, for instance, property had been added by the company after Sept. 1, 1903, or added before that date for other purposes than those specified in the lines quoted, the city might contend that it was not to be acquired, and therefore was not to be valued.

We have heard no contention at the hearings that the company possessed anything when its property was handed over to the city Dec. 31, 1904, that was not included in the property which the city was directed to acquire by the Act of 1903; and, if the contention is made at the argument, it is very clear that there is nothing in the evidence to support it.

The work done by the company was finished by Sept. 1, 1903, although it was not wholly paid for until after that date; and the work done between April 15, 1903, and Sept. 1, 1903, related solely

to the filtration plant, the dams, pumping apparatus, pipes, and other appurtenances in connection therewith.

The fundamental rule that you cannot invoke an act of eminent domain, or what has been done under it, to depreciate the value of the property taken, is violated by all the experts for the city. In fact, the whole case for the city is a denial of this proposition. No other source of supply had been developed when the act of 1903 was passed than Six Mile Creek. The temporary sources now used by the city were not then in existence, no money had been expended on them, and they would not have been developed by the city if it had not secured by this statute the right to take the company's plant. And yet the whole argument for the city is that the development of inadequate and suspicious sources of supply at Clinton Street and Williams Springs, which the city would not have undertaken except for the act of 1903, can be used to impair the value of the property taken under this very act. See, for instance, Hering, who assumed that the city had a right to compete with the G. W. W. Co. because three years after there was a competing plant erected. XX. p. 70, and see *infra*, pp. 162-163. You might as well contend that a man whose house is injured by a taking for a railroad should have his damages reduced because the laying out of the road under the act authorizing the taking was the cause of the damage.

The property in this case is probably to be valued as of Jan. 1, 1905, but is not to be affected one way or the other either by (1) the possibility that it might have been taken by eminent domain, or (2) by the fact that it was so taken, or (3) by what has been done, or could have been done, under the act authorizing the taking, but not without it.

7. *Miscellaneous Points.*

a. As to compensating reservoirs as a means of reducing the damages due to diversion.

In the consideration of Fall Creek as a competing source of supply the suggestion has been made that it might be possible to reduce the damages for diversion which would have to be paid to Cornell University and other riparian owners by establishing an impounding reservoir further up the water-shed for the purpose of securing there the quantity necessary to be diverted for water supply purposes, leaving a quantity of water equal to the natural flow of the stream to run past the premises of the University and other riparian proprietors, substantially as at present. Undoubtedly this would be the thing to do in such a case from an engineering standpoint, although the expense might be very great; but it is well settled that possibilities of this sort are not to be taken into account in estimating the damages to a land-owner by the diversion of the stream above his premises. The fundamental rule of eminent domain is that the land-owner is entitled to full compensation at once and in cash, and cannot be compelled to accept any substitute. The value of a compensating reservoir depends upon contract and the ability and willingness of the contracting party to maintain the reservoir and to operate it so as to let down a quantity of water equal to the natural flow of the stream. This is not the sort of compensation contemplated by the constitution.

Randolph, Em. Dom., § 225 *ad fin.*; § 285.

Lewis, Em. Dom., § 505.

Smith v. Rochester, 38 Hun, 612; 104 N. Y. 674.

b. The effect of withdrawing underground waters upon neighboring territory.

The suggestions that have been made that an additional underground supply could be obtained somewhere up the water-shed of Cascadilla Creek, in order to supplement the inadequacy of the city's temporary supply from Clinton Street and Williams

Springs, and to obviate the necessity of pumping to the high service, are obnoxious to the well-settled principle of law that you cannot divert underground waters for the purpose of a public water supply without full compensation to everybody thereby injured. Every land-owner has the right to use the underground water percolating through his own premises for ordinary domestic purposes without regard to the effect of such use upon neighboring wells and property; but it is well settled that he cannot withdraw from his premises the water thus procured and distribute it elsewhere for the purpose of supplying other lands or communities.

Smith v. Brooklyn, 18 App. Div. 340; aff'd 160 N. Y.

357.

Forbell v. New York, 164 N. Y. 522, 526.

c. The right to the closing argument.

The rule in cases of eminent domain is well settled that the land-owner, upon whom rests the burden of proceeding with his case in the first instance, has the compensating privilege of the closing argument.

Lewis, Em. Dom., §§ 426.

Matter of N. Y., L. & W. R.R., 33 Hun, 148, 155;
affirmed 93 N. Y. 664.

Burt v. Wigglesworth, 117 Mass. 302, 306.

d. Specific findings.

It is submitted that the parties are entitled to specific findings wherever such are necessary, to enable the court upon appeal to determine whether a certain item of the award should have been included or excluded, without sending the entire case back to be tried over again. See

Lewis, Em. Dom., § 512.

Matter of Brooklyn, 143 N. Y. 596, 600.

Newburyport Water Co. v. Newburyport, 168 Mass. 541.

Gloucester Water Supply Co. v. Gloucester, 179 Mass.

365,

and the report of the commissioners in the Long Island case. Appendix VI., *infra*, p. 193. Also the report in the Gardner case,

where the commissioners itemized the award so that the court might pass upon the legality of the several items without sending the entire case back for retrial.

See the requests for findings, *infra*, Appendix VIII.

Owing to the transfer of the chairman of the Commission in the pending case to the bench on Jan. 1, 1907, it is especially important that this course should be followed.

e. The effect of the general water supply law of 1905.

Chapter 723 of the Laws of 1905 was passed June 3, 1905, took effect under sec. 10 immediately, and the commission created by it was appointed by the governor July 13, 1905. XXVIII. — —.

This law was clearly intended to prevent the acquisition of new or additional sources of supply without the approval, first obtained, of the State Water Supply Commission. See the brief of Messrs. Horton and Tompkins in the Waverley case.

The city has paid no attention to this statute in its acquisition of Williams Spring, the land not having been bought till after July 17, 1905 (XXVII. — —), and no application having been made, then or since, to the Commission. Williams Springs having been acquired after the passage of the law of 1905, and not having received the approval of the Commission, has been and still is an illegal source of supply.

The act of 1905 has also an indirect but important bearing on the question of competition, putting, as it does, another barrier in the way of a rival corporation (private or municipal) desiring to obtain new sources of supply for purposes of competition. Williams Springs would certainly not have been approved by any State Water Supply Commission.

III½.

THE EXPERT EVIDENCE IN THE CASE.

So much in this case depends on the credibility of the expert witnesses called by the respective parties, or on the weight to be attributed to their opinions, that we invite the commissioners at the outset to compare and contrast the opinion evidence submitted by the company with that furnished in behalf of the city.

The company has put forward as its professional witnesses men of the highest standing and largest experience; and these gentlemen, Messrs. Williams, Hazen, Allen, Coffin, and Kuichling, have endeavored to do their work honestly, fairly, and consistently. They have taken into account all the considerations which, as explained, *supra*, pp. 35-65, properly affect the value of the property of a water supply company; and their methods in this case have been consistent with those adopted by them in other cases. We submit that their estimates and opinions are entitled to the highest regard.

The necessities of the city have forced it to rely, in the main, on the testimony of a very different class of experts.

Professor Mason and Mr. Hering are both engineers of repute, and, like all the witnesses for the company, must have satisfied the commissioners, as they did counsel for the company, that they intended to be perfectly fair and honest in any opinions they might give.

So far as Professor Mason's testimony goes, he could well have been put on by the company, so favorable was his evidence to its contention.

The same might be true of Mr. Hering, were it not for his eccentric financial notions. The assumption that a private water company could not invest its sinking funds at more than 3 per cent. per annum (XXV. 54-58), and the idea that franchises have no value unless they are exclusive (*ibid.*, 61) are very curious theories for a valuer of property to hold, as is the equally grotesque belief

(*ibid.*, 74) that a right of diversion is worth no more than the actual cost to procure it. We entertain no doubt, however, of Mr. Hering's honesty in advancing these theories; for they are the natural consequence of his belief (XXV. 65) that all franchise rights belong to the public, that water has of itself no value, and that a right of diversion is worth only what it cost. These extreme views have, of course, no sanction in the law, which justly holds that what the state has once granted as a franchise or water right cannot years afterward, when the grantee has been induced to invest hundreds of thousands of dollars on the faith of the grant, and the franchise has become very valuable, be reclaimed or confiscated without paying its full present value. It is these peculiar views of Mr. Hering that make him a useful witness for the low value side of a water supply case (see XXV. 26),—until the basis of his valuation is disclosed. Mr. Hering is, however, a perfectly honest man and a most competent engineer. Apart from the legal and financial errors into which he falls, he may be relied on for a fair and intelligent opinion on almost any technical question. This is particularly true of the subject of ground water supplies, in which he is an expert of acknowledged authority; and it will be remembered that counsel for the city after qualifying him to speak with authority on this subject did not dare to ask his opinion of the city's temporary sources of supply, either Clinton Street or Williams Springs.

So far as Hering's physical valuation goes, it does not vary materially from the estimates of the witnesses for the company, except as to the items which he took from Vermeule, and by reason of his extraordinary theory of restricting the rate at which a depreciation fund can accumulate to 3 per cent. per annum. If we confine our comparison to the items which Hering valued himself and correct his depreciation theory, his valuation of that part of the physical plant which he valued himself would differ from Kuichling's by an amount due almost entirely to a different assumption of the cost of digging in the streets of Ithaca. See below, p. 117.

Landreth and Bogart take their quantities entirely, and in many cases their values, from Getman and Vermeule. They

calculate depreciation on the absurd theory, described by Hering as utterly unfair, of a flat per annum rate; they have no knowledge of local prices; and their resulting valuations of the physical plant are practically nothing but repetitions of Getman's quantities and Vermeule's unit prices. Landreth, XXVII. —; Bogart, XXVIII.

As to franchises and water rights, these most important items in the property of a water supply company are entirely ignored by Landreth and Bogart,—the water rights apparently because they are assumed to have no legal existence, and the franchises because they are not exclusive. No earning capacity can be discovered by these gentlemen, because they confine their attention to the operations of the company with its unfinished plant during the years immediately preceding the day of valuation.

As to the technical questions on which these gentlemen testified, Landreth had not the qualifications, experience, or knowledge to make his opinion of any value; and Bogart had not a word to say in favor of the city's present supply, or against the filtered water of Six Mile Creek. All that his testimony amounted to was a criticism of the design of the dam as novel and original.

The other witnesses for the city, Mr. Vermeule, Mr. Sherred, and Mr. De Varona, belong apparently to a different class of experts. These gentlemen are ready to testify to anything they are asked to, entirely without regard to other and inconsistent opinions expressed by them in other recent cases, or in the very case on trial. The inconsistencies in their evidence, the absurdity of their reasoning, and, to say the least, the intellectual and moral recklessness of the opinions they express in order to justify their low valuations are too numerous to recite in this brief, and will be commented on in the oral argument.

It may be said in general of the expert witnesses for the city, that their opinions and valuations in this case are rendered worthless by errors of three sorts,—legal, intellectual, and professional. The intellectual and professional mistakes into which these gentlemen have fallen will be referred to below and in the argument at the bar; but it may be well at this point to summarize the erroneous assumptions of law which vitiate the whole expert testimony for the city.

Their chief legal errors are the assumptions: (1) that the rights of the company in the waters of Six Mile Creek are not to be valued at all; (2) that a right of diversion is worth only what it originally cost; (3) that a franchise is worthless unless exclusive; (4) that the company's property is to be valued in view of the possibility of its being condemned; (5) and also in view of what the city has done since and under the act of condemnation; (6) that the city had, irrespective of the act of 1903, an effective right of competition with the company; (7) that no regard is to be paid to the fact that the plant was turned over in an uncompleted condition; (8) that the reasonable probabilities of the near future, or, on completion of the plant, in respect to income, operating expenses, and net earning capacity, are to be ignored; (9) that the plant is to be valued on the assumption that it would remain indefinitely in the exact condition and with the same artificially high operating cost as in 1904; and (10) that in a case like this the cost of reproduction less depreciation of the physical plant is the sole and conclusive measure of value, and that no attention is to be paid to other tests or standards of value, or to the franchises, water rights, or prospective earning capacity of the company.

IV.

CAPACITY, CONDITION, AND EFFICIENCY OF THE
COMPANY'S PROPERTY.A. *Physical Plant.*

1. The Six Mile Creek supply plant, consisted of about 130 acres of land, on which had been constructed:—

a. A *reservoir*, built 1902-03, at a cost for land and clearing of about \$12,000 (VII. 238); area, with dam at 30 feet, 20 acres: capacity, 72,000,000 gallons. If the dam were raised to 90 feet, the reservoir would flow 62 acres, and its capacity would be 980,000,000 gallons. See XXVIII. —, and maps, Dft's Ex. 18, 18, 19a.

b. A *dam*, built 1902-03, at a cost of \$49,820 (Hazen, VII. 238), of concrete, partially reinforced. The height of the dam is 30 feet, and the elevation of the crest above Lake Cayuga 201 feet.

As to the design, construction, durability, and present condition of the dam, see

Williams, V. 72-86.

Coffin, IX. 4-5, 23-24.

Hazen, VII. 68-69.

Kuichling, XI. 39-40.

The witnesses for the city have made no serious attempt to discredit the type, design, or solidity of the dam. Bogart's only objection is to the novelty of the design. Its construction and present condition he admits to be good. XXVIII. —.

The great flood of June 21, 1905, went ten feet over the dam (V. 86) without injuring it; and the effect of this flood on the bed of the stream below the dam was entirely due to the failure of the company and the city to finish or reconstruct the cushion dam.

c. A 24-inch *pipe line* from the dam to the filter plant, laid 1902-03; length, 4,326 feet (IV. 66); cost, \$37,512. Hazen, VII. 238.

The supports for this pipe were not completed by Jan. 1, 1905, and the cost to the city to put it in proper condition to withstand the floods of Six Mile Creek was \$3,950. Getman, XIV. 343-344.

d. A *filtration plant*, built in 1903, of reinforced concrete, at a cost of \$70,578 (Hazen, VII. 238), consisting of two covered coagulating basins, of six filter basins with a capacity of 500,000 gallons each, or 3,000,000 gallons in all, with the necessary coagulating and controlling apparatus, piping, etc., and a pure water well of 500,000 gallons' capacity. Can be enlarged to a capacity of 5,000,000 gallons by adding four filter basins at a cost of \$20,000. Hazen, VII. 19-20.

Every witness on either side concedes that this plant is the best that could be built with regard to type, design, capacity, construction, and efficiency.

Williams, V. 87, 88.

Hazen, VII. 14-17, 133,
139.

Allen, VIII. 135.

Coffin, IX. 5.

Kuichling, XI. ———.

Mason, XVII. 73-75, 82, 99-103.
Vermeule.

Sherrerd, XXII. ———.

De Varona, XXIII. 8, 97, 98,
130, 184.

Hering, XXV. 51-52.

When estimating the cost of an alternative filtered supply from Cayuga Lake or Fall Creek, the witnesses for the city as well as those for the company assume the installation of exactly the same kind of plant as that built for Six Mile Creek.

✓ The filter plant was in operation from Sept. 1, 1903, to Dec. 7, 1905, and its technical "efficiency" has been 99 per cent. or over. Chamot, XXIV. 97-98. See also Dft's Ex. 118, summary of results in 1905, printed below, p. 75. Some trouble was experienced the first winter, when the plant was new, from frozen piping and incompetent men; but, as soon as competent men were found and they had learned to handle it properly, the operation of the plant was perfect. Chamot, XXIV. 99, 100, 127, 128, 136. The statement made by Vermeule to some of the city's experts that on one occasion the filter plant had "broken down" and let

raw water through (see De Varona, XXIII. —) was entirely without foundation. Chamot, XXIV. 98-99. Vermeule did not dare to make this statement when on the witness-stand himself.

The superior efficiency of the filter plant, as operated both by the company and the city, is shown in the following table of monthly averages compiled from the daily analysis of filtered water (Dft's Ex. 28a, 115, 118) made by Prof. Chamot for the company in 1903 and 1904 and for the city in 1905.

BACTERIA IN THE FILTERED WATER.

Date.	No. of Samples.	Bacteria per cu. cent.		
		Maximum.	Minimum.	Average.
1903. October . . .	85	135	2	26.0
November . . .	97	105	2	18.5
December . . .	90	1,000*	5	46.9
1904. January . . .	96	650	10	127.7
February . . .	109	1,600	10	223.9
March . . .	123	1,800	13	221.0
April . . .	107	175	5	35.6
May . . .	108	450	3	77.8
June . . .	104	275	2	47.3
July . . .	90	145	3	33.0
August . . .	105	225	3	38.8
September . . .	49	150	2	37.2
October . . .	110	300	2	31.6
November . . .	95	75	3	20.5
December . . .	96	100	2	27.0
1905. January . . .	24	88	3	18.0
February . . .	24	70	2	15.5
March . . .	24	215	3	38.75
April . . .	24	27	3	10.25
May . . .	30	37	3	9.8
June . . .	22	95	9	30.7
July . . .	23	295	12	66.6
August . . .	27	100	5	34.0
September . . .	24	15	2	5.5
October . . .	24	85	3	27.25
November . . .	9	130	4	31.5
Average of monthly averages .	—	321	5	50

average for last nine months of 1904 = 39

average for 1905 = 26

* On one occasion, maximum of other analyses 200.

Analyses of 1903 and 1904 combine individual results of all filter effluents and one sample of wash water daily.

Analyses of 1905 are based on averages of daily analyses.

The daily reports from which the above table was compiled show that of 1,464 samples of filtered water the presumptive tests for fæcal bacteria gave negative results in 1,404 cases, doubtful results in 60 cases, all in the early part of 1904, and positive results in no case; and that throughout the year 1905 the presence of fæcal bacteria in the filtered water was never even indicated by the presumptive tests, although they were frequently found in the raw water. See also Chamot, XXIV. 98. The results of the operation of the plant in 1905 are given in Dft's Ex. 118, viz.:—

Results of Bacteriological Analysis of Water from Filter Plant, 1905.
(Dft's Ex. 118.)

Averages of weekly averages as reported to the Ithaca Water Board:

Raw water	6,868 bacteria per cubic cent.
Filtered water	23 " " " "
Per cent. bacteria removed	99.6, if calculated from above
Per cent. bacteria removed	99.9, if averaged from weekly per cent. averages.

Maximum results obtained:

Raw water	180,000 bacteria per cubic cent.
Filtered water	295 " " " "

Minimum results obtained:

Raw water	190 bacteria per cubic cent.
Filtered water	2 " " " "

Colon group of organisms believed to be present:

- In raw water on 70 days out of 263 days.
- In filtered water in none of samples taken.

E. M. CHAMOT.

These results may profitably be compared with the analyses of the water furnished by the city in 1906 by Prof. Chamot and Messrs. Nelson and Laudor, tabulated below, pp. 155-156.

The amount of water furnished by the filter plant averaged 1,620,000 gallons per day in 1904 (Chamot, II. 129; Williams, V. 53) and about 600,000 gallons from two filter basins only in 1905. Chamot, II. 130.

De Varona says (XXIII. 82) that the filter plant should have

been placed at a lower elevation, so that it could be reached from the dam by gravity, and the cost of pumping from the sedimentation basin to the filters avoided. If this had been done, nothing would have been saved in respect to the high service water, which had to be pumped anyway; and it made little difference whether the pumping is done before filtration or afterwards. He had, however, made no surveys or maps, and did not know if a suitable site exists other than that chosen by Williams and Hazen. *Ib.* 83. Landreth and Bogart also think it "unfortunate" that the plant could not have been fed by gravity from the dam. They had no site in mind, however, and had not considered the effect of a lower elevation on the fire service. Landreth, XXVII. —; Bogart, XXVIII. —.

The effect on the fire pressure for the low service in the city proper of a lower elevation for the filter plant would have been serious. To locate the filter plant at the lower elevation would have lost some 20 pounds in pressure, which De Varona admits would not do. XXIII. 83. See also Williams, VIII. 12, 13; XXVIII. —. The pressure should be 75 to 80 pounds (Landreth, XXVII. —); and that means an elevation for the bottom of the filter plant above the hydrants in the lower city of 175 to 200 feet. We have now 215 feet above the lake, or 200 feet above the street level, without taking account of any frictional loss of head. It is evident that we could not lower the filter plant 40 odd feet without seriously impairing the pressure.

e. A pumping station, originally built in 1892 at a cost, including East Hill reservoir, of \$53,166, and rebuilt in 1903 at a cost of \$42,715. Hazen, VII. 238.

The arrangement, type, and efficiency of this plant are, with some qualifications, commended by the witnesses for the company, who point out its unfinished condition and state what was needed to bring it to a state of commercial efficiency. See below, p. 90. Most of the objections to the operation of this plant since its possession by the city are due to the fact that some necessary parts had not been installed by the company, and to the fact that it was never operated by the city in the manner for which it was designed; also to the neglect of the city in not replacing the Van Natta dam, washed out in the great flood of June, 1905, which neglect caused recourse to the old steam plant, which was only reserved, in the company's plans, to provide for emergencies of a day or two at most. See Getman, XIV. 323-327.

The *dam, reservoir, pipe line, filter plant, and pumping station* cost, including the expenditures of 1892-93 and 1903-04, \$250,998 (Hazen, VII. 238), and, with the waters of Six Mile Creek, constituted a supply plant capable of delivering 3,000,000 gallons daily, or, with slight additional expense for more filter basins, 5,000,000 gallons, of filtered water to all parts of the city.

Owing to the circumstances explained below, p. —, the improvements undertaken in 1902 and 1903 were not entirely completed before the city acquired the right to take the plant, and exercised this right. The plant, in its unfinished condition, was incapable of being operated with the economy that it would have shown if completed. The cost to complete the plant, so as to make it possible to be operated with the economy for which it was designed, may be safely estimated at from \$40,000 to \$50,000,* and the saving for coal and labor upon completion would have been about \$13,000 a year. See below, pp. 93 and 105.

2. The distribution system, built 1872-1904.

This consisted of 32.65 miles of main (Dft's Ex. 26), 226 public hydrants (Norton, I. 96; the city says 222), 382 meters (Summers, IV. 32, 37), and the necessary valves and connections. There was also a masonry reservoir on South Hill, with a capacity of 1,200,000 gallons, situated at an elevation of 173 feet above the lake, and thus capable of furnishing a pressure for the low service of about 60 pounds; and a steel tank on East Hill, at elevation 431, with a capacity of 600,000 gallons, for the high service.

The distribution system is well laid out, composed of unusually large pipe for a town of this size, and in remarkably good condition. It is a thoroughly good system, and one which, as Coffin says, is superior to most private systems and to many public systems.

Williams, V. 106, 107;

VIII. 97-99.

Hazen, VII. 69-72.

Allen, VIII. 131.

Coffin, IX. 29-30.

Kuichling, XI.

Norton, I. 104-105.

Darragh, II. 173-176; III. 42-46.

Silke, XIII. 120-121.

Drake, XVI. 69-71.

Van Order, XVI. 87.

De Varona, XXIII. 70.

*Exclusive of the changes in the high service.

The mains were laid by the day (Treman, I. 11-12) at an average depth of 5 to 6 feet. Crandall, I. 62-63; Silke, XIII. 60.

Attention is directed to the unusual opportunity for examining the condition of the mains which was afforded by the 100 hydrant connections made in 1902, and to the condition of the mains then exposed and cut into. I. 92-96.

The unusually good condition of this part of the plant is best shown, perhaps, by the ill success which has followed the persistent efforts of the city during the past two years to discover defective pipe. Hollister, superintendent under the city, could only mention five cases of frozen dead end pipes. XV. 500-503. Drake had only heard of one. XVI. 74. Silke, who, after twenty-seven years' service (sixteen as foreman) with the company, had had trouble about his wages, and has since been employed by the city to hunt up leaks (XIII. 56, 130), could mention only two cases of freezing (XIII. 63, 65), and only one instance of a defective pipe,—the light line in Seneca Street. This was laid in 1874 or 1875, and one length, or 12 feet in 500 ($= 2\frac{1}{2}$ per cent.), had to be taken out in 1903. XIII. 123, 135. Van Order tapped fifteen mains in October and November, 1905, for meter connections, and found only one length that did not seem in good condition, but this was good enough to leave. XVI. 87, 88. Drake uncovered 400 lengths of main in 388 different places, and found only 17 (or 4 per cent.) that looked wrong; but the only trouble with these was a little scale and rust on the outside. XVI. 69-98.

The contract of Aug. 25, 1902, contained rigid requirements as to pressure for the hydrant service, and it is not disputed that these requirements were fully met by the system installed in 1902-03. All the complaints of inadequate fire pressure relate to a period prior to the completion of this contract. XVI. 165, 210, 211, 218. Since the completion of the plant in the summer of 1903 there has been no complaint of lack of pressure.

3. Property on Buttermilk Creek.

This includes two dams and about 38 acres of land acquired in 1873-75 at a cost of \$18,297. Hazen, VII. 238. There is also an 8-inch pipe line, running from the lower

dam to the city, which is regarded by some of the witnesses as appurtenant to Buttermilk Creek, by others as a part of the distribution system.

4. Property on Enfield Creek.

This consists of about 75 acres of land, bought at various times from 1885 on, at a cost of \$13,288. Hazen, VII. 238.

5. Miscellaneous items.

These consist of land on Buffalo Street which, by agreement, is to be taken at \$2,000 (I. 3); and of certain personal property, the agreed value of which is \$1,730. Dft's Ex. 34.

The difficulty in laying out a water supply system for Ithaca,—owing to the great difference in elevation,—as well as the attempts of the company to overcome this difficulty, are shown in the following

Table of Elevations above Cayuga Lake.

(See Dft's Ex. 17 and 62.)

Old Van Natta Dam	crest	122.4
	tail race	61
Buttermilk Reservoir	250
South Hill Reservoir	top	173.7
“ “ “	bottom	157.7
30-foot dam	crest	201
Filter plant:		
Pure water well	top	228
“ “ “	bottom	215
Coagulation basin	flow line	243
East Hill standpipe	top of water	431
“ “ “	bottom	400
University Reservoir	top of water	509
Cornell Heights Reservoir	“ “ “	505
East Ithaca	50c
Dam at Beebe Lake, on Fall Creek	crest	398

B. *Water Sources:*

1. Buttermilk Creek.

Area of water-shed above the lower dam, 11 square miles. VI. 144, 174. Minimum daily yield, as at present developed, 500,000 gallons. VI. 177.

2. Enfield Creek.

Area of water-shed above the company's land, 25 square miles. VI. 145. Minimum daily flow at the company's land, about 1,000,000 gallons.

Both this and the Buttermilk Creek source would have to be filtered if used for drinking, and are chiefly valuable as reserve sources. Buttermilk Creek could also be used as it stands for fire protection in emergencies.

✓ 3. Six Mile Creek.

a. *General data:*

Area of water-shed above the dam, 47 square miles; population, 1944=41 per square mile. V. 49; VI. 145; VIII. 134; XXVI. 34-35; Dft's Ex. 122, below p. 84. Minimum daily natural flow of the stream, about 1,300,000 gallons. VIII. 100.

“ “ yield with the dam as it stands 3,000,000 to 4,000,000 gallons. Williams, V. 57, VIII. 109; Hazen, VII. —; Allen, VIII. 193; Coffin, IX. 24.

“ “ “ if an additional impounding reservoir were constructed at the so-called upper site, about 20,000,000 gallons. Williams, V. 55-56.

“ “ “ if the present dam were raised ten feet, 5,000,000 to 6,000,000 gallons. Williams, V. 78; Hazen, VII. 26, 27.

“ “ “ if it were raised to 90 feet, 9,000,000 gallons. Hazen, VII. 86.

Minimum daily yield with the stream developed to its full capacity, 20,000,000 to 24,000,000.

V. 49, 177.

Damages yet to be paid for the diversion of the stream to riparian owners below the dam other than the company, probably nothing beyond a nominal sum.

b. *The quality of the water.*

The quality of Six Mile Creek water, as supplied from the filter plant, is of the very highest order, and by far the best supply available for this community.

This is shown by the appearance, potability, and purity of the water after filtration; by the bacteriological analyses made by Prof. Chamot in 1903, 1904, and 1905, as given above, p. 75; by a comparison between these analyses and the analyses of the Clinton Street and Williams Springs water made in 1906 by Prof. Chamot and Messrs. Nelson and Lauder (see below, pp. 155-156); by the comparative softness of the water; by the absence of iron and of the vegetable and bacteriological growths dependent on or encouraged by the presence of that mineral; by the entire absence of fæcal bacteria, contrasted with the frequent appearance of the colon bacillus in the water supplied by the city; and by the opinion evidence in the case.

The expert and other evidence in the case shows:—

1. That the water-shed is a good one.

It has a very small population, only 41 per square mile (Hazen XXVI. 34-35; Dft's Ex. 122); and, although the privies along the stream are objectionable, this is rather from the standpoint of appearances. They are said by De Varona to be, like cemeteries quarter of a mile away from the wells of an underground system, objectionable from the standpoint of "public sentiment." XXIII. 178-180. So far as sanitary considerations go, filtration renders the water pure and wholesome. See

Mason, XVII. 8, 34, 70, 73, 74, 75, 82, 101,
and the testimony cited below under 2.

If for sentimental or other reasons it should be desired to remove some of the more conspicuous of these privies, it ought to be done at small expense to the company.

Hazen, XXVI. 45-46.

It should be pointed out that the numerous "watercourses" which Drake, in Vol. XVI., says he discovered as tributaries to Six Mile Creek in March and April, when the snow was melting and the ground thawing out, have no existence at other seasons of the year. Williams, XXVIII. —. Also that the rules of the State Health Commissioner, which Drake and Landreth rely on, were adopted April 21, 1903, during the typhoid fever epidemic, for the raw water of Six Mile Creek. Dft's Ex. 96.

The water-shed contains a very small population as compared with other water-sheds which furnish excellent water after filtration, as appears by the table on p. 84; and what population there is is distinctly rural. There are no large towns, and only two small villages on the entire watershed; and no municipal sewage is emptied into it.

2. That filtration is capable of converting surface waters far more polluted than those of Six Mile Creek into a perfectly safe and potable supply.

Hazen, XXVI. 38.

Mason, XVII. 6, 18, 21, 41, 62-67, 71, 83-101.

De Varona, XXIII. 181, 182.

Hering, XXV. 38.

The following table (Dft's Ex. 122) gives the population per square mile on various water-sheds used for a public supply, generally filtered. Many of these sources, notably those for Elmira, Binghamton, Hoboken, Philadelphia, Lawrence, and Pittsburg receive municipal sewerage above the intake. De Varona, XXIII. 181, 182, 210; Hazen, XXVI. 38.

DEFENDANT'S EXHIBIT 122.

AREA AND POPULATION ON WATER-SHEDS TAKEN FOR PUBLIC WATER SUPPLIES.

City.	Filter.	Population supplied.	Water-shed.	Area in Square Miles.	Population on Water-shed (1900 Census).			Population on Water-shed per Square Mile.		
					Urban Towns over 4,000.	Rural.	Total.	Urban.	Rural.	Total.
Chester . . .	Mechanical	33,988	Delaware	10,450	1,824,805	801,466	2,626,271	175	77	252
Philadelphia . . .	Sand	1,293,697	{ Delaware Schuylkill	8,186	247,164	497,240	744,404	30	61	91
Boston Metro- politan Water District	Sand		{ Wachusett Sudbury	1,915	19,320	*230,151	421,471	100	120	220
	None	*951,641	{ Cochituate Rockaway	118	—	*5,772	*5,772	—	49	46
Jersey City . . .	None	232,699	Hackensack	75	*10,730	*10,401	*21,131	143	139	282
Hoboken . . .	None	*200,000	Brandywine Creek	121	*13,511	*1,997	*15,508	676	100	776
Wilmington . . .	Mechanical	76,508	Merrimack	115	—	13,316	19,669	52	110	162
Lawrence . . .	Building	62,559	Conestoga	325	9,531	27,300	36,831	29	84	113
Lancaster . . .	Sand	41,459	—	463	318,000	164,000	482,000	69	35	104
Harrisburg . . .	Special	50,167	Hudson	350	—	33,250	33,250	—	95	95
Albany . . .	Mechanical	*98,374	Mahoning	24,030	601,554	1,549,755	2,151,309	25	65	90
Youngstown . . .	Sand	44,885	Maumee	8,240	*432,805	*280,583	*713,478	53	34	87
Toledo . . .	Mechanical	131,822	Delaware	967	28,974	47,925	76,899	30	50	80
Trenton . . .	Building	*84,180	Allegheny	5,968	167,179	276,317	443,496	46	28	74
Pittsburg . . .	Building	321,616	Croton	6,916	*150,083	*364,317	*514,407	22	52	74
New York . . .	Recommended	*2,112,380	Chemung	11,040	—	594,822	777,154	16	54	70
Elmira . . .	Mechanical	*34,687	Potomac	360	*33,859	*75,475	*109,334	16	59	59
Washington . . .	Sand	278,718	Susquehanna	2,107	70,563	457,530	537,093	7	42	49
Binghamton . . .	Mechanical	*42,036	Six Mile	*2,279	*18,729	*74,929	*93,658	8	33	41
Ithaca . . .	Mechanical	*14,615	Black	*47	—	*1,944	*1,944	—	41	41
Watertown . . .	Mechanical	*25,447	Mississippi	*1,660	—	*35,385	*35,385	—	21	21
Minneapolis . . .	Recommended	202,718	Saw Mill Creek	19,585	27,251	184,281	211,532	1	9	10
Yonkers . . .	Sand	*61,716		23	Less	than 100	per sq. mi.			

* 1905 Census

Note also the oral evidence concerning the cases of:

- Hamburg and Altona; Mason, XVII. 91-93; Hering, XXV.
 29; Hazen, XXVI. 38
 Albany; Mason, XVII. 71.
 Elmira; Mason, XVII. 83, 84.
 Little Falls; N. J., Mason, XVII. 88, 90, 91.
 Elmira; Mason, XVII. 83, 84.

No community enjoying filtered water has ever been visited by an epidemic of typhoid fever;

Mason, XVII. 91, 94, 101.

No such source has ever had typhoid fever traced to it;

Mason, XVII. 128, 129.

No well-constructed filter plant has ever been abandoned for a different supply;

Mason, XVII. 94, 95, 101.

De Varona, XXIII. 214.

No witness has testified that he ever advised abandoning a filtered surface supply for an underground source;

And there is no case on record where a filtered surface supply as good as Six Mile Creek was in existence and a competing underground source has been developed;

Mason, XVII. 103.

3. That the filtration plant built by the company is of the type best suited to the conditions, is well designed and constructed, and, when properly operated, makes Six Mile Creek water a first-class supply.

Williams, V. 87, 88.

Hazen, VII. 12-15, 17, 19,
 20, 134-142.

Allen, VIII. 135, 137.

Coffin, IX. 24-28.

Kuichling, XI. 26.

Chamot, II. 125-129, 131-

133, 139, 142, 145.

Summers, III. 89.

Mason, XVII. 8, 34, 70, 73-
 75, 82, 87, 99-101, 103.

Vermeule,

Hering, XXV. 52.

De Varona, XXIII. 8, 97, 98,

130, 184.

4. That there is no difficulty in procuring competent men who can operate the plant as it should be.

Chamot, XXIV. 100, 136.

Mason, XVII. 101.

Hazen, VII. 134-138.

This is amply demonstrated by the bacterial counts which, after March, 1904, when the men had become familiar with the machinery, and throughout 1905, were extremely low,—much lower than for the city water. See the tables on pp. 75 and 76.

Hazen, who is, perhaps, the most experienced man in the world in the operation of mechanical filters, says that the occasional turbidity of the water does not render it more difficult to filter.

5. That the plant did, in fact, operate, from the beginning to its closing down in December, 1905, with a very high degree of efficiency and with the very best results, so far as the purity of the water was concerned.

See Chamot, II. 125-129; the two bottles of raw and filtered water, Dft's Ex. 35 and 36; and the table of analyses given *supra*, p. 75.

The suggestion that it was easier to get good results in 1905, because of the smaller quantity filtered than in 1904, is unfounded, because in 1905 only two of the six filter basins were used. Moreover, the results for the last nine months of 1904 were almost identical with those for the corresponding months of 1905. See table, p. 75.

That the filtered water of Six Mile Creek was a perfectly pure and potable water, and in every respect a first-class supply, is asserted by:—

Williams, V. 49, 88,

Coffin, IX. 27, 28,

Hazen, VII. 15-18,

Kuichling, XI. 26, 27,

Allen, VIII. 135, 195-197,

Chamot, II. 125, 129, 133,

134, 137, 138,

and denied by no one. No witness for the city has ventured to intimate a doubt upon this point.

6. That the water is free from all traces of iron.

7. That it is a softer water than any underground supply; con-

taining, for instance, about 100 parts of hardness to 200 parts for the underground water of the Clinton Street city supply.

Chamot, II. 134-136, 149-152.

Hazen, VII. 197, 198.

It is estimated that there is a difference in value between a soft and a hard water of ten cents per million gallons for each part per million by which the hardness of the one water exceeds that of the other. This was the allowance made by both Hazen and De Varona when acting this year for the city of New York in their Staten Island Water Company valuations (De Varona, XXIII. 198, 199); and Hazen, applying the same rule to Ithaca, says that the Six Mile Creek water is worth \$11 per million gallons more than the underground water from the Clinton Street wells. VII. 51-53.

c. *The quantity available.*

This, we have seen, *supra*, p. 81, is adequate, not only for the needs of the present and the immediate future, but also for any increase in consumption likely to occur in the remoter future.

As the maximum daily consumption in 1906 was over 2,000,000 gallons* (Getman, XV. 310, 416; XXIV. 50-51), it is evident that a supply plant adequate for the immediate future should have a capacity of somewhere about 3,000,000 gallons; and it would be foolish to develop a source of supply or to install a plant without the certainty of being able to meet the increase in consumption to be reasonably expected in the remoter future. The proper ultimate capacity of a supply for Ithaca is 5,000,000 gallons daily,

Williams V. 55.

Coffin, IX. 26.

Hazen, VII. 25-26.

Kuichling, XI. —.

Allen, VIII. 136.

And this quantity is far within the capacity of Six Mile Creek.

d. *Comparison with other sources.*

A comparison, from the standpoint of capacity, quality, and cost, between Six Mile Creek and the other available sources for a public water supply in Ithaca, will be found below, in XI. p. 127, *seq.*, and a further discussion of the comparative disadvantages of the

* 2,176,162 gallons on Feb. 27, 1906. XXIV. 51.

present temporary city supply is given *infra*, pp. —, —.

The result of these comparisons, and the facts and opinions collated above, make it plain that, as Hazen puts it, Six Mile Creek is the "most available practical source of supply for Ithaca," or, as Allen and Coffin say, "by all means the best source."

Williams, V. 48-52.

Allen, VIII. 137.

Hazen, VII. 22.

Coffin, IX. 25.

V.

CHANGES AND ADDITIONS NECESSARY TO COMPLETE THE PLANT AND TO INSURE ECONOMY IN OPERATION.

As already pointed out, *supra*, p. 78, the plant, when turned over to the city Dec. 31, 1904, was admittedly incomplete in several particulars; and the business results which the plant was intended and calculated to secure had not yet been reached.

Its condition was not like that of a partially completed building, much less like that of a lot of land with buildings still to be constructed; it is rather to be likened to the condition of a building completed some years ago and fully occupied, to which extensive additions had recently been made, the additions being not quite complete, and the machinery intended to reduce the expenses of running the completed building not having been fully installed.

1. *Reasons why the Plant was not finished.*

The reasons why the work was not completed by the company according to the plans of its engineers, while not perhaps important on the question of value, are yet easy to discern, and may be useful in arriving at a correct understanding of the situation as it existed on the day of valuation.

The Act of April 15, 1903, provided that the city should acquire the company's plant as it then stood, "together with such improvements as shall be added prior to Sept. 1, 1903; but said improvements hereafter to be added before said date shall consist only of the filtration plant now in process of construction by said company, the dam not to exceed 30 feet in height for the use of said filtration plant, the necessary and proper pumps, pipes, and connections, and other appurtenances to said filtration plant."

During the interval of four and one-half months between April 15 and September 1 the company was fully occupied in prosecuting the work already under way, so that the plant could be put in operation by the early autumn. The plant was substantially completed by September 1, and put in operation on that day, but there was not time to carry out some of the changes and improvements contemplated by the engineers as essential to the economical operation of the system.

After September 1 it probably appeared to the company very doubtful whether, if they made these additions, they would ever get the cost or value back from the city. Looking back on the situation, it may seem that it would have been perfectly safe for the company to have made these changes after September 1, as it would seem to be a matter of indifference whether the plant was completed at the cost of these changes and turned over and valued in its completed state, or turned over unfinished and valued as if completed, but deducting the estimated cost of completion. But the company apparently did not regard the matter in this light, or perhaps, owing to the fact that it had practically lost the title to its property, was unable to raise the money needed for the purpose, particularly as the city might require the plant to be handed over at any moment.

For these reasons the plant was turned over in a state of successful but not economical operation, and the business results which the plant was intended and calculated to secure had not yet been reached.

2. The Defects in the Plant as turned over.

The most serious defect in the plant as it was left by the company was the small size (8-inch) of the main from the filter plant to

the low service, through which two-thirds of the entire daily consumption had to be pumped, although the elevation of the pure water well (228 feet above the lake) was sufficient to supply the entire low service by gravity, if the pipe had had a sufficient carrying capacity. The cost of this down-hill pumping was very great, and would be entirely avoided by substituting, at relatively small expense, a 16-inch pipe for the old 8-inch. This was contemplated, but, for the reasons stated, the company had not got around to it.

The pumping plant was also capable of improvement, so as to secure a more economical operation; and certain changes in the high service plant to avoid pumping intermediate service water against the high service head would tend in the same direction.

The defects in the unfinished plant from an operative standpoint, and the reasons for the excessive pumping cost while in its uncompleted state, are described by

Williams, V. 61, 62, 98.

Hazen, VII. 60-62, 194.

As Hazen puts it (VII. 60), "the water was being pumped in a very crude and expensive way to the high service, to the intermediate service, and pumped down hill . . . into the low service."

3. *The Work required to complete the Plant.*

There is in the main an agreement between the witnesses for the company and the city as to the best way to finish the plant.

All agree that a new 16-inch main should be laid in place of the 8-inch main from the pure water well to the low service, so as to obviate the necessity of pumping two-thirds of the entire supply down hill. It is also agreed that an enlarged sedimentation basin at the filter plant should be built, or some other equivalent device introduced, in order to enable the pumping plant to be used at its highest efficiency; also a new steam pumping plant for the intermediate and high service districts more efficient in type than that on the premises when turned over to the city. In addition to these improvements in the plant at Six Mile Creek it is generally agreed that there should be a new high service reservoir and

certain additional mains, both for the high service and intermediate service.

The witnesses for the company, Messrs Hazen, Allen, Coffin, and Kuichling, consider that the foregoing improvements were all that it was necessary to make in order to complete the plant from a commercial standpoint. Some of the witnesses for the city insist that other changes would be desirable, such, for instance, as a new reservoir and pipe system on West Hill, and several new mains of large size for reinforcing the distribution system. The company contends that these items, while no doubt desirable in themselves, were wholly unnecessary for the completion of the plant in a commercial sense, and that neither the company nor the city would seriously consider their introduction for many years to come. This opinion is fortified by the testimony of Mr. Getman, who, as superintendent of the plant under municipal management, may be assumed to have some familiarity with its needs. He says (XIV. 297-300) that all that is needed is (1) a new and larger pipe line from the pure water well to the low service, (2) a larger pipe to West Hill, (3) a higher reservoir on East Hill, and (4) the replacement of seven short sections of small pipes in the middle of the distribution system. This is a more modest program even than that suggested by the witnesses for the company; but it is strong evidence that the need for additions to or changes in the distribution system has been grossly exaggerated by the witnesses for the city.

Some of the witnesses, both for the company and the city, also suggest a moderate expenditure for the extension of mains, as, for instance, to Cornell Heights, for the purpose of securing an increase in revenue from new consumers not reached by the present system. These extensions, while doubtless likely to be made in the near future, were in no sense necessary to the completion of the Six Mile Creek plant as it stood, and are, therefore, not considered at this point; the present object being simply to ascertain the probable cost of bringing the uncompleted plant as it stood Dec. 31, 1904, to a condition of reasonable commercial efficiency, without regard to the possibility of increasing the company's income by the extension of mains.

4. *The Estimated Cost to complete the Plant.*

The estimates of the several witnesses of the probable cost of completing the plant on the foregoing basis are shown by the following table:—

ESTIMATES OF COST OF COMPLETION.*

Items.	Williams, Dft's Ex. 63, p. 8; V. 62, 63, 65-68, 93-96, 129-131.	Hazen, VII. 30, 31, 237, and Allen, VIII. 129, 130.	Coffin, IX. 6, 16-18.	Kuichling, Dft's Ex. 82, p. 22- 27.	Vermeule, Pl's Ex 164, pp. 14-16.	DeVarona† Pl's Ex. 194, pp. 31-33.
1. New 16-inch main to low service	\$16,387	\$17,200	\$19,380	\$14,200	\$14,378	\$14,181
2. Improvements about the dam, filter plant, etc.	41,400	12,300	19,230	13,400	15,650	15,560
3. Changes in the steam pumping plant	—	36,800	2,000	14,000	43,615	43,615
4. New high service reservoir and mains	9,487	21,850	16,800	14,200	23,501	21,145
5. New intermediate service pipes, etc.	8,625	2,645	2,500	2,800	4,467	4,194
Total	\$75,899	\$90,795	\$59,910	\$58,600	\$101,611	\$98,785

The average of the estimates of Messrs. Hazen, Coffin, and Kuichling, all of which contemplate using the dam as it now stands, is \$69,768.

Prof. Williams has figured out the cost to complete the plant as originally contemplated; that is, by raising the dam to 90 feet, and thus doing away with all necessity for the use of steam power at any season of the year. This plan, he estimates, would cost \$75,899.

The average of the estimates of Messrs. Vermeule and DeVarona is \$100,203; the chief difference between their estimates and those of the witnesses for the company being accounted for

* Some of the figures in this table differs from those in the schedules, for the reason that we have added the percentage for engineering to each item, while some of the witnesses made a separate item of this charge.

† De Varona's estimates are taken from Vermeule's without independent consideration, just as Allen took Hazen's, except for the items of pipe and specials which he refigured at a lower price per ton.

by the fact that the latter do not consider that it is necessary to make so many changes in the distribution pipes or to put in as expensive machinery at the pumping plant as is contemplated in the estimates of Vermeule and De Varona.

Here, again, while the more expensive pumping machinery and the enlargement of mains suggested by the witnesses for the city would be a desirable thing if they did not cost too much, there can be no question that the changes in machinery and mains contemplated by the witnesses for the company are entirely sufficient from a commercial standpoint to permit the plant to be operated with economy, and are, therefore, all that need be estimated on.

For the oral evidence as to what should have been done to complete the plant see:

Hazen, VII. 29-32, 71-72,
200-231.

Allen, VIII. 129.

Coffin, IX. 5-6, 16-19, 42.

Kuichling, XI. 8, 21-24, 38,
40-45; and Dft's Ex. 82,
pp. 22-27.

Williams, V. 65-68.

We may, therefore, conclude that at an expenditure of about \$70,000 it would have been possible to complete the plant and bring it to the state of practical commercial efficiency for which it was designed.

Extensions in the near future to Cornell Heights at other places would be desirable in order to secure an increase of revenue. The cost of these extensions would be \$10,000 to \$15,000.

Later on, as the business increased, it would be desirable to enlarge the plant so as to make it, in all its parts, capable of furnishing a daily supply of 5,000,000 gallons. This would cost, according to Hazen, \$151,840, including the expenditures which ought to be made at once. VII. 31.

VI.

THE GROSS INCOME OF THE PLANT.

A. THE ACTUAL INCOME AND EXPENSE OF THE PLANT, 1896-1906.

This is shown by the following table:—

ACTUAL INCOME AND EXPENSE 1896-1904.

YEAR.	Gross Income.	Rebates.	Actual Gross Income.	Expenses.	Net Income.	Reference.
May 1, 1896—	—	—	\$25,673	\$7,708	\$17,965	I. 30
May 1, 1897						
May, 1897—	—	—	27,826	6,687	21,139	I. 31
May, 1898						
May, 1898—	—	—	30,330	8,226	22,103	I. 31
May, 1899						
May, 1899—	—	—	32,210	11,336	20,874	I. 31
May, 1900						
May, 1900—	—	—	35,420	11,838	23,582	I. 31
May, 1901						
Nov. 1, 1901—	\$36,967	\$143	36,823	16,132	20,691	VI. 6b-7b
Nov., 1902						
Nov., 1902—	43,210	991	42,218	25,842	16,376	VI. 7b-8b
Nov., 1903						
Nov., 1903—	49,483	1,467	48,016	29,181	18,834	VI. 8b
Nov., 1904						
Jan. 1, 1905—	—	—	52,281	*	—	{ XXIV. 42, 70.
Jan. 1, 1906						
Jan. 1, 1906—	—	\$20 to 25	56,695	*	—	{ XXIV. 44, 73.
Jan. 1, 1907						

*The city operated the company's plant only in part during these years.

The operating expenses for 1905 and 1906 are not included in this table, because, owing to the use made of the plant by the city, it is impossible to say what the cost of operating it was, or would have been, if used alone.

B. PROBABLE INCOME ON COMPLETION OF THE WORKS.

The yearly increase in the gross income of the company, together with the percentage of increase from 1897 to 1905, is shown in the following table:—

PERCENTAGE OF INCREASE IN GROSS RECEIPTS, 1896-1904.

Year.	Income.	Increase over Preceding Year.	% of Increase.
1896-97, May to May	\$25,673		
1897-98, May to May	27,826	\$2,153	8.4
1898-99, May to May	30,330	2,504	9.0
1899-1900, May to May	32,210	1,880	6.2
1900-01, May to May	35,420	3,210	10.0
1902-03, May to Nov.	42,218	6,798	19.2 for 18 mo.
1903-04, Nov. to Nov.	48,016	5,796	13.7

The total increase in the six and one-half years preceding Jan. 1, 1905, was \$22,343, or 87 per cent.; and the average yearly increase was 10 per cent. of the income of the previous year. The increase in the three and one-half years previous to Jan. 1, 1905, was \$15,806, or 49 per cent.; and the average yearly increase during these three and one-half years was 12 per cent. of the income for the previous year.

At the average rate of increase for the whole period the income would have been \$52,816 for 1905, \$58,098 in 1906, and \$63,907 in 1907. If the rate of increase should be equal to that of the preceding three and one-half years, the figures would be \$53,778, \$60,231, and \$67,459, respectively.

There can be no doubt that the income of the company from 1901 to 1904, though helped by the increase in hydrants, was injuriously affected by the excessive rebates allowed (ten times as much in 1903-04, as in 1901-02, see above p. 95), and by the restricted consumption due to the typhoid fever epidemic, to the occasional turbidity of the water prior to Sept. 1, 1903 (see Williams, VI. 203, 204), and to the orders of the Board of Health imposing a penalty of \$50 for drinking the water without boiling. These regulations were continued in force until Feb. 14, 1905. Dft's Ex. 11a.

The probable revenue of the company upon the completion of the works might, therefore, assuming a proper commercial management, be safely put at from \$60,000 to \$65,000.

In further support of this contention see below under C. The arguments there adduced for a progressive increase in income during the next twenty or thirty years apply also, of course, to the short period required to complete the works.

These conclusions are not affected by the fact that the income derived by the city from its operation of the plant since Jan. 1, 1905, has been somewhat less than what it would have been if the rate of increase under the company's management had been maintained. The figures for this period are:—

Year.	Income.	Increase over Preceding Year.	% of Increase.
1905, Jan. to Jan.	\$52,281	\$4,265	8.9 for 14 mo.
1906, Jan. to Jan.	56,695	4,414	8.4 for 12 mo.

The chief reasons for the failure by the city to realize the almost certain indications of the business as it stood at the close of 1904 are to be found (1) in the evident absence of all effort to increase the number of consumers, there being at the present time (see below, p. 100) 559 dwellings unsupplied with water, but situated along the lines of the mains, and there having been only one new fire hydrant added in two years (XXIV. 51, 62); (2) in the unsatisfactory quality of the water supplied from Clinton Street and Williams Springs, both of which sources have been regarded with suspicion; and (3) by the effort to restrict the consumption to the limited capacity of these new sources through the introduction of meters, the effect of which in very many cases (see, for instance, that of Mr. Tompkins, where the city lost by metering nearly 50 per cent. of the previous yearly rate, XXIV. 61) has been a loss of revenue.* See Getman, XXIV. 61; and Miller, XXIV. 91. Until this lawsuit is settled, the city has no motive either to push the revenues or to keep down the expenses of the plant.

* The average daily consumption for the three months of September, October, and November 1904, was 1,542,000 gallons (Dft's Ex. 28) ; while for the corresponding period of 1906, two years alter, it was only 1,522,000 gallons. XXIV. 50; and XXVIII.—.

The estimates by the witnesses of the probable income of the plant on completion are:—

Williams,	\$58,460 *	
Hazen,	\$61,624 †	
Allen,	\$65,000.	VIII. 128, 129, 191, 192.
Coffin,	\$65,000.	IX. 18, 23, 46, 103.
Kuichling,	\$60,865.	Dft's Ex. 82, p. 5.

Upon all the evidence in the case, the conclusion is irresistible that, as matters looked Jan. 1, 1905, it was reasonably certain that upon the completion of the plant as proposed the gross income should be from \$60,000 to \$65,000.

*\$4.00 per capita of resident population. See below, p. 102.

† This is what his income of \$3.50 per capita figures out on a total population of 17,607. See below, p. 102.

C. PROBABLE INCREASE OF INCOME AFTER COMPLETION OF THE WORKS.

Statistics bearing on this question:—

Resident Population. See Pl's Ex. 139; II. 112; and XIX. 67-72.

1880	9,105.		
		Increase for 10 years, 1880-1890	21.68%
1890	11,079.		
		Increase for 10 years, 1890-1900	18.56%
1900	13,136.		
		Increase for 5 years, 1900-1905	11.25%
1905	14,615.		

The census figures are supposed not to include the students, and indicate a yearly increase at the present time of a little over 2 per cent., and a more rapid increase than in the preceding decade.

Student Population. See I. 54-56.

1895	1,611.		
		Increase, 1895-1900	536=33.2%
1900	2,147.		
		Increase, 1900-1905	845=39.2%
1905	2,992.		

These figures show a progressive annual increase, amounting at the present time to nearly 8 per cent.

The university students constitute a special class of consumers, demanding the most modern facilities for the use of water; and it is only in university towns that this class is found. Its presence may always be regarded as a guaranty of large consumption.

The important part played by the University in the life of the town is shown not only by the number of students and their increase, but by the fact that the property of the University was valued by the assessors in 1905 at \$9,492,000, or 34 per cent. more than the entire taxable property in the city (\$7,063,560). See II. 162.

Bank Deposits. See II. 154-156.

The rapidly increasing prosperity of the city is strikingly shown by the bank deposits:

1894	\$1,978,835
1899	3,352,965
1904	5,410,883

These figures show a fairly uniform increase of nearly 12 per cent. per annum.

Buildings. See II. 109-111.

According to the assessors there are in the city 2,864 frame houses, 121 brick and stone houses, 75 flats, and 15 hotels, or 3,075 buildings in all, besides stores, schools, industrial plants, etc. In the dwelling-houses are included 32 fraternity houses and 25 boarding-houses.

Mr. Hollister, a witness for the city, who made an actual count, gives a list, by streets, of 2,974 dwelling-houses in the city; of which 1,866 only are now supplied with public water. XIX. 224-277.

Unsupplied Domestic Establishments.

Of the 2,974 dwellings counted by Hollister, 1,108, or 37 per cent. were not attached to the mains, and are now supplied by private wells. Of these 1,108 houses, 559 are on the line of the mains.

The early discontinuance, under the pressure of better information or official action, of these dangerous private wells was a practical certainty in an intelligent community supplied with filtered water. Hazen, VII. 57.

Cornell Heights.

In this, the growing residential section of the city, there are many expensive residences supplied by private parties with unfiltered Fall Creek water.

Mr. Wyckoff gives a list (Dft's Ex. 99) of thirty-seven houses paying \$1,275 a year, besides thirteen establishments not connected with his system or not paying, which, at the same rate, would pay

about \$450. This makes a total revenue presently available of about \$1,700, and a revenue certain to increase very rapidly in the near future. This business can be secured at the expense of a force main, and of street mains which could either be bought from the present owners or laid independently. In fact so superior was the company's water to the raw Fall Creek supply that the land-owners might well conclude to contribute their street mains free of cost rather than incur the expense of a filtration plant. A single authenticated typhoid fever case would bring this result about.

Another way to handle this business of Cornell Heights would be to run a force main to connect with the Wyckoff pipes and sell water to him and his associates at wholesale rates. See Hazen, VII. 221. This is a common way of supplying water. There would also be a demand for hydrant service, which is now almost absent. Hazen, VII. 223, 228-229. Ten hydrants at \$40 would add \$400, and bring the total business of Cornell Heights to over \$2,000 a year, the greater part of which, if not the whole, could be secured by the company at the expense of a force main.

There can be no doubt that it would have paid the company to extend its system to this portion of the city.

University Buildings.

The Campus is supplied with filtered Fall Creek water from the university plant, but the fire protection is unsatisfactory. There can be no doubt that sooner or later the company would have been asked to connect its mains with those on the Campus for this purpose. Possibly, also, for the supply of the higher buildings. See Hazen, VII. 224, 225.

Income per Capita.

The gross income of the company was \$48,016 in 1904, or \$3.35 per capita for a resident population estimated at 14,300. This, for a community such as Ithaca, is low. Kuichling, Dft's Ex. 82, p. 3.

That the company was rapidly approaching the normal devel-

opment of its business is shown by the fact that in 1896 its revenue was only about \$2 per capita of the estimated resident population, about \$2.45 per capita in 1900, and \$3.35 in 1904. This increase was due partly to the natural increase in the consumption of the resident population, and partly to the very rapid increase in the number of students temporarily residing in Ithaca. This class of consumers is still increasing more rapidly than the resident population, and more rapidly now than formerly.

Both Hazen (VII. 53-57) and Kuichling (Dft's Ex. 82, p. 3) say that the company ought to get \$3.50 per head of population, including the students. This, with 14,615 residents and 2,992 students, would be $17,607 \times \$3.50 = \$61,624$. Williams says (VIII. 93) that the income should be \$4 per head of resident population. This is $14,615 \times \$4 = \$58,460$.

Income per Million Gallons.

In 1904, with a gross income of \$48,016 and an average daily consumption of 1,620,000 gallons, the company received only about \$80 per million gallons. Kuichling, Dft's Ex. 82, pp. 3-4; Allen, VIII. 139, 194.

\$100 per million gallons is a very low gross price for filtered water. Kuichling, Dft's Ex. 82, p. 4. The company should receive from \$110 to \$115 per million gallons. Allen, VIII. 139.

✓ *Hydrants.*

On Jan. 1, 1905, there were 226 hydrants, or about 7 per mile of main.

To give a proper fire service, the hydrants should not be over 300 to 500 feet apart; *i.e.*, should average 10 or 12 to the mile of main.

Williams, V. 108.

Allen, VIII. 127, 128.

Hazen, VII. 62.

This means that for the 32 miles of main owned by the company the city should demand and pay rent for between 320 and 370 hydrants, in order to secure adequate fire protection.

To secure sufficient fire protection, the city would have soon had to request the installation of from 100 to 150 additional hydrants, which, at \$40 per annum, would increase the company's revenues from \$4,000 to \$6,000.*

The New Low Service Pipe.

Getman thinks that the substitution of a 16-inch pipe for the present 8-inch main leading from the pure water well to the low service district would not only decrease the expenses of operation, but would increase the gross receipts. XIV. 299.

Rates.

There is no suggestion that the rates charged by the company were high. In fact, for filtered water delivered under the expensive conditions of water supply in Ithaca, the rates must be considered as distinctly low.

Williams, VI. 152, 153.

Hazen, VII. 54-57.

Allen, VIII. 138, 139.

Coffin, IX. 28.

The average revenue from 34 municipal water works in New York is \$15.93 per service, while the Ithaca Water Works Company was getting \$16.96 per service. VI. 153.

Since acquiring the plant, the city has increased rates in "lots" of cases. Miller, IV. 106-108, 112.

Nor is there any contention that \$40 is too much for a hydrant service as good as the company's admittedly was. This is a reasonable price, and not above the average.

Hazen, VII. 229.

Allen, VIII. 139.

Coffin, IX. 28, 33-35.

* At no cost to the company for extension of mains. The new hydrants and connections would be all that would have to be paid for.

Having these facts and considerations in mind, there need be no hesitation in accepting the conclusions of the witnesses for the company and not denied by any witness for the city, that a constantly progressive increase in the revenues of the company during the next twenty or thirty years was a practical certainty. See

Williams, V. 115-118, 121-125, 128; VI. 137-139, 150.

Hazen, VII. 53-64, 68, 79-83, 224-229, 233-235.

Allen, VIII. 127-128, 138-139, 190-191, 194-195.

Coffin, IX. 6-7, 15, 23, 27, 33-36, 42-47.

Kuichling, XI. 32-34.

Whether and how much the market value of the company's plant, or water rights, or franchises, can fairly be enhanced on account of the probable growth of business and income during the next twenty or twenty-five years, are questions considered below, p. —

One thing, however, is conclusively established by the evidence on this point, and that is the practical certainty of an income of \$60,000 to \$65,000 just as soon as the plant should be finished and the company's business, handled on ordinary commercial principles, should be brought to the point of normal profit.

VII.

ANNUAL OPERATING EXPENSES AND DEPRECIATION ON COMPLETION OF THE PLANT.

These items, as estimated by the witnesses, are given in the following table:—

ESTIMATES OF COST OF OPERATION ON COMPLETION.

Items.	Williams, Dft's Ex. 03, p 6; V. 125- 127.	Hazen, VII. 50-62; Dft's Ex. 124.	Allen, VIII. 129, 199.	Coffin, IX. 7, 19- 22, 40, 47- 50.	Kuichling, Dft's Ex. 82, pp. 6, 7, 20, 31, and XI. 24-26.	Vermeule.	DeVarona
Pumping cost	\$2,000	3,140	\$4,000	\$3,600	\$5,000	\$4,640	\$4,869
Filter plant expenses .	4,500	3,860	} 17,000	4,000	4,700	4,440	4,440
General ex- pense . .	4,500	6,027		7,650	5,300	12,400	12,400
Taxes and insurance .	3,000*	3,379		3,100	2,902	3,650	3,650
Total oper- ating ex- pense . .	14,000	16,406		18,350	17,902	25,130	25,359
Depreciation on old plant	2,900†	4,045†	} 500†	3,662	3,541	3,497	4,111
Same on new	240†	820		350	480	1,191§	1,087§
Total .	\$17,140	\$21,271	\$21,500	\$22,362	\$21,923	\$29,818	\$29,557

The estimates of Hazen, Coffin, and Kuichling of the cost of operation average \$17,552, or about \$8,000 less than the estimates for the city. To enable the commissioners to determine which party is right, we have arranged a comparison of the details of the above estimates in the following

* Taxes for 1904 + 10%.

† Computed from depreciation allowances.

§ Refigured from his depreciation, allowing for omission in the table *supra*, p. 93. of certain items as there explained.

ITEMIZED COSTS OF OPERATION.

Items.	Actual Cost to the Company, 1904.	Average estimates Hazen, Coffin, and Kuichling.	Vermeule.*
Pumping station:			
Fuel	9,637	—	430
Labor, oil, and waste	6,350	—	4,210
Total	15,987	3,913	4,640
Filter plant	3,660	4,186	4,440
General expenses:			
Reservoir	959	—	1,200
Stable	79	—	180
Repairs, labor, and supplies	2,492	—	6,520
Office	3,108	—	4,500
Total	6,638	6,326	12,400
Taxes	2,716	} 3,127	3,650
Insurance	179		
Grand total	29,180	17,552	25,130

It will be observed that to reach a total so much in excess of the estimates for the company Vermeule is obliged to assume that the filter plant would cost about \$800 more, the reservoir 25 per cent. more, and the office expenses 50 per cent. more than the actual cost in 1904, and that the repairs would cost nearly three times as much. There is no basis for these assumptions, and they have obviously been made only to depress the value of the plant. To concede a saving on completion in the item of fuel alone of over \$9,000, and then to eat this economy up by doubling the general expenses of the plant, is an absurdity only to be expected of a man who, like Vermeule, knows no difference between an engineer's estimate and a lawyer's plea.

* De Varona's estimate is omitted, as it is identical with Vermeule's in 15 out of 16 items, and cannot be considered as an independent estimate.

We submit that the estimates of our witnesses are borne out by a comparison with the actual cost in 1904, and by Vermeule's admission that the coal cost alone would be reduced \$9,200; and, if further evidence be needed of the untrustworthiness of Vermeule's estimates, it may be found in the fact that he estimates (Pl's Ex. 166, p. 1) the cost for coal to supply 1,800,000 gallons a day from the artesian system at \$5,694 per annum, while the actual cost to supply 1,200,000 gallons a day from the artesian system, as operated by himself in 1905, was nearly three times as much. See below, p. 132.

Another way to test the accuracy of the estimates of operating cost is the following:—

The expenses for operation during the only period for which we have the figures and which can be called a period of normal operation—namely, from May 1, 1896, to May 1, 1901—averaged 30.7 per cent. of the gross receipts.

RATIO OF EXPENSE TO INCOME, 1896-1901.

	Income.	Expenses.
1896-7	\$25,673	\$7,708
1897-8	27,826	6,687
1898-9	30,330	8,226
1899-1900	32,210	11,336
1900-1	35,420	11,838
	<u>\$151,459</u>	<u>\$45,795, = 30$\frac{7}{10}$% of the gross</u>

The average estimate of Messrs. Kuichling, Hazen, and Coffin of the cost of operation after completion is \$17,552, which is 29 per cent. of \$60,000 and 27 per cent. of \$65,000, whereas Vermeule's estimate of \$25,359 is 42 and 39 per cent., respectively.

This comparison amply justifies the estimates of our witnesses; for, although the plant, as operated prior to 1902, had no expense for filtration, it was not an economical plant (the "old steam plant" then in use is universally criticised by the experts, and was only used by the company after 1903 as a reserve plant). and it is, of course, to be expected that the ratio of expense will diminish as the receipts increase.

Still another test of the comparative accuracy of the estimates of operating expense is to be found in the statement of Hazen

(VII. 59) that the general expenses and taxes of a water company ought to equal about 20 per cent. of the income. This rule is justified by the company's own experience, the total expenses in 1904, exclusive of pumping and filtration cost, having been \$9,533, or almost exactly 20 per cent. of the income for that year; and Hazen uses this common rule of estimation in figuring out the cost of operation on completion. But Vermeule's estimate of the general expenses of the plant on completion is \$16,050, or 31 per cent. of his estimated revenue that year, namely, \$50,881. Pl's Ex. 164, p. 21.

As to the cost of filtration, some of the city's witnesses want three shifts of men and a high-class scientist as superintendent. Both of these assumptions are unfounded. Two shifts are enough (Hazen, VII. 134); and the plant was operated on this basis very successfully in 1904 and 1905. Chamot, II. 145; XXIV. 104. As to superintendence, Ithaca furnishes peculiar opportunities for procuring satisfactory service of this sort, and there is no reason to assume a larger expenditure than the \$900 for which Prof. Chamot was glad to do the work.

The average of the estimates of the company's witnesses for operating expense and depreciation, omitting Mr Williams's, is \$21,764, or 33 per cent. of a gross income of \$65,000.

With the dam raised to ninety feet, the cost of operation and depreciation would be some \$4,000 less, according to Williams.

VIII.

NET INCOME OR EARNING CAPACITY OF
THE PLANT.

a. On completion of the works:

This, on the basis of the figures given, *supra*, pp. — and —, would be as follows:—

	Williams.	Hazen,	Allen,	Coffin,	Kiuchling
Gross revenue .	\$58,460	\$61,624	\$65,000	\$65,000	\$60,865
Expense, depreciation, etc. .	17,140	21,270	21,500	22,362	21,923
Net revenue .	\$41,320	\$40,254	\$43,500	\$42,638	\$38,942

The witnesses for the city estimate the net revenue of the plant on completion at much smaller figures, because they ignore entirely the certain increase in gross receipts during the two years or so required to enable the plant to realize its normal business, and because, as pointed out, *supra*, p. 106, they grossly exaggerate the cost of operation. Their theory that only the actual income of the plant in its uncompleted condition in the year 1904 is to be considered renders their conclusions as to the proper earning capacity of the property entirely worthless.

b. In the period of twenty to twenty-five years after the completion of the works.

Estimates of the revenue, gross and net, likely to be realized during the next twenty or twenty-five years have been made by the witnesses for the company. See the references on p. 104.

A computation by counsel will be found below, p. 111.

IX.

VALUE OF THE COMPANY'S PLANT, WATER RIGHTS,
AND FRANCHISES, ON THE BASIS OF THE PROB-
ABLE NET EARNINGS ON COMPLETION OF THE
PLANT, CAPITALIZED AT 5 PER CENT.

The value of the plant on this basis, taking the data used by the several witnesses for the company, as given above, is worked out in the following table:—

	Williams.	Hazen.	Allen.	Coffin.	Kiuchling.
Gross income	\$58,460	\$61,624	\$65,000	\$65,000	\$60,865
Expenses and depreciation,	17,140	21,045	21,500	22,362	21,923
Net income	\$41,320	\$40,254	\$43,500	\$42,638	\$38,942
Value of completed plant on basis of net income, capitalized at 5 per cent.*	\$826,500	\$805,080	\$870,000	\$852,760	\$778,840
Estimated cost of comple- tion	75,899	90,795	90,795	59,910	58,600
Value of existing plant, water rights, etc., on basis of probable net rev- enue, when completed, capitalized at 5 per cent.	750,601	\$714,285	\$779,205	\$792,850	\$720,240

These results do not tally exactly with the estimates made by the witnesses themselves; because we have eliminated all expense for extension of mains, and have therefore been obliged to recalculate some of the figures. See *supra*, pp. 92-93.

* All the witnesses in the case appear to use 5 per cent. when they capitalize.

Williams, V. 128.

Hazen, VII. 60.

Allen, VIII. 130, 199.

Coffin, IX. 103.

Kiuchling, Dft's Ex. 82, p. 8.

Vermeule, Pl's Ex. 164, p. 18.

De Varona, Pl's Ex. 194, pp. 35, 37.

Hering, XXV. 59.

This figure is high enough to take account of the non-exclusive character of the company's franchises.

Ignoring Prof. Williams's estimate for the moment, as based on a 90-foot dam, we have an average valuation of \$751,645.

Making an independent estimate, based on all the evidence in the case, we suggest, as shown *supra*, p. 98, a reasonably certain revenue on completion of the plant of \$60,000 to \$65,000; an allowance for operating expenses and depreciation amounting to the average estimated by our witnesses, or \$21,750 in round numbers (see p. 108); and an expenditure of \$70,000 to complete the plant (*supra*, p. 94). These figures give from \$695,000 to \$795,000 as the value of the plant, according as we place the receipts on completion at \$60,000 or \$65,000, namely:—

$\begin{array}{r} \$60,000 \\ 21,750 \\ \hline \$38,250 = \$765,000 \\ 70,000 \\ \hline \$695,000 \end{array}$	$\begin{array}{r} \$65,000 \\ 21,750 \\ \hline \$43,250 = \$865,000 \\ 70,000 \\ \hline \$795,000 \end{array}$
--	--

If, therefore, we were to assume capitalization at 5 per cent. of the apparent net earnings of the plant on completion as the test of value, the award in this case should be somewhere between \$700,000 and \$800,000, or, say \$750,000 for the plant in use.

This sum, being predicated on earning capacity, includes only so much of the company's property as must be used to earn the profits assumed. It, therefore, does not include the Buttermilk or Enfield Creek properties, the land on Buffalo Street, or the personal property. See below, p. 144.

These corrections will add about \$25,000 to the value of the plant in use, making the total value of the company's property, as indicated by its earning capacity, on completion, about \$775,000.

In addition to this, we may fairly claim a special allowance for the value of the special franchise conferred by § 16 of the company's charter, and a further addition for the certainty of a large increase in net income after the completion of the plant.

If the dam should be raised to 90 feet, the valuation on the basis of earning capacity would be increased by from \$50,000 to \$100,000. *Supra*, p. 108.

X.

THE VALUE OF THE PHYSICAL PLANT, CONSIDERED
BY ITSELF.A. *The estimates of Reproductive Cost less Depreciation.*

The estimates by the several witnesses of the present value of the physical plant are shown in the following table:—

Items.	Hazen. VII. —	Allen. VIII. 198.	Coffin. IX. 104.	Kuichling. DIT's Ex. 8a.
The supply plant:				
Reservoir	\$12,277		\$5,481	\$12,307
Dam	44,303		45,048	20,344
Pipe line	37,137		35,870	31,147
Filter plant	69,872	\$91,954	71,156	73,422
Pumping plant	79,819	93,444	53,675	73,576
Miscellaneous	750	62,164	19,887	750
Total	\$234,158	\$247,562	\$231,117	\$247,546
The distribution system:				
Mains, meters, etc.	\$205,098		\$274,946	\$236,297
South Hill Reservoir	5,000	\$205,077	nothing	
East Hill Reservoir	9,500	10,000	10,167	25,425
Total	310,198	312,277	285,113	261,722
Buttermilk and Enfield			not included	13,288*
Other lands	26,027	24,522	3,000	5,324
Personal property	2,000	not included	1,730	not included
Total	\$574,113	\$584,361	\$520,460	\$497,880*

* Exclusive of Buttermilk Creek, which figures in the other items. Kuichling's schedule is very difficult to fit into this table; but the above figures are substantially correct.

Items.	Vermeule.		Sberrend.		De Varona.		Hering.	
	Pl's Ex. 164, pp. 12, 13.	Pl's Ex. 102, pp. 6, 7.	Pl's Ex. 194, p. 30.	Pl's Ex. 199, pp. 8, 9.				
Supply:								
Reservoir	\$17,011	\$21,460	\$17,398	\$17,398	\$17,398			
Dam		15,049	15,511	15,511	15,511			
Pipe line	14,583	13,649	53,059	53,059	65,475			
Filter plant	53,284	38,128	25,427	25,427	29,351			
Pumping plant	29,643	17,907						
Miscellaneous	16,962							
Total	\$131,483	\$106,193	\$111,395	\$127,735				
Distribution:								
Mains, etc.	\$145,847	\$144,555	\$174,101	\$174,101	\$177,459			
South Hill Reservoir	5,795	5,140	490	490	482			
East Hill Reservoir	7,521	7,521	6,301	6,301	6,638			
Total	\$159,163	\$157,216	\$180,892	\$184,579				
Buttermilk and Enfield	6,421	11,931						
Other lands	2,000	2,000						
Miscellaneous	1,730	1,730						
Going concern value		20,000						
Total	\$300,797	\$299,970*	\$322,400	\$346,113				

* This is \$10,000 less than Sberrend's schedule (Pl's Ex. 102, p. 7), which is erroneously added up.

† This is said to be Vermeule's figure for "real estate and water rights" (Pl's Ex. 194, p. 18). Part of it belongs in the supply; but Vermeule's corresponding figures add up to \$30,383, and De Varona's \$30,113 cannot be apportioned correctly.

‡ Preparatory cost.

** This is a *liso*, apparently, taken from Vermeule, and part of it belongs in the supply; but we cannot apportion it exactly.

Adding the omitted items, the average of the four estimates for the company is \$551,575; of the four estimates for the city, \$322,793,—a difference of about \$225,000, due to the fact that the witnesses for the city take smaller quantities, use smaller price units, and make larger depreciation allowances.

1. Quantities.

The chief difference in quantities is found in the items of rock excavation and trench water. There is no sure way to determine the truth about these items. The estimates are largely guess-work so far as the amount of rock and water likely to be encountered go; and the commissioners will have to rely on their general conclusions as to the credibility of the witnesses, and perhaps on what they have themselves seen of the soil conditions in Ithaca.

There is also a great divergence in the quantities for the Six Mile Creek plant. The city's estimates are all based on Getman's quantities, which were shown on cross-examination to be far from correct.

2. Price Units.

Here we can apply more or less definite tests.

Rock Excavation. Our witnesses take \$3 per cubic yard; the witnesses for the city, \$2. The higher figure is clearly the safer one, and is that adopted by De Varona in his Staten Island report. The Brooklyn bids of Jan. 6, 1905, ran from \$2.50 to \$5, that of the successful bidder being \$3. XXIII. 149, 150, 172.

Excavation and Backfilling. A number of local men testified (see XV. 436, 452, 459, 463, etc.) for the city that 15 cents a running foot was a fair price for digging and refilling a trench for a 6-inch main, and the valuations of the city's experts were generally made on the basis of this testimony. These opinions appeared on cross-examination, however, to have been mere guesses, not based on actual contracts or experience in laying water mains. And when at last an actual contract was unearthed, the price turned out to be 24 cents per running foot for digging and backfilling for a 6-inch water main 800 feet long in easy soil. XV. 455-456.

This is a fair sample of the methods adopted by the city to get a low reproductive value out of their experts. None of these gentlemen know anything of the soil conditions in Ithaca, which, as every one can see, are extremely hard. I. 16-18, 62, 63, 86-88, 96, 97, 102, 103; II. 167, 169. They are told, however, that the current going price for excavation and backfilling is 15 cents a lineal foot, and thus by assuming a figure only 60 per cent. of the real one they readily get the desired result,—a preposterously low figure for the reproductive cost of the distribution system.

Depth of Trenches. Another way is to assume, as most of them do, on Vermeule's assurance, an average depth for the trenches much less than the 5 to 6 feet (see *supra*, p. 79) they ought to have taken.

Cast-iron Pipe. This runs about \$27 per ton, except in the case of De Varona, who takes \$24, notwithstanding that the New York bids of Dec. 21, 1904, ran from \$25 to \$30, that of the successful bidder being \$27. XXIII. 152, 153. Pipe costs less for freight in New York than in Ithaca.

Macadam. The city's estimates run from 9 to 15 cents per lineal foot, but the Staten Island estimate was 30 cents (XXIII. 227), and the cost in Ithaca must be fully as much.

Brick Pavements. The city's estimates run from 27 to 35 cents per lineal foot, Vermeule's being the lowest; but he took 63 cents in his Staten Island report. XX.

Hydrants. According to the city these cost from \$25 to \$32 set, De Varona's figure for one-way hydrants being only \$24; but in the Staten Island reports they use \$40 for the same kind of hydrant. XXIII. 227.

Concrete. Ordinary foundation concrete Vermeule figures at \$6 per cu. yard in this case (Pl's Ex. 164, pp. 2, 3), but in his Staten Island report it runs from \$9 to \$12.

Engineering and Contingencies. Vermeule and De Varona use 10 per cent. for this item in this case, but in their Staten Island reports De Varona allows 15 per cent. and Vermeule 26½ per cent.* for the same item. XXIII. 228; XX.

* 15 per cent. for contractors' profit, and then 10 per cent. for engineering, etc. See Pl's Ex. 164.

The foregoing inconsistencies explain much of the low estimates for the city of the new cost of the distribution mains. It will be observed that Hering, whose work is relatively free from these glaring errors, figures the new cost of this part of the plant at \$214,345 (Pl's Ex. 199, p. 4), which is within \$45,255, or about 22 per cent. of Kuichling's \$259,600 for the same items (Dft's Ex. 82, p. 11),—a difference nearly all accounted for by the different assumptions as to the amount of rock and water in the trenches, and as to the depth of the trenches.

Passing to the supply plant, we have a fairly accurate test of the accuracy of the city's estimates of reproductive cost in the actual cost of the work within two years of the day of valuation. The following table contains a comparison between the estimates and the actual cost of the work:—

THE ESTIMATES OF THE COST TO REPRODUCE THE DAM, PIPE LINE, AND FILTER PLANT, ON JAN. 1, 1905, COMPARED WITH THE ACTUAL COST OF THE WORK IN 1902-03.

Items.	Actual cost as given by Hazen, VII. 112-126 and 238; and see below p. 122.	Estimates.			
		Getman, Pl's Ex. 102 and XIV. 370, 380.	Vermeule, Pl's Ex. 164, pp. 6-8.	Sherrerd, Pl's Ex. 102, pp. 4, 5.	De Varona, Pl's Ex. 104, pp. 28, 29.
Dam and reservoir	\$49,020*	\$16,842.93	\$19,331	\$20,049	\$19,331
Pipe line	37,512†	19,781.34	19,902	23,844	19,323
Filter plant	70,578‡	55,455.84	54,932	57,449	54,932
Total	\$157,110	\$92,080.11	\$94,166	\$101,342	\$93,586

The difference between the facts of the case and these *ex post facto* estimates is further illustrated by the following table of the amounts and percentages by which the actual cost of dam, pipe line, and filter plant exceeded the estimates of reproductive cost made by the witnesses for the city:—

Witness.	Excess of Cost over Estimate.	
	Amount.	Percentage.
Getman	\$65,030	76%
Vermeule	62,944	66
Sherrerd	53,768	55
De Varona	63,524	68
Average	\$61,817	68%

As a matter of fact, most of this estimation work was done by Getman, who had had no experience whatever in construction of this kind, made no attempt to ascertain the exact quantities used or prices paid, and gave no attention to the peculiar difficulties and hazards under which the work was prosecuted. Neither Sherrerd, De Varona, Hering, nor, so far as we can see, Vermeule, made independent estimates of much of anything outside the distribution system. Vermeule set a man without experience at work, and they all practically took the figures produced by him.

Hering, however, made for the filter plant an independent estimate of his own (Pl's Ex. 1, 99, p. 7; and XXV. 48), amounting to \$67,500, which is within $4\frac{1}{2}$ per cent. of the actual cost of the work. Hering and De Varona were the only witnesses for the city who had ever built a filter plant. Hering practically justifies the cost of our plant as given by Hazen, while De Varona carefully refrains from using the experience gained by him in Brooklyn where a 3,000,000 gallon mechanical filter built by him cost about \$125,000. XXIII. 124-127.

It is probably true that the Six Mile Creek plant cost somewhat more than if the company had had plenty of time to build it in; but Hering's estimate for the filter plant—which is practically the only independent estimate made by any of the city's experts for any part of the supply plant—shows that the excess was not large, and that the so-called estimates of reproductive cost made by the other witnesses for the city, all practically based on Getman's, are ridiculous.

3. Depreciation.

The only consistent and sensible witness for the city on the depreciation of the distribution system is De Varona, who uses a $4\frac{1}{2}$ per cent. sinking fund and gets a total depreciation of 13.72 per cent. (XXIII. —); which may be compared with Hazen's 6.6 per cent. (VII. 236, 238), Coffin's 9.3 per cent. (IX. 104), and Kuichling's 10.8 per cent. (XXIII. —). Some of the others use no sinking fund, and thus reach the absurd depreciation of 32 per cent. for a pipe system only sixteen years old. This is what Vermeule and Sherrerd say in this case; but when Vermeule was estimating the depreciation of the Staten Island system, which was about the same age, he allowed only 10 per cent. (—). Hering reaches nearly the same high percentage of depreciation by using a 3 per cent. sinking fund on the theory that you cannot invest money safely at a higher rate than this! XXV. 55-58. If they don't get enough off one way, they do in another. Hering apparently never stopped to think that, if any one would invest money in a water works at 3 per cent., that rate should be used for capitalizing the income. Even in 1904, when most of the water was being pumped down hill, the company cleared \$18,834 (*supra*, p. 95), which at 3 per cent. indicates a value of \$627,800. If we assume, as we ought, a net income on completion of somewhere about \$40,000 (*supra*, p. 109), we get a valuation, on the basis of Hering's theory of the value of money, of over \$1,200,000 for the company's plant.

Sherrerd's attempt to depreciate the filter plant 76 per cent. was too absurd for any of the others to follow, and indicates either complete ignorance of the subject on his part or something worse. His figures, correctly added, would show a reproductive value for the whole plant of only \$277,000; but this evidently frightened him, so he ran in \$20,000 for "going concern" value—which is no part of an estimate of reproductive cost (see *supra*, p. 60), and then makes an error in adding up of \$10,000.

We think the commissioners will have little hesitation in concluding that the fair value of the company's physical plant Jan. 1,

1905, as indicated by the cost of reproduction less depreciation, was about \$550,000, divided thus.—

Supply	\$240,000
Distribution	292,500
Miscellaneous	17,500
Total	<u>\$550,000</u>

B. *The Actual Cost of the Plant.*

A further, though usually less valuable, guide to the present value of the physical part of a plant of this sort is to be found in the figures of actual cost.

There is no exact information as to what the distribution works had cost down to Nov. 1, 1901, when the company was sold by Mr. Treman to Mr. Morris for \$350,000; but the cost of the rest of the plant is disclosed quite fully.

Mr. Kuichling estimates the reproduction cost of the distribution system, as it stood Jan. 1, 1905, at \$259,600 (Dft's Ex. 82, p. 11), and the company spent \$31,894.58 on mains, hydrants, and meters between Nov. 1, 1901, and Jan. 1, 1905 (see table below, p. 122), leaving about \$227,500 as the approximate cost of this part of the works down to Nov. 1, 1901. He estimates the cost of the East Hill reservoir, built in 1894, at \$8,500, and the cost of the pumping plant, built the same year, at \$33,000 (Dft's Ex. 82, pp. 12-13); besides which the company's lands (exclusive of those for Six Mile Creek basin and the filter plant) cost \$33,069. *Ibid.*, p. 18.

The cost of the Buttermilk Creek property and South Hill reservoir is put by Kuichling at \$24,900 (*ibid.*, p. 18), and the Enfield Creek property cost \$13,288. VII. 85.

Assuming that Kuichling's reproductive costs in 1905 do not exceed the actual cost (in fact, of course, the average cost of pipe was much greater between 1872 and 1901 than it was in 1905), and adding, therefore, the above figures together, we get a total of \$340,257, which is probably a close approximation to the actual cost of the works to Nov. 1, 1901.

Between that date and Jan. 1, 1905, the company spent for land and construction (including the \$31,894.58 mentioned above), in execution of the two contracts with the city of Aug. 25, 1902, and Feb. 18, 1903, the further sum of \$240,536.18, according to the books and vouchers of the company in evidence in this case. III. 85-86.

This makes a total probable actual expenditure by the company between 1872 and 1905 of at least \$580,793, unless the estimates

made by Kuichling (the lowest for the company) of the reproductive cost of the plant built before 1901 are too high.

The details of this computation are as follows:—

a. Prior to Nov. 1, 1901.

Cost of distribution system to Nov. 1, 1901, based on Kiuchling's estimate of the cost to reproduce the entire system, Jan. 1, 1905, less the actual expenditure for mains, services, hydrants, and meters, between Nov. 1, 1901, and Jan. 1, 1905, \$259,600—\$31,894.58	\$227,500
Cost of East Hill Reservoir, estimated by Kiuchling	8,500
Cost of pumping plant built in 1894, estimate by Kiuchling	33,000
Cost of Buttermilk Creek property and South Hill reservoir, based on the company's books and Kiuchling's estimates	24,900
Cost of Enfield Creek property	13,288
Cost of other lands	33,069
Total to Nov. 1, 1901	\$340,257

b. Between Nov. 1, 1901, and Jan. 1, 1905.

Prepared from Mr. Summers's testimony (III. 85-86) and the books and vouchers of the company.

Items.	Nov. 1, 1901— Nov. 1, 1902.	Nov. 1, 1902— Nov. 1, 1903.	Nov. 1, 1903— Nov. 1, 1904.	Total.	
Mains and services	\$11,787.46	\$12,455.84	\$110.70	\$24,132.60	} \$31,894.58
Hydrants	5,112.81	2,328.94	—	7,441.75	
Meters	—	320.23	—	320.23	
Dam	1,947.60	36,703.64	25.65	38,676.89	} 167,383.53
Clearing basin . . .	6,474.33	1,076.32	198.05	7,352.60	
Pipe line	14,067.23	13,262.68	580.13	27,910.04	
Filter plant	—	93,117.08	326.92	93,444.00	
Pumping plant . . .	1,260.17	22,296.52	866.10	24,422.79	} 41,258.07
Land for basin . . .	7,315.00	1,222.83	100.00	8,637.83	
Engineering	4,360.49	2,128.66	1,084.15	7,573.30	
Cottage	—	—	624.15	624.15	
Total	\$52,325.09	\$184,912.74	\$3,298.35	—	\$240,537.00

Hazen's statement of the actual cost of the work done in 1902-03 agrees with Summers's, except that he distributes it differently, apportioning more to the pumping plant and less to the filter plant. He includes in the former the cost of the pumps from the 24-inch main to the filter plant (VII. 68), while Summers calls this ma-

chinery a part of the filter plant. Hazen's figures and Summers's compare thus:—

	Hazen (VII. 238).	Summers (III. 85-86).
Dam and basin (construction)	\$49,820	\$46,028
Pipe line	37,512	27,910
Filter plant	70,578	93,444
Total	\$157,110	\$167,382
Pumping station	42,715	24,422
Total	\$199,825	\$191,804

The difference is accounted for by the fact that Hazen includes engineering in each item, while Summers's estimate for this item is put by itself, and is not included in the above table, because it includes the engineering on the distribution work done at that time.

C. SUMMARY.

Between 1872 and Nov. 1, 1901	\$340,257
Between Nov. 1, 1901, and Jan. 1, 1905	240,537
Total	\$580,794

Prof. Williams figures out that the actual cost of the physical plant was about \$50,000 for land, \$250,000 for the improvements of 1902-03, or \$300,000 besides the distribution system which he estimates at \$300,000 more, making \$600,000 in all. V. 131-132; VI. 151.

Hazen also makes an estimate of the actual cost of the whole plant, except the distribution system. He makes (VII. 238) the actual cost as follows:—

Buttermilk Creek	\$20,547
Enfield Creek	13,288
Six Mile Creek 1892 plant	43,166
Six Mile Creek 1903 plant	208,582
South Hill reservoir	10,600
East Hill reservoir	9,500
Total	\$305,683

Adding his estimate of the cost to reproduce the mains, etc., of the distribution system, \$316,251, and the agreed value of the Buffalo Street lots and the personal property, \$3,730, we get \$625,664 as his idea of what the whole plant fairly cost.

We thus have three painstaking efforts to ascertain the actual cost of the physical plant, as follows:—

Kuichling, \$580,794. Hazen, \$625,000.

Williams, \$600,000.

All of these gentlemen had been employed by the company at one time or another, and were familiar with it before this suit was brought.

We may check these figures with the price paid for the company in 1901, \$350,000, and the subsequent expenditure of \$240,537, or a total cost as represented by stock and bonds of \$590,537.

The necessary conclusion from all the evidence in the case is that the fair and actual cost of the company's physical plant, determined as to the distribution system by the prices of 1905 and as to the rest by the books and vouchers of the company, was about \$600,000.

A depreciation of \$50,000 from this figure is surely enough, and that leaves as the fair value of the physical plant \$550,000,—the average valuation of our witnesses for this part of the company's property.

N.B. For the reasons stated in the argument at the bar all references to the actual cost of construction prior to 1901 are to be considered as struck out of this brief.

C. *Going Concern Value.*

The additional value which has been imported into or added to the physical plant, by reason of its being a connected, going, tested unit, in excess of reproductive cost less depreciation, must be determined by the commissioners, without much assistance from opinion evidence in the case.

We may call attention, however, to the fact that in the Newburyport Water case (*supra*, p. 60) \$40,000 was allowed for going concern value in an award of \$275,000, and in the Gloucester case (*supra*, p. 61) \$75,000 in an award of \$600,000; the award in both cases including physical plant and water rights, but (owing to the terms of the condemnation) nothing for franchises or earning capacity. In the Gardner Water case (see report) the commissioners allowed \$165,000 for the physical plant, \$18,000 for going concern value, and \$91,000 for water rights and franchises, or \$274,000 in all.

If, however, the going concern value represents the fact that the company's plant is connected with the consumers, and that the purchaser steps at once into an income earning business, then, according to those witnesses who have paid attention to going concern value, thus defined, as a separate item, the following allowances should be made:—

Coffin, \$45,000; IX. 12, 13, Landreth, \$30,000; XXVII.

103.

Sherred, \$20,000; Pl's Ex. Bogart, \$15,000; XXVIII. —.

192, p. 7.

Coffin makes his going concern value equal to one year's income. IX. 12, 13. Sherred takes 5 per cent. of his valuation of the property in use. Pl's Ex. 192, p. 7.

In the Staten Island case Hazen and De Varona took \$10 per service for this item. XXIII. 221. This would be about \$20,000 for the Ithaca case.

We think the special value of the company's physical plant as a going concern, in addition to its value based on actual or reproductive cost less depreciation, may fairly be set at \$50,000 to \$75,000.

D. *Summary.*

For the total value of the physical plant considered by itself we have therefore:—

Reproductive cost less depreciation, as <i>supra</i> , p. —	\$550,000
Actual cost less depreciation, as <i>supra</i> , p. —	550,000

These computations check each other completely.

Going concern value, as <i>supra</i> , p. —	\$50,000 to \$75,000 .
Total value Jan. 1, 1905, of the company's physical plant, exclusive of water rights and franchises, and irre- spective of earning capacity	\$600,000 to \$625,000

We ask the commissioners to find this value for this part of the company's property.

XI.

THE VALUE OF THE COMPANY'S PROPERTY, IRRESPECTIVE OF FRANCHISES AND EARNING CAPACITY, DETERMINED BY THE COST OF AN ALTERNATIVE SOURCE OF SUPPLY.

A common and correct method of valuing the property of a water works company without regard to earning capacity and franchises is to consider it as divided into two parts, the distribution system and the supply. The distribution system includes the mains, meters, connections, stand pipes, and distribution reservoirs; and the supply, or, as it is sometimes called, the supply system, or supply plant, consists of the water sources, dams, impounding reservoirs, filtration plant, if any, pumping plant, if any, and everything required to deliver the water into the mains, stand pipes, or distributing reservoirs of the distribution system.

Considering the entire property of the company to be divided into these two parts or branches, a division to which every water works system naturally lends itself, there is no better way to value the distribution system than by the cost of reproduction less depreciation; that is, by the process known as reproductive cost. And this is the customary method of valuation adopted for this part of the works. Every witness in this case on both sides has valued the distribution system, considered by itself, in this manner.

The customary and proper way to value the supply, considered by itself, is by means of a comparison of the estimated cost to procure, develop, and operate the cheapest available source capable of furnishing an equal quantity of water, and to compare these figures with the cost to operate the supply system under valuation, making due allowance for the difference in the quality of the water, if any. The cost of acquiring and developing the cheapest alternative supply, increased or diminished, as the case may be, by the difference in operating costs and water values, represents, ap-

proximately and within certain limits (see *supra*, pp. 58-59), the value of the supply system in question.

This method of valuing the company's supply by the cost of substitution is recognized by the witnesses for the city as the correct mode of determining the value of this portion of the property of a water works company,

Vermeule, Pl's Ex. 166.

De Varona, XXIII. 226.

Hering, XXV. 74, 80-84;

but has been applied by them only in a superficial and half-hearted way in the case at bar.

The witnesses for the company have valued the company's property on this basis, as well as on the basis of earning capacity, using the results obtained by one process to check those indicated by the other.

Hazen, VII. 27, 32, 73, 74, 79. Coffin, IX. 14, 26.

Allen, VIII. 136-138.

Kuichling.

Where, as in New York City and some other places, the practice obtains of selling water at so much per million gallons for delivery into the distribution mains of the purchasing company or city, it is possible to value a water supply by taking the capitalized value of the annual cost to buy the necessary quantity of water and making additions or deductions for differences in quality and other conditions. The result represents, as in the other case, the approximate value of the supply system of the works under investigation. See De Varona, XXIII. 216-223. In the case at bar there is no evidence of a current going value for water sold wholesale in this part of the state; and it is, therefore, impossible to apply this process.

A. *The Distribution System.*

The estimates of the respective witnesses of the value of the company's distribution system, as measured by reproductive cost, are considered above (p. 115 *seq.*), and we need only repeat on this point the conclusion there sought to be demonstrated that the fair cash value on Jan. 1, 1905, of the company's distribution system, including mains, meters, connections, the South Hill reservoir, and the East Hill stand pipe, was about \$292,000.

B. *The Supply Plant.*

It is not contended that the source from which the company derived its water—namely, Six Mile Creek—was a monopoly source; that is to say, it is not denied that there were other water sources in the vicinity of Ithaca available for the purpose of supplying the community with water.

Among the other sources more or less available for this purpose the following have been mentioned in the evidence, and all of them have been investigated by the witnesses for the company: Six Mile Creek above Slaterville, Fall Creek, Taghanic Creek, Salmon Creek, Cayuga Lake, Cayuta Lake, the Inlet, ground water from the Inlet valley, and a combined supply from the Inlet valley and Cascadilla Creek. These sources were all considered by the company's engineers prior to the construction of the Six Mile Creek plant, and rejected.

Williams, V. 16, 17, 21, 27, 47, 48, 88-92; VI. 142-148, 169-173, 197-199.

Hazen, VII. 21-24, 195; XXVI. 2-30.

Some of these sources are evidently not considered as worth figuring on by either side, and may be dismissed with a reference to the evidence. This applies to Taghanic Creek, Salmon Creek, the Inlet, and Cayuta Lake. Hazen, VII. 23-24.

There is more or less dispute between the witnesses for the respective parties as to the merits of the other sources named.

1. *Slaterville.*

Six Mile Creek Valley above Slaterville is suggested by De Varona (XXIII. 82) as a better site for the dam and reservoir than the one selected by the company; but he puts this as an impression merely rather than a final opinion, and has made no surveys, plans, or estimates. See XXIV. 238. On the other hand it appears that the Slaterville site was considered by Williams and Hazen before they advised the company to locate where it did, and that it was rejected. The reasons were: (1) the small area of the water-shed, only 11 square miles; (2) the great size (400,000,000 gallons) and cost of an impounding reservoir; (3) the fact that

only 3,000,000 gallons daily could be secured from this development; and (4) the cost, \$105,000, of a ten-mile 12-inch pipe line, which would only carry 2,500,000 gallons daily. See Hazen, XXVI. 2, 6-7. To these objections may be added the large damages that would have to be paid to the mill owners on the stream, principally at Brockton.

Six Mile Creek at Slaterville may, therefore, be discarded from further consideration.

2. *Cayuga Lake.*

An ample supply of soft water could be procured from this source, but it would require filtration on account of the drainage of Ithaca and other places into the lake, and the whole supply would have to be pumped to a maximum height of 500 feet in order to supply the city.

There are two estimates of the cost of a supply from this source, one by Vermeule (Pl's Ex. 166, pp. 4, 5) and one by Hazen, Dft's Ex. 119. See also Hazen, XXVI. 22-24.

Vermeule's estimate (deducting his distribution system, which is included in his totals) amounts to \$274,450, while Hazen's is \$469,000. This difference is accounted for as follows: (1) Vermeule puts the estimated cost of a filter plant at \$55,000, which is contrary to all the evidence in the case; (2) he omits entirely the item of rock excavation in laying his force mains, and as these would have to run up the hills, which are all rock, to the height of 500 feet, there would evidently be an immense amount of expensive rock work; (3) he omits a covered reservoir, which is always necessary where filtered water is used, and which he figures on himself when he is trying to swell the cost to complete the Six Mile Creek plant (see Pl's Ex. 164, p. 14); (4) he estimates upon a pumping plant of only 3,000,000 gallon capacity, whereas for the purpose of a comparison with the Six Mile Creek supply plant he should have estimated, as Hazen did, on a 5,000,000 gallon pumping plant; (5) he estimates that the pumping plant will cost, according to the first five items of his schedule

only, \$105,400, in spite of the fact that the temporary and very inefficient plants installed by the city at Clinton Street and Williams Springs are estimated by him (Pl's Ex. 166, p. 1, item 3 to 8 inclusive) to cost when completed \$142,950; and (6) he apparently omits the allowance for engineering and contingencies, which, if we take the figure used by him in Pl's Ex. 164, would be 10 per cent.

We therefore conclude that Hazen's estimate of the probable cost of an efficient plant to pump Cayuga Lake water into the distribution mains is much more accurate than Vermeule's.

The expenses of operating this plant are estimated by Hazen at \$25,800, or \$15,800 more than is estimated for operating the Six Mile Creek supply plant. It is impossible to say just what Vermeule estimates as the cost of operating the supply, because his figures for the cost of operation in Pl's Ex. 166 are not apportioned between the distribution system and the supply. We make note, however, that all that he allows for coal to pump the whole supply for the city of Ithaca from this station is \$3,840, which is only a small part of what it is now costing the city for coal to pump from the same level. See p. 132. Hazen's estimate for the corresponding item is \$14,400, and is obviously much more accurate approximation.

Vermeule's estimate is demonstrably fallacious, not to say unintelligent or purposely misleading. Accepting Hazen's as approximately correct, we have a total first cost for the Cayuga Lake development of \$469,000 and a difference in operating expense of \$15,800 per annum, which capitalized at 5 per cent., amounts to \$316,000, or a total cost, for comparison with the Six Mile Creek plant, of \$785,000.

That is, the value of the Six Mile Creek supply, including water sources and physical plant, measured by the cost of procuring and operating an equivalent supply from Cayuga Lake, is \$785,000.

So far we have taken no account of the Ithaca sewage except to filter the water; but Mason says that if the lake were used as a source of supply, the water must not only be filtered, but the sewage of Ithaca first disposed of. XVII., 35, 39-42.

At this point we desire to call attention to the reckless estimates of coal consumption made by Vermeule in order to get low figures for his alternative sources of supply.

In Pl's Ex. 166 he allows \$5,694 for coal in his artesian well estimate (p. 1), and \$3,840 in the Cayuga Lake figures (p. 5). He does not give the number of gallons pumped, but we will assume that he is only estimating on the 1,800,000 gallons daily present consumption. This is 657 m. g. per annum, or \$8.66 per m. g. for the artesian system, and \$5.84 for the Cayuga Lake scheme.

Hazen's figures for the coal required to pump 3,000,000* daily are \$11,600 for the artesian scheme, exclusive of the lift to the ground, and \$14,400 for the lake plan. Dft's Ex. 120 and 119. These sums amount to \$10.59 and \$13.15 respectively; the former figure to be increased by the coal cost of pumping to the surface.

Now let us turn to the actual results achieved by Vermeule in the plant built and operated by him for the city of Ithaca. From Jan. 1, 1905, to Nov. 21, 1905, the expense for coal at the Clinton Street station was \$6,040 for pumping about 1,200,000 gallons daily for ten and three-quarters months. Dft's Ex. 56. This amounts to 390 m. g. at a coal cost of \$15.48 per m. g. For the whole period, from Jan. 1, 1905, to Nov. 1, 1906, the cost for coal at Clinton Street and Williams Spring was \$16,181. Miller, XXVIII. — This covered eleven months (Jan. 1–Dec. 1, 1905), when 1,200,000 gallons was pumped daily, and eleven months (Dec. 1, 1905–Nov. 1, 1906) during which 1,800,000 was pumped daily. This is equivalent, by proportion, to pumping the full supply, 1,800,000 gallons, for eighteen months, which would be 985 m. g. pumped for \$16,181; that is, the coal cost was \$16.42 per m. g.

Putting these results together, we have as the cost for coal of pumping from the "flat":—

	Artesian Supply.	Lake Supply.
Hazen's estimates	10.59†	13.15
Vermeule's estimates.	8.66	5.84
Vermeule's actual results	{ 15.48 }	
	{ 16.42 }	

These figures speak for themselves, and indicate which estimates of the cost of alternative supplies are the more accurate,—Hazen's or Vermeule's.

* XXVI. 23.

† Plus the cost of pumping to the surface.

3. *Fall Creek.*

Fall Creek is a larger stream than Six Mile Creek, and presents some advantages over the latter for a source of supply for Ithaca; but the water would require filtration, the cost of procuring it would be very great for construction alone, it would not be possible to supply the entire city by gravity, and there is absolutely no telling what it would cost for damages to the mill owners and the University.

Vermeule (Pl's Ex. 166, p. 3) estimates the cost of the physical plant from this source at \$196,849, being his figure of \$266,849 less his allowance of \$73,450, (see XXV., 85) for water rights. Hazen (Dft's Ex. 121) makes no attempt to determine the cost of the diversion rights, but estimates the cost of the plant itself at \$270,800. We do not find Vermeule's details, and, therefore, cannot compare them with Hazen's; but it is reasonable to suppose that his estimate is made up in the same erroneous manner—as to the capacity and cost of the machinery, the cost of the filter plant, rock excavation, engineering expenses, etc.—as that for the supply from Cayuga Lake considered *supra*, p. 130.

As to the cost of operation, Vermeule does not separate his figures so that we can tell what he allows for the supply plant. Hazen's figure (Dft's Ex. 121) is \$6,500, or \$3,500 less than the cost at Six Mile Creek.

Taking Hazen's estimate, therefore, as reasonably accurate, we have a total first cost for plant alone of \$270,800, from which, for the purpose of comparison with the Six Mile Creek supply, there must be deducted the capitalized value of the difference in operating expenses, or \$70,000. This leaves as the figure for the cost of a supply from Fall Creek, to be used as a test of the value of the Six Mile Creek supply, the sum of \$200,800, plus the amount to be paid for damages to the riparian owners on the stream.

If, therefore, these damages could be avoided or were nominal in amount, Fall Creek Supply would be a dangerous competitor of the Six Mile Creek plant, and so large a value could not be assigned to the latter as has been testified to by the witnesses for the company.

As a matter of fact, however, the damages to the mill owners and the University would be extremely large. Vermeule's estimate of \$70,000 is nothing but a guess, and an absurd one. Hazen, VII. 22, 23, 195; XXVI. 28-30. The total fall from Boole's dam is 440 feet, of which 370 is developed with machinery installed, having a capacity of over 2,000 h. p. See Williams and the mill-owners in XXVIII.

The University plant cost about \$160,000, and includes a hydraulic laboratory which uses at various times during the year the entire average flow of the stream, increased by the storage in Beebe Lake. G. S. and Emmons Williams in XXVIII. The importance of this hydraulic laboratory to Cornell University cannot be exaggerated. As shown by the evidence of Hering (XXV. 88-90) and Williams (VI. 143, 144, 169-173), Cornell University is the only institution of learning in the world with opportunities for the maintenance of a laboratory of this sort, and this opportunity and the use made of it is one of the factors that has most largely contributed to the renown and success of the University.

The damages to the mill owners and the University from the withdrawal of 5,000,000 gallons daily, which is nearly the entire minimum flow of the stream (VI. 171) would be, it would seem, incalculable; and the only practical way to meet the difficulty would be to establish large impounding reservoirs further up the valley and secure the necessary supply from these basins. There are, however, two objections to this course: one is that, as pointed out *supra*, p. 66, it cannot legally be done without the consent of the riparian owners; and, secondly, the cost of these reservoirs has not been included in any of the estimates made, and would necessarily be very large, both for land and construction. Hazen, VII. 195.

On the whole, therefore, it is necessary to conclude from the evidence in the case that Fall Creek is not available as a source of water supply for this community, except at an expense probably many times larger than Hazen's estimate for the cost of construction, and only then with the consent of the riparian owners on the stream. Fall Creek must therefore be eliminated from consideration as a competing source of supply with Six Mile Creek,

or as furnishing a standard or test of the value of the latter based upon the cost of procuring and developing its waters.

It may be noted in passing that the test wells sunk by the city in Fall Creek valley indicated a deficiency of underground water, and that this valley was therefore "ruled out" as a possible source of underground water supply. Getman, XIV. 393, 394.

4. *The Inlet Valley Underground Supply.*

Vermeule (Pl's Ex. 166, pp. 1, 2) estimates the cost of developing a supply from underground wells along the Inlet valley at about \$160,000, being his figure of \$459,124 less his estimate for the distribution part of the works. Hazen's estimate is \$250,000. Dft's Ex. 120.

The absurdity of Vermeule's estimate is shown by the fact that he includes the present temporary plant at its actual cost of \$95,000, adds an engine at Clinton Street, and another at Williams spring, installs a third for the high service, and then expects to operate the whole plant and pump at least 1,800,000 gallons daily on a coal cost of only \$5,694 per annum! The actual cost for the coal consumed at Clinton Street during 10 $\frac{3}{4}$ months in 1905 for pumping about 1,200,000 gallons daily on the average was \$6,040 (Dft's Ex. 56), which would mean \$10,200 per annum for 1,800,000 gallons daily.

The cost of operation, as estimated by Vermeule cannot be given, because he does not separate the supply from the distribution; but Hazen makes it \$17,000 per annum, or \$7,000 more than his estimate of the cost to run the Six Mile Creek plant.

Hazen's figures, as given above, however, assume that the water is delivered to his pumping plant, and do not include the cost to get the water from the ground to this level. This he estimates, without going into details, at an additional cost of at least \$100,000 for construction and \$5,000 per annum for pumping.

We have, therefore, with Hazen's figures, a total first cost of \$350,000 and the capitalized value of the extra cost of operation; namely, \$12,000 per annum, or \$250,000 more. This makes \$600,000, to which should be added for the purpose of comparison with Six Mile Creek plant the capitalized value of the difference in the quality of the water, which at \$10 per million gallons on a

total supply of 3,000,000 gallons amounts to \$219,000, making a total of \$819,600 as the value of Six Mile Creek supply based on the cost of securing an equally good supply of water from the Inlet valley.

This comparison assumes that a sufficient quantity of water could be obtained from driven wells in the Inlet valley; but the witnesses for the company do not believe that there is any certainty about the volume of this supply,

Williams, V. 88, 89, 92.

Coffin, IX. 37-39.

Hazen, VII. 24; XXVI. 25-28.

Allen, VIII. 137.

and this conclusion is amply fortified by the evidence discussed below, p. 158.

5. *A Combined Supply from the Inlet Valley and Cascadilla Creek.*

No one suggests that Cascadilla Creek could be intercepted at any point on its course and used as a surface supply.

The area of the water-shed is less than 13 square miles (VI. 174), and it is doubtful whether the most expensive development would furnish an adequate supply. The minimum flow is 500,000 gallons daily or less. VI. 175.

There are also two mill privileges on the stream, one (the Campbell Bros. planing mill) being in active operation from power derived from a dam about thirty feet high, recently constructed. VI. 174. This dam can be seen from Stewart Avenue bridge.

It is, however, apparently contended by some of the city officials that an underground supply can be obtained by driving wells some distance up the valley, and that enough water can be obtained in this manner to supply by gravity the requirements of the high service, estimated at about 600,000 gallons per day.

Certain test wells were sunk in 1905 in search of water in this valley. The only evidence in the case concerning these wells is found in Mr. Getman's testimony of Oct. 20, 1905, contained in Vol. IV. It appears that certain wells were sunk from two to three

miles up the valley (p. 74-75), and that these wells yielded about 15,000 gallons each (p. 75). On page 122 he says there were six wells sufficiently far up the valley so that water could be brought down to Ithaca under good pressure. On page 127 he says that these wells are located about three miles east of the city line, at an elevation of about 1,000 feet, or 160 feet above the highest point of the city (840 feet). On page 131 he says that the wells were "small test wells, to see where the gravels were located."

In Vol. XIV. p. 411-414, Mr. Getman testified on May 11, 1906, that the city had no further data respecting a possible supply from driven wells in Cascadilla valley than that given by him in October, 1905, abstracted above.

The result is that there is nothing to show that a supply of water sufficient for the Ithaca high service could be obtained from wells in Cascadilla valley, except the fact that six or seven test wells, sunk at various points up the valley at a distance of three or more miles from the city, were flowing on a given date at the rate of 90,000 to 100,000 gallons per day, in the aggregate. It seems too clear for argument that such evidence as this is wholly inconclusive that there could ultimately be obtained in this way a supply of water, which at the present time must be 600,000 gallons daily, and ought to be 1,000,000 (Getman, XIV. 412); and when we consider the small area of the water-shed above this point,—not exceeding 9 square miles at the most,—the fact that there are valuable mill privileges below, the fact that the flow of the stream, anyway, is small, and the fact that underground water cannot be diverted for purposes of a public water supply without compensation to the land-owners in the neighborhood and down the valley (see *supra*, p. 66), a proposition to procure from this source a supply for the Ithaca high service is preposterous.

The cost of development and operation by the figures made by Mr. Hazen in Dft's Ex. 123 show a cost for construction, including engineering and contingencies, of \$370,000, being \$188,600 for an efficient pumping plant at Clinton Street and Williams Spring in the Inlet valley, and \$118,400 for the wells, pumping plant, etc., for a high service supply in Cascadilla valley. This estimate

is for a 3,000,000 gallon plant only, however, and is, therefore, not fairly comparable with the Six Mile Creek supply. Hazen made no detailed estimates for the cost to procure a 5,000,000 supply from the Inlet valley and Cascadilla Creek, because he was of the opinion that it would be absolutely impossible to get this quantity of water. If, however, the water were there, the cost of development would, in his opinion, be at least \$40,000 more; which makes a total cost of \$347,000 for construction, exclusive of the damages that might have to be paid to the riparian owners on Cascadilla Creek for the diversion of underground waters.

The cost of operating this combined supply plant apart from distribution system is estimated by Mr. Hazen at \$13,200, or \$3,200 more than his cost of operating the Six Mile Creek supply.

We have, therefore, as against the feasibility of this proposition: (1) the absolute uncertainty of the quantity of water to be obtained from either or both of the sources involved; (2) assuming that enough water could be obtained, a construction cost of \$347,000, an increased operating expense amounting to \$3,200 a year, which at 5 per cent. amounts to a capital cost of \$64,000 more, or a total of \$411,000 as the probable cost of this combined supply; besides (3) the damages that might have to be paid to the riparian owners on Cascadilla Creek; and (4) an allowance for the inferior quality of so much of the supply as would be derived from the Inlet valley.

Assuming 2,000,000 gallons a day as the supply from the latter source and a difference in value of \$10 per million gallons for excess hardness, iron, etc., we should add to the above sum of \$411,000 the further sum of \$146,000, which is the capitalized value at 5 per cent. of 2,000,000 gallons of water per day at \$10 per million ($2 \times 365 = 730 \times 10 = 7,300$, which at 5 per cent. = \$146,000). This makes a total value for the Six Mile Creek supply, based upon the cost of a combined Inlet valley and Cascadilla Creek supply, of \$557,000, without taking into account the amount that would have to be paid for damages by the diversion of water from Cascadilla valley; and this is on the wholly unfounded assumption that a sufficient quantity could be obtained.

That this "combination supply" is not a serious proposition is to be conclusively inferred from the fact that Vermeule did not mention it either in his evidence (?) or in the estimates in Pl's Ex. 166. See also Hazen, XXVI. 41-44.

6. *Summary.*

The evidence shows that these alternative sources of supply are all, for one reason or another, impracticable, and that Six Mile Creek is, as our witnesses put it, the "most available" and the "best practical" source of supply for Ithaca.

So far as the cost of procuring a supply from these other sources is to be regarded as a test or measure of the Six Mile Creek supply, the evidence may be tabulated thus:—

Cayuga Lake	\$785,000
Fall Creek	200,800—plus the damages for diversion.
Underground supply from the Inlet valley	819,600
Combined supply from the Inlet valley and Casca- dilla Creek	557,000—plus the damages for diversion.

As the damages for diverting 3,000,000 to 5,000,000 daily from Fall Creek would be prohibitory, we have left only three sources, two of which are wholly uncertain in quantity, and in the case of one of these two something must be added for damages.

We may safely conclude that the value of the Six Mile Creek supply plant, including reservoir, dam, pumping plant, filter plant, and the right to divert (or by condemnation proceedings to acquire the right to divert) the waters of Six Mile Creek, is, if measured by the cost of an alternative supply, after deducting the estimated damages, still unpaid, to the lower owners on Six Mile Creek (or \$2,500 as figured below, p. 146), at least \$600,000.

C. *Total Value of the Company's Property on this Basis.*

Distribution system, as above p. —	\$292,000
Supply plant, as above, p. —	600,000

Total value of plant in use	\$892,000
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To this should be added:—

Buttermilk and Enfield Creek, as below, p. —	\$25,000
Buffalo Street lots, agreed price	2,000
Personal property, agreed price	1,730

Total	\$920,730
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This makes a total value for the company's physical property and water rights, but taking no account of the company's franchises, of \$925,000 in round numbers. This is considerably more than the value predicated on earning capacity (\$775,000, as figured out *supra*, p. 111); which indicates (1) that there is really no other source of supply comparable from the standpoint of cost with Six Mile Creek, and (2) that the estimate of \$775,000 based on earning capacity is a conservative valuation.

XII.

THE VALUE OF THE COMPANY'S FRANCHISES AND
CONTRACTS CONSIDERED BY THEMSELVES.

1. The company's general franchises.

It is always a difficult matter to put a value upon the franchises of a public service company considered independently of the ordinary rights of property, tangible and intangible, which the company owns, in addition to the franchises in question; all of which are required to enable the company to earn its revenues.

We do not consider it necessary for the commissioners to attempt to fix an independent value upon the company's general franchises to take water sources and property by eminent domain, and to sell and distribute water to the city of Ithaca and its inhabitants; and no specific evidence has been introduced of the independent value of these franchises. They are to be valued in connection with the ordinary property and rights, physical and incorporeal, possessed by the company; and a general award of the value of all the plant, franchises, and water rights of the company is all that seems to be contemplated by the Act of 1903.

If an itemized valuation is desired, it can be made by making a separate estimate of the value of the physical plant; and then the difference between that figure and the total value found for all the property in use would represent the value of the company's intangible property, including water rights, contracts, franchises, etc.

If an independent valuation of the company's franchises be attempted, we may suggest that in 1873, before the company had built its works, and twenty years before it had located on Six Mile Creek, at a time when the village was small and the University in its infancy, the trustees of the village voted to buy the "rights and franchises" of the company for \$60,000. *Supra*, p. 7. This offer, which was apparently rejected by the company, undoubtedly included the company's inchoate water rights as

well as its water supply franchise. If these rights were worth \$60,000, or anywhere near that sum, in 1873, they must have been worth many times that figure in 1905.

2. The company's special franchise under § 16 of its charter.

The special franchise, however, given by Sec. 16 of the company's charter to supply the city with water for fire purposes is a separate matter. It constitutes apparently an exclusive franchise of a very unusual sort, and, inasmuch as the meaning and legal effect of this provision is disputed, it would seem appropriate and necessary for the commissioners to make a separate finding as to the value of this special franchise.

Here, again, there is no specific evidence in the case which can be pointed to as determining the value or as giving a mathematical basis for the valuation of this privilege. We can only ask the commissioners to take all the evidence into account, and to say what, in their judgment, is the fair value of the privilege conferred by this franchise, and to put their finding on this point in a separate item, so that if the Court upon appeal should hold that this franchise was not exclusive, or did not bear the construction placed upon it by the company, it could strike this item out of the award without sending the entire case back for retrial.

If suggestions from counsel are desired, we may note that the gross hydrant rental would be at least \$10,000 per annum on the average; and, if two-thirds of this were profit, we should have, at 5 per cent., a value of \$133,333. As against this, however, is to be set the annual cost of the investment.

Looking at it from another standpoint, it is probably true that no one would be likely to build a water works if the hydrant service was all the business he could get; but, on the other hand, no company would be apt to go into the water supply business in Ithaca unless he could have the fire service as well as the domestic.

Such a franchise must be worth something anyway, and probably more in connection with a general water supply franchise than by itself alone.

An award of \$25,000 for the special value of this franchise, in addition to the value of the company's physical plant, water sources, and general franchise, would, we submit, be conservative and fair.

3. The contract of Aug. 25, 1902, and Feb. 18, 1903.

This contract had seven and a half years to run, and its value is to be included by the commissioners in their award.

The value of this contract for hydrant service, however, would seem to be covered by the award for the special franchise in § 16 of the charter; but in the event that the commissioners should rule that this franchise was not to be valued, then a special sum ought to be awarded for the contract.

4. Summary.

The total value of all the companies' franchises and water contracts, including the right to condemn the water of Six Mile Creek as a franchise, may fairly be put at \$200,000 at the lowest. This sum, with the \$600,000 for the physical plant, makes a total of \$800,000 for the entire property taken, but states no account of the certain increase of income after the completion of the plant.

Compare the amount allowed in the Long Island case for the franchises and other intangible rights of a water company using ground water only, having no rights of diversion and no exclusive franchises. *Infra* p. 193.

If the company's franchises were exclusive, their value would be much greater, as they could easily be sold, with the plant and water rights, on a 4 per cent. basis.

XIII.

THE COMPANY'S RESERVE PROPERTIES ON BUTTERMILK AND ENFIELD CREEKS.

These were valuable to the company as reserve sources and for the control of the situation in case of threatened competition, so far as the possibility of introducing water from these sources might be agitated.

They must also have some value for water power.

The Buttermilk Creek supply was actually used down to Sept. 1, 1903; it can flow by gravity the South Hill reservoir, the whole of West Hill, the whole of the "flat," and up East Hill as far as Stewart Avenue; and it has thus a special value as an emergency supply in case of fire.

Williams, VIII. 3, 5.

Coffin, IX. 31-33.

Hazen, VII. 76-77.

Allen, VIII., 140-144.

Kuichling, XI.

The values assigned to these properties by the several witnesses, exclusive of the 8-inch pipe to the city, are:—

Hazen,	\$26,027*	Vermeule,	\$6,421
Allen,	24,522	Sherred,	11,931
Kuichling,	21,219†		

One test of the value to be set on these properties is the sum for which, in the judgment of the commissioners, a water supply company owning these properties would be justified in selling them.

Measured by this test and the evidence in the case, there can be little doubt that the fair value of these properties Jan. 1, 1905, was at least \$25,000.

* Land at cost (\$18,219) and construction at \$7,808 (VII. 238).

† Taking the lands at cost (\$18,219, Dft's Ex. 82, p. 18) and the Buttermilk Creek reservoir at \$6,000, depreciated 50 per cent. (ib. p. 21.)

XIV.

MISCELLANEOUS ITEMS.

1. The Buffalo street lots.

These are to be taken at \$2,000 by agreement. I. 3.

2. The personal property.

The value of this has been agreed to, viz., \$1,730. Dft's Ex. 34.

3. The cost to perfect the company's diversion rights in Six Mile Creek.

The company obtained from the state in § 8 of the charter of 1853 a grant of the right to divert and sell the waters of Six Mile Creek, and by §§ 9-12 the right to condemn the conflicting rights of the lower riparian owners on the stream. See *supra*, p. 20.

This right of diversion was first exercised in 1892, to supplement the water supply from Buttermilk, and in 1903 was adopted as the company's sole or principal source of supply; but, although the company had acquired most of the water power rights below the dam, it had not filed the map required to bar the claims of the riparian owners below or begun condemnation proceedings, and here were on Jan. 1, 1905, a few of these persons whose consent had not been acquired by purchase or condemnation.

The estimated cost to bar these claims and thus perfect its right of diversion would, of course, have had to be defrayed by the company some time or other, and must be deducted from the commissioners' valuation of the company's property, based upon its statutory right to use the waters of Six Mile Creek. The estimated amount of these damages has been considered by the

witnesses for the company and taken into account in their valuations. Williams, VIII. 101; Hazen, VII. 195-196.

There are no existing mills on the stream, and have been none since 1873 or 1874. Hollister, XV. 551-553; XXIV. 46. This mill site and dam and all the power at this point of the stream was abandoned over thirty years. Crandall, XXIV. 28-30; Hollister, XXIV. 46-47; XV. 551-553.

The amount that could be recovered by the other land owners as mere riparian owners is obviously merely nominal. The value of land on a non-navigable stream of this character, running through the heart of a city the size of Ithaca, is evidently not enhanced by the presence of the stream, unless there is mill power. A simple inspection of the stream is all the evidence needed to support this contention.

We submit that \$2,500 will be a full allowance or deduction for the unpaid damages sustained by the riparian owners on Six Mile Creek from the use of the stream for water supply purposes.

4. Defective titles to portions of the pipe line easement.

Here, again, the city claims that the company has not the legal title to the whole right of way or easement over the strip of land occupied by the 24-inch pipe line.

If this is so, the title to the right of way could be perfected under §§ 9-12 of the company's charter, and the estimated cost to condemn the entire easement should be deducted from the award.

Upon the evidence this would cost, at most, only a nominal sum.

5. The outstanding accounts.

The company collected in advance a part of the water bills for 1905; the amount being stated by Summers at \$9,873.76, and by Miller at \$10,546. XXIV. 86. On the other hand there is an unsettled claim by the company for hydrant rentals accruing prior to 1905.

It would seem that neither of these items have any connection with the property under valuation, and that they should not be considered in the award.

6. Interest.

Interest should apparently be added to the award, running from Jan. 1, 1905, at the legal rate of six per cent. less all amounts paid by the city under sec. 3 of the act of 1903.

XV.

THE CITY'S TEMPORARY SUPPLY.

1. Underground waters generally.

An underground water supply has certain obvious advantages. The water is apt to be pure, and it is cool. In Europe, where the surface supplies are very badly contaminated, owing to the density of the population, and where for the same reason rights of diversion are very expensive, the exploitation of underground water sources has become quite general, although, as pointed out below, there has recently been a change of practice, and many underground sources are now being abandoned or filtered before use. Note the cases of Berlin (XXIII. 213); London (XVII. 58, 69); Breslau (XXIII. 242); Liverpool (XVII. 69); Maidstone (XVII. 60); and many others noted by the witnesses.

The disadvantages of an underground supply are numerous, and in this country have generally been regarded as conclusive except in specially favored localities, such as the sandy soils in the islands about New York Bay.

Underground waters are apt to become saturated with iron, and sometimes to become useless for this reason, or else to require filtration; in which case nothing is gained as compared with filtered surface waters.

They are peculiarly subject to objectionable growths, such as chrenothrix.

In the next place, if pollutions from the surface once get into an underground system, it is almost impossible to eradicate them, and the result is the forced abandonment of the source. See the opinions on this point of Mason (XVII. 60, 62-67, 105, 118), and De Varona, XXIII. 206. This is a very important consideration in the case at bar, where the conditions in the inlet valley are such as necessarily to keep one in a state of constant suspicion regarding the purity of the underground supply.

Finally, as to quantity. It is never so easy to estimate the

dry or minimum flow of an underground supply as in the case of surface streams. Mason, XVII. 58, 116. Many underground supplies have failed by reason of exhaustion. See Mason, XVII. 58, 68, 69, 114-115, 117-118; and note particularly the case of Albany, De Varona, XXIII. —.

Underground supplies in this country have frequently failed and been abandoned, owing to ineradicable contamination or lack of quantity. See the cases of

Lawrence, Mass., XXIII. 210;

Albany, XXIII. 211, 212;

Columbus, Ohio, XXIII. 209;

Charleston, S.C., XVII. 114 and XXIII. 214;

Indianapolis, XVII. p. 68;

and many others mentioned by the witnesses.

At the present time there is only one large underground supply in the country, that in Brooklyn, N.Y., where the conditions are peculiarly favorable. Hering, XXV. 9. Even this supply, however, is about to be abandoned for filtered surface water from the Catskills. Mason, XVII. 105, 117, 118. Trouble is also being experienced in Massachusetts with the underground supplies in the vicinity of Boston. Coffin, IX. 39, 96-98.

2. The search for underground water sources in Ithaca.

During the typhoid fever epidemic of 1903 a citizens' committee was organized, and drove some test wells in different parts of the city without success. XV. 497, 559, 561; XVI. 179-183.

This search was continued under the Ithaca Water Board, organized April 27, 1903; and during the remainder of that year and 1904 investigations were made in every direction, notably in the valley of Fall Creek, in the valley of Cascadilla Creek, and at various points along the Inlet valley. The results in the case of Fall Creek were unsatisfactory (Getman, XIV. 393, 394), and the inadequacy of those obtained in Cascadilla valley is pointed out, *supra*, p. 136. The city finally made use of some wells which had been operated by a Mr. Illston, drove others in the

immediate vicinity, and subsequently purchased the property known as Williams Spring.

Other investigations had been made for the Ithaca Water Works Company in Fall Creek valley and Six Mile Creek valley. Williams, VI. 197, 199.

3. The Clinton Street wells.

A contract was made by the Ithaca Water Board in August, 1903, for the Illston wells, which provided that the city should pay rent for the same, with an option to buy them outright at a certain price. The contract was made in this form evidently because the city was uncertain about either the quantity or the quality of the water that could be procured at this point; and it is to be noted that the option to purchase these wells has not yet been taken up. Miller, XXVIII. —.

Thirteen wells were sunk in the vicinity of Clinton Street Station, of which four proved to be worthless, and only nine were connected up; and it has been found in practice that the best results are obtained when only four are used. The natural flow of these wells is said by Williams to be about 400,000 gallons (VI. 197, 199), and by Getman to be about 500,000 gallons. XV. 416. When the pumps or air compressors are used, it has been possible at times to secure 1,500,000 ballons daily, but this pumping had a disastrous effect upon the private wells up and down the valley, showing either that surface water was being drawn into the artesian wells or that the supply was limited.

During the year 1904 a pumping plant was built at Clinton Street, which has been characterized by the witnesses as a temporary affair and, from the appearance of the buildings and machinery was evidently not designed as a permanent plant. Vermeule, when considering what should be done with the artesian system, contemplates the installation of entirely new machinery (XX. 93; Pl's Ex. 166); and the building is of the flimsiest character.

The plant was ready for operation Dec. 31, 1904, when the company turned over its property to the city, and the latter began at once to furnish water from this supply. It was not, however, able to supply the whole city from this source; and from Jan. 1,

1905, to Dec. 7, 1905, only about two-thirds of the whole supply was procured from the Clinton Street wells, the remaining one-third being furnished by the filter plant at Six Mile Creek. By this time wells had been driven at Williams Springs, and, since Dec. 7, 1905, the city has been entirely supplied from Clinton Street and Williams Spring. During most of the year 1906, when the consumption averaged nearly two million gallons daily, about one-quarter has been obtained from the Clinton Street wells and the remainder from Williams Springs.

For the evidence relating to the development of the Clinton Street wells and the available quantity of water, see Getman, XII. 493, 495-496, 523-524; XIV. 117-119, 416, 420, 421; XV. 310, 311; IV. 111, 113; Darragh, II. ———.

The water from the Clinton Street wells is of generally good quality, except that it seems to contain an undesirable quantity of iron, and to be frequently afflicted with the presence of chrenothrix.

Iron clogs the strainers, is objectionable for laundry work, and its presence encourages the growth of chrenothrix. The witnesses are agreed that anything beyond 3-10 of a part per million is objectionable, and that the presence of 5-10 of a part makes it necessary to extract the iron by filtration, as is so often done in the case of European ground waters. See Hazen, XXVI. 39-41, 52; De Varona, XXIII. 200-201; Hering, XXV. 30-34, 38, 40; Chamot, XXIV. 105-106, 112; Getman, XXVIII. ———.

The Clinton Street water is close to the danger line with regard to iron, as is shown by Chamot's analyses, taken between Aug. 20 and Oct. 17, 1906. Dft's Ex. 116.

TABLE SHOWING IRON IN CLINTON STREET SUPPLY.

DATE.	Parts of Iron per Million.	DATE.	Parts of Iron per Million.
August 20	0.53	September 24	0.29
August 21	0.55	September 25	0.21
August 27	0.71	September 26	0.37
August 28	0.50	September 27	0.54
August 29	0.33	September 28	0.42
August 30	0.50	October 1	0.38
August 31	1.70	October 2	0.66
September 1	0.20	October 3	0.66
September 4	0.40	October 8	0.28
September 19	0.44	October 10	0.33
September 20	0.55	October 13	0.55
September 21	0.40	October 15	0.35
September 22	0.40	October 17	0.32

Average of 26 samples = .445 parts per million.

So large a quantity of iron is not only objectionable, but seriously impairs the commercial value of the water. De Varona, XXIII. 200.

Chrenothrix is objectionable because it colors the water and gives it a bad taste and odor. Hazen, XXVI. 39; Nelson, XVIII. 183-204; Hering, XXV. 37-38; De Varona, XXIII.—; Chamot, XXIV. 112-113.

There has been almost constant trouble with the Clinton Street wells from this cause; Nelson and Lauder's analyses taken for the city showing the presence of chrenothrix on thirty-one days between March 28 and June 26 and on twenty-seven days between Aug. 3 and Nov. 1, 1906. See XVIII. 189-205, and Dft's Ex. 114.

The Clinton Street water is also hard, about twice as hard as the water of Six Mile Creek. *Supra*, p. 87. The difference in the commercial value of two waters, one of which is harder than the other, is commonly figured at ten cents per m. g. for each excess part per million, which amounts to about \$10 per m. g. in this case. *Supra*, p. 87. It should, however, be pointed out that the combined supply from Clinton Street and Williams Springs is by no means so hard.

4. Williams Springs.

Finding that the Clinton Street wells were inadequate as a source of supply for the entire city, the Water Board in 1905 continued its search for additional underground supplies. Wells were driven at Williams Springs in March, the land was bought in the summer, and a pipe line run from the springs to the Clinton Street pumping station in the autumn. The water was turned on Nov. 20, 1905, and used in connection with the Clinton Street supply. On Dec. 7, 1905, the filter plant was shut down, and from that date the city has been supplied from the combined sources.

It was soon found, however, that this system was not furnishing an adequate supply, unless air compressors were resorted to at Clinton Street; and in the winter of 1905-1906 a small pumping plant was erected at Williams Springs, and set in operation early in 1906.

This resulted in an apparent sufficiency of water, at least for the time being; but in February the quality became bad, and it was apparent that the pumps at the Williams Springs lot were drawing surface water. Upon complaint of the Board of Health the machinery was so adjusted as to make it difficult to draw the water below the actual yield of the springs. XII. 455-458, 473-477, 520-522.

Later on, in March and April, a sealing system was adopted which, it was supposed, would render impossible any draft on this source beyond the natural flow of the springs.

This system, however, broke entirely down in the summer of 1906. The yield from the combined sources of supply fell so close to the daily consumption that it was found necessary to abandon the seal, and to pump all the water that could be pumped at the Williams Springs station.

The result has been that with the consumption restricted by the introduction of meters (see *supra*, p. 97, note) the city has been able during the current year to procure a bare sufficiency of water from the two sources operated in combination; but all pretence of relying upon the natural flow of the spring

has been abandoned, and the effect of the hard pumping has been to drain the entire surrounding territory of its surface water. Williams, XXVIII. —, and Dft's Ex. 125 and 126.

The quality of Williams Springs water is good enough, so far as hardness goes, and it is free from iron.

The site itself, however, was a most unfortunate one for the location of a public water supply, as the Williams Springs lot and the surrounding territory had for years been a dumping ground for city night soil, and the operations of an adjoining rendering establishment had introduced great quantities of decaying animal matter of the most objectionable character in the immediate vicinity of the springs. For the evidence as to these pollutions, see Vol. XII.

The city has spent a considerable amount of money in cleaning up the premises, and now claims to have removed most of the polluting matter; but the ill success which has attended these efforts may be shown by the fact that, of the 300 to 400 diseased hogs which were buried within 300 feet of the springs, only three or four are proved to have been removed. Getman, XVIII. 93-94. The lot has also been covered with soil to a grade about one to two feet below the level of the adjoining railroad tracks. XVIII. 99, 106, 108, 110.

As to the effect of the presence of these pollutions on the desirability of Williams Springs as a source of water supply, we can best refer to the evidence of Professor Mason, who, testifying for the city, says that he would not use the supply, or certainly would not use it unless filtered, if these pollutions have not all been removed, nor unless the plant is so operated as to make it impossible to draw any surface water. His qualified approval of the water of Williams Springs rests entirely upon the assumptions that all polluting matter has been removed, that under the sealing system it is impossible for the water to be drawn in excess of the natural flow of the stream, and that the lot is now so high that no flood will cover it. These assumptions have been destroyed by the proof that most of the polluting matter appears still to be on or near the premises, by the abandonment of the sealing system, by the admitted fact that the pumps are now working as hard as they

can and are drawing water from the surface of the entire surrounding territory, and by the evidence of Van Orman (XIX. 46-47) that the entire neighborhood, including the railroad tracks, is covered by water in every flood.

The city supply, since Williams Springs has been used, has shown very high bacterial counts at Cascadilla Building, whether we use Professor Chamot's analyses or those of Nelson and Lauder.

The following table contains a summary of both sets of analyses:—

ANALYSES OF CITY WATER, 1906.
(CASCADILLA BUILDING.)

NELSON AND LAUDER (EX. 33, 34, 37).					CHAMOT (DFT'S 117).				
Date.	No. Samples.	Bacteria per c.c.			Date.	No. Samples	Bacteria per c.c.		
		Max.	Min.	Ave.			Max.	Min.	Ave.
Jan.	4	25	3	10.5	Jan.	27	260	5	37
Feb.					24	750	5	158	
Mar.	42	1,800	4	92.7	Mar.	30	20,000	80	2,510
April	50	720	9	134.5	April	25	35,000	230	8,120
May	50	30,000	9	778.6	May	26	70,000	165	6,200
June	47	17,000	19	443.8	June	23	6,300	60	1,230
July	67	2,600	7	109.9	July	26	253	5	51.8
Aug.	47	2,500	8	452.4	Aug.	25	302	12	50.3
Sept.	50	3,800	8	376.8	Sept.	21	1,510	12	220.2
Oct.	51	128	9	68.0	Oct.	23	510	5	60.2

It has been objected on behalf of the city that it is not fair to compare the analyses of filtered water at the plant with the analyses of city water taken at Cascadilla Building. Landreth, however, admits (XXVII. —) that the sudden variation in the counts shows that the bacteria could not have been wholly the result of development in the pipes. We append, however, for what they may be worth, the results of Nelson and Lauder's analyses of the city water taken at the source:—

BACTERIA IN CITY WATER AT WILLIAMS SPRINGS AND
CLINTON STREET, 1906.

NELSON AND LAUDER.

Month.	NUMBER OF BACTERIA.					
	48 Hour Count.			72 Hour Count.		
	No. of Samples.	Max.	Ave.	No. of Samples.	Max.	Ave.
January and February .	2	13	7.5	4	25	10.5
March	30	1,800	89.9	28	Liquefied	160.6
April	24	47	17.4	24	290	76.0
May	25	85	26.4	25	140	60.0
June	23	360	54.3	23	280	104.0
July	22	31	16.2	22	50	28.7
August	26	1,800	237.6	26	2,300	298.7
September . .	25	1,600	159.4	25	3,800	370.2
October . . .	29	132	33.1	29	260	56.3
November . .	24	168	37.8	24	490	102.7

Comparing these results with those obtained for the filtered water, it appears that the latter is more free from bacterial growths than the city water taken at its sources, and immeasurably better than the city water taken at Cascadilla Building. See *supra*, pp. 75, 76.

Fœcal bacteria have never been found in the filtered water (*supra*, p. 76); but they have been found by Chamot on many occasions in his analyses of the water delivered by the city at Cascadilla Building. The dates are March 5, March 10, May 8, June 6, July 2, August 6, August 8, August 10. Chamot, XII. 453-454; XXIV. 117. Chamot also says that he found colon bacilli at Williams Springs itself on two occasions XXIV. 117-118. Nelson says (XVIII. 214) that he found colon bacilli in the water July 2, July 3, and again on another occasion early in March.

The conditional approval of Mason, the evasive commendation of Landreth, the complete silence of Hering, concerning Williams Springs, and the fact that none of the witnesses for the city have anything to say against the Six Mile Creek water except that care

must be used in filtering it, amount, when we consider the temptation to witnesses in their position to laud the one supply and condemn the other, to a practical rejection by the city's own experts of both Clinton Street and Williams Springs as sources of supply for Ithaca.

The quantity of water available at Williams Springs is, to say the least, a question of great doubt. At certain times of the year there is probably a sufficiency of water; but the supply is very likely to come from the inlet stream itself or from other surface waters in the vicinity, filtering down towards the springs. Coy Glen has been suggested by some of the witnesses for the city (Getman, ; De Varona, XXIII. 203-204) as the sole source of the springs; but the investigations of Mr. Williams show that the natural dry flow of this stream, measured at a point far above where it enters the ground, is much below the amount required. On Oct. 14, 1906, it measured less than 200,000 gallons per day. XXVIII.—. De Varona says that he understands from Vermeule or Getman that the minimum yield of the Williams Springs supply has fallen this year as low as 600,000 or 700,000 gallons per day. XXIII. 17, 203.

The city has attempted to show that this was an abnormally dry season; but the testimony of the weather bureau clerk in XXVIII. — is that, while July, August, and September were dryer than usual, June was an extraordinarily wet month, and that during the period for which we have the rainfall statistics—namely, twenty-seven years—there have been at least six or seven years when the rainfall for August and September has been less. Dft's Ex. 30 and the evidence in XXVIII. — show that the average rainfall for June, July, August, and September during the past twenty-seven years has been 13.64 inches, while for the corresponding period of 1906 the rainfall was 13.36 inches,—very close to the average.

The inevitable inference, therefore, from the actual experience of the city in the exploitation of this source is that the necessary quantity of water is not there,—certainly not without drawing at large upon the waters of the Inlet valley, and probably not in any event.

5. Quantity available from the combined sources.

It is probable that the city has only managed to supply its needs during the current summer by reducing the consumption through metering and by drawing heavily from the surface waters surrounding Williams Springs; and it was only supplying from the combined sources 1,500,000 or 1,600,000 gallons per day during this period.

All the witnesses agree that the minimum capacity which should be regarded in laying out a system for Ithaca is 3,000,000 gallons daily; and the witnesses for the company assert, with far greater plausibility, that it would be improvident to spend money in the development of a water source in this community which did not have an ultimate capacity of 5,000,000 gallons daily. *Supra*, p. 87.

The experience of the city during the current year indicates very clearly the improbability of finding a satisfactory supply with reference to quantity from underground sources in the Inlet valley, and amply justifies the opinions of the witnesses for the company that this source of supply was not a practical source for Ithaca. Williams, V. 88-91; Allen, VIII. 137-138; Hazen, VII. 25.

6. The cost of development.

This most important factor in determining the availability of a water source is entirely ignored by the witnesses for the company, who have based their testimony and valuations upon the assumption that both Clinton Street and Williams Springs had been developed, or that it was competent to compare them with the Six Mile Creek supply without taking into account the fact that the latter was there, built and in use, while the other two supplies had to be developed at a large expenditure of money.

Just what the development of these two sources means is indicated by the fact that the city has already expended over \$113,000 for construction at Clinton Street and Williams Springs (XXVIII. —), and that the coal cost alone for pumping the water is over \$10,000 a year for an average daily supply of 1,800,000 gallons. See *supra*, p. 132, and Coffin IX. 25; Kuichling XI. 29, 32.

The plant itself is, moreover, a very poor one, and must be

entirely rebuilt if the city is to continue to use these sources of supply.

7. Conclusion.

The conclusion necessarily to be reached by the commissioners is that both Clinton Street and Williams Springs were and are unavailable as a practical competing source of supply with the filtered waters of Six Mile Creek, partly by reason of inferiority in quality and in consequence in value, partly by reason of the obvious lack of quantity, and partly on account of the excessive cost of development and operation.

There can be no doubt that Clinton Street and Williams Springs were intended merely as temporary sources of supply (Getman, XIV. 330-332, 391, 427; Vermeule XX. 213), and are being used by the city for the sole purpose of affecting the valuation in the case at bar.

Nor can there be any reasonable doubt that within a short time, probably very short, after the termination of this case, the citizens of Ithaca will hear no more of Clinton Street or Williams Springs as sources of supply, but will enjoy the better, safer, and larger supply of filtered water to be had at Six Mile Creek.

This method of trying a lawsuit may prove expensive to the city of Ithaca; but, on the other hand, as pointed out below, pp. 166-169, the city can well afford, from the standpoint of ultimate profit, to pay the fair value of the company's property and franchise, say \$800,000, and charge the amount wasted upon its underground sources to the surplus profits certain to be realized above a fair annual return upon this price.

XVI.

THE CHANCES OF COMPETITION.

It is claimed by the city that little or nothing should be allowed by the commissioners on account of the company's franchises or earning capacity, because of the fact that the company's general franchise was not exclusive, and of the right of the city to establish a competing plant.

The company contends, on the other hand, that, even if the city is right in its view of the legal relations of the parties, the question for the commissioners to consider in valuing the company's property and franchises is whether anything was likely to be done in the way of competition which would affect the market value of the company's property and franchises as indicated by their earning capacity, by the cost of substitution, or by any other test of value. The company asserts (1) that there was absolutely nothing in the situation, in fact or in law, as it existed immediately prior to the passage of the act of 1903, to justify any reasonable apprehension on the part of the company, or of any prospective purchaser, that competition would be permitted or undertaken, except upon the terms of condemnation; (2) that, although the possibilities and chances of competition should be taken into account, still as a matter of fact there was nothing in the situation or in these possibilities to affect the value of the company's property and franchises as indicated either by their earning capacity or by the cost of reproduction and substitution; and (3) that the company's property cannot as matter of law, be enhanced or diminished by the possibility that the city had or might acquire the right to acquire it by eminent domain.

Assuming the rights of the city to be as claimed by it, we have only to consider what weight should be given to the possibilities of competition, public or private.

As to private competition, it is apparent on the face of things that no one would furnish the capital required to establish a competing water works company in the city of Ithaca. It would cost some \$500,000 to \$600,000 for the physical plant alone, besides the cost of procuring and developing the necessary water sources. There is, we believe, no instance on record of competition upon this scale with an existing private company supplying the whole of a community and giving satisfactory service.

Moreover, the evidence shows that the two companies, which were organized in 1868 and 1892, respectively, for the purpose of competing with the Ithaca Water Works Company, were, either by failing to obtain the necessary capital or for some other reason, unable to make any progress whatever; and that nothing was done under either of these charters.

As Hering says, there is no practical danger of competition by another company, "because no legislature would authorize anybody else to come in." XXV. 62. He knows of no case in which competition with a satisfactory plant has been authorized. *Ib.* 71, 73.

The danger of municipal competition, though more apparent, was really no greater than the risk of private competition.

Assuming that the city had prior to the passage of the act of 1903 all the powers claimed by it in this regard, it did not have the right to take the property of the company by eminent domain, and that was essential to a competition with the Ithaca Water Works Company, unless we are to assume that the people of Ithaca were ready and willing to undertake the task of duplicating the distribution system of the company and to parallel its mains in every street of the city.

There is no evidence in the case of any such desire on the part of the inhabitants of Ithaca. They voted in 1902 to establish a public water works system, and they then applied to the legislature and procured an act authorizing them to take by condemnation the property of the Ithaca Water Works Company for that purpose. There is nothing to indicate that anybody in the city of Ithaca would have advocated for an instant the duplication of the company's distribution system with all the annoyance and expense that such a course would have caused, or that the people desired to establish a municipal plant except through the purchase or condemnation of the company's works.

Moreover, upon any theory of the city's rights, it was necessary

to apply to the legislature for an act authorizing the appointment of a board for the construction and operation of the municipal works; and upon an application of this sort to the legislature there was no reason to apprehend that it would have been granted, except upon condition that the property of the existing company would first be acquired by condemnation. At any rate, this was what actually happened; and there is no evidence in the case, or reason outside it, to suppose that, even if the citizens of Ithaca had wanted to establish a competing system, the legislature would have given them that right.

There is no instance, we believe, in the history of water supply in this State where a community of the size of Ithaca has desired or has been allowed by the legislature to establish a system of water works where there was already in existence a private company supplying the entire community, giving good service, and ready to make all the extensions and improvements the community desired.

Furthermore we have, in the case at bar, the fact that the great expenditures of the company in 1902 and 1903, aggregating a quarter of a million dollars, were incurred upon the faith and credit of contracts deliberately entered into with the city for the purpose of enabling the company to perform the obligations and duties imposed upon it by these two contracts. It is simply inconceivable that the legislature of any state would, under these circumstances, have authorized the city to enter upon a competition with a company, unjust in the highest degree to the latter, and ruinous financially to itself.

The effect on the value of a water company's non-exclusive franchise of the chances of municipal competition is nowhere better discussed than by the commissioners in the Long Island water supply case. The commissioners in that case said,—

“We must believe that the legislature would not, as it should not, permit the value of the franchise of the water company to be destroyed by a competition so irresistible as that of the city of Brooklyn unless the city should be willing to take the property of the company upon payment of just compensation therefor.” See below, p. 200.

Finally, we must consider the effect of the special franchise in Sec. 16 of the company's charter. If this clause means anything, it would seem to operate as a complete bar to municipal competition; for no community in its senses would establish a water works system if it could not supply the fire service as well as private consumers.

The commissioners may, therefore, unerringly conclude that the attempt to depreciate the value of the company's franchises and property by the possibility of municipal competition has no practical basis.

It was, of course, always possible for the city to procure the right to take the company's property by eminent domain, as was in fact done; but, as shown *supra*, p. 63, it is not competent for the commissioners to take this possibility into account for the purpose of either enhancing or depreciating the value of the property taken. The expert witnesses for the city have, one and all, erred in ignoring this fundamental principle of the law of eminent domain, and have been led to deny all value to the company's franchises because of what the city could do or has done under the terms of the act of 1903. They have confused what the city could only do under an act of condemnation, or what the city has done since April 15, 1903 but could not have done without the aid of that statute, with the probability of competition from the municipality before and without regard to this act. See *supra*, p. 65. This is a mistake of law which vitiates all their estimates of value.

XVII.

CONCLUSION.

The final valuations placed upon the company's property as it was Jan. 1, 1905, by the witnesses for the defendant, are as follows: Williams, \$800,000 or \$750,000, depending on whether the dam is raised to 90 feet or left as it is (VI. 138, 140); Hazen, \$800,000 (VII. 65); Allen, \$795,000 (VIII. 123); Coffin, \$725,000, exclusive of Buttermilk and Enfield Creek (IX. 6) and of all allowance for future growth (IX. 7); and Kuichling, \$751,360 (XI. 6): The estimates of Hazen, Allen, Coffin, and Kuichling are on the assumption that the dam is maintained at its present height.

It may be observed that none of these estimates represent the result of a capitalization of probable net revenue. All the witnesses consider the probable income of the future, and most of them have made calculations to show the present discounted value of such future income; but none of the witnesses take the result of this calculation as the value of the company's property. Their valuation of the latter is in every instance different from the present value of their estimate of the future earnings capitalized at 5 per cent. Capitalization of earning capacity is not a conclusive test, but only one of several tests, though perhaps the most important, and is so treated by all the witnesses for the company. See Williams, V. 115; VI. 138-139, 212-213; Hazen, VII. 65-84, 232; Allen, VIII. 122-131, 190-191; Coffin, IX. 6-8, 14-15, 103; Kuichling, XI. 6, 8, 26; Dft's Ex. 82.

The average of the valuations given by the company's experts, adding \$25,000 to Coffin's for Buttermilk and Enfield Creek, is \$779,200.

The independent computations contained in this argument indicate:—

1. A value for the physical plant, based either on actual or

reproductive cost, irrespective of water rights, franchises, and earning capacity, as follows:—

Supply	\$240,000
Distribution	292,500
Miscellaneous	17,500
Going concern	50,000 to 75,000
Total	600,000 to \$625,000

See *supra*, pp. 120, 124, 126.

2. A value for the physical plant and water rights, based on the cost of an alternative supply, irrespective of franchises and earning capacity, as follows:—

Supply	\$600,000
Distribution	292,000
Miscellaneous	28,730
	<hr/>
	\$920,730

See *supra*, p. 139.

3. A value for the company's plant, water rights, and franchises, based on their fair earning capacity on completion of the plant of \$775,000, without taking any account of the special franchise in § 16 of the company's charter. See *supra*, p. 111.

4. A value for the reasonable probabilities of the future in excess of the above. Amount not suggested.

5. A value for the special franchise conferred by § 16 of the company's charter. Amount suggested, \$25,000. *Supra*, p. 143.

6. A total value for the company's franchises and contracts considered by themselves, and reckoning the right to condemn the waters of Six Mile Creek, of \$200,000 or more. See *supra*, p. 143.

Taking all the foregoing items and considerations together, the conclusion must be that the award should be not less than \$800,000.

Looking now at the matter from the standpoint of the purchaser, it is easy to demonstrate that the city could well afford to pay \$800,000 for the company's property as it stood on Jan. 1, 1905, as a commercial investment; and much more if municipal money rates are to be considered.

We have seen, *supra*, p. 111, that the plant can earn 5 per cent. on \$870,000 or over immediately on its completion, provided the gross income should be \$65,000 or more. The city could thus pay \$800,000 for the plant as it stood, borrow \$70,000 more to finish the plant, and earn 5 per cent. net on the total investment.

No one will dispute that 5 per cent. is a fair commercial return, and all that a private buyer would expect. The city itself, having the power to borrow money at $3\frac{1}{2}$ to 4 per cent., could afford to pay a much higher price; or, paying that sum only, would have a large margin of profit to apply to the reduction of rates, or of the general burden of taxation.

Then the gross and net income from the works are absolutely certain to increase from year to year, while the capital expenditure for extensions and improvements during the next twenty years cannot exceed the sum of \$80,000. This is Hazen's total estimate of \$151,000 (*supra*, p. 94) less the \$70,000 to be expended at once.

To demonstrate the soundness of this calculation, even if we disregard the probability of a gross income of \$65,000 on completion, and start with the actual income under the inefficient management of the city in 1906, we have prepared a table which shows the financial operation of the plant from 1905 to 1925 upon the following assumptions:—

1. That the city pays \$800,000 for the plant as it stood Dec. 31, 1904.
2. That it had completed the plant in 1905 at a further expense of \$70,000.
3. That it should expend for additions and improvements during the ensuing twenty years the further sum of \$80,000, as follows: \$30,000 before 1910, \$25,000 between 1910 and 1915, and \$25,000 between 1915 and 1920.
4. That the income on completion would be only the \$56,695 actually collected in 1906.
5. That the gross income will increase between 1906 and 1910 faster than the population, owing to the exceptional opportunities pointed out (*supra*, pp. 96-103) to secure additional consumers

during the next five years; and that after 1905 the income will increase in proportion to the increase in population, estimating the latter at $11\frac{1}{4}$ per cent. each five years, as between 1900 and 1905. *Supra*, p. 99.

6. That the operating expenses in 1905 should have been according to the estimate (*supra*, p. 108) of the cost of operation on completion, and that for the other years in the table the cost of operation and depreciation will be $33\frac{1}{3}$ per cent. of the income, which is the ratio which the estimated cost of operation on completion bears to the estimated revenue on completion with the business properly handled. This is on the assumption that the dam is left at its present height.

RESULTS TO CITY OF AN AWARD OF \$800,000—ON A 5 PER CENT. BASIS.

Year.	Gross Income.	Operating Expenses and Depreciation.	Net Income.	Investment justified by the Net Income on a 5% Basis.	Actual Invest- ment.	Profit or Loss.	
						Capital.	Income.
1906 . . .	\$56 695	\$21,750	\$34,945	\$698,920	\$870,000 for plant and completion	\$171,080 deficit	\$8,555 deficit
1910 . . .	70,000	23,333	46,667	933,340	900,000	33,000 gain	1,650 gain
1915 . . .	77,875	25,958	51,917	1,038,350	925,000	113,350 "	5,667 "
1920 . . .	86,635	28,878	57,757	1,155,140	950,000	205,140 "	10,257 "

This calculation shows that the loss due to the assumption that the revenue on completion would be only the sum actually secured under the inefficient management of the city in 1905 would cease within five years, probably in a shorter time, and that thereafter there would be an annually increasing surplus profit over the annual cost at 5 per cent. of an investment of \$800,000 in the company's plant, \$70,000 for completion, and \$80,000 for extensions. The table shows a net surplus of \$1,650 in 1910, of \$5,667 in 1915, and of \$10,257 in 1920.

The value to the City may be considered only in the event that what the City has done since the Act of 1903 is considered. If we take into account what the City has done since and under the act of condemnation, it would seem proper to consider all that the City may do with to get out of the Company's works.

If municipal money rates are taken into account and the annual cost of the investment figured at 4 per cent., the investment justified by the net income and the resulting surplus profits would be:—

RESULTS TO CITY ON A 4 PER CENT. BASIS.

Year.	Investment justified by Net Income @ 4 per cent.	Profit.	
		Capital.	Income.
1906	\$876,125	\$6,125	\$245
1910	1,116,675	266,675	10,667
1915	1,297,925	372,925	14,917
1920	1,443,975	493,975	19,759

These computations are made on the most conservative assumptions possible as to the probable income in population, consumption, and revenue, and the resulting profit to the city would be greater yet if we should assume, as we should be amply justified in doing, in view of the facts set forth *supra*, pp. 99-103, a more rapid increase in consumption and revenue than in population after the year 1910. And still greater if the city raises the dam to 90 feet. See p. 108.

We contend that upon all the evidence in the case the award should be about \$800,000.

Respectfully submitted,

NATHAN MATTHEWS,
MYNDERSE VAN CLEEF, } of Counsel.

APPENDIX I.—THE COMPANY'S CHARTER.

LAWS OF 1853, CHAPTER 465.

(Dit's Ex. 1.)

AN ACT to incorporate the Ithaca Water Works Company.

Passed June 25, 1853.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:—

§ 1. Henry W. Sage, Alfred Wells, Charles E. Hardy, Anson Spencer, and Joseph E. Shaw, and all such persons as may hereafter be associated with them, are constituted a body corporate by the name of the Ithaca Water Works Company.

§ 2. The capital stock of said company shall be forty thousand dollars, to be divided into shares of fifty dollars each, but may at any time be increased by the directors of the company, provided that such capital stock shall not be increased so as to exceed the sum of two hundred thousand dollars, which stock shall be considered personal property and shall be assignable and transferable on the books of the company.

§ 3. The person named in the first section of this act, or a majority of them, shall meet at such place as they may select in the village of Ithaca, on the first Monday of June next (or such other day as they may select), by giving two weeks' notice in a newspaper printed in said village, and receive subscriptions to the capital stock of said company, and may adjourn such meeting from time to time until the whole amount of such capital stock shall be subscribed; and in case more than the number of shares authorized by this act shall be subscribed, they shall apportion the same among the subscribers as they shall think best for the interest of the company.

§ 4. The affairs of said corporation shall be managed by five directors, who shall be stockholders, three of whom shall constitute a quorum for the transaction of business, and who shall hold their offices for the term of one year, and until others are chosen in their places. The first election of directors shall be held within three weeks after the capital stock is subscribed, as aforesaid, at such

Body
corporate.

Capital
stock.

Meeting to
receive
subscriptions
to stock.

Affairs of
corporations to
be managed by
directors.

time and place as shall be designated by the persons named in the first section of this act. The directors shall thereafter be chosen annually in the village of Ithaca, on the first Monday of June, at such time of day and place in said village as the directors, for the time being, shall appoint. Two weeks' notice of such elections shall be given by a publication at least once a week in a newspaper published in said village; each stockholder shall be entitled to one vote upon each share of stock held by him or her, for at least ten days previous to an election; and the subscribers to whom such stock is allotted shall be competent voters at the first election; voting shall be by ballot, and may be in person or by proxy.

§ 5. The directors shall annually appoint a president, secretary and treasurer, and such other officers as they shall deem necessary, who shall hold their offices until others are appointed in their places, and they may make and ordain such by-laws and regulations as they may deem necessary and proper for the management of their business, and for accomplishing the purposes of the corporation, not contrary to the constitution and laws of this State. Officers.

§ 6. The directors may require payment of subscriptions to the stock at such time and in such proportions as they may see fit under the penalty of forfeiting all stock and previous payments thereon, and may sue for and recover all such subscriptions. Notice of time and place of such payment shall be published for four weeks previous to such time, at least once in each week, in a newspaper published in said village. Payment of
subscriptions.

§ 7. The persons named in the first section of this act shall be inspectors at the first election for directors. In case of vacancy in the direction, by reason of death or resignation of any director, or of his ceasing to be a stockholder, it may be filled by the remaining directors until the next annual election, or until some other person shall be elected to fill the same. The directors shall, from time to time, appoint three persons who shall act as inspectors at the annual elections. The directors may remove all officers appointed by them and appoint others in their places, and fill all vacancies in the offices. If at any time an election of directors does not take place on the day appointed by this act, the corporation Inspectors of
elections.

shall not for that cause be dissolved; but an election may be held on any other day in such manner as shall be prescribed by the directors, as provided for by the by-laws, two weeks' previous notice having been given in a newspaper printed in said village.

§ 8. For the purpose of supplying said village of Ithaca with pure and wholesome water, said company may purchase, take and hold any real estate necessary for the purpose, and by their directors, agents, servants, or other persons employed, may enter upon the lands of any person or persons which may be necessary for said purpose, and may take the water from any springs, ponds, fountains or streams, and divert and convey the same or any part thereof to said village, and may lay and construct any pipes, conduits, aqueducts, wells, reservoirs or other works of machinery necessary or proper for said purpose, upon any lands so entered upon, purchased, taken or held; said corporation may as aforesaid, enter upon any lands, streets, highways, roads, lanes or public squares, through which they may deem it proper to carry the water from said springs, fountains, ponds, streams, wells and reservoirs, and lay and construct any pipes, conduits, aqueducts, or other works for that purpose, leaving the said lands, streets, roads, lanes and public squares in the same condition as nearly as may be as they were before said entry.

§ 9. Before entering, taking or using any land or water for the purposes of this act, the directors of said company shall cause a survey and map of the lands intended to be taken, or entered upon, for any of said purposes, and by which the land of each owner and occupant intended to be taken and used shall be designated, and which map shall be signed by the surveyor or engineer making the same, and by the president of said company, and be filed in the office of the clerk of the county of Tompkins. The company, by any of its servants, agents or officers, may enter upon any lands for the purpose of making any examination, and of making said survey and map, doing no unnecessary damage.

§ 10. In case the said company cannot agree with the said owners or occupants of any lands or water intended to be taken or used as aforesaid for the purchase thereof the directors may apply to the supreme court at any term or session thereof, held

Company may
take and hold
real estate.

Survey of land
to be taken.

In case of
disagreement
with owners,
supreme court
may appoint
commissioners.

in the sixth judicial district, or to the county court of the county of Tompkins, for the appointment of three commissioners, by whom the compensation to be paid for damages suffered or to be suffered by any person or persons by reason of taking said lands and waters and constructing any of the works of said company shall be ascertained and determined; and in case of death, resignation, refusal or disability to act of any of said commissioners, the said court may appoint others in their places. The commissioners shall cause a notice of at least twenty days from the time and place of their meeting to be served upon such of the owners of said land and water as can be found in the state, which may be served personally, or in their absence from their dwellings or places of business, by leaving the same thereat with some person of suitable age; and in case of any legal disability of said owner to act, then upon serving notice in like manner upon his guardian or person appointed to act for him as hereinafter directed; and in case any of said owners cannot be found in the state, such notice shall be given to them by publishing the same for six weeks successively in a newspaper published in said village; and if any of said owners be married women, insane, infants or idiots, the said court shall appoint some suitable person to attend in their behalf before said commissioners, and take care of their interest in the premises. The commissioners may issue subpoenas to compel the attendance of witnesses to testify before them, and they or any one of them may administer the usual oath to such witness. They shall make a written report of their proceedings, containing the testimony taken by them, and showing the sum awarded to each owner or other person, and return the same to said court to be filed of record. The company shall pay to each commissioner the sum of three dollars per day for every day necessarily spent by him in the performance of his duties under this act, and to each witness sworn and testifying, or if not sworn, who the commissioners shall certify were properly and necessarily subpoenaed, the sum of fifty cents per day and four cents per mile travelling, if living more than three miles from the place of meeting.

§ 11. The said company, or any party to the proceedings

Appeal from
award of
commissioners.

of the said commissioners, may appeal to either the supreme court, or county court, from any award or determination of the commissioners, provided the party appealing shall, within twenty days after such award or determination shall be made, give written notice of the appeal to the other party or parties interested in the same; and the said court shall, upon the report of the commissioners and upon additional testimony to be taken by them, if they deem the same to be necessary, hear the said appeal, and may confirm the proceedings of the commissioners, or may increase or diminish the amount of compensation awarded by said commissioners; and if their proceedings in any case have been irregular, the court may set the same aside and order new proceedings and appraisements; and the said court may make such orders in reference to the proceedings of the commissioners and of the notice to be given to parties as may not be inconsistent with this act, and as the nature of the case and the interest of the parties may require.

Time when
company may
enter upon
lands.

§ 12. Upon the payment or legal tender of the compensation awarded by said commissioners, or in case of appeal by said court, the said company shall be entitled to enter upon, for the purposes contemplated in this act, all the lands, waters and real estate for which the said compensation shall be paid or tendered as aforesaid; and to hold and use the same to them and their successors forever. If any person to whom any compensation shall be awarded, or who shall be entitled to the same by virtue of said award, cannot be found, or shall refuse to receive the sum awarded him, then the payment may be made by depositing the amount of said award to the credit of said person in such bank or banks as may be appointed by said court; a certificate of such deposit signed by the cashier of the bank shall be published by said company in a newspaper in the village of Ithaca, for four weeks successively, immediately after said deposit. If the person to whom a compensation is awarded, or who is entitled to receive the same as aforesaid, be under legal disability as aforesaid, payment may be made to his guardian or person appointed as aforesaid by the said court; and if said guardian or person cannot be found, or shall refuse the same, then by deposit as aforesaid.

Persons to
whom com-
pensation shall
be awarded.

§ 13. The said company shall also take and hold for the purposes contemplated in this act, all lands, water and real estate which they shall in any way legally purchase, enter upon and take by virtue hereof, to them and their successors forever.

Company to further take and hold real estate.

§ 14. In laying pipes, conduits or aqueducts, or constructing or erecting works in the streets, lanes or public squares of said village, the company shall conform to such regulations as the trustees thereof shall prescribe.

Laying pipes and conduits.

§ 15. The directors of said company may establish rules and regulations for and concerning the use of water from their works, so as to preserve the same from impurity or waste, and may thereby impose penalties and forfeitures for any violation of said rules and regulations, so that said penalty or forfeiture shall not in any case exceed fifty dollars, which penalties may be recovered from the person or persons violating said rules with costs, in the name of the company, before any justice of the peace of said village; said rules and regulations shall be published for three weeks successively, in a paper published in said village; and a copy of said rules and regulations, certified by the president or secretary of said company, with affidavits of such publication of the same, made by any one of the publishers of said paper, or by a foreman in their office, shall be received as evidence in the trial of all such cases.

Rules and regulations concerning use of water.

§ 16. Said company shall furnish water to the trustees of said village for extinguishing fires, upon such terms as may be agreed upon between said trustees and the company and in case they cannot agree, either said trustees or said company may apply to the supreme court or county court, as provided in section ten of this act, for the appointment of three commissioners, who shall prescribe the terms upon which water shall be furnished, and said company shall furnish water upon the terms so prescribed, for the term of three years, at the expiration of which time a new commission may be applied for by either the trustees or the company, and thereafter, once in three years, a like application may be made. The company may make any agreements, contracts, grants, or leases, for the sale, use and distribution of water, that may be agreed upon between said company and any individuals, associa-

Water for fires

Company may contract for use of water.

tions or corporations; which agreements, contracts, grants or leases, shall be valid and effectual in law.

§ 17. Any person who shall maliciously or wilfully destroy or injure any of the works or property of said company or who shall maliciously or wilfully commit any act which shall injuriously affect or tend thus to affect the water of said company, shall be guilty of a misdemeanor, and may be punished by fine or imprisonment or both, in the discretion of the court, and shall also forfeit and pay to the company treble the damages sustained thereby, to be recovered in any court having cognizance thereof, with cost.

§ 18. The corporation hereby created shall possess the powers and be subject to the provisions of title three, chapter eighteen of the first part of the revised statutes.

§ 19. All the stockholders of the company hereby created shall be severally and individually liable to the creditors of said company to an amount equal to the amount of stock held by them respectively, for all debts and contracts made by said company until the whole amount of capital stock fixed and limited by the directors shall be paid in.

§ 20. No person holding stock in said company as executor, administrator, guardian or trustee, and no person holding such stocks as collateral security, shall be personally subject to any liability as stockholder of said company, but the person pledging such stock shall be considered as holding the same, and shall be liable as a stockholder accordingly, and the estate and funds in the hands of such executor, administrator, guardian or trustee, shall be liable in like manner and to the same extent as the testator or intestate, or the ward or the person interested in such fund, would have been, if he had been living, and competent to act and held the stock in his own name. Every such executor, administrator, guardian or trustee, shall represent the shares of stock held by him or her, as administrator, guardian, or trustee, at all meetings of the company, and may vote thereon as a stockholder.

§ 21. No stockholder shall be personally liable for the payment of any debt contracted for said company, which is not to be paid within one year from the time the debt is contracted, nor unless a suit for the collection of said debt shall be brought against said

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company within one year after the debt shall become due; and no suit shall be brought against any stockholder who shall cease to be a stockholder in said company, for any debt so contracted, unless the same shall be commenced within two years from the time he shall have ceased to be a stockholder in said company; nor shall any suit be brought against any stockholder until an execution against the company shall be returned unsatisfied in whole or in part.

§ 22. The said corporation may borrow, from time to time, such sum or sums of money as may be necessary to complete the works authorized by this act, in the whole not to exceed three-fourths of the amount of capital stock actually paid in, and may issue and dispose of their bonds for any amount so borrowed, and are hereby authorized to mortgage any part of their corporate property and privileges to secure the payment of such bonds; and the said directors may confer on the holder of any bond they may issue for any money so borrowed, the right to convert the principal due thereon into stock of said company, at any time not exceeding five years from the date of said bond, under such regulations as the directors may see fit to adopt, and for such purpose the corporation is authorized to increase its capital stock to the amount so borrowed whenever the persons or any of them to whom such money is due, shall elect to convert the same into stock; but nothing herein contained shall be construed to authorize an increase of stock of said company beyond the sum of two hundred thousand dollars.

Corporation
may borrow
money.

§ 23. This act shall take effect immediately.

APPENDIX II.

LAWS OF 1855, CHAP. 151.

(Dit's Ex. 2.)

AN ACT to amend an act entitled "An act to incorporate the Ithaca Water Works Company," passed June 25, 1853.

Passed April 3, 1855.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. Section seven, of Title three, chapter eighteen, of the first of the revised statutes, shall not be so construed as to apply to the act hereby amended. But the said act is hereby re-enacted and the persons named in the first section of said act may proceed to organize said company in the manner provided by the act hereby amended, at such other time as they or a majority of them may deem proper, giving two weeks' notice of the time and place at which they will attend to receive subscriptions to the capital stock thereof; and the corporation so organized shall in all respects be a valid corporation and possess all the powers authorized by said act, the same as though the organization had been perfected at the time mentioned in the third section of said act.

§ 2. This act shall take effect immediately.

APPENDIX III.—THE CONTRACT OF AUG. 25, 1902.

(Dft's Ex. 10.)

This agreement made this 25th day of August, 1902, between the Ithaca Water Works Company of Ithaca, New York, party of the first part, and the City of Ithaca, N.Y., party of the second part:

WITNESSETH, the party of the first part, for and in consideration of the covenants and agreements hereinafter contained to be kept and performed by the said party of the second part, hereby agrees to supply the City of Ithaca with water by hydrants for fire purposes according to conditions of proposal and specification now on file in the City Clerk's office for a period of ten (10) years at forty (\$40.00) dollars per hydrant per year, from the 1st day of December, 1902.

The said party of the first part guarantees to install as rapidly as possible a high pressure service for domestic use on high levels, a system of fire pumps to increase the efficiency of the fire protection, an impounding reservoir of ample capacity for the requirements of the city and its inhabitants, for more than ten years, which, when completed and in operation, will deliver without decrease of pressure four fire streams through one hundred feet of best two and one-half inch of rubbered lined hose, and a one and one-eighth inch nozzle upon the roof of the Cascadilla School, or six like streams upon the roof of the Wilgus Block, or six like streams upon the roof of Treman, King & Co.'s warehouse at the Inlet, or three like streams upon the roof of the West Hill School-house, and within four months of the date of this contract to deliver two like streams upon the roof of the Cascadilla School, or four like streams upon the roof of the Wilgus Block, or four like streams upon the roof of Treman, King & Co.'s warehouse at the Inlet, or two like streams upon the roof of the West Hill School-house.

The party of the first part further covenants and agrees to furnish a sufficiently high pressure for private consumption to run to the third floor of the highest house now built in the city limits;

and furthermore covenants and agrees on Nov. 1, 1902, to cut the present rates for consumption for combined hot and cold kitchen faucet from \$10 to \$8; to cut the present price for consumption for cold kitchen faucet from \$8 to \$6; and for baths in private residences from \$5 to \$4 per year.

And the party of the first part furthermore covenants and agrees that the water supplied shall be clear, pure, and wholesome, in that it shall be at all times free from disease-producing organisms, and that its turbidity, except in times of normal floods, shall be less than four one-hundredths by the platinum wire standard.

And for and in consideration of the above, the City of Ithaca agrees to pay the total annual charge for all public purposes, semi-annually, as follows:—

One-half on the first day of March and one-half on the first day of September succeeding the first day of December, 1902, and semi-annually thereafter during the continuance of this contract.

The official conditions and specifications filed in the City Clerk's office on the 16th day of July, 1902, are hereby referred to and made a part of this contract for the purpose of designating where hydrants are to be placed.

The Ithaca Water Works Company furthermore covenants and agrees to furnish additional hydrants than those hereinbefore provided for at the rate of forty (\$40) dollars per hydrant, at any places within the city limits hereinafter designated by the Common Council. In case where extensions are necessary beyond those hereinbefore provided for, they shall be placed not less than seven and one-half hydrants per mile a main, laid.

It is understood and agreed between the parties hereto that the foregoing contract shall supersede and take the place of the contract between the parties hereto, dated Sept. 24, 1898, which contract is hereby annulled from and after the commencement of this contract.

IN WITNESS whereof the parties of the first part have caused these presents to be subscribed by the President of the said company, and its corporate seal to be hereto affixed, and the party of the second part has caused these presents to be subscribed by the Mayor of the City of Ithaca and the City Clerk and the corporate

seal of the said city to be hereto affixed the day and year first above written.

THE ITHACA WATER WORKS COMPANY,
By WILLIAM T. MORRIS, *President.*

THE CITY OF ITHACA,
By WILLIAM R. GUNDERMAN, *Mayor.*

A. G. MARION, *City Clerk.*

APPENDIX IV.—THE CONTRACT OF FEB. 18, 1903.

[EXTRACTS FROM THE PROCEEDINGS OF THE COMMON COUNCIL
OF THE CITY OF ITHACA. DFT'S EX. 57].

Feb. 18, 1903.

Jacob Gould Schurman, President of Cornell University, addressed the Council relative to the city water supply.

A large number of citizens entered into the general discussion pertaining to the city water supply:—

By Alderman Rowlee:—

Resolved, That the agreement between the Ithaca Water Works Company and the City of Ithaca, dated Aug. 25, 1902, be modified by striking out the following words and clause on p. 2 in like 4 thereof; namely, "And furthermore covenants and agrees on Nov. 1, 1902, to cut the present prices for consumption for combined hot and cold kitchen faucet from \$10 to \$8; to cut the present prices for consumption for cold kitchen faucet from \$8 to \$6; and for bath in private residence from \$5 to \$4 per year," and by inserting in place thereof the following; namely, "And furthermore covenants and agrees that the price for consumption for combined hot and cold kitchen faucet will not exceed \$10, and that the price for consumption for cold kitchen shall not exceed \$8, and for bath in private residences shall not exceed \$5 per year."

The foregoing resolution is adopted in pursuance of the promise of the Ithaca Water Works Company to promptly build and maintain a suitable filtering plant for the purpose of filtering all water distributed by it, and this resolution is to go into effect when the Ithaca Water Works Company furnishes such filtered water throughout its system.

Ayes: LaFrance, McCormick, Burns, Baker, Rowlee, Rites.

Nays: Howell, 1.

Declared carried.

APPENDIX V.

LAWS OF 1903, CHAP. 181.

(Dft's Ex. 5.)

AN ACT to establish and maintain a water department in and for the city of Ithaca.

Passed April 15, 1903.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Within ten days after this act shall become a law, the mayor of the city of Ithaca shall appoint, subject to confirmation by the common council of said city, a board of water commissioners to be known as the Ithaca water board, which, exclusive of the mayor, shall at all times consist of six members, residents and tax-payers of said city, and no more than three persons belonging to the same political party, exclusive of the mayor, shall at any one time be members of said water board. Two of the first commissioners appointed shall hold office until January first, nineteen hundred and four, two of them until January first, nineteen hundred and six, and two of them until January first, nineteen hundred and eight; and when appointed their respective terms of office shall be designated by the mayor. All other water commissioners shall be appointed by the mayor, subject to confirmation by the common council, and their terms of office, except when appointed to fill vacancies, shall be for six years. The mayor of said city shall, *ex officio*, be a member, and the president, of said water board, but shall have no vote therein upon any question of appointment, employment or removal of any appointee or employee of said water board. In case of a vacancy from any cause the mayor shall appoint a commissioner for the unexpired term. Each commissioner shall hold office until the appointment and qualification of his successor. The office of a water commissioner, holding office under this act, shall become vacant by his death, resignation, removal

from said city, or his refusal or neglect for six months to perform the duties of his office without being excused by vote of the board, or by his becoming of unsound mind. Resignation may be made in writing to the mayor of said city. No other city office shall be held by any water commissioner while he remains in office as such water commissioner. Any water commissioner may at any time be removed from office in the manner provided in the charter of the city of Ithaca for the removal of its officers. The majority of all the commissioners in office (exclusive of the mayor) shall constitute a quorum for the transaction of business, provided a formal notice shall have been given to each commissioner a reasonable time before the meeting, or a notice mailed to his address at least twenty-four hours prior to said meeting.

§ 2. Within fifteen days after the appointment of the first six commissioners, at a time designated by the mayor, they shall meet at the office of the city clerk and take and file the oath of office prescribed by the constitution of this state, and shall as soon as the same can be conveniently done thereafter, select a secretary and a treasurer, neither of whom shall be a member of said board; and shall prescribe the form and the amount of the bond required to be given by the said treasurer. The term of office of the said secretary and treasurer shall be two years, and until their successors have been appointed and shall have duly qualified. The said secretary shall at all times act as secretary of said board of water commissioners and shall keep a record of the appointment and qualification of the commissioners and of the organization of the board, and shall also keep the records of said board. Said secretary shall also give notice in writing to the said treasurer of the appointment, qualification and organization of the said board.

§ 3. The said Ithaca water board is hereby authorized and directed, for and in the name of the city of Ithaca, to acquire, construct, maintain, control and operate a system of water works to furnish the city of Ithaca and its inhabitants with water, and may employ engineers, surveyors, superintendents, officers, agents and such other persons as may be necessary for that purpose, and fix their compensation and terms of employment, and

discharge them at will. The board may also contract for, purchase and acquire by deed or otherwise in the name of the city of Ithaca, all lands, water easements, property, tenements, hereditaments, rights, privileges and franchises to any ponds, fountains, dams, mains, pipes, conduits, hydrants, machinery, and all other real and personal property whatsoever, necessary for the acquisition or construction, and for the maintenance, control and operation of said water works, and to contract for the construction of said water works or any part thereof, and for supplying any and all necessary materials therefor. Said water board is hereby authorized and directed to acquire for and in the name of the city of Ithaca all the plant, franchises, water rights, land, pipes, mains, reservoirs, hydrants and other property essential and appurtenant to a water supply which belonged to the Ithaca Water Works company before the organization of the Ithaca Light and Water company, and also such as has been added for the purpose of a better water supply by either of said companies since their organization; together with such improvements as shall be added prior to September first, nineteen hundred and three, but such improvements hereafter to be added before said date, shall consist only of the filtration plant now in process of construction by said water company, the dam not to exceed thirty feet in height for the use of the said filtration plant, the necessary and proper pumps, pipes and connections and other appurtenances to said filtration plant. The said water board shall acquire such property by purchase, provided that the price thereof shall be agreed upon between the owners of the property sought to be acquired, and the said water board, but upon failure so to agree the said water board is authorized and required to condemn such property under the law of eminent domain and in that manner vest the title of such property in the said city of Ithaca. Provided, however, that on the first day of September, nineteen hundred and three, if condemnation proceedings have been instituted more than twenty days prior thereto, otherwise within twenty days after the instituting of such proceedings, the said Ithaca Light and Water company and said Ithaca Water Works company shall each turn over to the Ithaca water board their entire

plant used for or appurtenant to a water supply, to be operated by said board for and in behalf of the city of Ithaca; the said companies to be paid for the use thereof, from the time it is so turned over until the plant is finally paid for, an amount equal to the interest at the legal rate on the value of the plant as finally fixed and determined; and until such final determination is made, to advance such approximate rental value thereof as the Ithaca water board may establish, not less than the interest upon the outstanding bonds, such advancements to be made on or before the dates of such interest. The amount of such rental so advanced, if found to be in excess of, or less than, the interest on the value of the plant as so finally determined, shall be adjusted upon the final settlement. And in event the plant is so turned over, whatever interest or property the said companies, or either of them, may have which would otherwise be taken into account on the condemnation of such property, shall not be forfeited or impaired by reason of such turning over of such property or by any breach in the fulfilment of any of the contracts of either of the said companies with said city, while the plant is operated by the said water board. In case the said companies, or either of them, shall decline to turn over the plant to the Ithaca water board at the time and upon the conditions hereinabove set forth, then and in that event, the said water board shall be under no further obligation to acquire said plant, either by purchase or by condemnation, and may at its option discontinue and withdraw any condemnation proceedings instituted therefor. The said water board is further authorized to acquire by purchase or condemnation proceedings any other or further lands or water rights or rights of way or other property, wheresoever situated, which it shall deem necessary in order to supply water for the use of the city of Ithaca, and to contract for such property and construct such works as may be requisite for that purpose.

§ 4. Title one of chapter twenty-three of the code of civil procedure shall govern and be applicable in all proceedings taken under this act for the condemnation of property, where the same is not inconsistent with the provisions of this act.

§ 5. The Ithaca water board shall have power to make all

contracts necessary or incidental to the execution of the powers conferred by this act, but no contract or agreement for labor and materials, or either of them, requiring an expenditure of more than five hundred dollars shall be entered into, except in case of absolute necessity, or except for the employment of officers, agents, engineers, counsel and other employecs of the board, without first advertising at least twice a week for two successive weeks in at least one of the daily newspapers published in the city of Ithaca, and such other papers and periodicals as said board may direct, for proposals to enter into contract for the work or materials required; and all such contracts shall be let to the lowest bidder, who shall furnish such security for faithful performance as shall be approved by the board; but the board may reject such bids in its discretion and readvertise for proposals. A copy of each proposal received and every contract entered into by the board shall be filed with the secretary. All such proposals shall be under seal and opened in the presence of the board.

§ 6. No member of the board, or any of its officers, or any officer of the city of Ithaca, shall be directly or indirectly interested in any contract relating to work done or materials furnished under the authority or provisions of this act; and any violation of this provision shall be a misdemeanor. No member of the board shall receive compensation for his services as such.

§ 7. The Ithaca water board and all persons acting under its authority and direction shall have the right to enter, appropriate, occupy and use any public street, highway, square, avenue, road, park or other public ground for the purpose of constructing, maintaining and operating water works for supplying the city of Ithaca with water, and for all other purposes of this act; but the board shall in all cases restore such public street, highway, square, avenue, road, park and other public ground to its former state of usefulness.

§ 8. Whenever the Ithaca water board shall consider it necessary that any bonds of the city of Ithaca shall be issued for the purposes of this act, it shall certify to the common council of the city, the estimated amount so needed, not exceeding the sum of two hundred and seventy-five thousand dollars and the purpose

or purposes for which required; whereupon it shall be the duty of the common council, by resolution, to cause bonds for the amount so certified to be issued in the name and upon the credit of the city of Ithaca, which shall be executed by the mayor under the corporate seal of the city, and countersigned by the city clerk. The faith and credit of the city of Ithaca are hereby pledged for the payment of both principal and interest of any bonds issued under and in pursuance of this act. Said bonds shall be issued, with interest coupons, in such denominations or amounts as the common council may deem expedient, but not less than fifty dollars each, with interest at the rate of not to exceed four per centum per annum, payable semi-annually on the first days of January and July of each year, both principal and interest to be made payable in the city of New York at a bank or trust company to be specified in each bond and coupon, and shall be so classified and issued, in accordance with the constitution of the state of New York, that the whole of them shall mature within forty years from date of issue. Said bonds shall not be sold at less than par, and must be sold to the highest bidder and in such way or manner and under such conditions as said Ithaca water board may deem best to obtain the highest price therefor. The proceeds of said bonds or any of them, as soon as received, shall be paid over to the treasurer of said Ithaca water board and credited to a fund which shall be known as water fund account, and said treasurer shall immediately upon the receipt of the same, deposit such proceeds in such bank or banks or trust company as shall be designated by resolution of the Ithaca water board, and be paid out only on warrants, numbered consecutively as issued, signed by the president and secretary of the Ithaca water board, and countersigned by the said treasurer; which warrants shall be issued as fast as necessary for the purpose aforesaid. No order or warrant for the payment of such moneys shall be issued except upon the resolution of the board entered upon its minutes, and certified copies thereof shall be filed with the said treasurer. The voucher or other paper on account of which such order is issued, shall be filed with the Ithaca water board and shall bear a number corresponding with the number of the order

or warrant issued thereon. The board may, however, at any time, by resolution and order issued in the manner aforesaid, transfer any funds from any bank or banks or trust company to any other bank or trust company. The funds so transferred, and all interest accruing thereon, shall be held and paid out by such bank or banks or trust company only in the manner above provided. The amount of moneys on deposit at any time with any such bank or banks or trust company shall not exceed thirty per centum of the full paid capital stock and surplus of any such bank or trust company. Every such depositary shall give security, approved by said water board, for the safety of said moneys. If after the issue of said bonds hereinbefore provided for it shall appear to said Ithaca water board that a larger amount than said sum of two hundred and seventy-five thousand dollars is needed in order to acquire an adequate and safe supply of water for the use of the city of Ithaca, then such water board shall, from time to time, certify to the common council of the city, the estimated additional amounts so needed, not exceeding in the aggregate four hundred and seventy-five thousand dollars, whereupon it shall be the duty of the common council to issue a second and further series of bonds, which shall mature in not exceeding twenty years, and a sinking fund shall be created on the issuing of said bonds, for their redemption, by raising annually a sum which will produce an amount equal to the sum of the principal and interest of such bonds at their maturity. Such second issue and the proceeds thereof shall be subject to all the provisions of this act relating to the first issue of bonds herein authorized, except as otherwise herein provided.

§ 9. The amount derived from receipts from all sources, as hereinafter provided, shall, so far as necessary, be applied to the payment of the cost of maintaining, operating and extending the said system of water works, and to the payment of the principal and interest falling due on said bonds; and in any year in which said amount shall be insufficient for that purpose, the common council of said city shall make due provision, by tax, for the payment of the deficiency, and such deficiency shall be assessed; levied and raised in the same manner as any other

general tax of said city, and in addition to, and in connection with, the general taxes of said city.

§ 10. The proceeds of all bonds issued under the provisions of this act shall be used and applied by the Ithaca water board solely for the acquisition and construction of the system of water works herein provided for, and for the purpose of acquiring property rights, privileges and franchises therefor or to be used in connection therewith.

§ 11. The Ithaca water board shall, from time to time, fix and determine the water rates to be paid by all consumers of water, including a just annual rate to be paid by the city at large on account of the use of water for municipal purposes. All moneys and income which shall be received by the board for water, or on account of said system of water works, shall be deposited to the credit of the water fund account in the bank or banks or trust company designated by said water board, and shall be paid out only as provided by this act.

§ 12. The said Ithaca water board shall make, publish and enforce all needful rules and regulations in relation to the said water works, and all of the property and appliances pertaining thereto, and in relation to the management thereof and the supply of water thereby, whether to individuals or corporations, and may alter and modify the same from time to time, and may fix a penalty not exceeding fifty dollars for the violation of any of said rules or regulations. The said common council may aid such enforcement by ordinance. The said board may prosecute in the name of the said city for all violations of said rules, regulations or ordinances.

§ 13. The Ithaca water board shall fix and collect the annual, semi-annual, quarterly or monthly prices for water supply by means of said water works to the dwellings, establishments or uses of individuals, companies or corporations.

§ 14. The moneys derived from the penalties and water rates provided for in this act shall be paid over to the said treasurer, by him to be immediately deposited in the said bank or banks or trust company designated by the said board, to the credit of the water fund account, and shall be applied, as provided in section nine of this act.

§ 15. No obligation shall be incurred or money expended, or issue of bonds demanded under this act, by the Ithaca water board, except by resolution duly passed by a majority of the members of the board. In every case, the vote shall be taken by yeas and nays, and every such resolution and the vote thereon shall be recorded in full in the minutes of the board.

§ 16. Any and all actions or proceedings authorized by this act shall be brought, taken and instituted by the Ithaca water board in the name of the city of Ithaca; and all action, suits or other legal proceedings brought, instituted or commenced by any person or corporation, on account of any act or thing done or omitted by said board, shall be brought, instituted and commenced against the city of Ithaca in its name, and shall be defended by it under the direction of the board; and all actions, claims or demands may be compromised and paid by said board, and any final judgment recovered thereon shall be satisfied by it, out of the funds obtained by it in pursuance of the provisions of this act. Such payments shall be made only in the manner hereinbefore provided. No member of said board shall be personally liable for any act done in the performance of his official duty.

§ 17. The Ithaca water board shall keep books showing the cost of the acquisition, construction and maintenance of said water works and of extending the same, and all its collections, receipts, expenditures, proceedings and doings and shall make a report thereof to the said common council at the last regular meeting of said common council in the month of December in each year, and as much oftener as the common council may require, and shall furnish at all times such other or further information as to the business and affairs of the board as may be required by the common council. All the books, records, vouchers, contracts and all other papers kept by the Ithaca water board, or in its possession, or under its control, shall at all reasonable times, be subject to inspection by any officer or duly authorized agent of the city of Ithaca.

§ 18. The clerk of the city of Ithaca is hereby authorized and directed to deliver to the Ithaca water board certified copies

of all resolutions, acts and ordinances passed by the common council pursuant to the provisions of this act, or in any way relating to the Ithaca water board or the system of water works herein provided for. The said treasurer is hereby authorized and directed to prepare, and at all times to keep, a book or books, in which shall be entered all moneys received and deposited in any bank, or banks, or trust company, and all moneys paid out or orders, or warrants, countersigned by him, and also shall keep on file all resolutions, instruments and other papers received by him, and a record of all acts and things required to be done by said treasurer under the provisions of this act.

§ 19. The Ithaca water board shall fix the compensation to be paid by it to the secretary and treasurer for the services to be performed by them under the provisions of this act, and may, from time to time, change the compensation of such officers or either of them, but such compensation shall not be increased or diminished during the term of office for which such secretary or treasurer may be appointed.

§ 20. Said Ithaca water board shall have power in its discretion and upon the credit of the city of Ithaca, by issue of bonds as hereinabove provided, or otherwise, to take such action and make such expenditures as may be necessary for furnishing a temporary supply of water to the city and its inhabitants, until a permanent system and supply shall have been acquired, constructed and obtained.

§ 21. Any wilful act whereby the said water works or any property, apparatus or appliances pertaining thereto shall be injured or the supply of water obstructed, impaired or made less pure, shall be deemed a misdemeanor, and the person or persons convicted thereof shall be punished accordingly.

§ 22. This act shall take effect immediately.

STATE OF NEW YORK }
Office of the Secretary of State. } ss.:

I have compared the preceding with the original law on file in this office and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

JOHN F. O'BRIEN,
Secretary of State.

APPENDIX VI.—THE COMMISSIONERS' AWARD IN
THE CASE OF LONG ISLAND WATER SUPPLY
CO. *v.* BROOKLYN

UPHELD BY THE COURT OF APPEALS OF THIS STATE IN 143 N. Y.
596, AND BY THE SUPREME COURT OF THE UNITED STATES
IN 166 U. S. 685.

Supreme Court,

KINGS COUNTY.

In the Matter

OF

The Application of the CITY OF
BROOKLYN for authority to acquire the
property and franchises of the LONG
ISLAND WATER SUPPLY COMPANY.

TO THE SUPREME COURT OF THE STATE OF NEW YORK:

The Commissioners appointed by your Honorable Court as
hereinafter mentioned, hereby report:

Procedure of the Commission.

I. The undersigned, Eliphalet W. Bliss and Hiram W. Hunt
together with Edward Rowe, having been duly appointed such
commissioners by an order of your Honorable Court, bearing date
the 7th day of June, 1892, the said Edward Rowe, Eliphalet W.
Bliss and Hiram W. Hunt, being disinterested freeholders and
residents of the County of Kings, did, on the 10th day of June,

1892, before proceeding herein, duly take and subscribe the constitutional oath of office. Thereafter Edward B. Bartlett, who had in like manner been appointed a commissioner by the said order of June 7th, 1892, having declined to act as such, and thereafter by order of your Honorable Court, made on the 13th day of June, 1892, Jacob Cole having been appointed as such commissioner in the place of the said Edward B. Bartlett, and thereafter the said Jacob Cole having declined to act as such commissioner, and thereafter by order made by your Honorable Court on the 14th day of June, 1892, William T. Lane having been appointed such commissioner in the place of the said Jacob Cole, and thereafter the said William T. Lane having resigned as such commissioner and Charles E. Emery having, by order of the Court bearing date the 9th day of September, 1892, been duly appointed as such commissioner in the place of the said William T. Lane, the said Charles E. Emery being a disinterested freeholder and resident of the County of Kings, did on the 9th day of September, 1892, before proceeding herein, duly take and subscribe the constitutional oath of office. And George G. Herman having been also duly appointed such commissioner by the said order of 7th June, 1892, and having thereafter and on 9th November, 1892, resigned his office as such commissioner, and thereafter and by order of your Honorable Court, made on the 14th day of November, 1892, the undersigned Edward M. Shepard having been duly appointed such commissioner in the place of the said George G. Herman, the said Edward M. Shepard, being a disinterested freeholder and resident of the County of Kings, did on the 16th day of November, 1892, before proceeding herein, duly take and subscribe the constitutional oath of office. All the parties herein on the 16th day of November, 1892, duly stipulated in writing that the evidence theretofore taken herein should be considered by any duly qualified commissioner appointed in the place of the said George G. Herman with like force and effect as if given in the presence of such duly qualified commissioner so appointed while acting as such commissioner, but subject to the objections and exceptions taken thereto or to any part thereof, and without prejudice to any such objection and exceptions.

II. Pursuant to the provisions of the said order of 7th June, 1892, and of the order supplemental thereto of 13th June, 1892, directing the commissioners appointed herein to hold their first meeting at the office of the Corporation Counsel in the City Hall, in the City of Brooklyn, at eleven o'clock A.M., on the 28th day of June, 1892, the commissioners, then duly appointed and acting as aforesaid, did so meet at the said office at the said hour on the said day, but adjourned, a majority of the commissioners being present, without taking any testimony or hearing the parties; and under such adjournment the commissioners met as hereafter mentioned. The said commissioners so appointed and acting also caused to be duly published in the corporation newspapers of the City of Brooklyn for ten consecutive days prior to the 28th day of June, 1892, and beginning on the 15th day of June, 1892, a notice setting forth the said time and place as those at which they would hold a public meeting, and at which they would hear the proofs and allegations of the parties interested herein. And pursuant to the provisions of a further order of your Honorable Court, entered herein on the 9th day of September, 1892, directing the commissioners thereunder, appointed and then acting as aforesaid, to hold their first meeting on the 23rd day of September, at two o'clock in the afternoon, at room No. 19, on the second floor in the Kings County Court House in the City of Brooklyn, all the commissioners, so appointed and then acting (none of the commissioners then or theretofore appointed having theretofore taken any testimony or heard the proofs or allegations of the parties) did so meet at the said room at the said hour on the said day. And the commissioners last mentioned also duly caused to be duly published in the corporation newspapers of the City of Brooklyn for ten consecutive days prior to the said 23rd day of September, 1892, a notice setting forth the said time and place last mentioned as those at which they would hold a public meeting and at which they would hear the proofs and allegations of the parties interested.

All the said commissioners so appointed and acting since the 9th of September, 1892 (except that the said Edward M. Shepard has as aforesaid since the 16th of November, 1892, acted in the place of the said George G. Herman, resigned) have heard every

person or corporation that has desired to be heard, and have permitted every corporation or person so desiring to present proofs and allegations upon any hearing before the said commissioners. All of the commissioners, being the said Edward Rowe, Eliphalet W. Bliss, Hiram W. Hunt, Charles E. Emery and Edward M. Shepard, have viewed the property described in the petition and have heard the proofs and allegations of all persons interested and have reduced the testimony taken by them to writing; and with this report they submit to your Honorable Court and file in the office of the Clerk of the County of Kings, the minutes of the testimony taken by them. A majority of the said commissioners last named, being the said Eliphalet W. Bliss, Hiram W. Hunt and Edward M. Shepard, there being present with them the said commissioners, Edward Rowe and Charles E. Emery, did, after the testimony was closed, ascertain and determine the compensation which ought justly to be made by the City of Brooklyn to each person or corporation having any interest in or lien upon the property and franchises condemned; and the commissioners do hereinafter further report the compensation so ascertained and determined.

Awards for Just Compensation.

III.—Just compensation for the reservoir, wells, machinery, pipes, franchises and all other property of the Long Island Water Supply Company mentioned in the petition of the City of Brooklyn herein to your Honorable Court, dated 11th May, 1892, is the sum of Five hundred and seventy thousand dollars (\$570,000), of which there should be paid as such just compensation to the Mercantile Trust Company of the city of New York, the sum of Five hundred thousand dollars (\$500,000) with interest on Two hundred and Fifty thousand dollars (\$250,000) thereof from the 15th day of June, 1892, at the rate of six per cent. per annum, and on the remaining Two hundred and fifty thousand dollars (\$250,000) thereof from the 1st day of July, 1892, at the rate of six per cent. per annum, being together, as of the date of this report, principal and interest, the sum of Five hundred and seventeen thousand

five hundred and eighty-three $\frac{84}{100}$ dollars (\$517,583.34) and of which said total just compensation the remainder, being the sum of Fifty-three thousand, four hundred and sixteen $\frac{66}{100}$ dollars (\$53,416.66), as of the date of this report, should be paid as such just compensation to the Long Island Water Supply Company.

IV.—Of the said total just compensation of Five hundred and seventy thousand dollars (\$570,000), we have ascertained and awarded as just compensation (1) for the lands mentioned in the said petition, the sum of Seventy-seven thousand five hundred dollars (\$77,500) the award for buildings and fixtures thereon being included in the award next hereinafter mentioned.

Of the said total just compensation we have ascertained and awarded as just compensation for (2) the pump house, buildings, reservoir, fifty miles, more or less, of pipes and mains, gates, hydrants, wells, pumps, boilers, machinery, stock and materials of the Long Island Water Supply Company the sum of Two hundred and ninety-two thousand five hundred dollars (\$292,500).

Of the said total just compensation, we have ascertained and awarded the remaining Two hundred thousand dollars (\$200,000) as just compensation for (3) the franchises, contracts and all other rights and property of whatsoever nature or kind, of the Long Island Water Supply Company, including a certain contract dated the 15th day of December, 1881, between the Town of New Lots and the Long Island Water Supply Company, and referred to in chapter 335 of the laws of 1886.

V.—We have regretted that neither the parties nor the Court was, in advance, able authoritatively to define the nature of the franchises and rights of the Water Company. It was impossible for us to ascertain what would be just compensation for them without defining what they were; and we have been, therefore, compelled, upon the evidence before us and upon the statutes, to reach ourselves a definition. Testimony has been given by the Water Company as to the origin and nature of its rights; and much of the argument of counsel has been directed to their definition. As

the valuation of the rights would, in our judgment, depend materially upon this definition, and particularly upon what is the character in respect of exclusiveness of the right of the Water Company to supply water to inhabitants of the Twenty-sixth Ward of Brooklyn, it is proper that, as to some features of those rights, we should state our understanding, in order that, if we are in error, neither party shall be embarrassed in reviewing our report by doubt as to the basis upon which it has proceeded.

VI.—The Water Company was incorporated in the Town of New Lots in 1881, under chapter 737 of the laws of 1873. Under this act, as modified or extended by chapter 415 of the laws of 1876, the proposed incorporators presented their application to the authorities of the town, stating the persons who proposed to form the company, the proposed capital stock, the number and character of the shares of stock and the sources from which water was intended to be supplied, and asking those authorities to consider their application to supply the town and inhabitants thereof with pure and wholesome water. The authorities granted the application; and, under the terms of such grant and of the statute and certificate filed by the proposed incorporators, the latter were constituted into the Long Island Water Supply Company as a body corporate, with the capacity of suing and being sued, and with the right to lay and maintain their pipes and hydrants for delivering and distributing water in any street, highway or public place of the town, and also with the right to acquire certain kinds of property necessary for the purposes of the act under which they were incorporated. The Water Company has claimed that, under these acts and proceedings, it acquired a right of the nature of a contract to the exclusion of all other persons, corporations and authorities, to publicly purvey water to the town and its inhabitants. We think otherwise. We do not find in the law any prohibition upon the town authorities to make another grant to another company. It is probable that the authorities of a town, after having granted the application of a water company, which, upon the faith of the grant, has in good faith and with diligence constructed its reservoir and plant and laid its pipes,—ought not

to grant the application of another company so long as the first company discharges its obligations with fairness and to public advantage. They certainly ought not until the first company, so acting, has been fairly compensated by its profits for its investments, risks and services to the public. In valuing the franchise of the present Water Company, we have, therefore, made what we believe to be fair and ample allowance for the value which its franchise gains from the probability that liberal good faith will be observed by the authorities in not subjecting it to rivalry until it has been so fairly compensated.

But our allowance has been materially less than it would have been had we believed that, during the corporate life of the company, it had a right to be preserved from rivalry, which could not be taken from it by the legislature without its consent and without compensation. We have made the allowance upon what, there being no evidence to the contrary, we are bound to assume upon the evidence, that there has been no failure on the part of the company to perform its duties to the public.

In 1886 the Town of New Lots was annexed to the City of Brooklyn by chapter 335 of the laws of that year. Section 5 of that act provided that within two years the City of Brooklyn might by a contract with the Water Company, or, if an agreement could not be made, then under the right of eminent domain, acquire the property of the company. Section 4 of the act provided as follows:

“The said City of Brooklyn shall not distribute or furnish water for consumption or use within said territory or lay any pipes or mains for the distribution or supply of water within said territory, until the expiration of the charter of said company, or until the said city shall purchase or acquire the property of said company as in the next section provided.”

The City of Brooklyn did not within the two years acquire the property of the company in either of the ways prescribed by the statute. It was suggested in behalf of the Water Company that under this law it acquired an absolute or contract right against the City of Brooklyn that the latter should not, during the corporate life of the company, furnish water in the Twenty-sixth

Ward. This suggestion has seemed to us to be inconsistent with the argument of the Water Company that the act was not unconstitutional as being a local act which granted to a private corporation an exclusive privilege, immunity or franchise. If the act of 1886 did grant an exclusive franchise to the Water Company, we believe, and have so assumed, that it would in so far be unconstitutional. We have concluded that the act in this respect was not unconstitutional, and this because of our conclusion that it made no grant whatever to the Water Company. The provision was in our opinion merely a direction to the City of Brooklyn which was and is no more than a public agency completely subject to future legislation. The act of 1886, as it involved no grant whatever to the Water Company, was repealable at any time. But we have, in favor of the Water Company, assumed that, although this provision did not give it a right which might not at the pleasure of the Legislature be taken away, the provision nevertheless was inserted from a regard for public fair dealing; and we have also assumed that that public regard would continue in the future. We must believe that the Legislature would not, as it should not, permit the value of the franchise of the Water Company to be destroyed by a competition so irresistible as that of the City of Brooklyn, unless the City of Brooklyn should be willing to take the property of the Water Company upon payment of just compensation therefor; or, if the Legislature did grant such power to the City, then that the City itself would not in disregard of public fair dealing, avail itself of its power so as to effect a substantial injustice. It was obviously proper that the interests of a company which had lawfully begun business in the town of New Lots, and had carried it on for a number of years, to the public advantage, and in reliance upon the natural future growth in population of the town for its profit, should not be disregarded by any public authority. Prior to the annexation act of 1886, no other Water Company could have competed without the permission of the authorities of the town; and they also, it is to be assumed, would have acted fairly and with a due regard to the risks taken by the Water Company in doing what enured to the advantage of the public. We consider the direction in the act of 1886 as a direction

to the City of Brooklyn, given to a like end of public good faith and as nothing more.

To recapitulate what has just been said, we have valued the franchise upon the assumptions (1), that at present the Water Company alone has the right publicly to purvey water in the Twenty-sixth Ward, (2) that the exclusiveness now incident to its right may at any time be taken from it by the Legislature, or by local authorities acting under legislation, but (3) that neither the Legislature nor local authorities would, in determining whether to take from the company the exclusiveness of its right, fail to have such due regard as is demanded by ample and fair public policy, to the past investment, risks and services of the company and to the reasonably just expectations which those who invested money in its work had in mind when so investing. The Water Company has insisted that by reason of its supposed right to exclude competition, it could and would earn over and above all investment and outlay and interest thereon during the remaining life of its charter more than six millions of dollars. In our opinion the public authorities would not be justified, unless the Water Company had rights of a contract nature, to continue its freedom from competition in order to secure it returns so much in excess of anything reasonably due its former risks or investments or public services. The profits which the company has supposed it would earn in future years are based upon specific rates for its supply of water. If any protection of the Water Company from competition would at these rates produce such very excessive profits, it would clearly, in our opinion, be the duty of the legislature, or, under its permission, of other public authorities concerned, whether of the Town of New Lots or of the City of Brooklyn, to take care that such competition should be permitted as should secure to the people of the Twenty-sixth ward a fit reduction in the rates.

VII.—We have allowed and there is included in the sum of Two hundred thousand dollars (\$200,000) above mentioned what in our opinion is ample compensation for the value of its franchise because of the freedom which the Water Company would enjoy from competition under the circumstances and limitations to which we have

referred. There is also included in that allowance the present value of the net profits above all charges which in our opinion the Water Company would with reasonable certainty earn in the future if its property were not to be taken from it. In estimating such profits we have had due regard to the fact that the Twenty-sixth Ward of Brooklyn is an urban community which is rapidly increasing, and during the charter life of the Water Company will continue to rapidly increase, in population; to the fact that the consumption of water publicly purveyed will from year to year become more general; to the perennial supply of water which we believe can be obtained from wells now used, or which could be driven, by the Water Company upon its own property or upon other property on Long Island which it might hereafter acquire by purchase or condemnation; to the contracts, very advantageous to the Water Company, for the supply of water which it has with the town of New Lots and with the authorities of Brooklyn; to the fact that the investment in plant must be greater than at present to obtain the additional supply of water which will be necessary when population shall have largely increased beyond the present; to the fact that the land which may be necessary to such additional supply will, as population grows, become more expensive; to the cost of the operation of the plant of the Company as it will probably be in the future; to the other expenses incident to the future current supply of water; and to the other facts which were proved before us.

VIII. Both the Water Company and the City of Brooklyn produced testimony before us of persons who were skilled experts as to sources of water and as to the cost and operation of water works. Besides stating matters which clearly were matters of their expert knowledge, they were permitted by us to state directly their opinions as to the value of the franchise of the company.

Whether or not such opinion testimony were admissible, we have found ourselves unable to adopt any of it, given on either side. The testimony given by each of those witnesses was, in this matter, at best the expression of an opinion depending upon facts which could be, and were, submitted to us, and upon which it was

our duty to form our own judgment independently of the mere opinion of any witness. It was besides clear that each of the witnesses assumed as the basis of his estimate a continuance of the business of the Water Company during the term of its corporate life with a perfectly assured absence of competition; and, if there were no other reason to disregard such testimony, this assumption would in our opinion compel us to do so.

Nor have we accorded weight to the sworn statement of Mr. Trecartin, the president of the Water Company, made before the president of the Board of Assessors of Brooklyn, in May, 1890, that the valuation of the stock of the Water Company at that time was \$62,500. Even if it were an admission, or if it could have been used to discredit Mr. Trecartin had he given testimony as to value, the ample submission of the facts to us has enabled us to form a direct and far more satisfactory conclusion than could be derived from a statement made for the purpose of affecting the opinion of the Board of Assessors.

Very respectfully submitted.

BROOKLYN, 24th JANUARY, 1893.

E. W. BLISS,

HIRAM W. HUNT,

EDWARD M. SHEPARD,

Commissioners.

APPENDIX VII.—EXTRACTS FROM THE AWARD IN
THE GOAT ISLAND CASE.

MATTER OF STATE RESERVATION, 16 ABBOTT'S N. C. 159,
AFFIRMED 102, N. Y. 734.

The award of the Commissioners, which was ultimately sustained by the Court of Appeals, contains the following references to the evidence of future earning capacity or rental value of Goat Island. We quote from page 199 of the report in 16 Abbott's N. C.:—

“The evidence of income in each case has been given without objection, and is before us, and we feel bound to consider and give it due weight. We are compelled to do this to some extent by the absence of proof of market value which has been already referred to. We do not see how it can be omitted as an element in getting at the value of these properties. But before we can make the ascertained net income a measure of value, we must be satisfied that it has the element of permanency, and that such income is derivable from the property itself, and not from the skill of the management of the property. The actual net annual income of Goat Island is about \$12,000. This is derived mainly from the charge for admission across the bridge to the island. It seems not to have derived many aids from skillful management or advertising. This sum would be the interest at 5 per cent. upon \$300,000. We think this is an inadequate price, however, for the islands. We think that with reasonable diligence and skill the revenue from the islands themselves, considered as places for obtaining views of the natural scenery surrounding them and visible from them, might be considerably increased.

“The actual annual net income has become about \$15,000, and it may fairly be presumed that it will be somewhat increased. But we cannot assume that it will reach such proportions as to

justify the high valuation claimed by the owners. Trying to give due weight to all these considerations, we have at last, after considerable difference of opinion and discussion, concluded to award for this property the sum of \$525,000, which seems to us full compensation to the owners, and at the same time, in view of the situation and importance of the property to the State, not an extravagant price to be paid by the State therefor."

VIII. RULINGS AND FINDINGS REQUESTED BY THE DEFENDANTS.

A. *Rulings of Law.*

1. On the company's water rights or franchises in Six Mile Creek.

We rule that by virtue of the company's charter, the acceptance of the same by the company, the acquisition of the property on Six Mile Creek, the contracts entered into with the city for the development of this water source, the expenditure of several hundred thousand dollars in the purchase of land and the construction of dams, reservoirs, pumping plant, filtration plant, pipe line, and other works on that stream, and the diversion of its waters since 1892, the company had a vested property right, irrevocable except for just compensation, to acquire or perfect by condemnation proceedings, or in such individual actions as might be commenced against the company by any of the lower riparian owners, the right to divert the waters of Six Mile Creek at the dam for the purpose of supplying the city of Ithaca and its inhabitants with water, and to use so much of said waters as might from time to time be reasonably necessary for the purpose.

We rule that the fair value of this property right is to be included in the award, and that the company is to receive the value of this right as well as or in connection with the value of the dam, reservoir, pipe line, pumping station, filter plant, and other physical property owned by it on Six Mile Creek. In determining the value of this right or the value of said physical property taken in connection with said right, we have taken into account the fact that the company did not own all the riparian lands below the point of division and had not begun condemnation proceedings to bar the claims of those owners for damages, also the evidence offered concerning the damage to said lands by the diversion of the water for said purposes, and we have viewed the stream itself below the point of diversion.

2. On the question of earning capacity.

We rule that, in valuing the property and franchises of the company, regard is to be had to the reasonable probabilities of the future with reference to earning capacity, in so far as the same would probably affect the fair market value of said property and franchises on the day of valuation; and that, so far as the earning capacity is to be considered, we are not restricted to the actual earnings of any given year or series of years prior to the day of valuation.

In applying this rule, we have borne in mind the uncontroverted facts that during the three years preceeding the day of valuation the company had, in execution of certain contracts with the city, been engaged in the reconstruction of its plant for the purpose of furnishing a larger quantity of water, a better fire pressure, and an improvement in the quality of the water; that these extensions and improvements had been so far completed that the company was furnishing the larger supply, the better fire pressure, and the improved quality of water which it had undertaken to furnish, but that in some particulars the plant, when turned over to the city, was incomplete, in that certain machinery, mains, etc., essential to the economical operation of the works, had not been installed.

We have also considered the evidence relating to the probable cost of completing the plant in such manner as to insure its operation upon a scale of commercial economy, concerning the saving in operating expenses which would probably be effected by this change as compared with the cost of operation during the period of reconstruction immediately before the transfer of the plant.

We have also considered the evidence offered respecting the population of the city, the consumption of water, and other matters, in so far as the same tended, in our opinion, to indicate the probable earning capacity of the works upon their completion.

We find that the fair value of the property and franchises of the Ithaca Water Works Company as they stood on Jan. 1, 1905, valued in the light of the foregoing facts and considerations and

of the other rulings of law and finding of facts hereinbefore set forth, was \$.

We have also considered the evidence tending to show the probable earning capacity of the works during the twenty or thirty years subsequent to the completion of the works; and we find that the fair additional value of the property and franchises of the Ithaca Water Works Company as they stood on Jan. 1, 1905, due to these considerations, was \$ in excess of or in addition to the above sum of \$.

In reaching these amounts, we have taken into account the character of the company's franchises and water rights as hereinbefore set forth, and the possibilities and probabilities of competition, interference with rates, etc., as hereinbefore set forth.

These amounts do not include the Buttermilk and Enfield Creek property, nor the Buffalo Street lots, nor the personal property, nor the special value of the contracts of Aug. 25, 1902, and Feb. 18, 1903, nor the value of the special franchise for hydrant service contained in section 16 of the company's charter.

3. On the question of competition.

In valuing the company's property and franchises, we have taken into account the fact that the company's general franchise to supply the inhabitants of Ithaca with water, and for that purpose to lay and maintain pipes in the public streets, was not exclusive, and that the legislature could, without compensation to the Ithaca Water Works Company, authorize a private company or the city of Ithaca to establish a competing water-works system. Also that under the general laws a private company could be authorized by the Common Council of Ithaca to establish a competing system. We have also considered certain legislation enacted prior to 1903, to which we have been referred, namely: Laws of 1868, chapter 58; Laws of 1870, chapter 133; General Laws of 1895, chapter 630; the village charter of June 4, 1853; the general water supply law of 1875, chapter 181; the charter of the city of Ithaca; Laws of 1888, chapter 212; and Laws of 1893, chapter 346.

We have also taken into account the fact that the city of Ithaca

had no right, prior to the act of April 15, 1903, to acquire the property of the Ithaca Water Works Company, except on such terms as the company might agree to.

In determining the extent to which those statutes and principles of law fairly affect the value of the company's property and franchises, we have considered whether the legislature and the city would be apt, in authorizing or exercising the right of competition, to have such due regard as is demanded by ample and fair public policy to the past investment, risks, and services of the company and to the reasonably just expectations of those who invested their money in the company's works. Also whether it was likely that public competition would be authorized or undertaken except on terms of condemnation.

As to the possibility of either private or public competition under existing or future laws, we have considered the question whether such competition was likely to be authorized or undertaken in view of the magnitude of the investment required, of the uncertainty of the returns upon it, and of the annoyance to the inhabitants involved in the installation of a competing system of water works.

4. Items into which the award may be divided.

1. The physical plant in use	\$,
2. Water rights and franchises, disregarding any probable increase in revenue except that likely to be enjoyed through and immediately after the completion of the works	,
Total for property, water rights, and franchises in use as of Jan. 1, 1905, not including the following items (Nos. 3 to 8)	,
3. Additional value of the same due to taking into account the reasonable probabilities concerning the increase of income during the period of twenty years after the completion of the works	,
4. Additional value of the same in view of the contracts of Aug. 25, 1902, and Feb. 8, 1903	,

5. Additional value of the same in view of the provisions of section 16 of the company's charter	\$,
6. Additional value of Buttermilk and Enfield Creek properties	,
7. The Buffalo Street lots	2,000
8. The personal property	<u>1,730</u>
Total award	\$

5. In general.

In addition to the foregoing rulings the defendants request that the commissioners will rule upon the other questions of law arising in the case in conformity with the argument on pages 16-68 of this brief; and especially in accordance with the sentences or paragraphs which are indicated by red pencil marks on the copies of this brief presented to the commissioners and counsel for the plaintiff.

B. *Findings of Fact.*

The defendants request that the facts be found, so far as the same may have a bearing upon the rulings of law, and otherwise to the extent that the commissioners may decide to incorporate in their award any statements of fact, in conformity with the allegations of fact set forth in this brief; particularly in accordance with the allegations contained in those sentences or paragraphs which are indicated by blue pencil marks in the copies of this brief presented to the commissioners and counsel for the plaintiff.

