STATE OF NEW YORK

HUDSON RIVER REGULATING DISTRICT

PRELIMINARY PLANS OF THE SACANDAGA RESERVOIR

DETERMINATION, SPECIFICATIONS, ESTIMATES AND STATEMENTS

Approved by the Board of the Hudson River Regulating District

January 23rd, 1924.

Certified to the Water Control Commission, January 23rd, 1924.

HENRY M. SAGE, President

ERSKINE C. ROGERS EDGAR M. BETTS

MEMBERS OF THE BOARD OF THE

HUDSON RIVER REGULATING DISTRICT.

RANULF COMPTON,
Secretary.

EDWARD H. SARGENT,
Engineer

STATE OF NEW YORK

HUDSON RIVER REGULATING DISTRICT

CONSTRUCTION OF SACANDAGA RESERVOIR

DETERMINATION

Whereas, in pursuance of the provisions of Article VII-A of the Conservation Law, the Hudson River Regulating District was created on August 2, 1922 and

Whereas, the Official Plan for the regulation of the flow of the Hudson River and certain of its tributaries comprising the rivers in the said district was prepared by the Board of the said district and duly approved by the said Board and certified by it on April 30, 1923 to the Water Control Commission and was approved by the said Commission on June 7, 1923, included the Sacandaga Reservoir, now therefore be it

Resolved, That the Board of the Hudson River Regulating District pursuant to Section 450 of the Conservation Law does hereby determine as a part of the said Official Plan that the public interest and welfare require that a reservoir should be constructed for the regulation of the flow of the Sacandaga River and the Hudson River below the confluence of the Sacandaga and Hudson Rivers, and be it further

Resolved, that in accordance with the provisions of the said statute, the Sacandaga Reservoir should be created by the construction of a dam at or near the village of Conklingville with a high flow line at elevation 771 feet above mean sea level.

STATE OF NEW YORK)
)
COUNTY OF ALBANY) SS:
)
CITY OF ALBANY)

I, RANULF COMPTON, Secretary to the Board of the Hudson River Regulating District, do hereby certify that the foregoing is a true copy of a resolution adopted by the Board of the Hudson River Regulating District at a meeting held January 23rd, 1924.

I, FURTHER CERTIFY, that the said copy has been compared by me with the original thereof and that the same is a correct transcript therefrom and of the whole of said original.

WITNESS my hand and the seal of the said Hudson River Regulating District this 28th day of January, 1924.

(Signed) RANULF COMPTON
Secretary to the Board.

STATE OF NEW YORK

HUDSON RIVER REGULATING DISTRICT

SACANDAGA RESERVOIR

PRELIMINARY PLANS, MAPS, SPECIFICATIONS, ESTIMATES AND STATEMENTS.

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STATE OF NEW YORK

HUDSON RIVER REGULATING DISTRICT

SACANDAGA RESERVOIR

GENERAL SPECIFICATIONS

The Hudson River Regulating District was created on August 2, 1922 by final order of the Water Control Commission in accordance with the provisions of Article VII-A of the Conservation Law.

The Board of the Hudson River Regulating District certified to the Water Control Commission on April 30, 1923 its General Plan for the regulation of the flow of the Hudson River and certain of its tributaries. This General Plan, with certain modifications was approved by the Water Control Commission on June 7, 1923 and under the law, became the Official Plan for the regulation of the flow of the Hudson River and Certain of its tributaries. This Official Plan included the Sacandaga Reservoir. Accordingly, in pursuance of the provisions of Section 450 of the River Regulating Act, the Board of the Hudson River Regulating District has prepared the preliminary plans of the Sacandaga Reservoir.

It is apparently the intention of the statute, (Article VII-A of the Conservation Law), that the preliminary plans and specifications of a reservoir should show in detail the lands to be taken and show generally the construction to be accomplished. Accordingly the Board of the Hudson River Regulating District in submitting the plans and specifications of the Sacandaga Reservoir, submits maps in detail, showing the owner, occupant and area of every parcel of land to be taken, flowed or damaged. These plans and specifications of the work to be constructed are not intended to be contract plans

and specifications as it would seem unwise to submit contract plans until the preliminary plans shall have been approved by the Water Control Commission. As soon as possible after the preliminary plans shall have been approved by that commission, as submitted or as modified, contract plans and specifications for the reservoir works will be submitted to the Water Control Commission. Accordingly it is expected by the Board that the approval of the preliminary plans and specifications for the Sacandaga Reservoir herewith submitted will be contingent upon the Board's submitting to the Water Control Commission satisfactory plans and specifications of the various contracts.

The Sacandaga Reservoir will be created by the construction of an earth dam approximately 100 feet high in the valley of the Sacandaga river at Conklingville. The dam will impound 37,800,000,000 cubic feet of water, creating a lake 25 miles long with a maximum width of 4 miles and a surface area of approximately 42 square miles. The extreme depth of the water just above the dam will be 70 feet and the great swamp, known as "The Vly" will be covered with water nearly 40 feet deep over its entire area. The reservoir will cover parts of Conklingville, Batchellerville, Northampton and Benedict; will come close to North Broadalbin; within a mile of Broadalbin; close to Vail Mills; cover parts of Edinburg, Munsonville, Mayfield, Sacandaga Park, Northville, Hope Valley and all of Osborn Bridge, Day and West Day.

The General Plan for the regulation of the flow of the Hudson River prepared by the Board of Hudson River Regulating District and approved by the Water Control Commission under date of June 7th, 1923, included the Sacandaga Reservoir with a "high flow line" at elevation 771 (U.S.G.S. datum) and a taking line at elevation 778. ~~Accordingly~~ Accordingly these preliminary plans of the Sacandaga Reservoir are on that basis. The statute requires that a low flow line elevation be fixed and accordingly the Board submits elevation 740.0 as the "low flow line" of the reservoir. The capacity at this elevation is 7.8 billion cubic feet, giving an available storage of 30 billion cubic feet of water. The

Board has determined that generally speaking, land for the reservoir will be purchased up to elevation 778. "The water in the reservoir shall not be drawn below elevation 756 between May 1st and Labor Day".

C O N K L I N G V I L L E D A M

The Conklingville dam will be an earth structure approximately 100 feet high founded upon the glacial drift with which the ancient valley is filled. The top of the dam is to be at elevation 795.0 with a top width of 40 feet; the up-stream slopes varying from 3 to 1 at the top of the dam to 4 to 1 at the base and the downstream slope being 2½ to 1 with 8 foot berms at elevation 775 and 745. The above slopes give a maximum bottom width of the dam of 600 feet.

The dam is to be constructed by the semi-hydraulic fill process, that is, the earth will be excavated from the properly designated borrow pits, transported in dump cars to the dam site and deposited in dikes above and below and parallel with the axis of the dam. The fine part of this earth will then be sluiced into the center of the dam to form an impervious core. The foundation of the dam will be excavated to a depth of at least five feet, and more if warranted by the conditions revealed, for a width of 300 feet. A cut-off trench about 20 feet deep and 50 feet wide will be excavated at the base of the center of the dam and a cut-off trench will be excavated where the dam joins the side hill.

Several test pits have been excavated in the area in which it is proposed to locate the borrow pits out of which the material will come for the main dam. Analyses made of the material indicate that it is exceptionally well-fitted for earth dam construction and that there will be available ample material of an effective diameter of 0.01 millimeters for the core of the dam. The dam has been designed so that the core which will have a top width at elevation 780 of 30 feet and a bottom width of 140 feet is of sufficient cross-section to render the dam impermeable.

The upstream slope of the dam will be rip-rapped between elevations 730 and 795 and the downstream toe protected from erosion from any back wash of the spillway discharge by placing the rock spoil from the excavation of the spillway channel at the foot of the dam and up to elevation 730.

SPILLWAY

The spillway will consist of a concrete gravity type dam 600 feet long extending upstream from the dam. The water will be led away from the spillway to the river bed below the dam in a discharge channel cut in the ledge rock as shown on the plans. A memorandum giving the basis of design of the spillway has been submitted to and approved by the State Engineer. In brief this basis is as follows: The drainage area at Conklingville dam site is 1,044 square miles. The flood of March 25th to 30th, 1913 was the greatest known in the history of the Sacandaga River and reached a peak of 35,500 cubic feet per second. The assumption in the design of the spillway ~~capacity~~ capacity is a flood with a peak of 50,000 cubic feet per second and it was further assumed that the reservoir was full at the beginning of the flood. Under such assumptions the flood would have reached a maximum depth on the 600 foot spillway of 6.45 feet. It is pertinent to note that should a flood equal to the famous Miami River flood occur with the reservoir full, the water would reach a depth of less than 10 feet on the spillway crest, leaving a freeboard of over 14 feet.

LOG-WAY

The plans of the dam and spillway provide for a log-way or chute for passing the logs from the reservoir to the river below the dam. The log-way is located in an extension of the spillway at its extreme westerly end.

HIGHWAYS AT DAM

It is proposed to construct a highway on the dam connecting the existing highway routes on both sides of the river. The highway on the

dam will cross the spillway channel on a concrete arch bridge.

OUTLET WORKS

The regulated flow from the reservoir will be withdrawn through a gate-house located in the reservoir about 300 feet above the northerly end of the main dam and thence discharged through an outlet tunnel 24 feet in diameter by-passing the main dam into the river below. This tunnel will also serve as a diversion tunnel to take care of the flow of the river during the construction period. The gate-house will include six caterpillar sluice gates 12 feet, 6 inces by 8 feet with a discharging capacity at the low flow line (elevation 740) of 5,000 cubic feet per second. A bridge will connect the gate-house to the mainland.

Both an automatic recording gage and a staff gage will be installed in the gate-house in order that a careful record can be kept of the fluctuation of the water surface of the reservoir.

HIGHWAY RELOCATION

The Sacandaga Reservoir will flood about 68 miles of highways and in the estimate of cost there have been included items totaling $765,000 for building 41 miles of new highways to replace those flooded.

On the highway relocation map is shown the proposed system of new highways. The roads replaced are for the most part of the ordinary type of country raod but short stretches of state road will be flooded in the vicinity of Cranberry Creek, Sacandaga Park and Northville. Under date of September 14, 1923 the State Highway Department approved the Board's plan of relocation of state highways; it being understood that such approval was subject to the exact relocation and types to be determined later.

Besides the crossing on the dam, there will be at Northville a bridge across the Sacandaga River, a bridge over Hunters Creek at the southern end of Main Street and a bridge over Hunters Creek at Water Street; a bridge across

the arm of the reservoir at Mayfield and a power driven ferry at Northampton which the Board will maintain free of tolls. The proposed system of new roads is as follows: (1) Leading from below the dam along the shore line to Day Center and thence along the shore line to Edinburg; (2) Short lengths of relocated state road replacing the portions flooded of the state highway leading from Northville to Lake Pleasant; (3) Short lengths of relocated roads from Northville Depot to the present highway west of Stony Creek; (4) A short stretch of new state road between Northville Depot and Sacandaga Park; (5) Short stretches of new road connecting existing highway between Mayfield and Cranberry Creek and towards Northville; (6) From the top of the dam following along generally the southerly side of the reservoir to Batchellerville connecting short stretches of the existing road which will not be flooded and continuing along the shore to Northampton; (7) Short stretches of road connecting present highways in the hamlets of Northampton and Benedict; (8) Two short stretches connecting the existing highways adjacent to the Broadalbin-Mayfield route.

In the estimate of cost an allowance of $40,000 a mile has been made for the new state highways and $15,000 a mile for the new town highways and it is believed that these allowances will construct better roads than the one they replace.

RELOCATION OF FONDA, JOHNSTOWN AND GLOVERSVILLE RAILROAD

The Sacandaga Reservoir will flood the tracks of the Fonda, Johnstown and Gloversville Railroad between Mayfield and Cranberry Creek. This affects about 7.8 miles of tracks. This portion will be replaced by a new line to the west of the existing location, beginning at the highway about 1,000 feet northeast of Broadalbin Junction and running northeast, again joining the present line at Cranberry Creek, about 0.7 miles north of the present grade crossing.

The new location will be only 7.3 miles long, thus saving about one-half mile of track; will have a maximum curve of 2^0 whereas the present location has a maximum curve of 4^0. Then the new location will have a maximum grade of 1.96% northward and 1.65% southward while the present location has a maximum grade of 1.75% northward and 1.50% southward.

The new location will bring the line on the outskirts of Mayfield. It will not cross the State highway at any point along the entire relocation. There will be built three stretches of new State highway joining connecting links with the present State highway. All three will be west of the new line and directly alongside it. These will shorten the present highway route and give better alignment. One of these connecting links will be built from a point where the new line crosses the present highway about 1200 feet west of School Street, connecting with the existing State highway at the North Corporation line of the village of Mayfield.

It is planned to build a new passenger station and freight house at the North Corporation line of the village. These will be about one-half mile nearer the center of the village thus giving better passenger and freight facilities. The freight which now has to be hauled over a poor road with heavy grades will then be hauled over macadam road with slight grades. A new passenger station and freight house will be built at Cranberry Creek.

The reservoir will also flood the Northville terminal of the Fonda, Johns-

town and Gloversville Railroad, affecting about $\frac{3}{4}$ of a mile of roadbed. This will be replaced by a new line of about the same length beginning at Sacandaga Park and running just west of the present location . The Railroad Company will have a new terminal yard with new passenger station, freight house, etc., thus receiving the same terminal facilities they now have.

CLEARING OF BASIN OF RESERVOIR

In accordance with the provisions of Section 456 of the Conservation Law, the Board proposes to clear from the Sacandaga Reservoir site all timber and timber growth on lands to be flowed. Furthermore the Board proposes to do such work as may be necessary to prevent stagnant pools above the "low flow line" of the reservoir. As hereinbefore stated, the Board submits elevation 740 as the "low flow line" elevation of the reservoir.

The wooded areas in the reservoir basin total approximately 11,000 acres and are shown on the accompanying maps. Most of such areas consist of scattered ash, elm, and maple, which has very little value, and a small amount of soft wood. Most of the merchantable timber is on wooded lots which are a part of the various farms and it is anticipated that the purchase price of those farms may include the clearing of the timber by the owner. Large areas of the woodedland are under contract by the owners for the cutting of the cord wood, all of which makes it difficult to prepare a contract for the clearing of the reservoir basin. The Board proposes, as soon as the preliminary plans of the reservoir shall have been approved, to have a careful cruise of the timber made and to submit to the Water Control Commission its plans for clearing the reservoir site.

In the estimate of cost of the reservoir, there has been included an item of $710,000 for clearing the reservoir basin. The Board has carefully investigated the cost of clearing various storage reservoir basins including those recently constructed, and finds that such clearing under conditions similar to those in the Sacandaga basin has cost from $30 to $40 per acre, but the higher allowance of $65 per acre has been made to assure the satisfactory clearing of the Sacandaga Reservoir basin.

B R I D G E S

In addition to the highway bridge over the spillway channel, it is proposed to build four new highway bridges; three at Northville and one at Mayfield.

The new highway bridges across the Sacandaga River at Northville will be located immediately downstream from the existing bridge and will consist of three trusses, each having a span of 155 feet with an embankment 700 feet long at the westerly end. The concrete roadway will be 20 feet wide in the clear and there is also provided a concrete sidewalk five feet wide.

The bridge over Hunters Creek at the southerly end of Main Street will consist of a single truss having a span of 120 feet. As the main traffic after the reservoir is built will be over the so-called Edinburg road this new bridge will be built just upstream from the existing culvert and will come into the Edinburg road at a more convenient angle than at present.

The third bridge at Northville will be at the Water street crossing over Hunters Creek and will be a single span 25 feet long, of the reinforced concrete girder-slab type.

It is proposed to build a single truss bridge 120 feet long over the Mayfield Creek arm of the reservoir to connect the highway leading from Mayfield to Broadalbin. Earth embankments will connect the bridge to the mainland.

C E M E T E R I E S

Section 447 of the River Regulating Act provides in minute detail for the removal of any cemeteries that may be flooded by a storage reservoir.

There are fifteen public or community cemeteries and nine private cemeteries lying wholly or partially within the flow line of the proposed reservoir. These cemeteries contain a total of approximately 2450 graves from which the human remains will have to be removed in accordance with the provisions of the law.

Since the statute provides that persons legally interested in such remains may direct to a certain extent the place of reinterment of such remains, all that can be fixed at this time is the approximate locations of new cemeteries and of lands to be acquired by the Board of the Hudson River Regulating District for these new cemeteries which are as follows:

(1) It is proposed to provide a new cemetery, one acre of land above the proposed flow line from tract number 83 near Conklingville.

(2) Two acres of land above the proposed flow line from tracts 147 & 153.

(3) Three acres of land near the Church at Edinburg.

(4) One acre of land adjoining the Houseman Street Cemetery in tract number 637.

(5) One acre of land from tract number 1060 near Cranberry Creek.

(6) One-half acre of land adjoining Mayfield Cemetery in Mayfield.

(7) Two acres of land a short distance east of North Broadalbin from tract number 798.

(8) One-half acre of land adjoining Cemetery tract Number 336 between Batchellerville and Northampton.

(9) Three acres of land above the proposed flow line south of tract number 300, near Batchellerville on tract number 302.

In addition to the new cemeteries the two existing cemeteries at Northville, the Houseman Street Cemetery, the Mayfield Cemetery and the Northampton Cemetery

C E M E T E R I E S

are available for the reinterment of remains from the various cemeteries to be flowed.

If there are any graves below the proposed flow line in the Catholic Cemetery at Northampton the bodies can be moved to some part of the same cemetery that lies well above the proposed flow line.

In the estimate of cost of the reservoir an item of $75,000 has been included to cover the cost of removing cemeteries. This is at the rate of $36 per grave and is somewhat higher than the cost of removing cemeteries in the Ashokan, Gilboa, Delta and Hinckley Reservoirs but the Board believes that extreme care should be given to the removal of bodies and accordingly has made the higher allowance.

ELECTRIC TRANSMISSION LINES, TELEPHONE LINES AND TELEGRAPH LINES

TRANSMISSION LINES

Parts of certain of the transmission lines of the Broadalbin Electric Light and Power Company, a public utility corporation, lie within the Sacandaga reservoir basin. A map of the reservoir showing the location and characteristics of these lines is included in the preliminary plans. No scheme of relocation of these transmission lines is laid out as that is a matter which will undoubtedly be left in the hands of the company upon the payment to it by the Board of the just compensation for the damages suffered. The officers of the company have evinced a desire to cooperate with the Board for the adjudication of the damages which it will sustain.

TELEPHONE LINES

From the map of the reservoir basin, on which there has been drawn the location of the telephone lines, it is evident that the territory is chiefly served by the Glen Telephone Company from its exchange at Gloversville, Broadalbin and Northville and shows further that the Company's lines extend down the river to West Day. From West Day to Conklingville the territroy is served by the Riddell Telephone Company from its exchange at Luzerne.

Owing to the uncertainty as to the location of possible new communities to be settled by the present inhabitants of the basin, no attempt has been made to relocate the telephone lines. However, a conference with the officials of these companies indicates that there will be no difficulty in adusting the damages to be suffered by them.

TELEGRAPH LINES

The Western Union Telegraph Company has a telegraph line along the right of way of the Fonda, Johnstown and Gloversville Railroad, certain stretches of which as hereinbefore noted will necessarily have to be relocated. It is proposed to relocate the telegraph line along the relocated line of the railroad.

STATE OF NEW YORK

HUDSON RIVER REGULATING DISTRICT

SACANDAGA RESERVOIR

ESTIMATE OF COST

Property damage including lands, telephone, telegraph and transmission lines	$2,200,000
Clearing of Reservoir basin	710,000
Construction of dam and appurtenances	2,100,000
Relocation of F. J. & G. R. R.	350,000
New State Highways 6 miles at 40,000	240,000
New Town Highways 35 miles at 15,000	525,000
Removing cemeteries	90,000
New bridges	360,000
Ferry at Northampton	50,000
	6,625,000
Engineering, general overhead and contingencies - 15%	993,750
	7,618,750
Interest during construction - 8%	609,500
	8,228,250
TOTAL (Say)	$ 8,250,000

AMOUNT AND VALUE OF WATER POWER AT THE SACANDAGA RESERVOIR

Section 460 of the River Regulating Act directs the Board in submitting the preliminary plans of a reservoir to the Water Control Commission to "prepare a statement of the amount of water power, if any, which consistent with the proper regulation of the flow of the river or stream may be developed at or by reason of such reservoir by the withdrawal of water for power purposes directly therefrom with an estimate of the value thereof".

The elevation of the river at the Sacandaga Reservoir dam site is approximately 700 and in as much as the reservoir level would fluctuate between elevation 771 and 740, this means that the available head at the dam would vary from 71 feet to 40 feet and it follows that it would be extremely expensive to make a hydro-electric installation to develop power under such a fluctuating head.

The Board believes that the best method of regulation of the Sacandaga Reservoir (at least, until some other reservoir shall have been constructed), would be to regulate so as to produce as nearly as possible an "ideal flow" in the vicinity of Glens Falls. Such operation would be the best to reduce the flood flows of the Hudson River and to increase to the greatest possible degree, consistent therewith, the low water flow. This means that during the wet months of the year, no water would be withdrawn from the reservoir and consequently no power could be developed during those months at any power plant which might be located at the dam.

The Board is of the opinion that after the reservoir is in operation and the best method of regulation has been worked out, it will be found that "the water power at or by reason of such reservoir" will be feasible of development, and believes that such water power has substantial value. However, after having given careful consideration to the non-continuous flow at the dam and the great variation of the available head, and the uncertainty of the method of developing the power below the dam, the Board finds it impracticable at this time to make an estimate of

the amount and value of the power available at the Sacandaga Reservoir, "which consistent with the proper regulation of the flow of the river or stream may be developed at or by reason of such reservoir by the withdrawal of water for power purposes directly therefrom --------".

STATEMENT SHOWING GENERAL BENEFIT OF SACANDAGA RESERVOIR

"-----. The Board shall also prepare a statement showing generally the public corporations and locality or lands to be benefited by the improvement and how and whether the state will be benefited thereby and the public necessity for the improvement,--------".

The Sacandaga Reservoir basin is located in the towns of Hadley, Day, Edinburg and Providence in Saratoga County; Northampton, Broadalbin, Mayfield in Fulton County; Hope and Benson in Hamilton County.

The Sacandaga River flows from the dam site at Conklingville in an easterly direction for a distance of six miles to its confluence with the Hudson River; the fall in this stretch being 155 feet. The fall in the Hudson River from its confluence with the Sacandaga to the southerly limits of the District is 545 feet.

The regulated flow resulting from the operation of the Sacandaga Reservoir discharging into the Sacandaga River and flowing therefrom in the Hudson River will benefit either directly or indirectly the following counties, towns, cities, and villages adjacent to these rivers:

SARATOGA COUNTY

Towns	CITIES	Incorporated Villages	Unincorporated Villages
Hadley	Mechanicville	South Glens Falls	Hadley
Corinth		Corinth	Palmer
Moreau		Schuylerville	
Northumberland		Stillwater	
Saratoga		Waterford	
Stillwater		Victory Mills	
Half Moon			
Waterford			

WARREN COUNTY

Towns	Cities	Unincorporated Villages
Luzerne	Glens Falls	Luzerne
Queensbury		

WASHINGTON COUNTY

Towns	Incorporated Villages	Unincorporated Villages
Kingsbury	Fort Edward	Fort Miller
Fort Edward	Hudson Falls	Thomson
Greenwich		
Easton		

ALBANY COUNTY

Towns	Cities	Incorporated Villages	Unincorporated Villages
Colonie	Albany	Green Island	Coeymans
Bethlehem	Cohoes		
Coeymans	Watervliet		

RENSSELAER COUNTY

Towns	Cities	Unincorporated Villages
Schaghticoke	Troy	Castleton
North Greenbush	Rensselaer	
East Greenbush		
Schodack		

The towns and cities above listed have a total population of 333,049.

All the lands along and adjacent to the Sacandaga River below the Conglingville Dam and along and adjacent to the Hudson River below its confluence with the Sacandaga River and the water power developments and the water power sites located on these streams will be benefited by the maintenance and operation of the Sacandaga Reservoir.

BENEFIT TO THE STATE

The State of New York will be benefited both directly and indirectly by the operation of the Sacandaga Reservoir.

DIRECT BENEFIT

First, the State will benefit directly because of the increase in firm or continuous power made available at the so-called Waterford Dam, Dam No. 1, Champlain Canal, of which the State is the owner. At the time of the construction of this dam which forms the second pool of the Champlain Canal, the State acquired all riparian rights which it had not theretofore owned. The regulation of the flow of the Hudson River by the operation of the Sacandaga Reservoir will increase the amount of power available at this dam both by the greater flow in the time of low water, reduction of flow in times of highwater and the increase of available head in times of highwater.

Second, the State of New York will receive from the operation of the Sacandaga Reservoir a direct benefit to the Champlain Canal. Spring floods often delay the opening of navigation on this branch of the Barge Canal. With the Sacandaga Reservoir in operation control of spring floods thereby attained would permit the earlier opening and operation of the Canal. Floods further have the effect of carrying in suspension, and depositing in the channel silt and other material which must be removed by mechanical means in order to maintain the statutory twelve feet depth. Control of floods by means of the Sacandaga Reservoir will reduce the cutting action of the stream and therefore reduce the silt carrying and depositing action. Further, the release of impounded waters during dry periods will be an aid to navigation by keeping up water levels and tending to maintain full depth over miter sills and in channels.

Third, the State will be benefited directly because through the operation of the Sacandaga Reservoir the flooding of various state highways will be diminished and thus the cost of maintenance decreased.

INDIRECT BENEFITS

The State of New York will greatly benefit indirectly through the operation of the Sacandaga Reservoir.

First, its inhabitants living adjacent to the Hudson River will be in part relieved from the damage caused by floods.

Second, the increased dilution of sewage and trade wastes will diminish the unsanitary conditions which exist at various points along the Hudson River. Further, this increased dilution of the pollution will make the Hudson River a better water supply for potable purposes and facilitate the operation of municipal water supply plants.

Third, the regulation of the flow of the Sacandaga and Hudson Rivers inuring to the benefit of the properties in the communities adjacent to their banks will increase their intrinsic and taxable value and consequently will result in larger taxes.

Fourth, the increase in the amount of water power will make available to the citizens of the State a uniform and more adequate supply of electric light and power and reduce the consumption of coal now required for generation of light and power.

Fifth, the regulated flow will minimize drouths and the consequent lack of sufficient water to operate the water power mills, which lack brings partial shut-downs, idle employees and economic loss.

Sixth, the regulation will benefit navigation on the Hudson River both above and below the Troy dam by increasing the water levels at periods of low water flow.

PUBLIC NECESSITY FOR IMPROVEMENT

Floods and drouths have occurred on the Hudson River throughout all its history and the resulting high and low water flows show the need for the regulation of the flow of the river. During the period from 1888 to 1917 there were 407 days whenthe flood flow of the Hudson River at Mechanicville was greater than 5,000 cubic feet per second, whereas in the same period there were 177 days when the low water flow was less than 1,000 cubic feet per second and 1,169 days when the flow was less than 2,000 cubic feet per second. With the Sacandaga reservoir in operation the flow at Mechanicville would never be less than 3,000 cubic feet per second, and for 90 per cent of the time would be greater than 4,000 cubic feet per second. The beneficial effect of this reservoir is even more strikingly shown at Glens Falls, where during the period from 1900 to 1916 there were 14 months when the average flow was less than 1,000 cubic feet per second, 47 months when the flow was less than 2,000 cubic feet per second, and 80 months when the flow was less than 3,000 cubic feet per second, whereas after regulation the minimum flow would never be less than 3,000 cubic feet per second, and the average flow during the dry months would be 4,400 cubic feet per second.

It may be noted that the maximum flow of the Hudson River at Mechanicville, which occurred during the flood of March 28th, 1913 was 120,000 cubic feet per second, whereas on September 20th of the same year, the flow at this point reached a minimum of 170 cubic feet per second.

In recent years two very great floods have occurred, those in the years 1902 and 1913, each of which caused millions of dollars worth of damage in the communities adjacent to the river. During the flood of March 1913 the filtration plant which purifies the water supply of the city of Albany was inundated and there resulted therefrom an epidemic of typhoid fever and other water borne diseases.

The territory served by the electrical companies deriving their power from the Hudson River is undergoing a marked industrial expansion, one of the prerequisites of which is an abundant supply of power. This will be afforded through the operation of the Sacandaga Reservoir.

One of the beneficiaries of the Sacandaga Reservoir, namely, Adirondack Power & Light Corporation, which has water power plants on the Hudson River at Spier Falls and Mechanicville and distributes the output at Sherman Island, is a public utility and furnishes light, heat and power either directly or indirectly to over 90,000 customers. During the low water season this company is forced to either cut off some of its customers or else consume thousands of tons of coal in the operation of steam plants to maintain continuity of service.

The water powers on the Hudson River have undoubtedly been the greatest factor in the industrial development of the communities along its banks. The mills along the Hudson River have over 4,000 employees and most of the communities are largely dependent on the operation of the mills for their existence. Although from the time of their settlement these communities have suffered from the floods and drouths, yet with the hydro-electric development of some of the water powers, the effects of the floods and drouths have been extended beyond its banks. The demand for the development of the power resources of the river is shown by the fact that from its confluence with the Sacandaga River to tidewater every power site is developed, save only that owned by the State at the Waterford dam. Although these developments have a total installation of 203,000 horsepower, yet during times of low water only 35,000 horsepower can be produced. With the Sacandaga Reservoir in operation the available firm power at existing developments would be increased to over 135,000 horsepower.

During the hearings held by the Water Control Commission on the petition praying for the creation of the Hudson River Regulating District several hundred pages of testimony was taken showing the necessity for the regulation of the flow of the Hudson River. This testimony was given by engineers, doctors, health

officers, navigation experts, railroad officials and residents of the Valley. All the testimony showed the need for the regulation of the flow of the Hudson River and reference is hereby made to this testimony.

The city of Albany which obtains its potable water supply from the Hudson River has only recently been forced to suspend the operation of its filtration plants to permit the removal of the sediment and wastes which had clogged the filters due to the extremely low flow of the river and the consequent concentration of pollution.

These and other reasons which prove the direct and indirect benefit to the State hereinbefore recited all show the public necessity for the Sacandaga Reservoir.

APPROVAL OF THE PRELIMINARY PLANS OF THE SACANDAGA RESERVOIR

Whereas, pursuant to Section 450 of Article VII-A of the Conservation Law, The Board of the Hudson River Regulating District has determined as a part of the Official Plan for the regulation of the flow of the Hudson River and certain of its tributaries, that the public interest and welfare require that a reservoir should be constructed for the regulation of the flow of the Sacandaga River and the Hudson River, below the confluence of the Sacandaga and Hudson Rivers, and that the Sacandaga Reservoir should be created by the construction of a dam at or near the village of Conklingville with a high flow line at elevation 771 feet above mean seal level and

Whereas, the said Board has caused to be prepared preliminary plans and specifications of such reservoir with estimates of the total cost thereof together with a survey of the lands upon which the same is to be constructed, giving the location thereof, and of all lands to be taken, flowed or damaged, with a description by survey or otherwise, showing the amount of lands belonging to the state and to persons or public corporations; and also a map showing all such lands, the number of acres in each separate tract, the names of the owners and occupants thereof, so far as the board could ascertain the same, and the high flow line of the proposed reservoir; and also a statement regarding the amount of water power, which consistent with the proper regulation of the flow of the river or stream may be developed at or by reason of such reservoirs and also a statement showing generally the public corporations and locality or lands to be benefited by the improvement and how the state will be benefited thereby, and the public necessity for the improvement. Therefore be it

Resolved, That the said preliminary plans, specifications, estimates, maps, surveys and statements be and the same are hereby approved and be it

Further Resolved, That the said preliminary plans, specifications, estimates, surveys, maps and statements so approved be certified to the Water Control Commission for its approval thereof.

STATE OF NEW YORK.)
)
COUNTY OF ALBANY,) SS:
)
CITY OF ALBANY.)

I,RANULF COMPTON, Secretary to the Board of the Hudson River Regulating District, do hereby certify that the foregoing are true copies of specifications, estimates, statements and resolution of approval duly adopted and approved by the Board of the Hudson River Regulating District at a meeting held January 23rd, 1924, and duly approved as modified by the Water Control Commission at a meeting held March 6th, 1924.

I, FURTHER CERTIFY, that the said copies have been compared by me, each with the original thereof, and that the same are correct transcripts therefrom and of the whole of the said original.

WITNESS my hand and the seal of the said Hudson River Regulating District this tenth day of March, 1924.

(Signed) RANULF COMPTON
Secretary to the Board.

WHEREAS, the Board of Hudson River Regulating District under date of May 5, 1923 duly certified to the Commission a general plan for the regulation of the flow of the Hudson River and its tributaries, which plan was duly modified and as modified, approved by the Commission on June 7, 1923; and

WHEREAS, the said Board, under date of January 28, 1924, certified to the Commission its determination that the public interest and welfare require that the Sacandaga reservoir should be constructed for the regulation of the Sacandaga river and the Hudson river below the confluence of the Sacandaga and Hudson rivers, together with the preliminary plans, maps, specifications, estimates and statements as provided in Section 450 of the Conservation Law; therefore

RESOLVED That the said maps, specifications, estimates and statements be and the same hereby are modified by the insertion in the "General Specifications" of the following sentence: "The water in the reservoir shall not be drawn below elevation 756 between May 1st and Labor Day"; and be it further

RESOLVED, that the aforesaid preliminary plans, maps, specifications, estimates and statements as so modified be and the same hereby are approved.

I hereby certify that the above is a true copy of a resolution adopted by the Water Control Commission on March 6, 1924.

(Signed) F. H. Maey
Secretary to Commission.