



Board of Hudson River-Black River Regulating District  
350 Northern Boulevard, Albany, New York 12204 Phone (518) 465-3491  
FAX (518) 432-2485

February 4, 2010

Honorable Martin T. Reid, Chairman  
Rensselaer County Majority Legislature  
Rensselaer County Office Building – 5<sup>th</sup> Floor  
1600 Seventh Avenue  
Troy, New York 12180

Re: Hudson River – Black River Regulating District  
Apportionment  
Apportionment Grievance Hearing – March 30, 2010

Dear Chairman Reid:

The Hudson River – Black River Regulating District maintains facilities in the Hudson River Area, including the Great Sacandaga Lake, which provide flood protection to Rensselaer County. As it has done for the last eighty-five years, and pursuant to NY Environmental Conservation Law Article 15, Title 21, the Regulating District Board is required to apportion and assess the cost to maintain such facilities among the parcels of real estate and public corporations benefited by such facilities. Between 1930 and 2008, the owners of hydroelectric projects downstream of the Great Sacandaga Lake comprised 82% of the Regulating District's beneficiaries. Recently, in Albany Engineering Corp. v FERC (548 F3rd. 1071, 2008) the D.C. Circuit Court of Appeals ruled that the Federal Power Act preempts the Regulating District -- a FERC license holder in the Hudson River watershed -- from assessing under State law hydroelectric projects that are downstream from the Conklingville Dam which creates Great Sacandaga Lake. As a result, the Regulating District was compelled to prepare a new apportionment through which Rensselaer County will now share a portion of those costs. Following approval by the Department of Environmental Conservation, and as required by NY ECL §15-2121(4), on behalf of the Regulating District Board, please find a copy of the Apportionment for the Regulating District's fiscal year July 2009 – June 2010 served upon you as Chairman of the Rensselaer County Legislature. As required by statute, a copy of the Apportionment will also be filed in the Office of the County Clerk. Remittance is due upon receipt, but no later than June 30, 2010.

Also enclosed, please find a copy of a legal notice identifying the time and place where the Regulating District Board will meet to hear any public corporation or person aggrieved by the Apportionment. In addition, please find enclosed: copies of the Resolution through which the Regulating District adopted the Apportionment at its January 12, 2010 meeting; the letter

from Commissioner Grannis through which the Department of Environmental Conservation approved the Apportionment; the Regulating District's rule governing the Apportionment Grievance Hearing process; and the documents prepared for the Regulating District Board in support of its determination.

Staff will give a short presentation beginning at 9 a.m. March 30<sup>th</sup> immediately preceding the meeting at which the Regulating District Board will conduct the Apportionment Grievance Hearing. This presentation will provide a brief history of the Regulating District and outline the issues guiding the Board to determine the new Apportionment.

Please feel free to contact me if you have any questions. Thank you.

Sincerely,



Glenn A. LaFave  
Executive Director

cc: Hon. Kathleen M. Jimino, Rensselaer County Executive  
Steven Pechenik, Esq., Rensselaer County Attorney  
Frank Merola, Rensselaer County Clerk



**OFFICE OF THE RENSSELAER COUNTY ATTORNEY**  
**NED PATTISON GOVERNMENT CENTER**  
**1600 SEVENTH AVENUE**  
**TROY, NEW YORK 12180**  
**(518) 270-2950**  
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**Service by facsimile is not authorized**

Kathleen M. Jimino, County Executive

**Stephen A. Pechenik**  
County Attorney  
**Bryan J. Goldberger**  
Special Counsel  
**Peter R. Kehoe**  
Special Counsel

**Kelly A. Cramer**  
Deputy County Attorney  
**Jill A. Kehn**  
Assistant County Attorney

March 23, 2010

Hudson River Black River Regulating District  
350 Northern Boulevard  
Albany, New York 12208

Re: Complaint of Rensselaer County

Dear Sir or Madam:

Enclosed is the complaint of Rensselaer County to your District's recent apportionment. For your convenience, the exhibits are attached to the complaint and are also on the accompanying compact disc. Please stamp the date and time of your receipt of these papers upon the enclosed copy of this correspondence which should be returned to my office in the enclosed self-addressed envelope.

Thank you.

Very truly yours,

Stephen A. Pechenik  
Rensselaer County Attorney

SAP:sp  
Enclosures

**RECEIVED**

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**MAR 23 2010**

HUDSON RIVER-BLACK RIVER  
REGULATING DISTRICT  
ALBANY, NY

STATE OF NEW YORK  
HUDSON RIVER BLACK RIVER REGULATING DISTRICT

In the Matter of

**RENSSELAER COUNTY, NEW YORK,**

Complainant,

**COMPLAINT**

Regarding the Apportionment of Operation  
and Maintenance Costs by the

**HUDSON RIVER BLACK RIVER REGULATING DISTRICT.**

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The Complainant, County of Rensselaer, New York, by its County Attorney, Stephen A. Pechenik, does hereby complain about the assessment of the Hudson River Black River Regulating District, hereinafter referred to as "HRBRRD," as follows:

1. The County of Rensselaer is a municipal corporation of the State of New York, having its offices located at the Ned Pattison Government Center, 1600 Seventh Avenue, Troy, New York 12180.

2. The name, address and telephone number of the representative of the Complainant is Stephen A. Pechenik, Rensselaer County Attorney, Ned Pattison Government Center, 1600 Seventh Avenue, Troy, New York 12180, (518) 270-2950.

3. Upon information and belief, on or about January 12, 2010, the Board of the Hudson River Black River Regulating District Board, hereinafter referred to as the "Board," made an "Apportionment of Operation and Maintenance Cost of the Great

Sacandaga Lake Reservoir," hereinafter referred to as the "Apportionment," purportedly in compliance with New York State Environmental Conservation Law § 15-2121.

4. The Board, by the Apportionment, assigned responsibility to the County of Rensselaer 17.55 percent of the operation and maintenance cost of the Great Sacandaga Lake Reservoir, hereinafter stated as the "Costs, and assessed to this county the amount of \$781,400.61 to be paid for the HRBRD's fiscal year July 2009 - June 2010.

5. The said apportionment is unlawful, as stated hereinafter.

**NO CHANGE IN THE EQUITABLE LIABILITY OF THE COMPLAINANT COUNTY**

6. ECL §15-2121 (6) sets forth the statutory basis for the original apportionment of the Costs, which was accomplished by the Board in or around 1925.

7. ECL §15-2121 (6) provides in pertinent part as follows regarding the original apportionment:

Such apportionment and determination, when finally made, also shall be deemed to fix and determine the apportionment and the basis of apportionment of all subsequent expenses to be incurred in the maintenance and operation of such reservoir, including the amount of a reasonable return to the state, if any, as provided for in title 21 of this article.

8. ECL §15-2121 (7) sets forth the statutory authorization for any subsequent apportionment, such as the January 12, 2010 apportionment.

9. Relative to subsequent apportionment, ECL §15-2121(7) provides in pertinent part as follows:

If powers be developed after such apportionment has been made or if for any other reason any public corporation or any parcel of real estate becomes liable equitably for such subsequent expenses, a subsequent apportionment may be made in the same manner and subject to the same review as the original apportionment.

10. That statutory language requires that prior the HRBRRD making a new apportionment, a public corporation must "become liable equitably" for subsequent expenses. Thus, a necessary prerequisite to the Complainant's liability for HRBRRD subsequent assessments, a change in regard to the status of a public corporation such as the Complainant, must occur which makes it "become" liable for costs.

11. Indeed, the language of the original version of the current law even more specifically stated the preconditions to altering the apportionment, as follows:

§461. Lands exempt and later liable to assessment. If any lands in any district organized under this article are not liable for assessment at the time of the creation of the reservoir, but afterwards during the period when such reservoir is being paid for become liable to assessment by reason of some change in condition or ownership, the benefits to such real estate shall thereupon be apportioned and the amount thereof assessed as other real estate in said district receiving equal benefits, and such added assessments shall be levied and collected as other assessments and paid into the funds of the district for the uses thereof.

§462. Subsequent assessments. In case any real estate within the district is benefitted, which for any reason was not assessed, or in case any public corporation or real estate of any person shall receive benefits from the improvement in any district organized under the article to a degree not considered in the original apportionment of benefits the board shall make a reapportionment of such benefits, or in case the board find it necessary subsequent to the time when the first assessments are made to take or damage any additional property, the board shall levy and assess the expense thereof. Proceedings outline in this article for apportionment of benefits and levy, assessment and collection of the cost and expenses of the improvement, shall in all matters be conformed with, or the board may at its discretion make any suitable settlement for such benefit, damage or property taken. (emphasis added Chapter 622 Laws of 1915: Sections 461 and 462 of the Conservation Law)

12. While the later version of the law was streamlined, the requirement remains that some change in the benefits received by a public corporation is required before its portion of cost can be changed.

13. The original apportionment determined that the Complainant, County of Rensselaer, a public corporation, was not equitably liable for any costs of the Great Sacandaga Lake Reservoir.

14. There has been no change to the status of the Complainant that alters its equitable liability from the original determination of the Board of no liability.

15. The statutory condition precedent to the Board making a subsequent apportionment to include the Complainant, County of Rensselaer has not occurred, and the apportionment is therefore illegal.

**FAILURE TO APPORTION COST TO THE STATE**

16. ECL §15-2121(2) requires the Board to determine the portion of the costs chargeable to the State of New York, and to reduce the total costs by the resultant amount before apportioning the remaining Costs among the public corporations and parcels of real estate benefitted by the Great Sacandaga Lake Reservoir.

17. A review of the map of Rensselaer County would have revealed to the Board that, in Rensselaer County alone, that with the exception of a railroad bridge crossing the Hudson River from the town of schodack to the Town of Coeymans and a railroad bridge from the city of Rensselaer to the city of Albany, the State of New York has ownership of all the bridges crossing the Hudson River within the geographical limits of the Complainant, Rensselaer County. All of the highways on either side of those bridges, none of which is a county road, receive a flood protection benefit not considered by the Board.

18. In addition, the State of New York Canal Corporation has a series of locks and facilities in the Hudson River which receive a flood protection benefit. The Gomez and Sullivan report, cited in HRBRRD counsel's memorandum to the Board dated December 29, 2009, considered only the flow control benefit related to the

canal, not flood protection. Gomez and Sullivan Engineers, P.C., "Final Report, Hudson River Flow Regulation Benefit Study, July 2003, accompanying this Complaint as Exhibit "A".

19. In addition, the State maintains a State Emergency Management Administration (SEMA) which responds to natural disasters such as floods. If the Reservoir did not exist, in fact the cost of a 2, 4, 10, 50 or 100 year flood would ultimately be a state cost through SEMA assistance. The State thereby generally benefits from flood control of the Reservoir, by the reduction in severity and frequency of floods.

20. In addition, the State benefits from the recreational aspects of the Reservoir, both on Sacandaga Lake, in the white water rapids downstream of the Conklinville Dam, and throughout the Hudson River to the Atlantic. The benefit to commercial and pleasure navigation below and above Albany are also a general benefit to the State.

21. The aforesaid benefits are delineated the Gomez and Sullivan Report (Exhibit "A" hereto) commissioned and received by the Board of the HRBRRD, no attempt was made to include the State of New York in the apportionment herein.

22. The Board has failed to make any required determination of the amount of costs attributable to the State, and its apportionment fails to reduce the total cost by an amount attributable to the State, as required by ECL §15-2121(2).

### **FAILURE TO DETERMINE BENEFIT TO COMPLAINANT**

23. ECL §15-2121(2) requires the Board to determine the "...amount of benefit which will inure to each public corporation..." by reason of the Reservoir.

24. The methodology of the Board of HRBRRD in apportioning cost to the Complainant, County of Rensselaer consisted of totaling the equalized assessed valuations of parcels of real property partially or wholly within the hypothetical 100 year flood plain of the Hudson River without the Reservoir within Rensselaer County, and dividing it by the total equalized assessed valuations of parcels of real property partially or wholly within the hypothetical 100 year flood plain of the Hudson River within Albany, Rensselaer, Saratoga, Warren and Washington Counties.

25. Said methodology did not in any manner identify, consider, calculate or determine any benefit derived by the Complainant, County of Rensselaer by reason of the Reservoir.

26. The Board of HRBRRD apparently determined that "...flood protection is the most direct and clearly defined benefit...." and failed to identify, quantify or evaluate any other benefit of the Reservoir. (See "Memorandum" dated 1/7/2010 accompanying herewith as Exhibit "B").

27. The Board of HRBRRD knew or had reason to know that there are additional benefits created by the construction of the Reservoir, including but not limited to:

- a. Increased Real Estate Values for Lakeshore Property;

- b. lake recreation;
- c. hydroelectric power generation;
- d. flood protection;
- e. waste assimilation;
- f. white water recreation;
- g. water supply, stabilization and desalinization;
- h. downstream water recreation;
- I. Downstream fisheries enhancement; and
- j. navigation;

The listed benefits are identified in the "Hudson River Flow Regulation Benefit Study" prepared for HRBRRD by Gomez and Sullivan Engineers, P.C. and dated July 2003, at page 2. (Exhibit "A" hereto).

28. The Board of HRBRRD apparently concluded that the Complainant, County of Rensselaer benefitted by avoiding loss of public infrastructure, but failed to identify any infrastructure of the County that would be lost, and failed to evaluate the cost of damage thereto.

29. As aforesaid, the sole criteria used by HRBRRD to quantify a benefit to the Complainant, County of Rensselaer is the assessed valuation of the parcels owned by various individuals and entities which are located partially or wholly within a hypothetical 100 year flood plain of a hypothetical Hudson River without the Reservoir, as shown on the ArcGIS overlay mapping system.

30. None of the said properties are owned by the Complainant, County of Rensselaer and their assessed value is not relevant to any benefit accruing to the Complainant by virtue of the Reservoir.

31. There is no reasonable, rational or legal basis for the apportionment to the County of Rensselaer of 17.55 percent of the Cost of the Great Sacandaga Lake Reservoir based on the methodology used by the Board of HRBRRD.

**FAILURE TO APPORTION COST TO OTHER BENEFICIARIES**

32. ECL §15-2121 requires the Board of HRBRRD to apportion the cost of the Great Sacandaga Lake Reservoir among the State of New York, public corporations and parcels of real estate in proportion to the amount of benefit that will inure to each. Said Board has apportioned the entire (100 percent) cost to five counties of New York State, to wit: Albany for 38.38 percent, Rensselaer for 17.55 percent, Saratoga for 33.69 percent, Washington for 3.85 percent and Warren for 6.53 percent.

33. As stated above, the Board of HRBRRD has apportioned no amount to the State of New York. While said Board apparently considered and disregarded as negligible the flow control benefit to the State's canal system, it ignored the benefit the State derives from flood protection to its infrastructure as well as other benefits the State as a whole derives such as navigation, recreation and flood protection to delineate a few.

34. While the Board purportedly has identified multiple properties in the five aforementioned assessed counties which it says are located in the hypothetical flood plain, it has failed to determine the flood protection benefit to "each such parcel" as required by the ECL §15-2121 (2).

35. Methodology exists and is available to the Board to properly assess flood protection benefits to individual parcels of real estate. The Gomez and Sullivan Report (Exhibit "A" hereto) in fact made such a calculation for the Board in 2003. See Exhibit "A" hereto at pages 7-12, 15-16 and 47-71).

36. In addition to failing to identify the individual parcels of real estate located in the 100 year flood plain and in failing to determine the amount of benefits each receives by the existence of the Great Sacandaga Lake Reservoir, the Board of HRBRRD failed to identify, assess and apportion the Reservoir's benefit to parcels of real estate located outside of the five counties but within the entire length at the hypothetical 100 year flood plain of the Hudson River.

37. The Petition for the establishment of the District in 1925, identifies benefits of the Reservoir accruing to Public Corporations and parcels of real estate which are located outside of the regulatory boundaries of HRBRRD, and specifically along the Hudson River south of Troy to the Atlantic Ocean. Copies of the 1925 Petition and resulting Order accompany this Complaint as Exhibit "C".

38. The Petition (Exhibit "C" hereto) states that:

- a. the River is navigable and extensively used commercially for the transportation of property and persons from the city of Troy to the city of New York;
- b. during springtime excess freshets overflow the banks of the River and cause extensive damage;

- c. floods damage the railroads constructed along the banks of the river; and
- d. various municipalities located along the River from the village of Corinth to the city of New York use the River for sewage disposal, and that at low flow, the River can become unsanitary and a menace to public health as a result of the lack of water to assimilate the waste;

39. Clearly, the Reservoir was constructed to address the damages and conditions that existed and are described in the Petition, and clearly all of the public corporations and real estate parcels that were adversely affected by the problems described in the Petition were and are beneficiaries of the construction and existence of the Reservoir.

40. The Board of HRBRRD in its assessment hereby complained of, has failed and refused to consider any of the benefits of the existence of the Reservoir other than the flood protection benefit.

41. The Board of HRBRRD has failed and refused to consider public corporations and parcels of real estate benefitted by the Reservoir, including the following classes of beneficiaries:

- a. each and every town, village, city, county and the state with infrastructure located within the flood plain of the Hudson River from the Conklinville Dam to the outlet of the River at the city of New York;

- b. each and every parcel of real property located within the flood plain of the Hudson River from the Conklinville Dam to the Atlantic Ocean;

c. each and every waste water treatment plant which discharges treated water into the Hudson River;

d. railroads with rail lines located in the flood plain of the Hudson River between the Conklinville Dam and New York City;

e. each parcel of real estate which receives electricity generated by the hydro power facilities located on the Hudson River;

f. each and every town, village, city, county and entity which drains water from the Hudson River for use as a public water supply or irrigation or any other purpose, from the Conklinville Dam to New York City.

42. ECL §15-2101(3) states the following requirements:

"Benefit or benefits" shall be interpreted to include benefits to real estate, public or private, to municipal water supply, to navigation, to agriculture and to industrial and general welfare by reason of the maintenance and operation of a regulating reservoir, whether such benefit shall inure to a person, a public corporation or the state. In the event that any regulating reservoir operates to relieve the state of any obligation by reason of diversion of the water of any river for canal purposes, the state, to the extent that the maintenance and operation of such reservoir may accomplish such relief, shall be deemed to have received benefit there from.

43. Thus, the Board of HRBRRD failed and refused to apportion costs to recipients of benefits, as required by law.

44. The Gomez and Sullivan study, commissioned by the Board, identified, quantified and apportioned the benefits of the

Reservoir to the recipients. That study apportioned only 54.14% of benefit to flood protection, which is the only benefit category that was considered by the Board. (Exhibit A, p. 19).

45. The Gomez and Sullivan Report identified nine benefits resulting from the Reservoir in addition to flood protection, the sole benefit considered by the Board of HRBRRD in making the assessment against which this Complaint is made. (Exhibit A, page 15 et seq).

46. The Gomez and Sullivan Report also identified increased real estate values for lakeshore property, but did not attempt to quantify those. (Exhibit "A" page 15, par. 4.1).

47. Additionally, that report identified lake recreation as a benefit, and referred to the "DeSeve Report" for its quantification (Exhibit "A" page 15, par. 4.2).

48. Further, the Gomez and Sullivan Report identified hydroelectric power generation as a benefit and quantified it. (Exhibit "A" page 15, par. 4.3). While the U. S. Court of Appeals decision in Albany Engineering Corp v. FERC prevents the Board of HRBRRD from assessing the power companies listed directly, each of the properties which receives electric power generated by these facilities (i.e. the customers) are beneficiaries of the Reservoir as much as the power companies are. Those e customers' shares of this benefit can be recovered through the companies.

49. The Gomez and Sullivan Report identifies and quantifies flood protection benefit by municipality, at least down

to the southern boundaries of Albany and Rensselaer Counties. (See Exhibit "A" page 15-16, par 4.4). The methodology of quantifying benefit to each parcel within these municipalities is set forth by the Report, and should be used by the Board to properly carry out its mandated responsibility of apportioning benefits to individual properties, both above and below the Albany/Rensselaer boundaries.

50. The Gomez and Sullivan Report identifies waste assimilation as a benefit of the Reservoir, and quantifies it by scientific methodology ( See Exhibit "A" page 17, par 4.5). In addition, the Board has the benefit of the 1984 Malcolm Pirnie Report, "Study of Impacts of Hudson River Flow Regulation" a copy of which accompanies this Complaint as Exhibit "D". The Facilities listed include some above Albany/Rensselaer boundary and some below. That study was prepared to examine the impact of a proposed reduction of the minimum reservoir level. It studied and quantified by scientific measurement the effect of a reduction in flow on industrial and municipal waste treatment facilities. This methodology is available to identify the impact to those facilities of 100 year drought conditions as they would occur without the Great Sacandaga Reservoir. The benefit to these facilities and their owners must be identified and quantified in any assessment and allocation.

51. As stated above, the Gomez and Sullivan Report, identified white water recreation, downstream water recreation, downstream fisheries enhancement and navigation as benefits. That

report further identified benefits to water supply systems, but restricted its study to north of the Albany County line. In contrast, the Malcolm Pirnie study however extended its study to public water systems and industrial water users along the entire length of the Hudson River. Its study was limited to the impact of a reduction in lake level, and didn't address what would exist if there were no reservoir. It is clear that without the Reservoir, there would be a severe impact on these facilities in times of drought and low flow. The importance of the Reservoir to lower Hudson River water systems is dramatized by the drought which occurred in 1995. The Reservoir released additional flow to help prevent and reverse a salt water front which threatened water supplies in Poughkeepsie. (See Exhibit "E" - News articles) Clearly the flow control and water impoundment afforded by the Reservoir benefits these properties. The Board has both the required responsibility and the ability to identify these facilities' benefit and quantify it and apportion the cost accordingly.

52. The failure to consider and apportion costs to all these categories of benefit and to all the public corporations and parcels of real estate benefitted thereby is arbitrary and capricious and is not in compliance with the requirements of the statute.

### **METHOD OF APPORTIONMENT IS FLAWED**

53. Using the ArcGIS system and assessment information, the Board of HRBRRD totaled the assessed valuations of all parcels in Rensselaer County located wholly or in part within a hypothetical 100 year flood plain of the Hudson River, without the Reservoir. The staff of the Board of HRBRRD, using the ArcGIS system, created a mapping of the length of the Hudson River from the Conklinville Dam to the southern boundaries of Albany and Rensselaer Counties, and superimposed overlays of the hypothetical 100 year flood plain of the River without the presence of the dam, and superimposed tax mapping to show the parcels of land wholly or partially within the flood plain.

54. An examination of the data and maps created by this method reveals that, in a high percentage of these parcels, most of the value of the parcel, including land and improvements, is located outside the flood plain, and those values bear no relationship to an identification, quantification or apportionment of any benefit to the parcel.

55. In addition, large portions of parcels which are not improved by structures are located outside of the flood plain. Accompanying this Complaint as Exhibits "F" and "G" are hard copies of the Board's spreadsheet of properties included.

56. HRBRRD provided some maps to the Complainant, County of Rensselaer. Annexed hereto as Exhibit "H" is a copy of that map upon which the Complainant has superimposed a topographic map, thus

clearly demonstrating that only a very small portion of the included lots are within the flood plain.

57. Further, included in those parcels with structures which are located outside the 100 year flood plain are major industrial/commercial facilities. There is no demonstrable relation of the values of these parcels to a benefit resulting from the Reservoir.

58. Further, the Board included the value of New York State properties located wholly or partially within the 100 year hypothetical flood zone. The Board has failed and refused to charge any amount of benefit to the State (although required to do so by the statute), but has included the assessed value of State properties in Rensselaer County's share of the apportionment calculation.

59. ECL §15-2101(4) requires the Board to "view" the premises and public corporations to be benefitted. The Board has failed and refused to comply with this statutory requirement.

60. Had the Board complied with the requirement that it view the premises, it would have immediately recognized the lack of any flood control benefit to the above mentioned parcels, and could not have reasonably included them in a calculation of apportionment of benefits.

61. The methodology to identify parcels which benefit from flood control afforded by the Reservoir, and to quantify the benefit, is available to the Board, as it was done in the Gomez and

Sullivan Report. The extreme reduction in total assessed value would certainly reduce the flood prevention benefit apportioned on account of these properties to the Complainant, County of Rensselaer.

62. The method utilized by the Board does not comply with the requirements of ECL §15-2121, and bears no logical relationship to the identification, quantification, and apportionment of benefits of the Great Sacandaga Reservoir.

63. The method utilized by the Board is arbitrary and capricious and lacks any rational basis in law or in fact.

**THE BOARD HAS IMPROPERLY PLACED THE COLLECTION AND GRIEVANCE PROCESSES UPON THE COMPLAINANT, COUNTY OF RENSSELAER**

64. HRBRRD has improperly placed the duty of determination of affected parcels upon the Complainant, thus allowing the affected parcels to grieve their assessments as they would their real property taxes.

65. HRBRRD lacks the power or authority to delegate such to the Complainant or any other entity. The enabling statutes require that this function be performed by HRBRRD.

66. As aforesaid, HRBRRD has failed to properly identify the benefitted properties and has failed to quantify the benefit to those properties. Instead, it has wrongfully chosen to merely identify certain counties such as the Complainant and has thus failed to provide adequate notice of grievance hearing so as to deny property owners any meaningful way of knowing whether they are

actually benefitted and to what extent, thereby denying those who are truly aggrieved to have an opportunity to complain to HRBRRD and has attempted to force the Complainant and the other four counties to notify and assess those persons and entities.

67. Additionally, no municipal entities other than the Counties of Albany, Rensselaer, Saratoga, Warren and Washington where provided any notice of the grievance hearing as is required by ECL §15-2121(4).

68. The HRBRRD by its improper assessment procedure in delegating the assessment of individual properties to the Complainant, will be giving an opportunity to those property owners who dispute the assessment the opportunity to grieve with the Complainant rather than with HRBRRD and foreclose the Complainant if unsuccessful in its assessment of any property owner, from seeking reimbursement from HRBRRD.

69. HRBRRD failed to include in its assessment any properties, entities or municipalities that receive benefits and are located outside the district or other than the five aforesaid counties, are located within the district.

#### **THE BOARD HAS ABDICATED ITS STATUTORY DUTY**

70. In its memorandum dated January 7, 2010 for the January 12, 2010 Board Meeting, (Exhibit "B" hereto) District staff stated that "The 'market value' of properties in the 'without GSL' 100-year flood plain serves as the basis for the calculation of the proportion of benefits derived by each."

71. As demonstrated above, this calculation is flawed and irrational due to the fact that huge portions of the value of these properties are outside the flood plain, and due to the fact that it relates only to one of the multiple benefits of the Reservoir, that of flood control.

72. The Board's counsel's memorandum dated January 7, 2010 totally ignores apportionment of benefits to each parcel, as required by ECL §15-2121, but rather advises the Board that "...by grouping the towns cities, villages and individual parcels of real estate within each such public corporations, the potential disparate treatment of one individual parcel, neighborhood or municipality when compared to others diminishes." (p. 1, fourth paragraph) There is no explanation of the meaning or basis of this comment.

73. Counsel goes on to state "the documents supporting staff's recommended apportionment against the counties includes information upon which the counties could rely to pass-through (sic) such apportionment to the constituent cities, towns and villages within such county." (Leslie memo, page 1, last paragraph).

74. This statement is totally without basis in the law. The counties have absolutely no authority to pass on any portion of benefit assessment to any village, city or towns, nor to any parcels of land. To "pass-through" the Board's assessment to less than all of Saratoga County would require formation of a taxing

district. County Law Article 5-A authorizes counties to form only water, sewer, drainage and refuse districts. No authority is granted for a "pass through" district, and none is needed. If, as the Board's counsel says, the information is available for the counties to apportion benefits to the cities, towns and villages, then it is available to the Board to do so. That authority and responsibility is given to the Hudson River Black River Regulating District Board by ECL §15-2121.

75. The Board's apportionment of benefits to the Complainant County of Saratoga is an abdication of its duty under ECL §15-2121 to "...apportion such cost, less the amount which may be chargeable to the state, among the public corporations and parcels of real estate benefitted, in proportion to the amount of benefit which will inure to each such public corporation and parcel of real estate by reason of such reservoir." (ECL §15-2121(2)).

#### **DENIAL OF EQUAL PROTECTION**

76. As set forth above; the Board has failed and refused to apportion benefit costs to a multitude of public corporations and parcels of real estate which are benefitted by the Reservoir.

77. This failure and refusal deprives the Complainant, County of Rensselaer and the citizens, residents and taxpayers thereof of equal protection of the law. The Board has selected only a portion of those benefitted and required them to bear the entire burden of the cost of the benefit.

78. Even within the county, the apportionment of benefit costs to the Complainant, County of Rensselaer as a whole imposes the assessment on all of the citizens, residents and taxpayers of the county, without discriminating between those who derive a direct benefit from the Reservoir by virtue of living and owning property within or in close proximity to the Hudson River and those who live remotely from the River, and do not derive a direct benefit.

79. The population of Rensselaer County was 155,261 as of the 2000 census. Of those, only 86,623 reside in the local municipalities abutting the Hudson river, to wit: the town of East Greenbush, the city of Rensselaer, the town of Schaghticoke, the town of Schodack and city of Troy. A vast majority of the river cities' and towns' population do not reside within in the flood plain.

80. By failing to apportion benefit costs to each parcel benefitted, as required by the statute, and instead apportioning cost to the County as a whole, the Board is denying equal protection of the law to those residents of the County not benefitted.

81. The piecemeal approach of assessment by HRBRRD demonstrates that the boundaries of the district are at best ambiguous.

**CURRENT APPORTIONMENT SHOULD BE  
BARRED AS INEQUITABLE AND UNFAIR  
DOCTRINE OF EQUITABLE ESTOPPEL**

82. It is settled that the doctrine of estoppel precludes enforcement of a right otherwise permissible which results in injustice to a party who has acted to its detriment in reliance on previously established conduct. (Citations omitted.)

83. Never before in history has the District apportioned costs against Counties as it currently intends. In light of the District's 82 year history as its prior course of conduct, the Complainant, Rensselaer County did not budget for an apportionment of any District costs to be chargeable against the County. The Complainant County was induced to act to its detriment by the District's prior conduct.

84. The apportionment is therefore flawed and unjust. Accordingly, the District should be precluded from enforcing the intended apportionment under the doctrine of equitable estoppel.

**FAILURE TO REAPPORTION WITHIN REASONABLE TIME  
DOCTRINES OF WAIVER AND OF LACHES**

85. It is settled that failure to assert a right for an unreasonable and unexplained length of time is a bar to enforcement of the right when it operates to the detriment of another acting in reliance. (Citations omitted.)

86. Under the circumstances presented, for over 82 years, since creation of the District, costs have never been assessed against Counties. As a result, the Complainant,

Rensselaer County has never budgeted to pay District costs, and did not budget for such costs in 2009 and 2010. See affidavit of Michael J. Slawson, Rensselaer County Chief Fiscal Officer sworn to on the 22<sup>nd</sup> day of March, 2010, annexed hereto as Exhibit "I".

87. Imposition of the proposed apportionment would severely damage the current fiscal position of the Complainant, Rensselaer County which, given current state and national market conditions, is already severely compromised. See Exhibit "I". The Complainant, Rensselaer County does not have budgeted funds to pay District's costs.

88. Given the length of time over which the District chose not to apportion costs against Counties, and reliance on that conduct by Rensselaer County in preparing yearly budgets for over 82 years, the current apportionment should be precluded under the doctrines of waiver and laches.

#### **LACK OF AUTHORITY**

89. ECL Sec. 15-2121(6), in pertinent part, authorizes the District to establish an apportionment of costs for a reservoir, which, "...when finally made, also shall be deemed to fix and determine the apportionment and the basis of apportionment of all subsequent expenses to be incurred..."

90. ECL Sec. 15-2121(7) provides: "If powers be developed after such apportionment has been made or if for any other reason any public corporation or any parcel of real estate becomes liable equitably for such subsequent expenses, a subsequent

apportionment may be made...." This subdivision requires that, once the original apportionment is fixed, there must be a circumstance in which a public corporation becomes "equitably liable" for subsequent expenses.

91. The initial, fixed apportionment, carried over year after year for over 82 years, did not apportion any costs to the Complainant, Rensselaer County. Additionally, there has been no change in the status of the Complainant, Rensselaer County as would make it "become liable" under Sec. 15-2121. The Complainant, Rensselaer County has not changed its status as a beneficiary since the original apportionment was fixed. The only change from the original apportionment has been in the ability of the District to apportion costs against power companies. The Complainant's status has not changed.

92. Therefore, the District is without authority to modify the fixed apportionment established originally against the Complainant, Rensselaer County. In filing the recent apportionment the District has acted in excess of its authority under Sec. 15-2121. Thus the apportionment is flawed and represents an actionable arbitrary and capricious abuse of discretion. Accordingly the apportionment fails and should be withdrawn.

### **INCORPORATION OF OTHER COMPLAINTS**

93. The Complainant, Rensselaer County hereby adopts and incorporates herein by reference as applicable any and all other objections made by Albany, Saratoga, Washington and Warren Counties not otherwise made here.

### **DAMAGES**

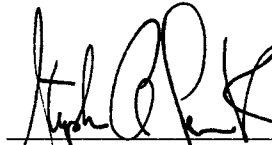
94. Requiring the Complainant, Rensselaer County to pay District costs under the intended apportionment would severely strain an already austere budget. See Exhibit "I" hereto. Such funds are not authorized. Payments to settle the intended apportionment are not feasible under the 2010 plan adopted in Albany County to address the severe effects of the current recession.

**WHEREFORE**, for the reasons set forth above, the Complainant, County of Rensselaer, New York seeks the withdrawal of the apportionment by HRBRRD, the modification of the apportionment in accordance with the objections stated herein and for such other and further relief as may be just, proper and equitable.

Dated: March 22, 2010.

Yours, etc.,

**STEPHEN A. PECHENIK**  
**RENSSELAER COUNTY ATTORNEY**



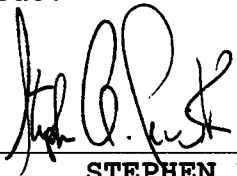
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Stephen A. Pechenik, Esq.  
Attorney for Complainant,  
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1600 Seventh Avenue  
Troy, New York 12180  
Tel. No.: (518) 270-2950

TO: **HUDSON RIVER BLACK RIVER REGULATING DISTRICT**  
350 Northern Boulevard  
Albany, New York 12208

STATE OF NEW YORK            )  
  )  ss.:  
COUNTY OF RENSSELAER    )

**STEPHEN A. PECHENIK**, being duly sworn, deposes and says that deponent is the Rensselaer County Attorney and represents the Complainant, Rensselaer County, New York in the within administrative proceeding; that deponent has read the foregoing Petition and knows the contents thereof; that the same is true to deponent's own knowledge, except as to the matters therein stated to be alleged on information and belief, and that as to those matters deponent believes it to be true.

  
\_\_\_\_\_  
**STEPHEN A. PECHENIK**

Sworn to before me this  
22<sup>nd</sup> day of March, 2010.

  
\_\_\_\_\_  
Notary Public, State of New York

**SUSANN E. CIPRIANI**  
Commissioner of Deeds  
Commission Expires 5/31/10

# Exhibit “A”

FINAL REPORT

HUDSON RIVER FLOW REGULATION BENEFIT STUDY



Prepared for:

HUDSON RIVER-BLACK RIVER REGULATING DISTRICT

Prepared by:

Gomez and Sullivan Engineers, P.C.

July 2003

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1.0 Introduction

The Hudson River-Black River Regulating District (District) is a public benefit corporation organized and operating in accordance with Title 21 of Article 15 of the New York State Conservation Law. It was formed in 1959 when the former Hudson River and Black River Regulating Districts were merged. The District operates two reservoirs, Great Sacandaga Lake and Indian Lake, in the Hudson River Basin. Great Sacandaga Lake was created in 1930 by the construction of the Conklingville Dam on the Sacandaga River, about six miles above its confluence with the Hudson River. At the time of its construction, its intended purpose was to reduce floods and increase the low water flow of the Sacandaga and Hudson Rivers for hydroelectric power generation. Since its construction, other benefits have been realized.

As part of the Upper Hudson/Sacandaga River Offer of Settlement Agreement, the District agreed to conduct a headwater benefit analysis to identify potential beneficiaries and the relative magnitude of the benefits they receive from flow regulation provided by Great Sacandaga Lake. This study was completed as part of the District commitments under the settlement agreement.

1.1 Project Operations

Great Sacandaga Lake is a 25,940 acre impoundment. The emergency spillway crest elevation is 771 MSL. The District's current operating policy is based on the Upper Hudson/Sacandaga River Offer of Settlement Agreement. That policy balances the needs of flood control, low flow augmentation for waste assimilation and fish habitat, hydroelectric power generation, lake recreation, whitewater recreation and navigation.

Historically (prior to the Upper Hudson/Sacandaga Offer of Settlement Agreement, March 27, 2000-see Appendix A), Great Sacandaga Lake was regulated to provide a flow of 3000 cfs in the Hudson River downstream of the confluence of the Sacandaga River, from Monday to Saturday from May 1 through Labor Day. On Sundays and holidays, the flow was less than 1000 cfs. This was accomplished by filling Great Sacandaga Lake to elevation 768 in late spring by not allowing any flow releases for approximately three weeks. The purpose of this was to avoid or reduce spring flooding and to collect water in storage to augment summer flows. As the summer progressed, the water level of Great Sacandaga Lake was then drawn down to provide releases for downstream users while maintaining a lake level above 756 during the period May 1 through Labor Day. During fall and winter, the District continued to draw down the lake to provide storage for rainy periods in November-December and for spring runoff. By the middle of March, the average reservoir level was elevation 744.

Following the Upper Hudson/Sacandaga Offer of Settlement Agreement, regulation of Great Sacandaga Lake was changed to provide higher lake elevations between Labor Day and Columbus Day for fall lake recreation and to provide base flows in the Sacandaga River year-round by increasing the winter drawdown elevation. The new regulation is to be phased in over 20 years.

The first operation scenario was scheduled from license issuance to June 1, 2010 and is targeted to achieve a maximum winter drawdown elevation of 748 by mid-March in anticipation of snowmelt and spring flows. The District will maintain this low level until mid-April when it will begin to refill the reservoir to an elevation of 768 in the first week of June. Once the reservoir is filled, the District will maintain an average flow in the Hudson River below the confluence with the Sacandaga River of 1760 cfs. At the same time, the District will also maintain a lake level above 760 from May 1 to Columbus Day. The reservoir will continue to be drawn down through fall and winter from elevation 760 to a maximum drawdown in mid-March at elevation 748.

The second operation scenario scheduled from June 2, 2010 to June 1, 2020 is targeted to achieve a maximum winter drawdown elevation of 749. The District will maintain this low level until mid-April when it will begin to refill the reservoir to an elevation of 768 in the first week of June. Once the reservoir is filled, starting in 2013, the District will maintain a base flow in the Sacandaga River between 300 and 350 cfs depending on the reservoir elevation and an average flow in the Hudson River below the confluence with the Sacandaga River of 1760 cfs. At the same time, the District will also maintain a lake level above 760 from May 1 to Columbus Day. The reservoir will continue to be drawn down through fall and winter from elevation 760 to a maximum drawdown in mid-March at elevation 749.

The final operation scenario scheduled from June 2, 2020 to FERC license expiration is targeted to achieve a maximum winter drawdown elevation of 750. The District will maintain this low level until mid-April when it will begin to refill the reservoir to an elevation of 768 in the first week of June. Once the reservoir is filled, the District will maintain a base flow in the Sacandaga River between 300 and 350 cfs depending on the reservoir elevation and an average flow in the Hudson River below the confluence with the Sacandaga River of 1760 cfs. At the same time, the District will also maintain a lake level above 760 from May 1 to Columbus Day. The reservoir will continue to be drawn down through fall and winter from elevation 760 to a maximum drawdown in mid-March at elevation 750.

### 1.2 Statutory Authority to Assess Beneficiaries

Title 21 of Article 15 of the New York State Environmental Conservation Law requires that the cost of operation of the District's reservoirs be apportioned upon any public corporation or parcel of real estate benefited. The cost to individual beneficiaries is to be proportioned based on the benefits received. Therefore, any corporation, individual property owners, municipalities, counties, and the State of New York can be assessed for benefits derived from operation of the Great Sacandaga Lake. Presently, benefits are assessed for industry (hydropower) and flood protection. An annual apportionment schedule allocating the District's expenses is determined every 3 years. Benefits as defined in Article 15-2101.3 include "benefits to real estate, public or private, to municipal water supply, to navigation, to agriculture and to industrial and general welfare. The list of potential benefits is described in Section 2 of this report.

### 2.0 Hudson River Flow Regulation Benefits

The benefits created by construction of the Conklingville Dam and Great Sacandaga Lake are numerous. A list of these benefits includes:

- Increased Real Estate Values for Lakeshore Property
- Lake Recreation
- Hydroelectric Power Generation
- Flood Protection
- Waste Assimilation
- Whitewater Recreation
- Water Supply
- Downstream Water Recreation
- Downstream Fisheries Enhancement
- Navigation

As discussed below, the economic benefits to water supply, downstream water recreation, downstream fisheries enhancement and navigation are very small when compared to the other categories.

### 3.0 Methodology to Evaluate Benefits

In order to develop an assessment schedule, all the significant economic benefits should be quantified and summed. The percentage of the total benefits allocated to each benefit category can then be calculated. The benefit derived by individual beneficiaries can then be calculated by the portion of the total benefit category they receive. With these numbers in hand, the cost of operation of Great Sacandaga Lake can then be calculated for each benefit category and for each beneficiary. The addition of the benefit values requires that each benefit be quantified in the same units, dollars. Therefore, all benefits have been calculated on an annual basis as June 2001 dollars. Unfortunately, at this time we are not able to quantify one major benefit on an annual basis - increased real estate values for lakeshore property. The reasons are discussed below.

Based on initial investigations, it was evident that the benefit study should focus on those uses that derive the most benefit from Hudson River flow regulation and which have not been previously quantified. Lake recreation, navigation, and water supply benefits that have already been quantified previously into dollars have been indexed using the Consumer Price Index to June 2001. Downstream water recreation and downstream fisheries benefits have not been studied in detail because their economic value is much smaller compared to the major benefits.

### 3.1 Increased Real Estate Values for Lakeshore Property

One of the biggest benefits of Great Sacandaga Lake is the creation of 125 miles of lakeshore property. The increased real estate benefits derived from the Great Sacandaga Lake would be the difference between current property values and property values without the reservoir. A literature search yielded very little information to quantify this benefit.

The Great Sacandaga Lake region is defined as those townships, which share a piece of the approximately 125 miles of lake shoreline. The townships include Northampton, Mayfield, and Broadalbin, which are located in Fulton County; and the townships of Edinburg, Day, and Providence, which are located in Saratoga County. According to the deSeve report (1984), the 1984 market value of seasonal lake property (from a survey of 2,000 seasonal residences) was \$117 million. This survey also reported that there were a total of 9,841 total housing units in the Great Sacandaga Lake Region but did not give their dollar value. The market value of the total housing units (9,841) is expected to be greater than \$117 million since there are almost 5 times as many properties compared to the sample size (2000) and they are expected to have more amenities since many are inhabited year-round.

A previous real estate appraisal for the District's reservoir lands in the Town of Northampton can provide some information on current lakefront property values if Great Sacandaga Lake did not exist. The appraisal by the NYS Division of Equalization and Assessment, conducted in 1992, was performed to determine the without project value of District reservoir lands<sup>1</sup> in the Town of Northampton. The NYS report reviewed historical records, aerial maps, topography and geology maps to determine the land use of each of the 380 parcels prior to reservoir construction. Then a map of probable Adirondack Park Agency (APA) zoning for the inundated reservoir area was developed based on APA zoning for the Sacandaga River north of the reservoir and the Hudson River between North Creek and Lake Luzerne. The probable APA zoning for each parcel was determined based on likely physical attributes, location, access, and likely public amenities. Market values for each type of APA zoning/land use were determined using a Sales Comparison Approach. Property values (\$/ac) for each zoning/land use were determined from comparable locations in 4 other counties in the

<sup>1</sup> The District owns all land below water elevation 778 (7 feet above spillway crest)

Adirondack Park for riverfront and non-riverfront property. The land values from the NYS appraisal could be applied to properties adjoining Great Sacandaga Lake to determine their real estate value if Great Sacandaga Lake did not exist (i.e. Conklingville Dam had not been constructed).

The current real estate value for properties around the perimeter of Great Sacandaga Lake could be determined from property tax information. The increased real estate benefit of flow regulation would be the difference between the real estate value of properties with and without the presence of Great Sacandaga Lake. However, this analysis, while potentially representing a significant benefit attributable to the existence of Great Sacandaga Lake, was beyond the scope of this report.

### 3.2 Lake Recreation

Lake recreation includes boating, swimming, fishing, and sunbathing. According to the Upper Hudson/Sacandaga River Offer of Settlement Agreement, Great Sacandaga Lake will be managed for lake recreation from Memorial Day weekend to Columbus Day weekend. The value determined by deSeve (1984) for lake recreation, \$16.8 million/year was indexed to June 2001. This cost was composed of day use (\$2.3 million), seasonal residents (\$11.1 million), boaters (\$0.9 million), property taxes by seasonal residents (\$1.9 million), and property maintenance costs of seasonal residents (\$0.6 million). This computation was based on user-days of seasonal and non-residents, and did not include permanent residents. In addition, the lake recreation benefit did not include a value associated with shoreline real estate.

### 3.3 Hydroelectric Power Generation

In order to quantify flow related benefits, a HECSP operations model of the Great Sacandaga Lake/Upper Hudson River system was used. This model was initially developed by Eric Boulevard Hydropower as part of the FERC relicensing negotiations associated with several of the Upper Hudson River projects. During negotiations, the HECSP model was used for evaluating impacts associated with flow regulation in terms of hydroelectric power generation, and flood/low flow magnitude and frequency.

The HECSP model originally developed by Eric Boulevard Hydropower terminated at the Hudson Falls hydroelectric project. For this study, the model was extended downstream to encompass all hydroelectric projects and river basin hydrology down to the Green Island Hydroelectric Project (Troy Lock and Dam). Table 1 lists all of the hydroelectric projects on the mainstem of the upper Hudson River by FERC license number, license, project name, station capacity and river mile and Figure 1 shows the location of each hydroelectric project. FERC licenses to construct the Northumberland and Waterford Projects at existing dams were issued, however, construction has not commenced.

Once the extension of the HECSP model was completed, it was executed for two scenarios. The first scenario reflected the operational conditions set forth in the settlement agreement for the Upper Hudson/Sacandaga River Offer of Settlement Agreement<sup>2</sup>. The second scenario reflected run-of-river operation at Great Sacandaga Lake.

For hydroelectric power generation computations at a particular project, HECSP uses the basic power equation:

<sup>2</sup> The settlement agreement stipulates that the targeted elevations for winter maximum drawdown will be 748 feet from license issuance to 6/1/2010, 749 feet from 6/2/2010 through 6/1/2020, and 750 feet from 6/2/2020 through license expiration.

$$P = \frac{\rho Q H_{net} \eta}{11.8}$$

Where: P= Power (kW)  
 Q= Turbine Discharge (cfs)  
 H<sub>net</sub>= Net Head (ft), which is equals the headwater minus tailwater minus headlosses  
 η = Station Efficiency (%)  
 11.8= Constant for English/Metric conversion

The monthly average energy generated at each hydroelectric project was calculated for peak and non-peak periods based on the hydrologic period of record from 1922 to 1995 for each operational scenario (see Appendix B). This information allowed for a computation in MWh of the net monthly benefit each hydroelectric project receives from flow regulation.

Table 1: Hydroelectric Stations in the Upper Hudson River Watershed

FERC No.	Project License	Project Name	Capacity (MW)	River Mile
2318	Erie Boulevard Hydropower	E.J. West	20	(Sacandaga River) 6
2047	Erie Boulevard Hydropower	Stewarts Bridge	30	3
2609	Curtis/Palmer Hydroelectric	Curtis Station	10.8	(Hudson River) 218
2609	Curtis/Palmer Hydroelectric	Palmer Falls	48	218
2482	Erie Boulevard Hydropower	Spier Falls	51	213
2482	Erie Boulevard Hydropower	Sherman Island	30	209
2554	Erie Boulevard Hydropower	Feeder Dam	6	202
2385	Finch Pruyn	Glen Falls	12	200
5461	Adirondack Hydro	South Glen Falls	15.7	200
5276	Adirondack Hydro	Hudson Falls	36.1	198
4226	Mercer Companies, Inc.	Fort Miller	4.8	187
4244	Northumberland Hydro Partners	Northumberland	NA	184
4684	Stillwater Hydro Partners	Stillwater Hydro	3.5	168
2934	NYSEG	Mechanicville Upper	18.5	166
6032	Fourth Branch Associates	Mechanicville Lower	4.5	164
10648	Adirondack Hydro	Waterford	NA	160
13	Green Island Power Authority	Green Island	6	154

The monthly benefits for each project were summed for conditions with and without flow regulation. The difference in monthly energy generation was converted to dollars by multiplying the energy generated by the price of peak and nonpeak energy. There is some difficulty in predicting these prices as the energy generation and distribution system is in the early years of conversion from a regulated to a deregulated market. For this reason, hydroelectric energy values were converted to dollars by multiplying the monthly energy generation values by the cost paid by the Independent System Operators for the 12 month period June 2000-May 2001 as reported by the New York State Public Service Commission for the Capitol region of the state (see Appendix C).



Location	Drainage Area (sq. mi.)	Recurrence Interval	Flow Regulation <sup>3</sup>		Run-of-River		Difference (ft)
			Flow (cfs)	Elevation (ft)	Flow (cfs)	Elevation (ft)	
Upper	4500	100	71,976	81.7	103,283	84.6	2.9
Mechanicville		50	65,751	81.0	95,420	83.9	2.9
		10	50,707	79.4	74,577	81.9	2.6
		2	33,575	77.2	50,664	79.4	2.2
Lower	4572	100	73,233	53.9	104,381	55.9	2.0
Mechanicville		50	66,877	53.4	96,432	55.4	2.0
		10	51,537	52.2	75,362	54.0	1.8
		2	34,103	50.7	51,176	52.2	1.5
Waterford	4611	100	73,922	35.4	104,980	37.6	2.3
		50	67,495	34.8	96,983	37.1	2.2
		10	51,992	33.6	75,788	35.5	1.9
		2	34,391	31.9	51,454	33.5	1.6
Green Island (Troy)	8090	100	152,901	27.9	192,829	30.3	2.4
		50	140,831	27.2	176,937	29.4	2.2
		10	110,862	25.2	135,613	26.8	1.7
		2	75,012	22	90,668	23.7	1.2
Albany	8090	100	NA	20.1	NA	22.2	2.1
		50	NA	17.8	NA	20.6	2.8
		10	NA	13.1	NA	16.8	3.7
		2	NA	8.8	NA	12.4	3.6
Southern Corporate	—	100	NA	16.4	NA	18.0	1.6
Limits-Towns of		50	NA	14.6	NA	16.8	2.2
Schodack/Coeymans		10	NA	11.0	NA	13.8	2.8
		2	NA	7.7	NA	10.4	2.7

### 3.5 Waste Assimilation

Flow releases from Great Sacandaga Lake during the summer months provide the majority of flows necessary for waste assimilation. The flow that is commonly used in determining wastewater treatment needs to maintain water quality (i.e. permit wastewater dischargers) is the minimum average 7 consecutive day low flow with a 10-year recurrence interval (MA7CD10). The NYSDEC's Upper Hudson River Waste Assimilative Model, which is used to permit wastewater discharges, is based on a flow of 1760 cfs at Hadley Falls. The flows used by the NYSDEC in its Upper Hudson River Waste Assimilative Model are the sum of an average of the 5-day weekday flow plus the historically 2-day low flow weekend period. The HEC-5P operations model was used to determine the MA7CD10 flow in the Hudson River at different locations for run-of-river operation. The wastewater treatment plants on the Upper Hudson River, downstream of Great Sacandaga Lake, would have to provide additional treatment to meet water quality standards under this lower flow if Great Sacandaga Lake did not exist.

Table 3 compares the flows used by the NYSDEC in their waste assimilative model with the MA7CD10 computed by the HEC-5P model for run-of-river conditions at different locations along the Hudson River.

Table 3: Waste Assimilative Design Flows for Existing Flow Regulation and Run-of-River Operation

Location	Drainage Area	Existing Regulation (NYSDEC Regulatory Flow)	Run-of-River (MA7CD10)
Hadley Falls	2,719	1,760	470
Fort Miller	2,980	1,764	524
Upper Mechanicville	4,500	1,952	863
Green Island	8,032	3,013	1,846

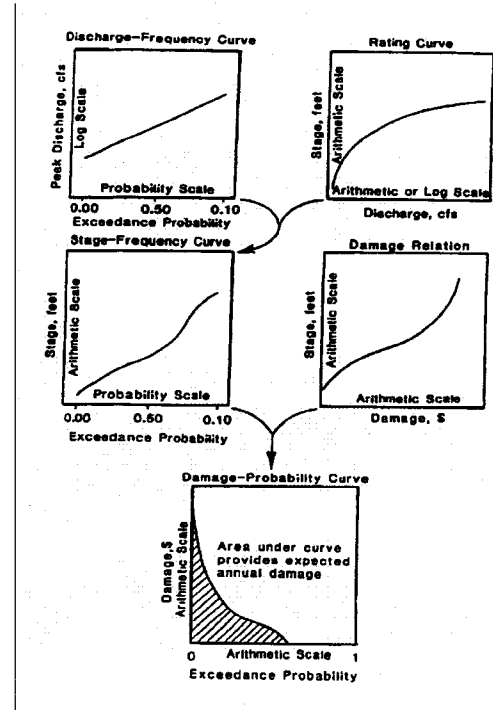
This information was provided to the NYSDEC who then used it with their Upper Hudson River Waste Assimilative Model to predict what the new pollutant permit loadings would be at each treatment plant based on the lower streamflows for run-of-river operation (see Appendix E). The additional cost to maintain stream standards between regulated flows and run-of-river flows is the flow regulation benefit for waste assimilation.

DEC's waste assimilative model is divided into 3 segments. Segment 1 is from Palmer Falls Dam (mile point 218) to Stillwater Dam (mile point 168). Segment 2 is from Stillwater Dam (mile point 168) to Troy Lock (mile point 154). Segment 3 is from Troy Lock (mile point 154) to mile point 123, the location of the next dissolved oxygen sag.

In order to maintain the same existing water quality under run-of-river conditions with respect to dissolved oxygen, existing permit loads for biochemical oxygen demand (BOD) and nitrogenous oxygen demand (NOD) would have to be reduced 60% in segment 1, 35% in segment 2, and 25% in segment 3. Table 4 lists the major wastewater dischargers of BOD and NOD, their permitted and actual discharges, their permitted and actual BOD and NOD loadings, and their reduced BOD and NOD loadings for run-of-river operation.

To calculate the expected pollutant loadings for dischargers who operate below permit discharges, it was necessary to prorate the past year's effluent loadings by the ratio of the maximum permitted discharge and actual discharge. This is considered a conservative assumption for BOD and NOD because it is likely that pollutant loadings would actually be higher at higher discharges because removal efficiency rates would decrease. Based on these assumptions, each wastewater discharger was evaluated to see if additional treatment was needed to reduce pollutants for run-of-river conditions.

Figure 2: Derivation of Damage CDF from Discharge CDF, Rating Function, and Elevation-Damage Function (Source: ASCE Handbook of Hydrology).



DEC regulatory permit personnel were interviewed to identify the existing treatment processes employed at each wastewater treatment plant. Table 4 lists those wastewater discharges that would require additional treatment to maintain existing water quality for run-of-river conditions and the pollutants whose loadings would need to be reduced.

If additional treatment was necessary, the capital and operation and maintenance costs were calculated from EPA cost curves for all of the treatment processes. The costs on the EPA cost curves are a function of discharge and do not take into account influent or effluent pollutant concentrations, removal efficiencies, redundancies in a treatment plant, etc. The EPA cost curves are intended for planning or comparison purposes and are not meant to be the absolute answer.

It was assumed that additional BOD treatment would be provided by a biotower and additional NOD treatment by providing a separate activated sludge chamber for nitrification.

### 3.6 Whitewater Recreation

The benefit of whitewater recreation was determined by the unit day value method. The annual benefit of flow regulation was based on the number of whitewater trips and the average willingness to pay of whitewater users for the Sacandaga River whitewater experience.

In the Stewarts Bridge license application, the Niagara Mohawk River Power Corporation<sup>5</sup> (NMPC) published the number of commercial whitewater boating trips for the years 1993-1996. The Whitewater River Manager was contacted to update the number of boating trips for 1997-1999. A review of this data indicated that the number of commercial whitewater trips is fairly constant, around 30,000 boating trips per year. In previous reports, estimates of the number of private whitewater trips per year have varied anywhere between 1,000 and 10,000 trips per year.

In the NMPC Response to the FERC Additional Information Request Item No. 13 for the E.J. West Project on Whitewater Recreation (1993), it was estimated that the direct expenditures on whitewater recreation on the Sacandaga River of a commercial trip including the rafting trip fee, lodging/camping, food, transportation, and souvenirs (e.g. photos, tee shirts, etc.) was \$35 per day and for a private trip was \$20 per day. These values have been updated to 2001 by using the CPI. Based on this method, the economic benefit in 2001 for whitewater recreation in the Sacandaga River is \$43 /day for a commercial trip and \$25/day for a private trip.

<sup>5</sup> Predecessor to Erie Boulevard Hydropower.

Table 4: Indian River Storage Treatment Plant Discharges and BOD and NOD Loadings for Flow Regulation and Run-of-River Operation

Discharge	Flow Rate (MGD)	Annual BOD (lb/day)	Annual NOD (lb/day)	Annual BOD (lb/year)	Annual NOD (lb/year)	Annual BOD (lb/year)	Annual NOD (lb/year)	Notes
Trans-Canada	10.3	0.6	16,127	6450	9032	0	0	BOD reduction
Corinth (V)	0.6	0.41	500	174	176	459	0	no data
Finch Pruyn	17.5	18.2	67,502	18,425	24,432	12,109	9,773	BOD reduction
Encore Paper	2.2	2.03	10,810	6,178	4,524	6,695	0	BOD reduction
Green Paper	5.5	5.1	3,116	302	1,206	561	9,600	BOD reduction
General Electric - Waterford	0.216	0.162	590	16	200	21.3	48	13.7
East Greenbush	3.2	0.94	6,660	1,600	2,160	780	0	BOD reduction
Washington Co. SD #2	1.9	2.3	934	374	407	1,870	1,034	748
Washington Co. SD #1	1.9	2.3	990	187	256	187	0	0
NY State Mills (East)	0.25	0.367	100	34.6	48	34.6	100	no data
Saratoga (V)	0.201	0.3	112	17	225	84	146	94
Saratoga Co. SD #1	2.13	10.4	8,000	1,328	5,500	27.0	19,900	3,255
GE Waterford	30.0	30.6	16,600	1,665	6,500	1,665	0	475
Albany North	35.0	22.7	10,946	663	8210	10,222	20,377	4,338
Albany South	24.0	21.6	7,919	1,063	5,844	14,674	19,318	11,006
Rensselaer Co. SD #1	54.0	19.3	7,506	1,611	5,620	2,003	14,635	5,959
East Greenbush	2.5	1.9	938	438	704	500	1,006	1,126
Bethlehem	4.9	4.5	1,819	270	1,379	294	3,735	274
Total								299

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4.0 Results

4.1 Increased Real Estate Values for Lakeshore Property

A real estate appraisal of lakeshore property values is necessary to determine the flow regulation benefit.

4.2 Lake Recreation

According to deVese report (1984), the total direct lake related expenditures by day users, seasonal residents, and boaters are \$16.3 million/year. Based on the CPI, this figure in 2001 dollars is \$28.7 million/year.

4.3 Hydroelectric Power Generation

The benefit of hydroelectric generation was evaluated using the HEC-5P operations model. The amount of generated electricity is converted into dollars by multiplying the monthly MWh by the price per MWh. Table 5 shows the difference in annual average energy generation in MWh for peak and non-peak periods. The benefit of flow regulation is the difference in the energy produced under flow regulation and by run-of-river operation. The hydroelectric benefit of flow regulation by project owner, in 2001 dollars, is also shown in Table 5. The total hydroelectric benefit for all projects combined is \$15.1 million/year.

Table 5: Difference in Annual Power Generation for Flow Regulation and Run-of-River Operation

Owner	Difference in Peak Energy (MWh)	Difference in Off-Peak Energy (MWh)	Total Annual Replacement Cost (\$)
Erie Boulevard Hydropower	(114,239)	(23,363)	(\$8,224,557)
Curtis/Palmer Hydroelectric	(30,387)	(29,524)	(\$3,019,307)
Finch Pruyn	(5,314)	(5,127)	(\$522,231)
Adirondack Hydro	(23,018)	(22,237)	(\$2,268,108)
Mercer Companies	(2,616)	(2,508)	(\$256,979)
Stillwater Hydro	(965)	(925)	(\$96,016)
NYSEG	(5,075)	(4,899)	(\$482,962)
Fourth Branch Associates	(1,241)	(1,199)	(\$125,952)
Green Island Power Authority	(1,439)	(1,380)	(\$134,617)
Total	(184,294)	(91,162)	(\$15,130,729)

4.4 Flood Protection

Flood control was the major impetus for the original construction of Great Sacandaga Lake. The District contracted with the NYSDEC to calculate the flood damages for the 2, 10, 50, and 100 year flood events (see Table 6). The average annual flood damage for each case is equal to the area under the damage probability curve. The annual flood protection benefit (i.e. damage reduction) is the difference in the annual flood damages determined with and without flow regulation.

Table 6: Flood Damages for Entire Study Area under Flow Regulation and Run-of-River Operation

Flood Event	Flood Damages (Flow Regulation)	Flood Damages (Run-of-River Operation)
2-year	\$84,406,588	\$173,974,737
10-year	\$105,978,378	\$261,522,836
50-year	\$133,026,270	\$305,549,654
100-year	\$145,055,264	\$339,763,812

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The average annual flood damages under flow regulation and run-of-river operation are \$49,027,587 and \$113,008,981, respectively. For all municipalities analyzed, the total annual flood protection benefit is \$63,981,395 in 2001 dollars. The annual flood protection benefit by municipality is listed in Table 7.

Table 7: Annual Flood Protection Benefit by Municipality

Municipality	Annual Flood Protection Benefit
City of Albany	\$8,768,385
City of Coboes	\$207,426
City of Mechanicville	\$243,149
City of Rensselaer	\$2,552,199
City of Troy	\$727,424
City of Watervliet	\$23,369
Town of Bethlehem	\$31,486,852 <sup>6</sup>
Town of Coeymans	\$219,326
Town of Colonie	\$81,594
Town of Corinth	\$60,329
Town of East Greenbush	\$663,864
Town of Easton	\$4,964
Town of Fort Edward	\$9,555
Town of Greenwich	\$62,539
Town of Hadley	\$142,107
Town of Halfmoon	\$982,474
Town of Moreau	\$85,445
Town of New Baltimore	\$257,766
Town of North Greenbush	\$826,804
Town of Northumberland	\$3,867
Town of Queensbury	\$223,799
Town of Saratoga	\$101,363
Town of Schaghticoke	\$174,390
Town of Schodack	\$133,051
Town of Stillwater	\$234,114
Town of Stuyvesant	\$18,744
Town of Waterford	\$1,352,139
Village of Castleton-on-Hudson	\$1,392,484
Village of Corinth	\$2,733,982
Village of Fort Edward	\$162
Village of Green Island	\$29,779
Village of Hudson Falls	\$0
Village of Menands	\$5,666,464
Village of Schuylerville	\$459,284
Village of South Glens Falls	\$1,252,286
Village of Stillwater	\$2,658,402
Village of Waterford	\$141,516
Total	\$63,981,395

<sup>6</sup> The Town of Bethlehem accounts for approximately 49% of annual flood protection benefits due principally to flood benefits received at a Niagara Mohawk fossil fuel generating station, which is valued at \$267 million.

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4.5 Waste Assimilation

Flow releases from Great Sacandaga Lake during the summer months provide the majority of flows necessary for waste assimilation.

Table 8 shows the incremental capital cost and annual operating and maintenance cost for additional wastewater treatment to maintain existing water quality between run-of-river operation and existing flow regulation. The capital cost to reduce BOD and NOD loadings in the Hudson River in 2001 dollars is \$56.3 million, which amortized assuming a 20-year useful life and 5% bond rate for municipal plants and a 10-year useful life and 8% interest rate for industrial plants, is an annual cost of \$7.7 million. The operations and maintenance cost to reduce BOD and NOD loadings is \$1.4 million. Therefore, the annual cost to reduce BOD and NOD is \$9.1 million/year in 2001 dollars.

Table 8: Cost of Additional Biological Wastewater Treatment for Run-of-River Conditions to Reduce BOD and NOD

Discharge	Pollutants to be Removed	Treatment Processes	Capital Cost	Annualized Capital Cost	Annual O & M Cost	Total Annual Cost
Trans-Canada	BOD, phenols	biotower	\$12,762,538	\$1,901,618	\$335,627	\$2,237,245
Corinth	BOD	biotower	\$1,491,430	\$119,762	\$32,522	\$152,284
Finch Pruyn	NOD, phenols	nitrification	\$10,568,921	\$1,574,769	\$70,957	\$1,645,726
Encore Paper	BOD	biotower	\$2,914,549	\$434,268	\$74,150	\$508,418
Irving Tissue	BOD	biotower	\$4,298,960	\$640,545	\$105,371	\$745,916
Washington County S.D. #2	BOD	biotower	\$3,169,397	\$254,503	\$83,256	\$337,759
Washington County S.D. #2	NOD	nitrification	\$2,536,541	\$203,684	\$107,977	\$311,661
General Electric - Waterford	NOD	nitrification	\$16,064,760	\$2,393,649	\$462,760	\$2,856,409
East Greenbush	NOD	nitrification	\$2,536,541	\$203,684	\$107,977	\$311,661
Total			\$56,343,637	\$7,726,482	\$1,380,597	\$9,107,079

Note: Capital cost for municipal plants amortized assuming 5% bond rate and 20-year return period. Capital cost for industrial plants amortized assuming 8% interest rate and 10-year return period.

4.6 Whitewater Recreation

Without Great Sacandaga Lake, it is unlikely that there would be whitewater recreation in the Sacandaga River in any season other than the spring. The Reservoir provides the majority of the streamflow in the popular summer season on a predictable schedule. Without the Reservoir, summer streamflows would be on the order of 300 cfs (the median August unregulated flow would be 294 cfs). The optimum whitewater flow according to studies by NMPC (1993) for relicensing is 4000 cfs.

Based on the annual number of daily Sacandaga River whitewater boating trips and the economic benefit per trip, the annual benefit of commercial whitewater recreation is \$1,050,000 and the annual benefit of private whitewater recreation can vary between \$25,000 and \$250,000. Therefore, the total benefit, in 2001 dollars is \$1,075,000/year to \$1,300,000/year.

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4.7 Water Supply

Although summer flow releases from Great Sacandaga Lake improve downstream water quality and, therefore, are a benefit to water supply treatment, the benefit is much smaller than other benefits to be studied. Decreased summer flow under a natural flow regime would result in increased treatment costs for coagulation/sedimentation, sludge handling, chlorination, and chloride removal.

The Malcolm Pirnie Report (1984) estimated that the costs for these increased processes for a reduction in the MA7CD10 flow of 260 cfs to be \$16,100. Assuming that we saw a fivefold decrease in the MA7CD10 flow of approximately 1290 cfs (this is the difference at Hadley between 1760 cfs for existing regulation and 470 cfs for run-of-river operation), the 1984 cost would be approximately \$80,500. Escalated by the CPI, the 2001 cost would be \$137,524/year. The benefit of avoiding this cost is small compared to some of the more significant benefits.

4.8 Downstream Water Recreation

The benefit of flow regulation on downstream water recreation is unclear for several reasons. First, it would be difficult to quantify the differences in water recreation use. Although flows in the river would be less in the summer for run-of-river operation as compared to flow regulation, there would still be water in the river and the impoundments behind the existing dams would still be present. To be consistent with the analysis of waste assimilation benefits, it is assumed that existing water quality would be maintained for run-of-river operation and be suitable for water-based recreation. Therefore, assuming water depths were suitable for boating and water quality was suitable for swimming and fishing, recreation use is not expected to be significantly different for run-of-river operation than flow regulation.

4.9 Downstream Fisheries Enhancement

The economic benefit of fisheries enhancement in the Sacandaga and Hudson Rivers is believed to be small and may be offset by negative effects to fisheries created by other beneficiaries' uses such as hydroelectric power generation and whitewater boating. Therefore, this economic benefit has not been quantified in this report.

4.10 Navigation

Navigation benefits from flow regulation are considered small when compared to the other benefits. By law, the NYSDOT has first priority for Hudson River flows up to a monthly average of 150 cfs to be diverted to the Glens Falls Feeder Canal. This flow augments lockage water for the Champlain Canal from April to December. About 25 % of diverted water returns to the Hudson River (Malcolm Pirnie, 1984).

"The actual average amount of diversion is about 100 cfs" (Malcolm Pirnie, 1984). Unregulated flows in the Hudson River would exceed the 150 cfs diversion requirement. Therefore, no benefit is derived from regulation of Great Sacandaga Lake.

The only navigation benefit derived from the Great Sacandaga Lake is that it improves the sediment transport of the Hudson River by increasing the quantity of summer flows. This has the effect of decreasing the maintenance dredging requirements of the Champlain Canal which functions with diverted Hudson River flows. M-P estimated in 1984 that the annual increased dredging cost to remove 600 cubic yards of sediment due to lower flows would be \$12,000. This value updated to 2001 by the CPI is \$20,524/year. The benefit of avoiding this cost due to releases from Sacandaga River is small compared to other benefits.

5.0 Summary

The most significant benefits due to regulation of Hudson River flows are increased real estate values for lakeshore property, flood protection, lake recreation, hydroelectric power generation, wastewater assimilation, and whitewater recreation. Water supply, downstream recreation, fisheries enhancement, and navigation are relatively small benefits compared to the significant benefits. Table 9 summarizes the annual dollar value of the benefits we have identified.

Table 9: Summary of Annual Benefits of Flow Regulation from Great Sacandaga Lake

Benefit	Annual Value
Increased Real Estate Values for Lakeshore Property	Further Study Required
Flood Protection	\$64.0 million
Lake Recreation	\$28.7 million
Hydroelectric Power Generation	\$15.1 million
Waste Assimilation (for BOD and NOD)	\$9.1 million
Whitewater Recreation	\$1.1-1.3 million
Water Supply	\$0.1 million
Downstream Water Recreation	-
Downstream Fisheries Enhancement	-
Navigation	\$0.02 million

6.0 Benefit Apportionment Schedule for Hudson River Flow Regulation

The District's present assessment schedule allocates 95% of their costs to hydroelectric generation beneficiaries and 5% to municipalities for flood control benefits.

The following apportionment schedule in Table 10 is based on the benefits that have been quantified to date. This schedule will change if the benefits for increased real estate values are quantified.

Table 10: Benefit Apportionment Schedule

Benefit Category	Annual Value	Percentage
Flood Protection	\$64.0 million	54.14%
Lake Recreation	\$28.7 million	24.28%
Hydroelectric Power Generation	\$15.1 million	12.77%
Waste Assimilation (for BOD and NOD)	\$9.1 million	7.70%
Whitewater Recreation	\$1.2 million	1.02%
Water Supply	\$0.1 million	0.08%
Downstream Water Recreation	-	-
Downstream Fisheries Enhancement	-	-
Navigation	\$0.02 million	0.02%
<b>Total Benefits</b>	<b>\$118.2 million</b>	<b>100.00%</b>

The information in Table 10 was apportioned further by the individual beneficiaries within each benefit category. This analysis was completed for the lake recreation, flood protection, hydroelectric power generation, waste assimilation, and whitewater recreation benefit categories. The analysis was not conducted for water supply and navigation, as these benefits are relatively minor. The purpose of the analysis was to determine each individual beneficiary's payment percentage.

For lake recreation, the benefit associated with this category was apportioned between Fulton and Saratoga Counties, which surround Great Sacandaga Lake. The apportionment was based on a ratio of lake surface area between the two counties. Flood protection benefits were apportioned by municipality based on the estimated damage that would have occurred (Table 7). Hydroelectric generation benefits were apportioned by project owner based on the percentage of annual replacement costs (see Table 5). For waste assimilation, the benefits were apportioned by discharger based on the annual cost of additional biological wastewater treatment to reduce BOD and NOD. Whitewater recreation benefits were apportioned between commercial (30,000 user-days) and private (10,000 user-days) use based on users-days (see Section 3.6). Table 11 illustrates the results of this analysis.

Table 11: Apportionment Schedule for Individual Beneficiaries

Benefit Category	Individual Beneficiary within Category	% by Benefit Category (see Table 10)	% of Benefit within Category	% of Total Payment from Individual Beneficiary
Flood Protection	City of Albany	54.14%	13.70%	7.42%
	City of Cohoes		0.32%	0.18%
	City of Mechanicville		0.38%	0.21%
	City of Rensselaer		3.99%	2.16%
	City of Troy		1.14%	0.62%
	City of Watervliet		0.04%	0.02%
	Town of Bethlehem		49.21%	26.64%
	Town of Cocoyans		0.34%	0.19%
	Town of Colonie		0.13%	0.07%
	Town of Corinth		0.09%	0.05%
	Town of East Greenbush		1.04%	0.56%
	Town of Easton		0.01%	0.00%
	Town of Fort Edward		0.01%	0.01%
	Town of Greenwich		0.10%	0.05%
	Town of Hadley		0.22%	0.12%
	Town of Halfmoon		1.54%	0.83%
	Town of Moreau		0.13%	0.07%
	Town of New Baltimore		0.40%	0.22%
	Town of North Greenbush		1.29%	0.70%
	Town of Northumberland		0.01%	0.00%
	Town of Queensbury		0.35%	0.19%
	Town of Saratoga		0.16%	0.09%
	Town of Schaghticoke		0.27%	0.15%
	Town of Schodack		0.21%	0.11%
	Town of Stillwater		0.37%	0.20%
	Town of Stuyvesant		0.03%	0.02%
	Town of Waterford		2.11%	1.14%
	Village of Castleton-on-Hudson		2.18%	1.18%

Benefit Category	Individual Beneficiary within Category	% by Benefit Category (see Table 10)	% of Benefit within Category	% of Total Payment from Individual Beneficiary
Flood Protection	Village of Corinth	54.14%	4.27%	2.31%
	Village of Fort Edward		0.00%	0.00%
	Village of Green Island		0.05%	0.03%
	Village of Hudson Falls		0.00%	0.00%
	Village of Menands		8.86%	4.79%
	Village of Schuylerville		0.72%	0.39%
	Village of South Glens Falls		1.96%	1.06%
	Village of Stillwater		4.15%	2.25%
	Village of Waterford		0.22%	0.12%
	Lake Recreation		Saratoga County	24.28%
Fulton County		69.76%	16.94%	
Hydroelectric Generation	Erie Boulevard Hydropower	12.77%	54.81%	7.00%
	Curtis/Palmer Hydroelectric		20.12%	2.57%
	Finch Pruyn		3.48%	0.44%
	Adirondack Hydro		15.12%	1.93%
	Mercer Companies		1.71%	0.22%
	Stillwater Hydro		0.64%	0.08%
	NYSEG		3.22%	0.41%
	Four Branch Associates		0.84%	0.11%
	Green Island Power Authority		0.90%	0.11%
Waste Assimilation	Trans-Canada	7.70%	24.57%	1.89%
	Corinth		1.67%	0.13%
	Finch Pruyn		18.07%	1.39%
	Encore Paper		5.58%	0.43%
	Irving Tissue		8.19%	0.63%
	Washington County S.D. #2		7.13%	0.55%
	General Electric - Waterford		31.36%	2.41%
	East Greenbush		3.42%	0.26%
Whitewater Recreation	Commercial	1.02%	75.00%	0.76%
	Private		25.00%	0.25%
<b>Total</b>		<b>100%</b>		<b>100%</b>

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## 7.0 Recommendations

The benefits of increased real estate values for lakeshore property and waste assimilation are significant enough to warrant further study prior to revising the District's assessment schedule of benefits. Although, the District charges access permit fees<sup>7</sup> for properties around Great Sacandaga Lake, these mostly cover the administrative cost of the program and not the benefit of flow regulation. We recommend that the District contract with New York State's Division of Equalization and Assessment Department or a real estate appraisal firm to determine the benefit of increased real estate values. The most comprehensive level of study would be to compile a list of all the lakefront properties and their assessed values from the tax records of local municipalities or counties. In order to calculate the benefit of the reservoir's presence, the value of these lakefront properties would be compared to similar type properties in nearby areas that are not located on a lake. The difference between the real estate value of property with and without Great Sacandaga Lake frontage would be the net benefit. The level of effort required for this type of study is extensive.

A lower level of effort might be to study 5 or 6 types of property in one community to see the difference between property values with and without the reservoir. These results could then be applied to properties in the other communities as well. The drawback to this approach is that it uses a much smaller sample size than the first alternative and may be more subject to criticism.

The waste assimilative benefits appear to be a large benefit that warrants further study if the District wishes to assess the beneficiaries. The analysis conducted for the waste assimilative benefit was at a planning level, particularly in the case of toxics. Additional study, if pursued, should refine and make more site-specific the EPA cost curves used to determine the removal of pollutants.

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<sup>7</sup>The District owns all land up to approximately elevation 778 (7 feet above spillway crest). Permit holders are people who own land adjacent to the lake who use the lake by access to the District's land with a permit.

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## REFERENCES

- DeSeve Economics Associates, Inc. Local Economic Impact of Water Level Regulation of the Great Sacandaga Lake, August 10, 1984.
- Malcolm Pirnie. Study of Impacts of Hudson River Flow Regulation, May 1984.
- Metcalf and Eddy. Wastewater Treatment/Disposal/Reuse. 1991.
- Niagara Mohawk Power Corporation. Stewarts Bridge Project (FERC No. 2047) FERC License Application, Year?
- Niagara Mohawk Power Corporation. E.J. West Project (FERC No. 2318-002) Response to FERC Additional Information Request Item No. 13 on Whitewater Recreation, 1993.
- Niagara Mohawk Power Corporation. Stewarts Bridge Project, Assessment of Recreational Facilities and Use, July 1997.
- Stetson-Dale. Conklingville Dam Flood-Benefit Study, March 1986.
- Title 21 of Article 15 of the New York State Environmental Conservation Law - River Regulation by Storage Reservoirs
- USCOE. Policy and Planning - Guidance for Civil Works Planning Studies, ER 1105-2-100, December 28, 1990
- USEPA. Innovative and Alternative Technology Assessment Manual, 430/9-78-009, February 1980.
- USEPA. Handbook Remedial Action at Waste Disposal Sites, EPA/625/6-85/006.
- Upper Hudson/Sacandaga River Offer of Settlement Agreement. March 27, 2000.

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UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION  
Eric Boulevard ) Project Nos. 2318, 2047  
Hydropower, LP ) 2482 and 2554

## UPPER HUDSON/SACANDAGA RIVER OFFER OF SETTLEMENT

MARCH 27, 2000

3.0 OPERATION OF GREAT SACANDAGA LAKE

3.1 Introduction

The Parties have agreed to a plan for the operation of Great Sacandaga Lake (GSL) that is based on maintaining certain maximum and minimum lake elevations, and to following an annual guide curve for lake levels that is intended to meet a number of resource objectives in consideration of the storage capacity of the lake.

The operation of GSL except as provided in Section 3.9 below will begin upon issuance and acceptance of a license by the Regulating District. Table 3.0-1 provides a summary of the operational enhancements to be provided by the Regulating District for Great Sacandaga Lake.

3.2 Operating Objectives for Great Sacandaga Lake

The Regulating District will operate the Great Sacandaga Lake to achieve the following objectives while maintaining the goal of controlling floods on the Hudson River:

- Maintaining the lake at the targeted elevations during the late winter consistent with the use of storage for flow augmentation;
- Providing flows in the Hudson River to maintain water quality and fish habitat;
- Targeting higher than current lake elevations to enhance fall lake recreation;
- Minimizing energy losses to affected hydro projects by the aggressive use of storage while maintaining the other objectives;
- Enhancement of whitewater recreation on the Sacandaga River.
- Providing base flows in the Sacandaga River.

Table 3.0-1  
Summary of Settlement Offer Measures for Great Sacandaga Lake

Issue	Description	Time Frame for Implementation
Winter Drawdowns	748 feet	From License Issuance and Acceptance to 06/01/10
	749 feet	06/02/10 to 06/01/20
	750 feet	06/02/20 to License expiration
Operation to Target Flow Augmentation Needs on the Upper Hudson River Just Below the Confluence with the Sacandaga River	In accordance with Table B (p. 38)	From License Issuance and Acceptance to 06/01 / 13
	In accordance with Table C (p. 38)	From 06/02/13 to License Expiration
Targeted Maximum Flows in Hudson River Below the Confluence with the Sacandaga River for Aggressive Use of Storage	In accordance with Table D (p. 39)	From License Issuance and Acceptance to License Expiration

When flows are being released from Great Sacandaga Lake, the Regulating District will ensure that releases from Great Sacandaga Lake will allow Erie to provide a base flow and whitewater flows below the Stewart's Bridge Project, a minimum average daily flow below the confluence of the Hudson and Sacandaga Rivers, and a base flow below the Feeder Dam Project.

3.2.1 Level Curves

Four level curves have been developed to express the annual constraints on lake elevations in Great Sacandaga Lake. The four Level Curves are designated as follows:

- Level Curve 1 is considered the bottom of available storage; Great Sacandaga Lake may be drawn below this Level Curve only under circumstances detailed in this agreement; Level Curve 1 is defined as elevation 756 from May 1 through Labor Day, then linearly interpolated to 740 on October 15 and maintained at 740 feet through March 31 of the next year, and then linearly interpolated back to 756 on May 1;
- Level Curve 2 represents the top of buffer storage; buffer storage between Level Curves 1 and 2 is primarily reserved to augment flows on the Hudson and Sacandaga Rivers for water quality, and to provide whitewater flows;
- Level Curve 3 represents the annual Guide Curve the Regulating District will follow over the course of any given year, subject to balancing inflow to Great Sacandaga Lake with other operating constraints. Level Curve 3 represents the top of conservation storage. Storage between Level Curves 2 and 3 is used to augment flows on the Hudson and Sacandaga Rivers for water quality and power generation, as well as to provide white water flows.

- Level Curve 4 represents the top of the flood pool and is set at elevation 773 throughout the year; lake levels will approach this elevation only in accordance with the Regulating District's responsibility to utilize the storage capability of the lake to control flooding on the Hudson River.

The Settlement allows for a transition in Level Curve 3 from a targeted elevation for maximum winter drawdown of 748 at the time of license issuance, elevation 749 starting on June 2, 2010, and elevation 750 starting on June 2, 2020. Figures A through C show the Level Curves for each of the three time periods in the transition period.

Shown in Appendix E is a look-up table that shows the relationship between lake Level Curves and USGS datum for Great Sacandaga Lake elevations, including intermediate levels 1.2, 1.5, 2.5, etc., which pertain to operating guidelines herein.

3.3 Winter Drawdowns

During the winter, the maximum drawdown of Great Sacandaga Lake occurs typically in late March or April and the targeted elevations for maximum winter drawdown for Level Curve 3 are shown in Table A (p. 37). Under certain circumstances, the Regulating District will be allowed to operate Great Sacandaga Lake below the targeted elevation for maximum winter drawdown as described further below.

In all cases, drawdowns below the targeted elevation for maximum winter drawdown will be for the minimum duration necessary and the lake elevation will be restored above the target level as soon as possible after the circumstances requiring the drawdown have passed.

Under the following circumstances, prior notification to the NYSDEC will not be required for drawdowns below the targeted elevation for winter drawdown:

- Any emergency situations related to dam safety, human life and property, or rescue activities;
- The need for flow augmentation objectives as described in Subsection 3.4.

3.3.1 Consultation Requirements Prior to Drawdowns Below the Targeted Elevation for Maximum Winter Drawdowns

Under the following circumstances, consultation with NYSDEC will be required prior to drawdowns below the targeted elevation for winter drawdown:

- Maintenance, repair or reconstruction of the Conklingville Dam, for which NYSDEC approval will be required;
- Existence of a water equivalent of 8.6 inches at the first March snow survey may warrant the provision of more storage for flood control purposes. In the event that the water equivalent trigger is met, the Regulating District will consult, in advance of drawing the lake below the target elevation, with NYSDEC Regional Director for Region 5.

The Regulating District is required to implement the following notification and consultation steps prior to drawdowns below the targeted elevation for maximum winter drawdowns if circumstances described above warrant:

- The Regulating District must consult in advance with appropriate NYSDEC Region 5 staff, Fulton and Saratoga County staff and Erie's staff regarding the need for drawdowns below the targeted elevation for maximum winter drawdowns for flood protection purposes, describing the need for the drawdown, the approximate drawdown level needed, and the approximate duration of the drawdown. It will be the responsibility of the NYSDEC to notify the USFWS and APA of the request. To the extent possible, the decision on drawdown level will be determined by consensus of these parties. Documentation of consultation among the Regulating District, NYSDEC, Fulton and Saratoga Counties and Erie on the justification for the drawdown will be prepared and maintained on file by the Regulating District and NYSDEC, with a copy supplied to Erie and Fulton and Saratoga Counties within 30 days of the occurrence. In the absence of consensus, the Regulating District and NYSDEC will make the final determination on the level of drawdown.

- Advanced notification and consultation with appropriate NYSDEC, Fulton and Saratoga Counties and Erie staff will not be deemed necessary if it would impair the Regulating District's ability to address immediate dangers relating to dam safety, human life and property, or rescue activities. However, NYSDEC, Fulton and Saratoga Counties and Erie will be notified within 24 hours of the commencement of the drawdown and the related emergency. This notification will be followed within the subsequent 24 hours by submission to NYSDEC of a description of the need for the drawdown, any related emergency actions and the reasons why the situation is an emergency. Documentation of the notification will be maintained on file by the Regulating District and NYSDEC, with a copy, supplied to Erie and Fulton and Saratoga Counties within 30 days of the occurrence.

3.4 Operation for Flow Augmentation

The Regulating District will allocate sufficient daily water volume releases from Great Sacandaga Lake to meet minimum average daily flow requirements on the Hudson River just below the confluence with the Sacandaga River and to help meet the 1,500 cfs instantaneous Hudson River base flow requirement below Feeder Dam. The Regulating District will use the minimum average daily flows shown in Tables B (p. 38) or C (p. 38), as adjusted in Section 3.4.2, to help meet these objectives.

3.4.1 Drawdown Exceptions to Level Curve 1

The Regulating District may draw Great Sacandaga Lake below Level Curve 1 only in accordance with the exceptions described herein. In all cases, drawdowns below Level Curve 1 will be for the minimum duration necessary and the lake elevation will be restored above Level Curve 1 as soon as possible after the circumstances requiring drawdown have passed. As soon as Great Sacandaga Lake rises above Level 1, Hudson River flows shall be restored per Table B or C and subsection 3.4.2, below, as applicable. Reasons for drawing below Level Curve 1 may include, but not necessarily be limited to the following:

- Maintenance, repair or reconstruction of the Conklingville Dam;
- Any emergency situations related to dam safety, human life and property, or rescue activities;
- The need for flow augmentation because of critical low flows in the Hudson River which adversely affect water quality conditions' (see subsection 3.4.3 below for consultation procedures for drawdowns below Level Curve 1 for flow augmentation).

3.4.2 Drawdown Exceptions during the Champlain Canal Navigation Season

During the Champlain Canal Navigation Season (approximately May 1 through mid-November), if the elevation of Great Sacandaga Lake drops below level 1.2 (interpolated between Level Curves 1 and 2) and an interim minimum average daily flow has not been invoked per subsection 3.4.3 (see below), the minimum average daily flow on the Hudson River just below the confluence with the Sacandaga River (see row 1 of Table B or C, p. 38) shall be increased by the flow being diverted from the Hudson River to the Feeder Canal. The resulting minimum average daily flow will remain in effect until either Great Sacandaga Lake rises above level 1.2 or an interim minimum average daily flow is established per subsection 3.4.3.

3.4.3 Consultation on Drawdown Exceptions for Flow Augmentation

If the elevation of the Great Sacandaga Lake reaches Level 1.2 (interpolated between Level Curves 1 and 2) at any time and the lake elevation is continuing to drop, the Regulating District will, within 48 hours of the lake reaching Level 1.2, notify the NYSDEC. At any time between Memorial Day and Labor Day, the Regulating District shall also provide general, public notification in the event an emergency occurs that will require Great Sacandaga Lake to be drawn below level 1.2. Notification shall be provided within 48 hours following commencement of the emergency drawdown. Within seven working days of the lake reaching level 1.2, the NYSDEC and Regulating District will consult with Erie, the USFWS, the APA and Fulton and Saratoga Counties to establish an interim minimum average daily flow that will be invoked should the lake actually reach Level 1.0. To the extent possible, the decision on an interim minimum average daily flow shall be determined by consensus among the participants. In the absence of consensus, the NYSDEC will, within the seven-day period described above, make the final determination on the minimum average daily flow that will be invoked should the lake actually reach Level 1.0. As soon as the Lake rises above Level 1.0, the minimum average daily flow shall be restored as per Table B or C (p. 38), as applicable.

The NYSDEC, The Regulating District, and the consulted Parties shall consider the following factors in establishing the interim minimum average daily flow:

- The goal of minimizing the extent and duration of lake drawdown below Level Curve 1;
- Water quality conditions on the Hudson River at the time;
- Natural inflow to Great Sacandaga Lake
- Natural flow in the Hudson River above Hadley;
- Minimum base flow in the Sacandaga River;
- The quantity of flow being diverted from the Hudson River to the Feeder Canal;
- Other meteorological circumstances (e.g., precipitation and temperature).

In the event an interim minimum average daily flow is implemented that may take Great Sacandaga Lake below Level Curve 1, periodic consultation shall occur thereafter for NYSDEC to determine whether changes in conditions warrant raising or lowering the interim minimum average daily flow. Consultation shall continue until Great Sacandaga Lake elevation is restored to above level 1.2.

3.5 Operation for Fall Recreation

To facilitate lake recreation through Columbus Day, the Regulating District will regulate Great Sacandaga Lake in accordance with Level Curve 3. A minimum lake elevation of 760 feet on October 15 as shown on Level Curve 3 is considered a target elevation, and the Regulating District may operate Great Sacandaga Lake below elevation 760 feet under the following conditions:

- to maintain flow augmentation needs on the Hudson River as a daily average of 1,760 cfs below Feeder Dam and an instantaneous flow of no less than 500 cfs below Feeder Dam using the target flows shown on Tables B and C and the provisions of Subsection 3.4.2;
- to maintain Sacandaga River Base Flows;
- to maintain the whitewater demand schedule.
- to address other conditions as requested by NYSDEC.

3.6 Operation for Aggressive Use of Storage

For the purpose of minimizing energy losses to affected downstream hydroelectric projects, the Regulating District will make every reasonable attempt to limit water releases from the Great Sacandaga Lake to not exceed the target maximum flows in the Hudson River below the confluence with the Sacandaga River, based on the relationship shown in Table D.

3.6.1 Exceptions to Operation for Aggressive Use of Storage

In cases where exceedance of the target maximum flows on the Hudson River is needed, the Regulating District will restore the Hudson River to below the maximum flows as soon as possible after circumstances requiring the exceedance have passed. Reasons for exceeding the maximum flows shown in Table D include, but are not limited to, the following:

- Maintenance, repair or reconstruction of the Conklingville Dam;
- Observation of lake elevations rising above elevation 771 and anticipation of unusual meteorological conditions that may result in flooding around Great Sacandaga Lake above Level Curve 4;
- Any emergency situations related to dam safety, human life and property, or rescue activities.

3.6.2 Consultation to Implement Exceptions to Operation for Aggressive Use of Storage

The following notification and consultation provisions for exceedance of target maximum flows in the Hudson River will be undertaken as circumstances warrant:

- The Regulating District will consult with appropriate NYSDEC Region 5 staff and Fulton and Saratoga Counties and downstream hydroelectric project owners and municipalities regarding the need to exceed the maximum flows shown on Table D. Consultation will include the need for the exceedance, estimation of the consequences to downstream properties and hydro facilities as a result of the exceedance, and an estimation of the approximate duration of the exceedance. Documentation of the consultation will be maintained on file by the Regulating District, with copies to NYSDEC, Fulton and Saratoga Counties, Erie and affected downstream entities within 30 days.

• Consultation with NYSDEC, Fulton and Saratoga Counties and downstream hydroelectric project owners and municipalities will not be deemed necessary where consultation would impair the Regulating District's ability to address immediate dangers relating to dam safety, human life and property, or rescue activities. However, NYSDEC, Fulton and Saratoga Counties and affected downstream entities will be notified as soon as possible of the emergency situation and its expected duration. In such emergency circumstances, the Regulating District will prepare a report discussing the rationale and circumstances for exceeding the target flows. The report will be maintained on file by the Regulating District and copies will be provided to NYSDEC, Fulton and

• Saratoga Counties, Erie and affected downstream hydroelectric project owners and municipalities within 30 days of the occurrence.

3.7 Operation for Whitewater Recreation

For the purpose of enhancing whitewater recreation, the Regulating District will operate the Great Sacandaga Lake to provide the daily volume of water, if available, needed to sustain the whitewater demand flow in the Sacandaga River below Stewarts Bridge dam as provided in Section 5.5.1.4 of this settlement document.

3.8 Operation for Base Flows in the Sacandaga River

The Regulating District shall provide sufficient flow volumes to facilitate the release of an instantaneous base flow, beginning in 2013, to the Sacandaga River below the Stewarts Bridge Project as described in Section 5.3 below. In the event neither of the two turbine/generator units at the E.J. West Project are operating, the Regulating District and Erie will cooperate to insure that base flows are maintained in the Sacandaga River without violating impoundment fluctuation restrictions at the Stewarts Bridge Project.

3.9 Interim Measures

Until the new license is issued and accepted, the Regulating District shall maintain status quo operation of the Great Sacandaga Lake with the exception of the following interim measures.

The Regulating District shall provide the following interim measures for a period not to exceed two years from the date this Settlement Offer is executed and filed with the FERC, and thereafter once a license has been issued and accepted.

3.9.1 Interim Operation of Great Sacandaga Lake for Fall Recreation

For interim enhancement to fall recreation, the Regulating District will strive to keep the Great Sacandaga Lake level at or above elevation 760 through October 15.

3.9.2 Interim Operation of Great Sacandaga Lake for Aggressive Use of Storage

To the extent practicable, the Regulating District will limit water releases from the Great Sacandaga Lake, to approach but not exceed the targeted maximum flows on the Hudson River below the confluence with the Sacandaga River based on the relationship shown in Table D.

Implementation Schedule	Targeted Elevation for Maximum Drawdown
From License Issuance and Acceptance to June 1, 2010	748 feet
From June 2, 2010 through June 1, 2020	749 feet
From June 2, 2020 through License Expiration	750 feet

Table B: Operation of Great Sacandaga Lake to Target Flow Augmentation Needs on the Hudson River Just Below the Confluence with the Sacandaga River (from License Issuance to June 1, 2013)

Great Sacandaga Level	Minimum average daily flow target on the Hudson River just below the confluence with the Sacandaga River (cfs)
1.00-1.19 <sup>1</sup>	1,500 <sup>4</sup>
1.20-1.50 <sup>2,3</sup>	1,760
2.50-3.00 <sup>3</sup>	2,250
3.50 <sup>3</sup>	3,000
4.00 <sup>3</sup>	4,000

Table C: Operation of Great Sacandaga Lake to Target Flow Augmentation Needs on the Hudson River Just Below the Confluence with the Sacandaga River (from June 2, 2013 to License Expiration) Great Sacandaga Level Minimum average daily flow on the Hudson River just below the confluence with the Sacandaga River (cfs)

Great Sacandaga Level	Minimum average daily flow target on the Hudson River just below the confluence with the Sacandaga River (cfs)
1.00-1.19 <sup>1</sup>	1,500 <sup>4</sup>
1.20-1.50 <sup>3</sup>	1,760
2.50-3.00 <sup>3</sup>	2,000
3.50 <sup>3</sup>	3,000
4.00 <sup>3</sup>	4,000

<sup>1</sup> NYSDEC and the Regulating District will confer in accordance with Section 3.4.2 to determine the appropriate flow that will be provided below Level Curve 1.00.

<sup>2</sup> Levels above 1.50, the corresponding minimum average daily flow targets on the Hudson River exceed the 1,760 cfs required for water quality. The flow targets shown are designed to increase hydro operating efficiency at Hudson River hydro projects (i.e., generation).

<sup>3</sup> Flows between specified ranges are to be interpolated.

<sup>4</sup> See exception at subsection 3.4.2.

Table D: Targeted Maximum Hudson River flow Below the Confluence with the Sacandaga River	
Great Sacandaga Lake Elevation (feet)	Targeted Maximum Flow on the Hudson River below the confluence with the Sacandaga River (cfs)
735.00-755.00	6,000
755.01-769.00	8,000
769.99	10,000
770.00	20,000
773.00	26,000
776.0 and above	32,000

Note: For those GSL elevations not shown above, the targeted maximum allowable flow should be linearly interpolated.

Month	DIFFERENCE IN TOTAL ENERGY GENERATION										All Projects Gross/Net (MWh)	
	Genesee	Ontario	Seneca	St. Lawrence	Upper Mohawk	Lower Mohawk	Upper Hudson	Lower Hudson	Upper Delaware	Lower Delaware		
January	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
February	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
March	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
April	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
May	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
June	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
July	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
August	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
September	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
October	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
November	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
December	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
<b>Annual</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>141,080</b>

TABLE B-2 ENERGY GENERATION UNDER SETTLEMENT CONDITIONS

Month	TOTAL ENERGY GENERATION UNDER SETTLEMENT CONDITIONS										All Projects Gross/Net (MWh)	
	Genesee	Ontario	Seneca	St. Lawrence	Upper Mohawk	Lower Mohawk	Upper Hudson	Lower Hudson	Upper Delaware	Lower Delaware		
January	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
February	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
March	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
April	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
May	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
June	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
July	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
August	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
September	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
October	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
November	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
December	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	14,108
<b>Annual</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>14,108</b>	<b>141,080</b>



STATE OF NEW YORK  
DEPARTMENT OF PUBLIC SERVICE  
INTEROFFICE MEMORANDUM

June 5, 2001

TO: Directors  
FROM: Office of Regulatory Economics  
SUBJECT: Market Prices of Electricity: May 2001

Attached to this monthly memo are tables<sup>5</sup> containing recent market prices for electricity. As described below, there are two tables, Actual Price of Electricity and Price of Electric Futures, and a chart, Weekly Peak Period Energy Prices, followed by two tables, Monthly Electric Forward Prices and Annual Electric Forward Electric Prices. Note that these prices are energy prices, i.e., they do not reflect any cost of capacity or ancillary services.

Actual Price of Electricity

We report energy prices for four NYISO market zones: Western NY, Capital Region, Hudson Valley, and New York City. For comparison purposes, we also report energy prices from two of New York State's neighboring power markets, PJM and New England.

**PJM Spot:** The average of hourly energy prices reported by the PJM ISO for the "NY West" interconnection.

**NYISO NY West:** The average of hourly location based marginal price (LBMP) of energy in the NYISO Day-Ahead market for the NY West zone.

**NYISO Capital:** The average of hourly LBMP of energy in the NYISO Day-Ahead market for the NY Capital zone.

**NYISO Hudson:** The average of hourly LBMP of energy in the NYISO Day-Ahead market for the Hudson Valley zone.

**NYISO NYC:** The average of hourly LBMP of energy in the NYISO Day-Ahead market for New York City zone.

**NEPOOL Market:** The average of hourly energy prices reported by the New England ISO.

<sup>5</sup>All of the prices in the above memo and the attached tables are simple averages for the respective periods. That is, they represent the price per MWh a 100% load factor wholesale buyer would pay (ignoring applicable losses, ancillary services and other uplifts). A typical customer that demands more on peak than off peak would pay a higher average price. More detailed data are available for anyone who wishes to price out a different load shape.

Appendix C-Electricity Prices

Prices of Electric Futures

The New York Mercantile Exchange (NYMEX) facilitates the trading of a few standardized futures contracts for the 5x16 peak period (Monday through Friday, 16 hours per day) for future months and reports the results of these trades. Because off-peak prices do not vary much, we also calculate an "around the clock" (ATC) average energy price for PJM by including the previous 12 months of off-peak actual prices (as a rough forecast of future off-peak prices) in this ATC average. The tables reflect the settlement price on the last trading day of the latest month.

**PJM:** The PJM service area includes all or part of Pennsylvania, New Jersey, Maryland, Delaware, Virginia and the District of Columbia.

**Cinergy:** The Cinergy system is in central and southern Indiana, southwestern Ohio, and northern Kentucky.

**Entergy:** The Entergy transmission system is in Louisiana, Arkansas, Mississippi, and Texas.

Weekly Peak Period Energy Prices

The graph shows the weekly average of the peak period prices for the last eight weeks for the five markets described in the above section, except the Hudson Valley zone.

Monthly and Annual Electric Forward Prices

Natsource, Inc. facilitates the trading of standardized forward contracts for the 5x16 peak period (Monday through Friday, 16 hours per day) and for the 5x8, 2x24 off-peak period (Monday through Friday, 8 hours per day and Saturday through Sunday, 24 hours per day). The tables reflect the average of daily bid and ask prices for the month.

Attachment

Actual Price of Electricity - Energy Market

Office of Regulatory Economics

(unit in \$/mWh)

Month	On Peak					Around the Clock								
	PJM NY	WEST	CAPITAL	HUDSON	NYC	PJM NY	WEST	CAPITAL	HUDSON	NYC				
2000.05	41.87	38.39	49.89	50.54	52.34	123.09	352	28.84	28.12	40.36	38.97	41.83	72.78	744
2000.06	29.95	47.41	96.37	92.85	95.86	47.74	352	24.51	35.69	65.86	64.03	67.11	39.45	720
2000.07	34.02	36.04	61.69	62.12	64.44	44.83	336	23.96	27.21	44.94	44.81	47.18	37.14	744
2000.08	41.20	46.07	70.87	75.61	78.44	50.02	368	29.28	34.64	51.66	54.57	58.79	42.23	744
2000.09	34.55	46.45	95.72	95.33	81.12	48.80	336	27.20	38.71	48.01	46.11	50.17	43.15	720
2000.10	43.64	51.56	60.80	60.73	63.90	55.94	352	31.61	44.57	52.88	51.86	54.83	50.33	744
2000.11	44.69	46.42	58.47	58.00	60.97	52.89	336	32.93	42.33	52.46	52.35	53.68	49.30	720
2000.12	58.79	60.98	68.78	72.05	78.43	70.13	320	46.71	50.32	58.12	58.24	64.44	62.59	744
2001.01	47.03	52.02	66.57	66.53	69.64	69.64	352	37.40	44.97	55.93	55.81	57.72	62.89	744
2001.02	38.63	39.40	49.82	49.48	55.03	47.74	320	31.55	34.24	43.26	42.69	46.09	43.01	672
2001.03	43.85	44.91	56.61	58.02	61.07	56.24	352	35.63	38.20	47.64	47.65	52.40	50.15	744
2001.04	46.41	46.73	53.47	55.00	67.82	44.67	336	34.82	37.35	43.13	44.07	51.71	38.29	720
2001.05	41.25	44.30	53.43	58.43	64.56	51.70	352	31.28	36.27	44.85	47.28	51.27	41.28	744
Twelve-M	42.00	46.86	62.87	63.86	68.52	53.32	343	32.24	38.71	50.54	50.98	54.61	46.47	720

**UPPER HUDSON RIVER  
PRELIMINARY FLOOD IMPACT ECONOMIC ANALYSIS**

(AUGUST 2002)

**Appendix D-Upper Hudson River Preliminary Flood Impact Economic Analysis  
August 2002**

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**PURPOSE**

The purpose of this study was to make a preliminary determination of the economic impact of the Hudson River's flood waters on the surrounding areas within Saratoga, Warren, Washington, Rensselaer, and Albany counties. The flood events studied included the 100 year event (1% annual chance flood) with the influence of the Great Sacandaga Lake and the 100 year event without the influence of the Great Sacandaga Lake.

**STUDY AREA**

The study area included a stretch of the Hudson River beginning at Lake Luzerne, in the towns of Hadley and Lake Luzerne, NY; and ending just south of the Dunn Memorial Bridge in the cities of Albany and Rensselaer, NY (see Figure 1.) The total length of the Hudson River studied was 131,162 meters, or approximate 81.5 miles. Fifteen sites along this stretch of the river provided flow data in cubic feet per second, and elevations in feet.

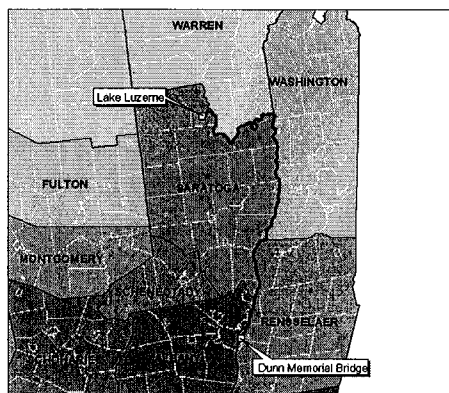


Figure 1. Project Scope

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**SOFTWARE**

The majority of the analysis performed in this study was done using geographic information systems (GIS) software. Specifically, ESRI's ArcView v.3.2 software package was used, with the addition of ESRI's Spatial Analyst v.1.1 extension. Digital data for this study can be found in one of the following formats: ArcView shapefile; ESRI's Gird; or MrSID image.

**DATA**

A variety of pre-existing and newly developed data sets were used in this study. Below is a list of those data sets, with a description of their development and usage. The projection used in this study was Universal Transverse Mercator (UTM) zone 18. The horizontal datum was NAD83, GRS80 spheroid.

Color Balanced Ortho-imagery

The ortho-imagery depicts ground conditions as shown on aerial imagery taken within the period 1994 through 1999. The original digital ortho-imagery was produced under the federal Digital Ortho-Photography Quarter Quadrangle Program and New York State Department of Environmental Conservation. Department of State enhanced the ortho-imagery as part of New York State's Y2K preparedness planning effort. The imagery was used as the base map.

For more information: [http://www.nysgis.state.ny.us/gis3/data/dos\\_dogg\\_orthos.html](http://www.nysgis.state.ny.us/gis3/data/dos_dogg_orthos.html)

Hudson River Hydrography

The source of this data was the 1:24000 statewide hydrography. The hydrography is a single line representing the channel. The data was manually modified to align with the ortho-imagery. After cleaning the channel's topology, left and right banks were calculated, along with a perimeter. These data sets were used in both the GIS and Engineering Methodologies for determining the flood extents. These methodologies are described later in this report.

10 meter Digital Elevation Models (DEMs)

A DEM is a collection of data that consist of points arrayed in a grid over a particular geographic extent. Each point in a DEM will always contain an X, Y, and Z value. The 10 meter DEMs are at a scale of 1:24000 and have a horizontal spacing of 10 meters, and a vertical accuracy (for the study area) of approximately +/- 2 meters( +/- 6 feet).

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The 10 meter digital elevation models were joined together to form one elevation model for the entire study area. A hillshade model was calculated from the elevation model. The elevation data was used in determining the flood extents.

**Office of Real Property Parcel Centroids**

This data set contains point features and attributes for real property tax parcels by county. These points represent the visual center of the parcel on a tax map. The points and associated attributes were extracted from local government assessment rolls. The data is developed by local governments for assessing real property tax parcels. The points represent a spatial address that can be used for mapping and analysis. Although the data is developed for the purpose of real property tax administration, the ability to map parcel centroids along with the associated assessment information creates the opportunity to use the data for many other purposes.

For more information: <http://www.nygis.state.ny.us/gis3/data/orps.rpsdata00.html>

The data used for the study was for the year 2000. There were 6,655 parcel centroids in the general study area. From these centroids, there were 119 unique property classifications. It was necessary to reclassify the data in order to simplify it for the economic analysis. The final classifications used in the study included:

- Single story, residential
- Split level, residential
- Two story, residential
- Mobile, residential
- Commercial
- Converted residence
- Warehouse
- Agriculture

Additional fields were added to the database to facilitate the re-classification.

The ORPS centroids acted as the main input for the economic analysis. The data set contains a field with a dollar value, determined by the municipality, for the land and for the land and structure. From these two fields, a third was added, representing strictly the structure value. Figure 2 is a graphical representation of the spatial distribution of the structure value of all those properties included in the flood extents.

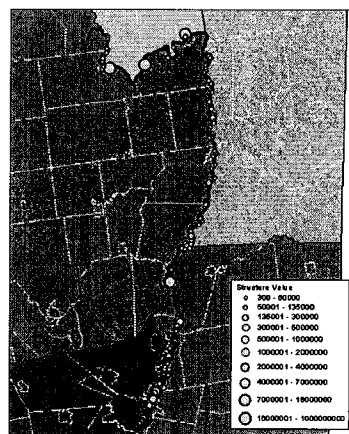


Figure 2. Structure Values in Flood Extent

It is important to note that the centroids were not spatially corrected to represent the location of the structure. There may be cases where a property was included in the study, but the structure that resides on that property actually fell outside the flood extent. Alternatively, there may be cases where a property was excluded from the study, but the structure that resides on that property actually fell inside the flood extent.

**Dams**

The fifteen dams used in the study were extracted from NY State Department of Environmental Conservation's Water Division, Dam Safety section's statewide dam database. The dams were then spatially re-oriented to match the ortho-imagery and the DEMs.

**FLOOD EXTENT DETERMINATION**

Two flood extents were calculated for the study area. The first was the 100 year flood event (1% annual chance flood) with the influence of the Great Sacandaga Lake and the 100 year event without the influence of the Great Sacandaga Lake.

Table 1 shows the discharge and elevation data used for the 100 year flood event with and without Great Sacandaga Lake provided by the District for the flood extent determination. Flood discharges and elevations for the 100 year event for with and without Great Sacandaga Lake were predicted from the HECSP operations model developed by the District.

**Table 1**  
Discharge and Elevation Data at each Dam

DAM	Drainage Area (sq.mi.)	With Great Sacandaga Lake (Settlement 750)		Without Great Sacandaga Lake (Run-of-River)	
		Z50_FLOW Flow (cfs)	Z50_ELEV Elev.(ft.)	ROR_FLOW Flow (cfs)	ROR_ELEV Elev.(ft.)
Hadley (Lake Luzerne)	2719	44661		75889	
Curtis (Corinth)	2760	45568	553.37	76749	555.37
Palmer Falls (Corinth)	2760	45568	531.94	76749	536.38
Spiers Falls	2779	45585	443.38	76749	446.76
Sherman	2810	46019	359.36	77352	362.31
Feeder Dam	2811	45983	291.59	77312	295.1
South Glens Falls/					
Finch Pruyn	2807	45967	274.38	77296	277.02
Hudson Falls	2821	46180	213.34	77513	216.52
Fort Miller	2980	48609	121.74	80029	124.72
Stillwater (Stillwater)	3773	60046	89.46	91963	92.02
Upper Mechanicville	4500	71976	81.68	103283	84.61
Lower Mechanicville	4572	73233	53.86	104381	55.90
Waterford	4611	73922	35.35	104980	37.62
Green Island (Troy)	8090	152901	27.94	192829	30.33
Albany Estuary (estimate)	0	0	20.1	0	22.2

Both flood extents were calculated using the following GIS Methodology. This methodology consisted of using the change in elevation values to fill the DEM.

1. Map panels were created for each one of the dam sites. Each map panel would contain the dam, and extend upstream to just beyond the next dam. (Figure 3.)

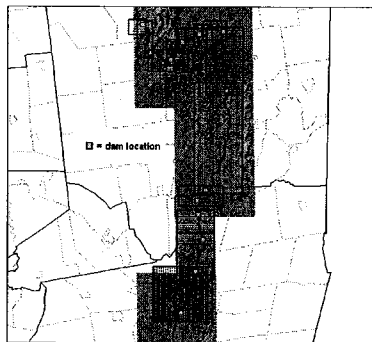


Figure 3. Grid Paneling Scheme

2. Using the panels, individual elevation grids were extracted from the master merged grid.
3. For each dam, the normal surface water elevation was calculated and populated into the [ELEVFT] field. This value was then subtracted from the surface water elevations in the [Z50\_FLOW] and [ROR\_FLOW] field. The results were converted to meters, and stored in the [Z50\_DIF\_M] and [ROR\_DIF\_M] fields.
4. For each elevation grid extract made in step 3, two grid-filling operations were performed. One for each value in ([Z50\_DIF\_M] + [ADDMETER]) and ([ROR\_DIF\_M] + [ADDMETER]). The [ADDMETER] field represents the +/- 2 meter vertical accuracy of the 10 meter DEM. An optimal value was chosen from this range to reflect the real world elevation. The programming code used to fill the grid can be found in Appendix II of this study.
5. The grid filling output for each panel of a particular flood event was merged together. The end product was two polygon flood extents, one for With Great Sacandaga Lake and one for Without Great Sacandaga Lake.
6. To clean the flood extents they were buffered out by 300 feet and then back in by 300 feet. For a more involved discussion on the buffering technique, see Appendix III.

**FLOOD EXTENT DETERMINATION  
METHODOLOGY QUALITY ASSURANCE**

Approximately 40 miles of river was studied using a standard engineering backwater methodology. The purpose of this analysis was to use the output flood extent data as a quality assurance for the above described GIS Methodology.

The flood extents were developed using the Army Corps of Engineer's HEC - RAS (River Analysis System) v.2.2 software package. The modeling parameter and geometry were derived using GIS techniques and data sets. Cross section elevations were extracted from the 10 meter DEMs. The spacing between each cross section was set to 600 feet. Roughness factors (Manning's 'n') used in the model were obtained using semi-automated methods supported by GIS techniques. The 30 meter multi-resolution land cover (MRLC) data produced by EPA was used to estimate the roughness factors for the over-bank areas of the floodplain. The discharge values for each dam along the river are shown in Table 1. The effects of hydraulic obstructions, such as bridges and culverts, along the stream were not taken into consideration due to a lack of structure data.

The output of the engineering backwater methodology was compared to the output of the GIS methodology for the With Great Sacandaga Lake. For each extent, any area that exceeded that of the other extent was extracted. These two extractions were merged into one polygon. The extents themselves were then merged into a single polygon. The merged flood extent's total square miles was equal to 1.86709. The merged exceeding data's total square miles was equal to 0.24716. 86.77% of the flood extent area calculated using both methodologies was shared, while 13.23% was not. See Figure 4.

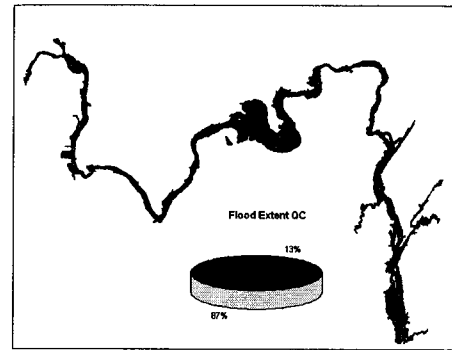


Figure 4. QC Output

**ECONOMIC ANALYSIS**

The economic analysis was performed in two parts. The first part consisted of applying a structure damage percentage to the structure value of all properties that fell within the flood extents. The second part consisted of applying a content damage percentage to the structure value of *only* residential properties that fell within the flood extents.

For the case With Great Sacandaga Lake, all properties that fell within the flood extent were assumed to have an average flood depth of 2 feet. For the case Without Great Sacandaga Lake, all properties that fell within the With Great Sacandaga Lake flood extent were assumed to have an average flood depth of 4 feet. The remaining properties that fell outside the With Great Sacandaga Lake extent but within the Without Great Sacandaga extent were assumed to have a flood depth value of 2 feet.

The flood depth percentages used came from a study done by the Army Corps of Engineers, Institute for Water Resources, titled *Depth-Damage Functions for Corps of Engineers Flood Damage Reduction Studies* (2001). The depth damage percentages in that study were statistically validated for residential structures without basements. The following depth damage tables are from the *Depth-Damage Functions for Corps of Engineers Flood Damage Reduction Studies* (2001) report.

**Table 2  
Damage for One Story, No Basement**

Structure Damage:

Depth	Damage	Comments
-2	0%	No structure damage.
-1	2.5%	Some damage to garage, occasional foundation damage, damage to porches and decks.
0	13.4%	Damage to floors, carpets, buckled tile, and floor molding.
1	23.3%	The first four feet of drywall need replacement and the insulation and lower cabinets are damaged. Doors need replacement.
2	32.1%	Additional cabinet damage, plumbing fixtures are damaged.
3	40.1%	Reaches the top of the cabinet level.
4	47.1%	Reaches second layer of drywall.

Content Damage:

Depth	Damage	Comments
-2	0.0%	
-1	2.4%	Some damage to items in garage, or on the porch.
0	8.1%	Rugs ruined, furniture damage begins.
1	13.3%	Appliances are damaged.
2	17.9%	Much of the furniture is damaged.
3	22.0%	Clothes in the closet are damaged.
4	25.7%	Damage to items on countertops.

**Table 3  
Damage for Two Story, No Basement**

Structure Damage:

Depth	Damage	Comments
-2	0%	
-1	3.0%	
0	9.3%	
1	15.2%	
2	20.9%	
3	26.3%	
4	31.4%	

Content Damage:

Depth	Damage	Comments
-2	0.0%	
-1	1.0%	
0	5.0%	
1	8.7%	
2	12.2%	
3	15.5%	
4	18.5%	

**Table 4  
Damage for Split Level, No Basement**

**Structure Damage:**

Depth	Damage	Comments
-2	0%	
-1	6.4%	
0	7.2%	
1	9.4%	
2	12.9%	
3	17.4%	
4	22.8%	

**Content Damage:**

Depth	Damage	Comments
-2	0.0%	
-1	2.2%	
0	2.9%	
1	4.7%	
2	7.5%	
3	11.1%	
4	15.3%	

**Table 6  
Contents Damage**

Property Class	Depth (Content)	Damage Source	Table	2 Foot Damage %	4 Foot Damage %
Single story, residential	One Story, No Basement			17.9	25.7
Split level, residential	Split Level, No Basement			7.5	15.3
Two story, residential	Two Story, No Basement			12.2	18.5
Mobile, residential	One Story, No Basement			17.9	25.7
Commercial	One Story, No Basement (minus 1 ft)*			13.3	22
Converted residence	One Story, No Basement			17.9	25.7
Warehouse	One Story, No Basement (minus 2 ft)*			8.1	17.9
Agriculture	One Story, No Basement (minus 2 ft)*			8.1	17.9

**RESULTS**

Table 7 shows the number of each property type that are flooded by the 100 year event with and without Great Sacandaga Lake.

**Table 7  
Property Type Count Flooded by the 100 Year Event  
With and Without Great Sacandaga Lake**

	With Great Sacandaga Lake	Without Great Sacandaga Lake
PROPERTY TYPE	COUNT	COUNT
Two story, residential	499	499
Agriculture	0	1
Commercial	234	332
Converted residence	4	9
Mobile, residential	51	54
Single story, residential	35	79
Split level, residential	4	6
Warehouse	52	504

(See Chart 1.1 and Chart 1.2 in Appendix IV)

The average depths used in the study take into account the fact that depth damage percentages provided by the Corps account for structures without basements. This lowers the damage estimate, since a significant number of structures within the flood extent probably have basements, particularly those that are residential. The lowered estimate is balanced by the fact that first floor elevations were not considered.

Using the classifications listed in the ORPS data discussion, the most reasonable associations between classification type and damage percentage were made.

This study's property classifications and associated flood damage percentages can be seen in the Table 5 for structure damage, and Table 6 for content damage.

**Table 5  
Structure Damage**

Property Class	Depth (Structure)	Damage Source	Table	2 Foot Damage %	4 Foot Damage %
Single story, residential	One Story, No Basement			32.10	47.10
Split level, residential	Split Level, No Basement			12.90	22.80
Two story, residential	Two Story, No Basement			20.90	31.40
Mobile, residential	One Story, No Basement			32.10	47.10
Commercial	One Story, No Basement (minus 1 ft)*			23.30	40.10
Converted residence	One Story, No Basement			32.10	47.10
Warehouse	One Story, No Basement (minus 2 ft)*			13.40	32.10
Agriculture	One Story, No Basement (minus 2 ft)*			13.40	32.10

\* the "minus n ft" value was an adjustment made based on the property class. For example, the One Story, No Basement depth damage source table was used for the "Commercial" property class. However, it was decided that the structural damage would not be as high as that found in an actual residential property. As such, the 2 Foot Damage Percentage used is actually the equivalent to the 1 Foot Damage Percentage found in the original One Story, No Basement depth damage source table.

**Structure Damage Analysis**

The structure damage values (in dollars) to the properties listed in Table 7 were calculated for the 100 year event for With and Without Great Sacandaga Lake. They are shown in Table 8.

**Table 8  
Structure Property Damage for With and Without Great Sacandaga Lake  
For the 100 Year Event**

	With Great Sacandaga Lake	Without Great Sacandaga Lake
<b>Total</b>	\$25,480,531.76	\$58,526,612.51
<b>Number of properties</b>	874	1554
<b>Mean value</b>	\$29,153.93	\$37,661.91
<b>Maximum value</b>	\$3,041,861.60	\$5,235,135.20
<b>Minimum value</b>	\$0.00	\$0.00

**Content Damage Analysis**

The content damage listed in Table 9 is that to residential properties for the 100 year event for With and Without Great Sacandaga Lake. Content damage analysis was only calculated for residential structures. Commercial structures were not included. The contents damage due to flooding of commercial structures could be significant.

**Table 9  
Structure Property Damage for With and Without Great Sacandaga Lake  
For the 100 Year Event**

	With Great Sacandaga Lake	Without Great Sacandaga Lake
<b>Total</b>	\$2,456,087.51	\$3,707,816.05
<b>Number of properties</b>	589	1142
<b>Mean value</b>	\$4169.93	\$4,611.42
<b>Maximum value</b>	\$59658.00	\$90,465.00
<b>Minimum value</b>	\$53.70	\$77.10

**Total Damage Analysis**

The combined damages (structure and content) for With Great Sacandaga Lake is:

27,936,619.27 Dollars US.

The combined damages (structure and content\*) for Without Great Sacandaga Lake is:

62,234,428.56 Dollars US.

The difference between the two studies is the flood protection benefit for the 100 year event of Great Sacandaga Lake and is:

34,297,809.29 Dollars US.

The computed damages resulting from the 100 year storm for run-of-river and flow regulation scenarios in the August 2002 NYSDEC report differ from those reported in June 2003 for several reasons. An additional 13 miles of stream was added to the analysis. A review of the previous analysis indicated that several commercial properties were erroneously excluded. Contents damages for commercial properties were not included previously.

A breakdown by municipality of the flood damages reported as part of the revised June 2003 analysis for the 2, 10, 50, and 100 year events is shown on the following pages.

2 Year Flood-Flow Regulation		Number of Properties	Structure Damages	Contents Damages	Total Damages
City of Albany	41	\$2,295,441	\$1,485,829	\$3,685,270	
City of Cohoes	17	\$154,277	\$90,943	\$245,220	
City of Mechanicville	20	\$339,151	\$195,060	\$534,231	
City of Rensselaer	80	\$497,945	\$293,966	\$791,931	
City of Troy	52	\$313,991	\$184,553	\$498,543	
City of Waterford	1	\$13,899	\$8,113	\$22,012	
Town of Bethlehem	12	\$34,292,389	\$20,724,503	\$55,016,901	
Town of Coeymans	16	\$260,857	\$153,761	\$414,637	
Town of Colonie	14	\$167,359	\$99,619	\$266,978	
Town of East Greenbush	21	\$20,873	\$69,392	\$90,265	
Town of Easton	19	\$5,184	\$40,517	\$45,701	
Town of Fort Edward	3	\$8,769	\$5,118	\$13,887	
Town of Greenwich	6	\$100,557	\$58,509	\$159,066	
Town of Hadley	13	\$213,181	\$118,876	\$332,057	
Town of Moreau	42	\$1,050,952	\$634,468	\$1,685,420	
Town of New Baltimore	2	\$233,989	\$131,859	\$365,848	
Town of North Greenbush	7	\$26,787	\$167,359	\$194,146	
Town of Northumberland	1	\$10,250	\$9,559	\$20,809	
Town of Queensbury	35	\$395,237	\$224,349	\$619,585	
Town of Saratoga	21	\$272,246	\$153,966	\$426,213	
Town of Schaghticoke	47	\$309,090	\$177,446	\$486,536	
Town of Schoharie	42	\$204,865	\$120,282	\$325,147	
Town of Stillwater	22	\$404,390	\$231,792	\$636,172	
Town of Stuyvesant	3	\$0	\$0	\$0	
Town of Waterford	6	\$42,472	\$24,850	\$67,322	
Village of Hudson-on-Hudson	3	\$1,359,472	\$713,350	\$2,072,822	
Village of Corinth	5	\$2,919,879	\$1,764,546	\$4,684,425	
Village of Green Island	1	\$1,193	\$697	\$1,890	
Village of Hudson Falls	1	\$0	\$0	\$0	
Village of Minerva	2	\$31,623	\$19,115	\$50,738	
Village of Schuylerville	17	\$624,648	\$369,073	\$993,721	
Village of South Glens Falls	3	\$1,397,804	\$844,941	\$2,242,745	
Village of Stillwater	136	\$3,836,505	\$2,241,352	\$6,077,857	
<b>SUM</b>	<b>23</b>	<b>\$27,936,619.27</b>	<b>\$16,247,954.29</b>	<b>\$44,184,573.56</b>	

2 Year Flood-Run of River Operation		Number of Properties	Structure Damages	Contents Damages	Total Damages
City of Albany	83	\$9,283,200	\$3,761,134	\$13,044,334	
City of Cohoes	26	\$337,972	\$134,176	\$472,148	
City of Mechanicville	19	\$517,872	\$296,357	\$814,229	
City of Rensselaer	173	\$1,391,113	\$555,312	\$1,946,425	
City of Troy	156	\$1,169,892	\$658,113	\$1,828,005	
City of Waterford	14	\$20,892	\$8,113	\$29,005	
Town of Bethlehem	26	\$2,656,563	\$2,250,010	\$4,906,573	
Town of Coeymans	22	\$530,096	\$184,065	\$714,161	
Town of Colonie	1	\$39,742	\$10,028	\$49,770	
Town of Corinth	22	\$186,151	\$71,501	\$257,652	
Town of East Greenbush	19	\$1,716,000	\$465,232	\$2,181,232	
Town of Easton	19	\$5,021	\$6,911	\$11,932	
Town of Fort Edward	3	\$8,769	\$5,118	\$13,887	
Town of Greenbush	20	\$150,821	\$59,509	\$210,330	
Town of Hadley	20	\$409,056	\$173,626	\$582,682	
Town of Moreau	5	\$2,490,092	\$634,468	\$3,124,560	
Town of New Baltimore	44	\$366,643	\$141,338	\$507,981	
Town of North Greenbush	9	\$256,948	\$153,196	\$410,144	
Town of Northumberland	2	\$24,341	\$9,457	\$33,798	
Town of Queensbury	43	\$711,488	\$392,670	\$1,104,158	
Town of Saratoga	21	\$405,512	\$153,966	\$559,478	
Town of Schaghticoke	50	\$487,071	\$192,478	\$679,549	
Town of Schoharie	48	\$390,361	\$129,964	\$520,325	
Town of Stillwater	22	\$601,812	\$231,792	\$833,604	
Town of Stuyvesant	4	\$22,862	\$13,415	\$36,277	
Town of Waterford	10	\$267,777	\$153,196	\$420,973	
Village of Hudson-on-Hudson	37	\$3,411,273	\$926,975	\$4,338,248	
Village of Corinth	13	\$7,113,487	\$1,845,096	\$8,958,583	
Village of Green Island	3	\$30,840	\$18,134	\$48,974	
Village of Hudson Falls	1	\$0	\$0	\$0	
Village of Minerva	6	\$6,143,329	\$3,658,607	\$9,801,937	
Village of Schuylerville	17	\$1,307,770	\$669,073	\$1,976,843	
Village of South Glens Falls	4	\$3,386,170	\$1,844,361	\$5,230,531	
Village of Stillwater	136	\$3,836,505	\$2,241,352	\$6,077,857	
Village of Waterford	23	\$1,122,351	\$70,622	\$1,192,973	
<b>SUM</b>	<b>23</b>	<b>\$44,184,573.56</b>	<b>\$27,936,619.27</b>	<b>\$72,121,192.83</b>	

50 Year Flood-Flow Regulation		
City of Albany	14	\$1,382,468
City of Cohoes	36	\$2,201,119
City of Mechanicville	38	\$562,583
City of Rensselaer	283	\$4,558,189
City of Troy	254	\$1,234,102
City of Waterford	2	\$23,404
Town of Bethlehem	34	\$35,457,355
Town of Coeymans	3	\$26,837
Town of Corinth	22	\$124,688
Town of East Greenbush	21	\$778,325
Town of Easton	30	\$12,729
Town of Fort Edward	6	\$15,727
Town of Greenwich	13	\$171,705
Town of Hadley	70	\$309,442
Town of Hudson	3	\$246,883
Town of Mechanicville	43	\$358,170
Town of North Greenbush	3	\$1,650,893
Town of Northumberland	3	\$8,829
Town of Queensbury	43	\$515,827
Town of Saratoga	23	\$306,520
Town of Schaghticoke	83	\$439,779
Town of Schoharie	34	\$655,789
Town of Shrewsbury	5	\$37,388
Town of Waterford	23	\$2,059,841
Village of Castleton-on-Hudson	52	\$1,618,978
Village of Corinth	13	\$3,053,387
Village of Green Island	6	\$31,670
Village of Hudson Falls	1	\$0
Village of Menands	2	\$6,814,856
Village of Schoharie	21	\$673,110
Village of South Glens Falls	4	\$1,397,804
Village of Stillwater	198	\$5,012,102
Village of Waterford	80	\$288,180
<b>SUM</b>	<b>1813</b>	<b>\$46,984,177</b>

10 Year Flood-Flow Regulation		
City of Albany	53	\$8,246,468
City of Cohoes	56	\$2,201,119
City of Mechanicville	19	\$361,864
City of Rensselaer	173	\$841,680
City of Troy	166	\$786,562
City of Waterford	1	\$13,899
Town of Bethlehem	26	\$35,178,424
Town of Coeymans	22	\$329,098
Town of Corinth	22	\$124,688
Town of East Greenbush	21	\$778,325
Town of Easton	19	\$5,184
Town of Fort Edward	3	\$8,769
Town of Greenwich	8	\$100,557
Town of Hadley	20	\$308,439
Town of Hudson	5	\$1,050,952
Town of Mechanicville	61	\$330,687
Town of North Greenbush	9	\$369,981
Town of Northumberland	2	\$18,201
Town of Queensbury	1	\$0
Town of Saratoga	35	\$395,237
Town of Schaghticoke	21	\$193,869
Town of Schoharie	50	\$272,246
Town of Schoharie	48	\$192,478
Town of Shrewsbury	4	\$221,552
Town of Stillwater	24	\$36,380
Town of Waterford	23	\$836,327
Village of Castleton-on-Hudson	37	\$1,541,507
Village of Corinth	13	\$3,053,386
Village of Green Island	3	\$30,040
Village of Hudson Falls	1	\$0
Village of Menands	6	\$8,096,199
Village of Schoharie	21	\$673,110
Village of South Glens Falls	4	\$1,397,804
Village of Stillwater	136	\$3,838,505
Village of Waterford	23	\$122,351
<b>SUM</b>	<b>1813</b>	<b>\$46,984,177</b>

50 Year Flood-Run of River Operation		
City of Albany	124	\$20,898,539
City of Cohoes	36	\$270,860
City of Mechanicville	36	\$824,120
City of Rensselaer	263	\$5,385,294
City of Troy	254	\$1,946,793
City of Waterford	2	\$30,397
Town of Bethlehem	34	\$84,832,115
Town of Coeymans	28	\$432,316
Town of Corinth	3	\$72,784
Town of East Greenbush	22	\$180,968
Town of Easton	21	\$1,800,528
Town of Fort Edward	6	\$15,568
Town of Greenwich	10	\$24,350
Town of Hadley	70	\$348,968
Town of Hudson	13	\$650,980
Town of Mechanicville	23	\$2,613,544
Town of North Greenbush	4	\$358,692
Town of Northumberland	3	\$1,699,033
Town of Queensbury	43	\$8,329
Town of Saratoga	23	\$711,488
Town of Schaghticoke	83	\$561,105
Town of Schoharie	64	\$439,576
Town of Schoharie	54	\$674,763
Town of Shrewsbury	34	\$853,230
Town of Stillwater	5	\$28,752
Town of Waterford	23	\$3,175,912
Village of Castleton-on-Hudson	52	\$3,704,219
Village of Corinth	13	\$746,298
Village of Green Island	3	\$78,250
Village of Hudson Falls	1	\$0
Village of Menands	12	\$14,111,408
Village of Schoharie	21	\$1,356,134
Village of South Glens Falls	4	\$3,348,470
Village of Stillwater	198	\$5,965,064
Village of Waterford	80	\$350,328
<b>SUM</b>	<b>1813</b>	<b>\$52,753,877</b>

10 Year Flood-Run of River Operation		
City of Albany	124	\$11,807,688
City of Cohoes	36	\$239,860
City of Mechanicville	36	\$468,775
City of Rensselaer	263	\$3,181,891
City of Troy	254	\$1,106,885
City of Waterford	2	\$17,852
Town of Bethlehem	34	\$46,851,064
Town of Coeymans	28	\$325,316
Town of Corinth	3	\$40,867
Town of East Greenbush	22	\$108,957
Town of Easton	21	\$1,005,476
Town of Fort Edward	6	\$8,683
Town of Greenwich	10	\$13,698
Town of Hadley	70	\$127,997
Town of Hudson	13	\$448,968
Town of Mechanicville	23	\$1,463,865
Town of North Greenbush	4	\$189,484
Town of Northumberland	3	\$402,739
Town of Queensbury	43	\$1,026,655
Town of Saratoga	23	\$6,154
Town of Schaghticoke	83	\$400,066
Town of Schoharie	64	\$561,105
Town of Schoharie	54	\$674,763
Town of Shrewsbury	34	\$486,091
Town of Stillwater	5	\$77,686
Town of Waterford	23	\$1,829,296
Village of Castleton-on-Hudson	52	\$2,070,371
Village of Corinth	13	\$4,065,843
Village of Green Island	3	\$49,000
Village of Hudson Falls	1	\$0
Village of Menands	12	\$7,968,963
Village of Schoharie	21	\$1,865,633
Village of South Glens Falls	4	\$3,348,470
Village of Stillwater	198	\$5,965,064
Village of Waterford	80	\$302,421
<b>SUM</b>	<b>1813</b>	<b>\$52,753,877</b>

100 Year Flood-Flow Regulation		
City of Albany	209	\$1,768,419
City of Cohoes	38	\$374,410
City of Colonie	368	\$3,576,376
City of Rensselaer	369	\$6,896,703
City of Troy	262	\$1,261,978
City of Waterford	15	\$148,728
Town of Bethlehem	39	\$35,632,217
Town of Coeymans	28	\$433,135
Town of Colonie	4	\$726,038
Town of Corinth	22	\$124,488
Town of East Greenbush	23	\$193,329
Town of Easton	43	\$1,058,886
Town of Fort Edward	6	\$145,727
Town of Greenbush	13	\$171,705
Town of Hadley	20	\$309,442
Town of Halfmoon	13	\$1,179,405
Town of Mareau	43	\$246,083
Town of New Baltimore	17	\$476,359
Town of North Greenbush	3	\$116,836
Town of Northumberland	3	\$1,028,895
Town of Queensbury	43	\$515,827
Town of Saratoga	23	\$308,520
Town of Schaghticoke	64	\$450,652
Town of Schoharie	60	\$274,454
Town of Stillwater	34	\$655,789
Town of Stuyvesant	6	\$38,101
Town of Town of Hudson	16	\$2,722,223
Village of Castleton-on-Hudson	65	\$1,670,914
Village of Corinth	13	\$3,053,387
Village of Green Island	9	\$36,239
Village of Hudson Falls	1	\$0
Village of Minerva	27	\$8,346,177
Village of Schuylerville	21	\$673,070
Village of South Glens Falls	1	\$1,387,804
Village of Stillwater	168	\$2,442,745
Village of Waterford	60	\$248,180
		\$1,169,552
		\$1,169,552

100 Year Flood-Run of River Operation		
City of Albany	209	\$1,768,419
City of Cohoes	38	\$374,410
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		\$1,169,552
		\$1,169,552

**Determination of Benefit Due to Flow Regulation on the Upper Hudson River**

**I. Organic Loads**

**Segment 1: Upper Hudson River - Palmer Falls Dam (MP 218) to Stillwater Dam (MP 168)**

- The Upper Hudson Dissolved Oxygen (DO) was run using current flow (regulated) and permit loadings. The river dissolved oxygen at the DO sag point was determined to be 4.62 mg/l.
- The model was then run under unregulated flow conditions. It was determined that a 60% load reduction (BODu + NOD) would be necessary to achieve a sag point DO of 4.62 mg/l under the reduced flow conditions.
- The existing permit loads were multiplied by 60% to determine the total BODu and NOD load reductions needed to meet the established DO sag point criteria.
- Fine tuning of the individual discharge responsibility at the DO sag point can be accomplished by performing a unit response analysis.
- The sag point DO unit responses for the BODu and NOD components for each individual discharge were determined.
- The sum of the DO unit responses (BODu + NOD) were totaled (r = 2.73 mg/l).
- The sum of the DO unit responses due to the BODu components were totaled (r = 1.785 mg/l).
- The percentage of the total DO deficit due to the BODu component was determined (65.4 %).
- The sum of the DO unit responses due to the NOD components were totaled (r = 0.945 mg/l).
- The percentage of the total DO deficit due to the NOD component was determined (34.6 %).
- The percentage that each individual discharge contributes to the BODu and NOD component deficits was calculated by dividing the BODu and NOD unit response for each discharge by the total segment DO deficit.
- The required reduction in individual BODu and NOD loads needed to meet the 60% overall reduction was derived by multiplying total segment reduction by the percent the discharge contributes to the total deficit.
- The required reduction was subtracted from the existing discharge load to determine the allowable load under unregulated flow conditions.

**Example:** Develop limits for Finch Pruyn under unregulated flow conditions.

- Regulated Flow Conditions (1760 cfs@ Corinth)**
  - DO @ Sag Point (upstream of Stillwater Dam MP 168) : 4.62 mg/l
  - Discharge Load : 143,003 #/d
    - BODu 106,413 #/d
    - NOD 36,590 #/d
- Unregulated Flow Conditions (653 cfs@ Corinth)**
  - DO @ Sag Point (upstream of Stillwater Dam MP 168) : 4.62 mg/l
  - Required Load Reduction to Maintain DO @ Sag Point : 60 %

BODu 63,848 #/d (Required reduction)  
 NOD 21,954 #/d (Required reduction)

- Allowable Discharge Load : 57,201 #/d  
 BODu 42,565 #/d  
 NOD 14,636 #/d

- A 60 % reduction can be assigned to all discharges. This approach does not account for the non-conservative nature of the organic based discharges. A different way to assign benefit value to the various discharges is to evaluate the DO unit response at the segment sag point for each individual discharge. The unit response was developed for both the carbonaceous and nitrogenous components separately since they have different stream reaction rates.

- Finch Pruyn existing permit load :  
 BODu 67502 #/d  
 NOD 24432 #/d

- Sag point DO unit response :  
 BODu 1.18 mg/l  
 NOD 0.64 mg/l

- Total segment DO deficit @ the sag point : 2.73 mg/l
- Segment DO deficit due to BODu component of discharge : 1.785 mg/l
- % of DO deficit due to BODu : 1.785 mg/l / 2.73 mg/l = 65.4 %
- segment DO deficit due to NOD component of discharge : 0.945 mg/l
- % of DO deficit due to NOD : 0.945 mg/l / 2.73 mg/l = 34.6 %

- Finch Pruyn contribution to total deficit :  
 BODu 1.18 mg/l / 2.73 mg/l = 43.2 %  
 NOD 0.64 mg/l / 2.73 mg/l = 23.4 %  
 Total = 66.7 %

- Finch Pruyn BODu required reduction : (43.2% / 65.4 %) x 63,848 = 42,208 #/d
- Finch Pruyn NOD required reduction : (23.4% / 34.6 %) x 21,954 = 14,868 #/d
- Finch Pruyn BODu allowable load : 67,502 #/d - 42,208 #/d = 25,294 #/d
- Finch Pruyn NOD allowable load : 24,432 #/d - 14,868 #/d = 9,564 #/d

- Results : Unit Response Analysis - Required Percent Reductions**

- International Paper 44 %
- Corinth (V) 39 %
- Finch Pruyn 62 %
- Encore Paper 63 %
- Glens Falls (C) 62 %
- GE Hudson Falls 65 %
- Scott Paper 61 %
- Washington SD #2 67 %
- Hollingsworth & Vose, Easton Mill 61 %
- Schuylerville (V) 0 %

**Segment 2 : Upper Hudson River - Stillwater Dam (MP 168) to Troy Lock (MP 154)**

- An identical procedure was followed for this segment. The results indicate an overall load reduction of 35 % is necessary to maintain current minimum DO level in the segment.

- Results : Unit Response Analysis - Required Percent Reductions**

- Stillwater (V) 39 %
- Saratoga Co. SD # 1 38 %
- GE Waterford 29 %

**Segment 3 : Lower Hudson River - Troy Lock (MP 154) to MP 123**

- An identical procedure was followed for this segment. The results indicate an overall load reduction of 25 % is necessary to maintain current minimum DO level in the segment.

- Results : Unit Response Analysis - Required Percent Reductions**

- Albany North 25 %
- Albany South 25 %
- Rensselaer Co. SD # 1 25 %
- East Greenbush 25 %
- Bethlehem 25 %

**Allowable Loads At Current and Unregulated Flows**

**SEGMENT 1**

**CURRENT RIVER FLOWS**

INDUSTRY @ TBL  
 MUNICIPAL STP's @ SECONDARY LIMITS

SOURCE	REACH	FLOW	BODu	NOD
	MGD	#/D	#/D	#/D
International Paper	1	10.3	15127	0
Corinth (V)	1	0.6	300	450
<b>Reach Total</b>	<b>1</b>	<b>10.9</b>	<b>16427</b>	<b>450</b>
Finch Pruyn	4	17.5	67502	24432
Encore Paper	4	2.2	10610	0
Glens Falls (C)	4	9.5	3150	9600
<b>Reach Total</b>	<b>4</b>	<b>29.2</b>	<b>81462</b>	<b>34032</b>
GE Hudson Falls	5	0.216	500	48
Scott Paper	6	3.2	8400	0
Washington Co. SD #2	6	2.5	934	1870
<b>Reach Total</b>	<b>6</b>	<b>5.7</b>	<b>7334</b>	<b>1870</b>
H&V Easton Mill	10	1.9	580	0
Schuylerville (V)	10	0.25	100	190
<b>Reach Total</b>	<b>10</b>	<b>2.15</b>	<b>680</b>	<b>190</b>
<b>Totals</b>			<b>106413</b>	<b>36590</b>
<b>Totals</b>			<b>143003</b>	

**UNREGULATED RIVER FLOWS**

At the unregulated flow condition a 60 % load reduction is needed to meet the current (regulated flow condition) DO of 4.62 mg/l at MP 168 =

SOURCE	REACH	FLOW	BODu	NOD	% Reduction
	MGD	#/D	#/D	#/D	
International Paper	1	10.3	8973	0	44
Corinth (V)	1	0.6	121	334	39
<b>Reach Total</b>	<b>1</b>	<b>10.9</b>	<b>9094</b>	<b>334</b>	
Finch Pruyn	4	17.5	25204	9564	62
Encore Paper	4	2.2	4014	0	63
Glens Falls (C)	4	9.5	1004	3792	62
<b>Reach Total</b>	<b>4</b>	<b>29.2</b>	<b>30312</b>	<b>13356</b>	
GE Hudson Falls	5	0.216	142	48	65
Scott Paper	6	3.2	2465	0	61
Washington Co. SD #2	6	2.5	219	708	67
<b>Reach Total</b>	<b>6</b>	<b>5.7</b>	<b>2684</b>	<b>708</b>	
H&V Easton Mill	10	1.9	232	0	61
Schuylerville (V)	10	0.25	100	190	0
<b>Reach Total</b>	<b>10</b>	<b>2.15</b>	<b>332</b>	<b>190</b>	
<b>Totals</b>			<b>42564</b>	<b>14636</b>	
<b>Totals</b>			<b>57200</b>	<b>60</b>	

**SEGMENT 3**

**CURRENT RIVER FLOWS**

EXISTING PERMIT LIMITS

SOURCE	REACH	FLOW	BODu	NOD
	MGD	#/D	#/D	#/D
Albany North	17	35	10846	20277
Albany South	17	25	7819	14674
Rensselaer Co. SD #1	17	24	7506	14636
East Greenbush	17	2.5	938	1906
Bethlehem	17	4.9	1839	3735
<b>Totals</b>			<b>29046</b>	<b>55226</b>
<b>Totals</b>			<b>84276</b>	

**UNREGULATED RIVER FLOWS**

At the unregulated flow condition a 25 % load reduction is needed to meet the current (regulated flow condition) DO of 4.62 mg/l at MP 168 =

SOURCE	REACH	FLOW	BODu	NOD	% Reduction
	MGD	#/D	#/D	#/D	
Albany North	17	35	8244	15266	25
Albany South	17	25	5792	11013	25
Rensselaer Co. SD #1	17	24	5648	10975	25
East Greenbush	17	2.5	769	1383	25
Bethlehem	17	4.9	1332	2794	25
<b>Totals</b>			<b>21785</b>	<b>41421</b>	
<b>Totals</b>			<b>63206</b>	<b>25</b>	

**SEGMENT 2**

**CURRENT RIVER FLOWS**

INDUSTRY @ TBL  
 MUNICIPAL STP's @ SECONDARY LIMITS

SOURCE	REACH	FLOW	BODu	NOD
	MGD	#/D	#/D	#/D
Stillwater (V)	11	0.301	112	226
Saratoga Co. SD #1	13	21.3	8000	15900
GE Waterford	14	7	10000	0
<b>Totals</b>			<b>18112</b>	<b>16126</b>
<b>Totals</b>			<b>34237</b>	

**UNREGULATED RIVER FLOWS**

At the unregulated flow condition a 35 % load reduction is needed to meet the current (regulated flow condition) DO of 4.62 mg/l at MP 168 =

SOURCE	REACH	FLOW	BODu	NOD	% Reduction
	MGD	#/D	#/D	#/D	
Stillwater (V)	11	0.301	112	94	38
Saratoga Co. SD #1	13	21.3	4542	10388	36
GE Waterford	14	7	7119	0	29
<b>Totals</b>			<b>11773</b>	<b>10482</b>	
<b>Totals</b>			<b>22155</b>	<b>35</b>	



Lead	Glens Falls	7.10	1.2	
	Ciba Geigy	No Data. Plant closed. Site is undergoing reclamation and is being capped. There is essentially no discharge at this time. Eventually site will have only a stormwater permit.		
	GE Fort Edward	0.07	0.01	
	Chase Bag	0.05	No data available	
	Saratoga Co. SD	3.00	0.86	
	GE Waterford	0.006 mg/l	2.24	
<b>Phenols</b>	International Paper	5.10	1.90	
	Finch Pruyn	3.60	3.00	Does not include 11/00 measurement of 49.1 #/d
	Encore Paper	3.30	0.80	
	GE Fort Edward	Phenols not contained in current permit. Remove from table.		
	Chase Bag	0.01	No data available	
	GE Waterford	6.00	1.56	
	Albany North	Phenols not contained in current permit. Remove from table.		
	Albany South	Phenols not contained in current permit. Remove from table.		
	Rensselaer Co. SD	6.00	1.70	
	East Greenbush	0.40	0.14	Added to inventory
<b>Tetrachloroethylene</b>	GE Hudson Falls	The toxics inventory for tetrachloroethylene carried a load of 2.1 #/d for Encore Paper. Further investigation shows this parameter has been removed from the Encore permit. Tetrachloroethylene is no longer a water quality limiting substance in the Upper H		
	Encore Paper			
	Chase Bag			
	Scott Paper			
	Saratoga Co. SD			

### Upper Hudson River : Unregulated Flow Impact on Toxic Discharges

Parameter	Evaluation
<b>Metals</b>	
Aluminum	No Impact
Antimony	No Impact
Arsenic	No Impact
Barium	No Impact
Beryllium	No Impact
Boron	No Impact
Bromide	No Impact
Cadmium	No Impact
Chromium	No Impact
Chromium <sup>6+</sup>	No Impact
Copper	Upper Hudson River discharges - reduce current loads by 48% International Paper Chase Bag Finch Pruyn Scott Paper Encore Paper Washington Co. SD Glens Falls Saratoga Co. SD Ciba Geigy Katzenbach & Warren GE Hudson Falls GE Waterford Lower Hudson River discharges - reduce current loads by 17% Albany North Rensselaer Co. SD Albany South
Cyanide	Upper and Lower Hudson River discharges - reduce current loads by 30% Finch Pruyn GE Waterford Encore Paper Albany North Glens Falls Albany South Ciba Geigy Rensselaer Co. SD
Fluoride	No Impact
Iron	No Impact
Lead	Upper Hudson River discharges - reduce current loads by 49% Glens Falls Chase Bag Ciba Geigy Saratoga Co. SD GE Hudson Falls GE Waterford Lower Hudson River discharges - No Impact
Magnesium	No Impact
Manganese	No Impact
Mercury	No measurable impact
Nickel	No Impact
Selenium	No Impact
Silver	No Impact
Thallium	No Impact
Zinc	No Impact

Parameter	Evaluation
<b>Organics</b>	
Benzene	No impact
Bis (Zethyl-hexyl) phthalate	No impact
Bromodichloromethane	No impact
Butyl Benzyl Phthalate	No impact
Carbon Tetrachloride	No impact
Chlorobenzene	No impact
Chloroform	No impact
Dichlorobenzene	No impact
PCB	No Impact
1,1 Dichloroethane	No impact
1,2 Dichloroethane	No impact
1,1 Dichloroethene	No impact
1,2 trans Dichloroethene	No impact
Diethyl Phthalate	No impact
Dimethyl Phthalate	No impact
Di-n-butyl Phthalate	No impact
Ethylbenzene	No impact
Methylene Chloride	No impact
Phenanthrene	No impact
Phenols	Upper Hudson River discharges - reduce current loads by 45% International Paper GE Hudson Falls Finch Pruyn Chase Bag Encore Paper GE Waterford Lower Hudson River discharges - reduce current loads by 26% Albany North Rensselaer Co. SD Albany South
Sulfides	No impact
Sulfite	No impact
Tetrachloroethylene	Upper Hudson River discharges - reduce current loads by 11% GE Hudson Falls Scott Paper Encore Paper Saratoga Co. SD Chase Bag Lower Hudson River discharges - No Impact
Toluene	No impact
1,1,1 Trichloroethane	No impact
Trichloroethylene	No impact
Vinyl Chloride	No impact
Xylene	No impact

# Exhibit “B”



Board of Hudson River-Black River Regulating District  
 350 Northern Boulevard, Albany, New York 12204 Phone (518) 465-3491  
 FAX (518) 432-2485

## MEMORANDUM

To: Board of Hudson River - Black River Regulating District  
 From: Glenn A. LaFave, Executive Director  
 Robert P. Leslie, General Counsel  
 Richard J. Ferrara, Chief Fiscal Officer  
 Robert S. Foltan, P.E., Chief Engineer  
 Michael A. Clark, P.E., Hudson River Area Administrator  
 CC: File  
 Date: 01/07/2010 (for the January 12, 2010 Board Meeting)  
 Re: Hudson River Area / Great Sacandaga Lake Apportionment

RECEIVED  
 FEB 04 2010  
 RENSSELAER COUNTY  
 ATTORNEY'S OFFICE

The Board directed Regulating District staff to complete an internal apportionment for the Hudson River Area and the Great Sacandaga Lake and to develop an apportionment schedule for the purpose of generating revenue and facilitating the sale of tax anticipation notes.

The development of an apportionment analysis involved: 1) identification of the type of benefit derived by operation of Great Sacandaga Lake; 2) identification of the group of beneficiaries which are benefited by operation of the Great Sacandaga Lake; 3) the selection of a method to determine the proportion of benefit or relative percentage by which an assessment will be levied among the members of the beneficiary group.

Identification of the Type of Benefit Derived

Regulating District staff concluded, for the purpose of an internal apportionment, that flood protection is the most direct and clearly defined benefit to the beneficiaries derived from the operation of river regulating reservoirs. Flood protection benefits are provided to properties in the floodplain and to the greater community which avoids loss of public infrastructure (i.e., roads, bridges, water, sewer, etc.). The 100-year flood is widely considered the benchmark by which the public measures flood events, and serves as a reasonable and rational basis for calculation of flood protection benefits. For these reasons staff has selected the 100-year flood as the basis for its analyses.

### Identification of the Group of Beneficiaries

Recognizing that flood protection benefits are received by both the properties in the floodplain as well as the greater community, staff focused its attention on development of an apportionment among the counties that receive flood protection benefit. Staff has identified five counties within the jurisdictional territory that comprises the Hudson River Area, and through which the Hudson River flows, as the group of beneficiaries that derive flood protection benefits. The five counties that border the Hudson River include Albany, Rensselaer, Saratoga, Washington, and Warren. A detailed discussion of the statutory and legal basis for selection of counties as beneficiaries was provided to the Board in December in a memorandum from General Counsel.

### Selection of a Method to Determine the Proportion of Benefit

Two methods were considered as potential means for determining the proportion of benefit derived by each beneficiary from flood protection. One approach considered by staff included the use of the Federal Emergency Management Agency's (FEMA's) Hazards U.S. Multi-Hazard (HAZUS-MH) flood assessment model software. This software was ordered in mid-November 2009. Staff made several attempts in early December 2009, through various contacts, to expedite delivery of the software, and the Regulating District anticipated receipt of the software by late December; however, as of January 6, 2010, that software had not been delivered. By mid-December 2009 it became apparent to staff that an equally effective alternative method of completing the flood protection benefit analysis would be required. In December 2009 staff began utilizing a graphic information (GIS) system, *ArcGIS*, to conduct a mapping analysis of the properties in the five counties that derive flood protection benefits from the operation of the Great Sacandaga Lake.

In general, a graphic information system-based analysis involves the layering of digital mapping and spatially oriented data to conduct evaluations, generate inventories, or quantify characteristics represented in the mapping. For the in-house GIS analysis of the flood protection benefit derived by properties within the floodplain of the Hudson River, staff used in-house generated flood inundation data, New York State Office of Real Property data, and United States Geological Survey topographic maps to identify flood protected properties.

## Calculation of an Apportionment

Calculation of an apportionment involved three stages of analysis:

- Hydraulic Modeling of the Hudson River for the "without GSL" 100-year flood,
- Generation of GIS map layers and an inventory of properties within the floodplain,
- Summation of property values and a calculation of the relative proportion of benefit based on the total value of properties within the floodplain in each county to the total value of properties within the floodplain in all five counties.

The following terminology and phrases are used throughout the remainder of this memorandum.

- "with GSL" :** refers to analyses involving river flow conditions that exist after the creation of the Great Sacandaga Lake
- "without GSL" :** refers to analyses involving river flow conditions that exist before the creation of the Great Sacandaga Lake
- ArcGIS or GIS :** computer mapping software for completing 3-dimensional/spatial analysis
- 100-year flood :** refers to river flow produced by an analysis involving a Log Pearson Type III frequency distribution probability-based calculation which determines the flow for specific recurrence interval(s) (i.e. 1 in 100 years, or an exceedance probability of 0.01, known as the 100-year flood).
- inundation area :** the surface area of land flooded during a flood event.

### Hydraulic Modeling of the Hudson River "without GSL" 100-year floodplain

This analysis assumes that all properties within the "without GSL" 100-year floodplain receive some level of flood protection. A portion of the properties are not damaged by a 100-year flood event if it were to occur today (as a result of the flood protection offered by the GSL), but would be flooded if the GSL did not exist. Other properties would be partially inundated or damaged by a flood event if it were to occur today, but would be more severely impacted by a 100-year flood event if the Great Sacandaga Lake did not provide some reduction in the flood flow.

Therefore, engineering staff selected the "without GSL" 100-year flood flow and the resulting inundation area and floodplain as the basis for the apportionment analyses. This approach to calculating the apportionment recognizes benefit derived by both the properties that receive full flood protection (those properties above the current 100-year floodplain elevation which would be flooded if the reservoir did not exist) and the properties that receive partial protection (those in the current 100-year floodplain which would experience greater flood depth and damage if the reservoir did not exist).

USGS gauge data information for the Hudson River at Newcomb, North Creek, Hadley, Stewarts Bridge, Fort Edward, and Waterford has been used to complete 100-year flood flow frequency analyses. The 100-year flood flow values for the "without GSL" scenario for the Hudson River from the confluence of the Sacandaga and Hudson River (at the Town of Hadley) to Albany were added to a U.S. Army Corps of Engineers *HEC-RAS River Analysis System* water surface profile model of the Hudson River, to calculate the depth of water in the Hudson River for the "without GSL" 100-year flood scenario.

#### Generation of GIS Map Layers and Inventory of Properties

The *HEC-RAS* generated "without GSL" 100-year floodplain water surface data was exported to *ArcGIS* where it was combined with topographic mapping, and real property tax maps to develop inundation mapping of all properties within the "without GSL" 100-year floodplain.

The combined GIS map layers were used to develop an inventory of properties and property values, within each town, city, and village, which were located within the "without GSL" 100-year floodplain.

#### Summation of Property Values and Proportion of Benefit

The final step in the apportionment analysis involved quantifying the benefit derived from flood protection based on the value of properties within the "without GSL" 100-year floodplain. Property value data was exported from *ArcGIS* to an Excel spreadsheet, sorted by county, and adjusted to "market value" as necessary through application of equalization rates. The "market value" of properties in the "without GSL" 100-year floodplain serves as the basis for the calculation of the proportion of benefit derived by

each. Table 1 – *Property Values in the “without GSL” 100-year floodplain* contains the “market value” of properties in the “without GSL” 100-year floodplain. Table 2 – *Apportionment of Counties* contains the recommended proportion of flood protection benefit derived by each county.

Included as an attachment to this memorandum is the:

- Statement of Operation and Maintenance Cost and Apportionment of Operation and Maintenance Cost
- Assessment of Maintenance and Operation Cost

Table 1 - Property Values in the "without GSL" 100-year floodplain

A County	B Quantity of Properties in 100 yr floodplain (without GSL) 1	C Total Value of Property in 100 yr floodplain (without GSL) 1	D Apportionment of Benefit	
City of Albany	411	\$209,570,956	0.1459	\$ 648,766.99
City of Cohoes	207	\$48,345,153	0.0115	\$ 51,822.10
City of Waterville	75	\$349,028,774	0.0835	\$ 372,039.83
Town of Bethlehem	103	\$183,183,392	0.0391	\$ 173,947.78
Town of Coeymans	80	\$120,411,153	0.0288	\$ 128,349.35
Town of Colonia	183	\$150,854,678	0.0361	\$ 180,799.89
Town of Green Island	487	\$161,912,621	0.0388	\$ 172,866.84
<b>Albany</b>	<b>1527</b>	<b>\$1,603,822,732</b>	<b>0.9838</b>	<b>\$ 1,709,342.82</b>
City of Rensselaer	550	\$191,657,235	0.0459	\$ 204,282.39
City of Troy	790	\$388,545,166	0.0930	\$ 414,160.31
Town of East Greenbush	78	\$13,820,775	0.0033	\$ 14,731.92
Town of North Greenbush	10	\$62,679,592	0.0150	\$ 68,811.79
Town of Schaghticoke	983	\$48,312,809	0.0116	\$ 51,497.86
Town of Schoharie	125	\$4,580,900	0.0011	\$ 4,882.80
Village of Castleton-on-Hudson	64	\$23,475,973	0.0056	\$ 25,023.85
<b>Rensselaer</b>	<b>1909</b>	<b>\$739,072,251</b>	<b>0.1735</b>	<b>\$ 701,400.51</b>
City of Mechanicville	107	\$23,338,208	0.0056	\$ 24,876.80
Town of Corinth	90	\$11,755,045	0.0028	\$ 12,530.97
Town of Hadley	183	\$128,392,222	0.0285	\$ 131,526.95
Town of Halfmoon	181	\$55,048,202	0.0132	\$ 58,675.20
Town of Mareau	202	\$301,895,248	0.0722	\$ 321,585.81
Town of Northumberland	88	\$23,586,400	0.0056	\$ 25,141.36
Town of Saratoga	106	\$19,345,000	0.0046	\$ 20,820.53
Town of Stillwater	120	\$61,841,977	0.0148	\$ 66,025.55
Town of Waterford	422	\$240,861,358	0.0577	\$ 256,740.33
Village of Corinth	64	\$135,702,062	0.0325	\$ 144,640.33
Village of Schuylerville	87	\$19,065,359	0.0046	\$ 20,323.84
Village of South Glens Falls	26	\$76,990,429	0.0184	\$ 82,085.08
Village of Stillwater	427	\$74,102,225	0.0177	\$ 78,987.47
Village of Waterford	422	\$240,861,358	0.0577	\$ 256,740.33
<b>Saratoga</b>	<b>2525</b>	<b>\$1,407,686,385</b>	<b>0.3369</b>	<b>\$ 1,500,489.21</b>
Town of Easton	130	\$32,975,897	0.0079	\$ 35,149.85
Town of Fort Edward	177	\$37,292,438	0.0089	\$ 39,751.02
Town of Greenwich	76	\$14,323,200	0.0034	\$ 15,267.47
Village of Fort Edward	211	\$42,742,349	0.0102	\$ 45,560.17
Village of Hudson Falls	8	\$33,425,000	0.0080	\$ 35,828.57
<b>Washington</b>	<b>602</b>	<b>\$160,758,935</b>	<b>0.0385</b>	<b>\$ 171,367.09</b>
City of Glens Falls	58	\$89,833,838	0.0239	\$ 108,521.84
Town of Lake Luzerne	378	\$95,021,024	0.0227	\$ 101,285.36
Town of Queensbury	181	\$77,887,347	0.0186	\$ 82,808.95
<b>Warren</b>	<b>617</b>	<b>\$272,642,010</b>	<b>0.0653</b>	<b>\$ 290,616.15</b>
	<b>7280</b>	<b>\$4,177,782,312</b>	<b>1.0000</b>	<b>\$ 4,453,296.89</b> 3

Notes  
 1 ORPS and County Real Property Assessment Data  
 2 Based on Internal Regulating District analysis of value of properties in the "without reservoir" floodplain  
 3 Represents unlevied balance of Board approved assessment for year 1 of budget July 1, 2009 - June 30, 2010 in the amount of \$5,403,458.  
 Difference of \$950,252 is the amount levied against the original five(5) municipalities and the five(5) undeveloped parcels owned by NIMO.

NY Statewide Hudson River Valley Reassessment/Global Property Value Based Apportionment Schedule 20

1234 PM/11/2010

**Table 2 - Apportionment of Counties**

A County	B Quantity of Properties Receiving Flood Protection Benefit 1	C Total Value of Property Receiving Flood Protection Benefit 1	D Apportionment of Benefit (%)
Albany	1527	\$1,603,622,732	38.38%
Rensselaer	1989	\$733,072,251	17.55%
Saratoga	2525	\$1,407,686,385	33.69%
Washington	602	\$160,758,935	3.85%
Warren	617	\$272,642,010	6.53%
	7260	\$4,177,782,312	100.00%

**Notes**

1 ORPS and County Real Property Assessment Data

2 Based on internal Regulating District analysis of value of properties in the "without CSL" floodplain

# Exhibit “C”

PETITION

Filed in office of Water Control Commission  
July 6, 1922.

TO THE CONSERVATION COMMISSION, THE ATTORNEY  
GENERAL AND THE STATE ENGINEER, AND OR THEIR  
RESPECTIVE DEPUTIES, CONSTITUTING THE WATER  
CONTROL COMMISSION UNDER ARTICLE VII-A OF THE  
CONSERVATION LAW OF THE STATE OF NEW YORK.

The Petition of the undersigned residents of, or owners of  
real estate within the district herein proposed to be organized, and  
public corporations whose boundaries lie wholly or partially within  
such district, for the creation of a river regulating district, under  
and pursuant to the provisions of said Article VII-A, respectfully  
shows:

FIRST: The proposed name of said district is the "Hudson  
River Regulating District."

SECOND: The necessity for the organization of such district,  
the purposes to be accomplished thereby and the benefit to inure from  
the exercise of the powers are as follows, viz:

A. The Hudson River is the largest and most important river  
in the State. Said river and its principal tributaries rise in the  
Adirondacks and empties into the Atlantic Ocean at the City of New  
York. Its length from its source to its mouth is about three hundred  
miles and from its source to the City of Troy is about one hundred and  
fifty miles. It is navigable and extensively used commercially for  
the transportation of property and persons from the City of Troy to  
the City of New York, a distance of some one hundred fifty miles.  
The Adirondack region in which the upper Hudson and its tributaries  
find their source is a high mountainous region. Within this region  
there occurs annually a very heavy rainfall. A great part of this

State of New York  
Water Control Commission  
River Regulation by Storage Reservoirs

Application No. 3  
HUDSON RIVER REGULATING DISTRICT  
Petition - Final Order  
Resolutions

Certified Copies  
August 21, 1925

- 2 -

precipitation takes the form of snow, the melting of which in the  
spring causes great floods. There is a great variation of flow  
of this river owing to such floods and to droughts. Such variation  
differs from year to year between an observed maximum and minimum  
flow during spring freshets of over one hundred thirteen thousand  
(113,000) cubic feet per second at a given point, and in the same  
year at the same place a minimum flow of less than seven hundred  
(700) cubic feet per second. That such variation is not necessarily  
the limit but floods to a greater extent have occurred and may be  
expected to re-occur, and in extraordinarily dry years the river has  
and may shrink to even smaller proportions. That such freshet flow  
of water cannot be contained within the normal banks of the river and  
during the years of such freshets the banks of the river have over-  
flowed causing extensive damage. In a single year such damage in the  
City of Albany and vicinity has been upwards of a million dollars and  
a total property damage of upwards of two million dollars.

That the cities of Albany, Watervliet, Rensselaer, Troy and  
Mechanicville and the villages of Castletown, Green Island and Water-  
ford are all adjacent to said river and within such proposed district  
as are other villages and towns, and during such freshets large areas  
thereof are flooded and inundated with water, rendering such flooded  
areas unsanitary and unsafe to health, and cause sickness and death  
and do great property damage and inconvenience to the inhabitants  
thereof, and cause great public and private damage.

That the New York Central Railroad and the D. & H. Railroad  
are for many miles constructed along and adjacent to the banks of  
said river and during the times of such freshets the flow of water  
in said river interferes with and stops traffic on said railroads,  
suspends transportation of passengers and freight, and inflicts great

- 3 -

public and private injury.

That many of the municipalities located along said Hudson  
River from the village of Corinth to the city of New York empty  
raw sewage into said river, and during the periods of low flow of  
water in said river said sewage contaminates this water and the same  
becomes a menace to the general health and during the periods of  
lowest flow such contamination approaches the stage of an actual  
nuisance and renders habitation along said river unsanitary and the  
condition of the river at such times is a menace to the public health.

That at the times of the low flow of said river sea water is  
found as far north as Poughkeepsie and it is impossible to take water  
from the river below said place for domestic purposes.

That from the Village of Fort Edward to the City of Troy said  
Hudson River is in part canalized and used for navigation and during  
the period of natural minimum flow there is not sufficient water for  
continuous navigation.

That during the periods of low flow of said river it has at  
times been difficult for boats carrying persons and property to pass  
up and down said river for several miles below the city of Troy and  
because of the low level of water in said river resulting from drought.

That there are at present on the Hudson River and within the  
district herein asked to be created many developed water power plants,  
some of which are used to generate electric energy which is utilized  
for public purposes in lighting streets and public and private build-  
ings in municipalities and operating street railroads, and that more  
of such energy is needed for public uses. Other water power plants  
are now in course of construction on said river. It is impossible for  
these plants to use waters coming from freshets and to the extent not  
used the flow is economic waste; during the periods of the low flow a

large part of this installed power capacity is idle and throws out of employment a great many men and suspends in whole or in part operations in said power plants resulting in lack of electric energy needed for public uses and in hardship to industries and to communities along said river and the inhabitants of such communities.

Said variations in the flow of said river are detrimental to public and private interests in many respects not above enumerated.

B. The topography of said Adirondack region is such that large storage reservoirs can be constructed in which the spring freshet floods may be restrained and impounded and thus prevent floods and thereafter the waters thus impounded can be released when the flow of the river is naturally at minimum and such minimum flow be very materially increased. That extensive surveys and investigations of the possibilities of such reservoirs have been made by the Conservation Commission of this State and by private interests, and it has been determined and the fact is that two thirds of the maximum flow can be restrained and impounded in reservoirs and that by so doing said river will not overflow its banks so as to impair or injure health or do damage to persons or property. The water thus restrained and impounded can be released during the times of natural minimum flow and such flow raised from less than seven hundred cubic feet per second to fifty six hundred cubic feet per second or better.

By the creation of such district storage reservoirs can be provided which will regulate the flow of such river eliminating the now maximum flow thereof and by properly operating such reservoirs increase such minimum flow. This will increase by about a foot and a half the depth of water in the Hudson River below the City of Troy and benefit navigation; and also supply ample water for navigation between Port Edward and Troy; it will prevent loss and damage to life and property;

FOURTH: That as your petitioners are informed and believe through the construction and operation of reservoirs two thirds of the maximum flood flow can be restrained, and a maximum flow of 113,000 cubic feet per second can be cut in half, and that a minimum flow of 650 cubic feet per second can be raised to 5,600 cubic feet per second.

FIFTH: Both state and private lands will be required. The amount of state lands required will not exceed 9,000 acres and together with all other state lands which may be required for reservoir purposes on other watersheds will not exceed 2% of all the state lands within the Forest Preserve. The amount of private lands required cannot be determined accurately until all proposed reservoirs are located and the high flow lines thereof surveyed, but private land necessary for such reservoirs will be inconsiderable when compared with the great public benefits to be derived from the regulation of the river.

WHEREFORE your petitioners pray that your honorable Commission will create the regulating district herein petitioned for pursuant to and for the accomplishments of the objects provided for in said Chapter VII-A of the Conservation Law.

Dated, July 5th, 1922.

City of Glens Falls, N. Y.  
By C. W. Cool, Mayor.  
Village of Corinth, N. Y.  
By Maurice T. Jones, President.  
Town of Corinth, N. Y.  
By V. Harry Dunmore, Supervisor.  
Village of Sol Glens Falls  
By John Fridge, President.  
Village of Port Edward  
By Millard Robinson, President.

it will greatly improve the dangerous unsanitary conditions along said river; and the consequent impairment of health; it will greatly diminish the danger of interference and suspension of railroad operations (and the transportation of persons and property) and the obstruction and washing out of bridges and highways and thus facilitate public travel and intercourse; it would permit the cities along said river to draw their supply of water from the river for domestic and other purposes and would even permit the City of New York to obtain its future water supply by taking water from the river in the vicinity of Poughkeepsie, it will give a more continuous and uniform flow of water for use of said power plants and increase the power or energy therefrom for both public and private purposes and keep labor more uniformly and continuously employed and be a great benefit to the cities along said river and the inhabitants of such cities and will also be a great benefit in producing hydro-electric energy and in building up communities and creating values and will accomplish other public and private purposes. That such additional energy is needed for public uses.

THIRD: The territory to be included in the proposed district constitutes the watershed of the Hudson River and its tributaries within the State of New York above the intersection of the southerly boundary lines of the counties of Albany and Rensselaer with the Hudson River, excepting therefrom the Mohawk River and its tributaries. The extent of the proposed district is approximately five thousand square miles. The reason why the Mohawk River is not included in the proposed district is because this river is a canalized stream and controlled and supervised by the Superintendent of Public Works. That the counties that lie wholly or in part in the proposed district are Albany, Columbia, Rensselaer, Saratoga, Washington, Warren, Fulton, Hamilton, Essex, Greene, Schoenectady and Schoharie.

Village of Hudson Falls  
By George S. Drome, President.  
Adirondack Power & Light Corporation  
By Elmer J. West, Vice Presdt.  
Frank L. Bell  
Elmer J. West  
Village of Schuylerville, N. Y.  
E. D. Naylor, President.  
City of Mechanicville, N. Y.  
By John W. Burke, Mayor.  
Albert S. Cluett, Troy, N. Y.  
A. B. Roche, Engr., Troy, N. Y.  
City of Watervliet, N. Y.  
By M. L. Walsh, Mayor.  
City of Rensselaer  
By Henry Meurs, Mayor.  
City of Albany, N. Y.  
By Wm. S. Hackett, Mayor.

STATE OF NEW YORK  
WATER CONTROL COMMISSION

IN THE MATTER

-of the-

Petition of the City of Glens Falls  
and Others, for the Creation of the  
Hudson River Regulating District.

FINAL ORDER.

On reading and filing the petition of the City of Glens Falls and others, duly presented to the Commission on the 8th of July, 1922, praying that the territory constituting the watershed of the Hudson River and its tributaries within the State of New York above the intersection of the southerly boundary lines of the counties of Albany and Rensselaer with the Hudson River, excepting therefrom the watershed of the Mohawk River and its tributaries, be created into a river regulating district pursuant to and for the accomplishment of the objects provided for in said Article VII-A of the Conservation Law, being Chapter 662 of the Laws of 1916 of the State of New York as amended, and that the district be known as the "HUDSON RIVER REGULATING DISTRICT"; and the notice of hearing thereof, together with proof of due publication thereof; and hearings having been had on said petition on the 25th day of July, 1922, and on the 2nd day of August, 1922, and Allen Wardwell, Esq., of 15 Broad Street, New York, N. Y., and John H. Vincent, Esq., of 15 Broad Street, New York, N. Y., representing the Adirondack Power & Light Corporation, and Frank L. Bell, Esq., of Glens Falls, New York, in person and representing the Village of South Glens Falls, New York, having appeared in favor of the petition; and F. W. Orr, Esq., of Menands, Albany, New York, in person, A. W. Klopot, Esq., of Sacandaga Park, New York, in person, Stuart Christie, Esq., of Monticello,

FURTHER ORDERED, that the petition of the City of Glens Falls and others, praying that the territory constituting the watershed of the Hudson River and its tributaries within the State of New York above the intersection of the southerly boundary lines of the counties of Albany and Rensselaer with the Hudson River, excepting therefrom the watershed of the Mohawk River and its tributaries, be created into a river regulating district pursuant to and for the accomplishment of the objects provided for in said Article VII-A of the Conservation Law, being Chapter 662 of the Laws of 1916 of the State of New York, as amended, be and the same hereby is in all respects granted, and such territory is hereby constituted and created a river regulating district and it is

FURTHER ORDERED, that the said river regulating district shall be known as the Hudson River Regulating District.

WATER CONTROL COMMISSION by  
Charles D. Newton  
Attorney General  
Frank M. Williams  
State Engineer and Surveyor  
C. Tracey Stagg  
Deputy Conservation Commissioner.

Dated, Albany, N. Y.  
August 2, 1922.

New York, and H. R. Perkins, Esq., Green Island, New York, representing the Ford Motor Company, having appeared; and Joseph Moses, Esq., of Northville, New York, in person, and F. M. Sinclair, Esq., of Northampton, New York, in person, and representing Lucy J. Sinclair, Messrs. Baker & Maider, of Gloversville, New York, representing the Ponds, Johnstown & Gloversville Railroad Company and the Village of Northville, and George W. Murray, Esq., of 37 Wall Street, New York, N. Y., President of and representing the Schroon Lake Association, a corporation whose members consist of free-holders and residents in the neighborhood of Schroon, Brant and Paradox Lakes, having appeared in opposition thereto, and evidence having been taken at such hearings, and no person or public corporation having filed objections to the organization of such district, except the Village of Northville and the Ponds, Johnstown & Gloversville Railroad Company, and Frank M. Sinclair, Lucy J. Sinclair, Harry T. Sinclair, W. R. Stark, D. W. Noyes, W. A. Hayden, Ray Leslie, John J. Stead, Elmer Brown, and Joseph Moses, all of Northampton, New York, and F. E. Eddy of Edinburgh, Saratoga County, New York, and the Commission having considered the evidence offered by the parties appearing and after due deliberation had thereon, it is

ORDERED, that the Commission does hereby find, determine and declare that the creation of the Hudson River Regulating District as prayed for in the said petition is required by the public welfare, including public health and safety, and that the purposes of Article VII-A of the Conservation Law, being Chapter 662 of the Laws of 1916 of the State of New York, as amended, will be subserved by the creation of the Hudson River Regulating District, as prayed for in the said petition and that such regulation is feasible, and it is

STATE OF NEW YORK  
WATER CONTROL COMMISSION

IN THE MATTER

-of-

The Petition of the City of  
Glens Falls, and others, for the  
Creation of the Hudson River  
Regulating District.

CERTIFICATE.

We, the undersigned, constituting the Water Control Commission of the State of New York do hereby certify that on August 2nd, 1922, the said Commission did make and enter a final order finding, determining and declaring as follows:

"IT IS ORDERED, that the Commission does hereby find, determine and declare that the creation of the Hudson River Regulating District as prayed for in the said petition is required by the public welfare, including public health and safety, and that the purposes of Article VII-A of the Conservation Law, being Chapter 662 of the Laws of 1916 of the State of New York, as amended, will be subserved by the creation of the Hudson River Regulating District, as prayed for in the said petition and that such regulation is feasible, and it is

"FURTHER ORDERED, that the petition of the City of Glens Falls and others, praying that the territory constituting the watershed of the Hudson River and its tributaries within the State of New York above the intersection of the southerly boundary lines of the counties of Albany and Rensselaer with the Hudson River, excepting therefrom the watershed of the Mohawk River and its tributaries, be created into a river regulating district pursuant to and for the accomplishment of the objects provided for in said Article VII-A of the Conservation Law, being Chapter 662 of the Laws of 1916 of the State of New York, as amended, be and the same hereby is in all respects granted, and such territory is hereby constituted and created a river regulating district and it is

amended, be and the same hereby is in all respects granted, and such territory is hereby constituted and created a river regulating district, and it is

"FURTHER ORDERED, that the said river regulating district shall be known as the Hudson River Regulating District;" and we do hereby

FURTHER CERTIFY, that the extent of such district is the territory described in such final order and also shown and defined on the attached map, the boundary of the district being the center of the outer line as laid down on said map; and we do hereby

FURTHER CERTIFY, that the purposes of such district are the regulation of the flow of the Hudson River and its tributaries within such district for the benefit of the public welfare, including public health and safety, and the other purposes of such Article VII-A of the Conservation Law; and we do hereby

FURTHER CERTIFY, that the name of the said district is and shall be the Hudson River Regulating District.

WATER CONTROL COMMISSION, by

Charles D. Newton,  
Attorney General

Frank M. Williams  
State Engineer and Surveyor

C. Tracey Stagg  
Deputy Conservation Commissioner.

Dated, Albany, N. Y.,  
August 2, 1922.

Order approving General Plan (Official Plan)

From minutes of meeting of Water Control Commission, held at the office of the State Engineer, June 7, 1923.

NEW YORK STATE WATER CONTROL COMMISSION

-----x  
In the Matter :  
of the :  
General Plan for the Regulation : Order.  
of the Flow of the Hudson River :  
and certain of its tributaries. :  
-----x

RESOLVED, that the General Plan for the Regulation of the Flow of the Hudson River and certain of its tributaries duly certified to, and filed with the Commission on May 5th, 1923, by the Board of the Hudson River Regulating District, be and the same hereby is modified in the following respects and particulars:

Piseco Lake Reservoir: Approved provided that regulating works be provided to maintain a water surface elevation of not more than 1668 at any time, nor less than 1661 between the dates May 1st and September 15th in every year.

Elk Lake Reservoir: No determination is made either approving or disapproving the construction of this reservoir, inasmuch as the feasibility of its construction may be better considered at some future time by an amendment of the General Plan, upon proper application made by the Board to the Commission after the obtaining by said Board of more data relative to its feasibility.

Hadley, Cooley, Beaver Brook, Sanford Lake, Stewart Brook, Rich Lake, Fishing Brook, Catlin Lake, Cedar-Indian, Rock Lake, Thirty-four Marsh, Paradox Lake, Olmsteadville, Blue Ridge, Elk Lake, Diamond Mountain, Saratoga Lake and Battenville

Reservoirs: No determination is made either approving or disapproving the construction of these reservoirs at this time, inasmuch as the feasibility of their construction may be better considered at some future time by an amendment of the General Plan, upon proper application made by the Board to the Commission, after the obtaining by said Board of more data relative to their feasibility.

and be it further

RESOLVED, that the aforesaid General Plan for the Regulation of the Flow of the Hudson River and certain of its tributaries, as filed with the Commission on May 5th, 1923, by the Board of the Hudson River Regulating District, be modified as aforesaid, and that, as so modified, it be and the same hereby is in all respects approved.

Dwight B. LaDu  
State Engineer and Surveyor, Chairman

Carl Sherman  
Attorney General

Alexander Macdonald  
Conservation Commissioner

June 7, 1923.

Resolution approving Preliminary Plans, Specifications, Estimates and Statements of the Sacandaga Reservoir

From minutes of meeting of Water Control Commission held at the office of the State Engineer and Surveyor March 5, 1924.

PRESENT;

Hon. D. B. LaDu, State Engineer & Surveyor, Chairman  
Hon. Carl Sherman, Attorney General  
Hon. Alexander Macdonald, Conservation Commissioner  
F. H. Macy, Secretary.

Upon motion of Attorney General Sherman, seconded by Commissioner Macdonald, the following resolution was unanimously adopted:

"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; and therefore

RESOLVED, that the said maps, plans, specifications, estimates and statements be and the same hereby are modified by the insertion in the "General Specifications" of the following sentence: "The May 1st and Labor Day"; and be it further

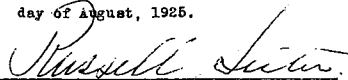
RESOLVED, that the aforesaid preliminary plans, maps, specifications, estimates and statements as so modified be and the same hereby are approved."

STATE OF NEW YORK )  
CITY AND COUNTY OF ALBANY ) ss.

I, Russell Suter, Secretary to the Water Control Commission of the State of New York, do hereby certify that the foregoing are true copies of the Petition, Final Order, Certificate of Determination and Order approving the General Plan of the Hudson River Regulating District, and of Resolution of approval of Preliminary Plans, etc. for the Sacandaga reservoir, all filed in connection with "Petition of the city of Glens Falls and others for the creation of the Hudson River Regulating District," which papers are now on file in the archives of or spread upon the minutes of the Water Control Commission.

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

WITNESS my hand and the seal of said  
Water Control Commission, this 21st  
day of August, 1925.



Secretary to the Commission.



# Exhibit “D”

**MALCOLM  
PIRNIE**

ENVIRONMENTAL ENGINEERS, SCIENTISTS &amp; PLANNERS

**FINAL REPORT****STUDY OF IMPACTS OF  
HUDSON RIVER FLOW REGULATION**

For  
Hudson River - Black River  
Regulating District

MAY 1984

**MALCOLM  
PIRNIE**

ENVIRONMENTAL ENGINEERS, SCIENTISTS &amp; PLANNERS

October 12, 1984

Hudson River-Black River  
Regulating District  
1 Columbia Place  
Albany, New York 12207

ATTENTION: Mr. J. Lowell Fitzsimmons  
Chairman

Gentlemen:

In accordance with the terms of our Contract dated January 9, 1984, we have completed the report on the Study of Impacts of Hudson River Flow Regulation. We herewith submit this document for your use.

The report identifies the users of the Hudson River which might be affected by a reduction in river flows during the summer months. An assessment has also been made of the probably economic impacts associated with the reduced summertime flows.

We appreciate the assistance and cooperation afforded us by the Hudson River-Black River Regulating District during the preparation of this report.

Very truly yours,

MALCOLM PIRNIE, INC.

*Thomas C. Avista*  
Thomas C. Avista, P.E.  
Vice President

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**I. INTRODUCTION**

The function of the Hudson River - Black River Regulating District is to operate its reservoirs "for the purpose of regulating the flow of streams, when required by the public welfare, including public health and safety." The Great Sacandaga Lake (formerly the Sacandaga Reservoir) is the District's only reservoir on the Hudson River Basin, and releases from this reservoir are controlled at the Conklingville Dam. Operation of the reservoir provides a reduction in flood flows and low flow augmentation in the Hudson River.

Approval of the construction plans for the Conklingville Dam in 1924 specified that the reservoir water level not be drawn below Elevation 756 between May 1 and Labor Day. The District's present operating policy is based upon balancing the needs of flood control, low flow augmentation, hydroelectric power generation and recreational interests. This policy has resulted in an average reservoir water surface at Elevation 758 for Labor Day since the dam's construction. However, the release of water to augment low flows is in conflict with recreational uses at the Great Sacandaga Lake, since periods of low flow and increased recreational usage both occur during the summer season.

Recreation users of the Great Sacandaga Lake have expressed their dissatisfaction with the District's operating policy to the point where legislation has been proposed which would mandate the minimum reservoir level at Elevation 762 between May 1 and September 30. Implementation of this policy would result in a reduction in Hudson River flows during the summer season.

The purpose of this report is to identify downstream users of the Hudson River which might be affected by a reduction in river flows during the summer months. Upon completion of the inventory, an assessment will be made of the probable economic impacts associated with reduced summertime flows.

**II. INVENTORY****2.1 GENERAL**

An inventory of entities making use of Hudson River flows which may be impacted by changes in flow regulation was developed from existing sources of information. These entities include:

- o Municipal and Industrial Wastewater Dischargers.
- o Municipal/Institutional Water Suppliers.
- o Industrial and Commercial Water Suppliers.
- o Hydroelectric Power Generators.
- o Thermal Power Generators.
- o Navigational Interests.
- o Recreational Interests.

A copy of the inventory data for each facility is contained in the Appendix to this report. The inventory data obtained for each major facility was mailed to the facility contact person, along with a letter describing the purpose of the study requesting that the data be reviewed for accuracy. Comments were also solicited. Tables summarizing the inventory data are included in this Section.

**2.2 MUNICIPAL AND INDUSTRIAL WASTEWATER DISCHARGES**

Current wastewater discharges into the Hudson River have been identified using SPDES (State Pollution Discharge Elimination System) Permit information. This information was obtained from the New York State Department of Environmental Conservation, Division of Pure Waters and consisted of a computer printout of the SPDES master file dated July 5, 1983 for the Lower Hudson River Basin and January 16, 1984 for the Upper Hudson River Basin.

These printouts were searched for all facilities which discharge to Hudson River.

A data sheet was generated for each facility with a wastewater discharge to the Hudson River. This data includes:

1. Location (mile point).
2. Name and address of facility and contact person.
3. Type of discharge (non-municipal discharges only).
4. Type and level of treatment.
5. Population served (municipal discharges only).
6. Discharge classification (non-municipal discharges only).
7. Toxic classification (non-municipal discharges only).
8. Discharge permit conditions.
9. Current volume and discharge loadings.
10. Remarks.

The SPDES master list contained information pertaining to Items 1, 2, 6, and 7. Mile points correspond to those indicated on U.S.G.S. maps were used by the NYSDEC for stream classification and the Hudson River mile points for municipal wastewater treatment plants was obtained from the NY publication, "Descriptive Data of Sewage Treatment Systems in New York State" dated June 1983. Item 4 for industrial discharges was obtained through discussions with NYSDEC personnel responsible for the industrial category and pertained to the particular discharge. Data for Item 5 was obtained searching a recent NYSDEC computer printout entitled, "Sewage Treatment W - General Information Report".

To obtain information on Item 3, the NYSDEC's Daily Monitoring Report (DMR) files were searched for recent operating data pertaining to facilities. Parameters of concern in this report are flow, BOD<sub>5</sub>, temperature, toxics, and oil and grease. In general, the data for the last quarter of 1983 and the first three quarters of 1984 were available. The DMR files

indicated any updates to the SPDES computer printout. In many cases, the data was updated when the inventory data was reviewed by the facility.

### 2.2.1 Municipal Wastewater Treatment Plants

Appendix A contains the data sheets for the municipal discharges. Tables 2.1 and 2.2 present summary information of the data contained in the inventory sheets. As indicated in Tables 2.1 and 2.2, there are 33 municipal wastewater treatment plants with SPDES permits for discharge to the Hudson River. The total includes the partially completed plant at North River and the proposed plants at Fort Edward, Castleton-on-Hudson, and New Baltimore.

The municipal wastewater treatment plants included in the inventory range in size from 0.02 mgd to 170 mgd with the majority being between 0.1 and 5 mgd. Of the existing plants, 9 provide only primary wastewater treatment. Present, the secondary wastewater treatment plants are operating well with their average BOD<sub>5</sub> pounds per day discharge limits with the exception of the Stony Point Sewage Treatment Plant, which is approaching its design capacity and Rockland County Sewage Treatment Plant which is exceeding its design capacity. Plants that occasionally exceeded their maximum BOD<sub>5</sub> discharge limits include the Ossining Wastewater Treatment Plant, Newburgh Water Pollution Control Plant, Beacon Sewage Treatment Plant and Saratoga County Sewage Treatment Plant. These isolated violations were typically caused by unusual circumstances and are not expected to reoccur.

### 2.2.2 Industrial Wastewater Discharges

Appendix B contains the sheets for those industries which have a SPDES permit for discharges to the Hudson River. There are 65 facilities with wastewater discharges to the Hudson River.

Table 2.3 presents a summary of the discharges by discharge and toxic classification. A major (or significant) discharge is:

- o A discharge, or combination of discharges under common ownership, of sufficient size and complexity to require substantial wastewater treatment.

- o A discharge which, regardless of size, causes, or level of treatment, could cause critical water quality problems and impede the best use of the receiving waters. Water quality problems could include fishkills, bacterial contamination, odor, and discoloration or long term impacts such as accumulation of toxic substances aquatic and benthic resources.

Volume of the determining discharge, organic and inorganic loading, toxicity, thermal content, and character and usage of receiving waters, all considered in the designation. A history of poor operational management, or non-cooperation may also be grounds for designating a particular discharger as major.

As indicated in Table 2.3, only 31 of the discharges are classified as major (significant) discharges. Furthermore, only 24 of the discharges have toxic classification. In general, the non-significant and non-toxic classifications correspond to facilities with SPDES permits for stormwater run-off. Table 2.4 presents a summary of the discharges classified as major (significant) and/or toxic.

Facilities which had occasional monthly violations of their discharge limits during the last year include:

- o Kay Fries, Inc. (maximum BOD).
- o Indian Point Station (maximum BOD).
- o Roseton Generating Station (average and maximum Vanadium).
- o IBH (maximum BOD).
- o GE Silicone Products (maximum Xylene, Monochlorobenzene, Ethylbenzene, Methyl Chloride).
- o Crown Zellerbach (average and maximum BOD).
- o International Paper (average BOD).

### 2.3 MUNICIPAL/INSTITUTIONAL DRINKING WATER SUPPLIES

Information pertaining to water supplies using the Hudson River as a water source was obtained from the NYSDOH computer printout, "Selected Public Water System Inventory", dated 1/17/84. This printout included the Lower and Upper Hudson River Basins, and the specific Hudson River sources could be identified by the source name indicated on the printout.

A data sheet was generated for each facility which uses the Hudson River as a raw water supply source. This data included:

1. Location (mile point).
2. Name and address of facility and contact person.
3. Level and type of treatment provided.
4. Design capacity.
5. Current production, if metered.
6. Population served.

The "Selected Public Water Supply Inventory" contained information pertaining to Items 1, 2, 3, and 4. The remaining information was obtained through discussions with NYSDOH personnel and survey/inventory data maintained by the NYSDOH.

Appendix C contains the inventory data for the public water supplies which intakes on the Hudson River. Table 2.5 summarizes this data. There are 9 intakes located on the Hudson River including the infiltration gallery at Green Island Water Treatment Plant. It should be noted that Green Island present water supply source is a ground water source and is not directly connected to the Hudson River. Of the 9 water supplies, 7 are municipal water supplies and 2 institutional water supplies.

The design capacity of the municipal water treatment plants range in size from 0.5 mgd to 15.2 mgd. All except Poughkeepsie have design capacities less than 3.5 mgd. New York City has an emergency water supply intake located between Poughkeepsie and Beacon at Chelsea (Mile Point 66).

#### 2.4 INDUSTRIAL AND COMMERCIAL WATER SUPPLIES

Inventory data for commercial and industrial facilities with water intakes on the Hudson River was not as readily available as information for facilities with wastewater discharges to the Hudson River. The U.S. Army Corps of Engineers (COE) maintains U.S.G.S. maps and corresponding permit information which indicate those facilities with COE permits for outfalls/intakes, docks, piers, etc. However, there are many facilities with intakes that do not have COE permits. Available information from the COE was obtained by searching the COE files.

Additional information pertaining to facilities with water intakes was obtained by searching the NYSDEC's SPDES permit application files. Many of the applications indicated the amount and source of water used at the facilities.

The NYSDEC, Division of Water, is developing procedures and methodologies for the development of a state-wide and sub-state water resource management strategy. A pilot study, entitled, Capital Region Water Resources Strategy, was the first step in this program. Part of this study included an industrial use survey in the form of a questionnaire which was sent to industries in Albany, Columbia, Greene, Rensselaer, Saratoga and Schenectady counties. The response to the questionnaire was about 30 percent. These completed questionnaires searched for industries with intakes on the Hudson River.

During the late 1950's and early 1960's, the NYSDOH undertook surveys of the Hudson River Drainage Basin to establish water quality standards recommended for assignment to waters of the drainage basin. Part of these surveys included a survey of municipal, industrial, and institutional surface water supplies. This information was also reviewed during development of the inventory.

A final source of information utilized was the planning agencies of the various counties located along the Hudson River. These agencies were contacted to identify major industries located on the Hudson River.

assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the body of water." There are also several general and special criteria that govern thermal discharges. These include:

1. The water temperature at the surface of a stream shall not be raised to more than 90° F at any point.
2. At least 50 percent of the cross sectional area and/or volume of flow of the estuary including a minimum of one third of the surface as measured from shore to shore at any stage of tide shall not be raised to more than 4° F over the temperature that existed before the addition of heat of artificial origin or to a maximum of 2° F whichever is less.
3. From July through September, if the water temperature at the surface of an estuary before the addition of heat of artificial origin is more than 83° F an increase in temperature not to exceed 1.5° F at any point of the estuarine passageway delineated above may be permitted.

The regulations contain provisions for modification of the criteria if the discharger can prove that the criteria are unnecessarily restrictive and that a modification to the criteria would assure the protection and propagation of a balanced population of aquatic life. The NYSDEC reports that the thermal plants along the Hudson are currently meeting the thermal standards and either complying with the criteria or have been granted a modification.

#### 2.4.5 Recreation

Swimming and recreational boating are two uses that have similar water quality requirements. Water quality for swimming should satisfy three general conditions. First, the water should be esthetically pleasing and free from obnoxious floating or suspended solids, heavy growths of attached plants or animals, algae blooms, objectionable color and foul odors. Second, the water should be reasonably free from pathogenic organisms. Finally, the water should contain no substances that are toxic upon ingestion or that are irritating to the skin. In general, only the first condition listed for swimming would be a condition of recreational boating.

Ease of access is another important consideration for swimming and boating. Since the hydrostations and other impoundments on the Upper Hudson River are essentially run of river facilities, a relatively stable water level is maintained. However, the water elevations of the pools may fluctuate up to 3 feet on a diurnal basis depending upon the discharges of the Sacandaga Reservoir, natural flow of the Hudson River above Hadley, and the power requirements of the individual dams. The reduction in flows is not expected to affect the water levels in the Lower Hudson where tidal action occurs.

In addition to the above sources, information was obtained through direct contact with the facility. Appendix D contains the inventory for industrial/commercial water supplies. This information is summarized in Tab 2.6. It should be noted that the intakes for the thermal power generating facilities are included in Section 2.6.

#### 2.5 HYDROELECTRIC POWER GENERATION

Inventory data for the hydroelectric power generation facilities located on the Hudson River and on the Sacandaga River between the Conklingville Dam and the Hudson River was obtained from three main sources. The first was the Hudson River Basin, Level B, Water and Related Land Resources Study prepared by the NYSDEC (February 1979). The second source was a report prepared by Wipjets-Abbott-McCarthy-Stratton for Niagara Mohawk Power Corporation, entitled, Hydroelectric Studies of the Upper Hudson River (December 1980). The final source was the NYSDEC Division of Fish and Wildlife Status Report, Hydropower Projects (December 1983).

Inventory data for the hydroelectric facilities included the location (mile point) and the name, address, and owner of the facility. Appendix contains the data sheets for each facility. This information is summarized in Table 2.7. It should be noted that the facility at Baker Falls is not in service. Fort Miller Pulp and Paper Company is presently developing the hydroelectric potential created by the Fort Miller Dam (Mile Point 196). Several additional projects are proposed and in various stages of planning for developing the hydroelectric potential created by the existing Hudson River impoundments.

#### 2.6 THERMAL POWER GENERATION

Information pertaining to the power generating facilities, other than hydroelectric, was obtained predominantly from the same sources as that for the industrial wastewater discharges. Additional information was obtained

from the staff of the New York Power Pool and the 1983 New York Power Pool Report (Section 5-112). Appendix F contains the inventory sheets for the thermal discharges. This information is summarized in Table 2.8. There are fossil fuel, 1 nuclear and 1 resource recovery power generating facilities located on the Hudson River. All of these facilities are located on the lower Hudson River. Furthermore, the thermal power facilities are located south of Newburgh, with the exception of the Albany Steam Station. Violations of the maximum discharge temperature have occurred at the 59th Street Generation Station, Lovett Generating Station, Roseton Generating Station, and Danskammer Point Generating Station.

## 2.7 NAVIGATION

### 2.7.1 Volume of Traffic on Hudson River and Champlain Canal

The Federal Channel in the Hudson River is 32 feet deep between New York Harbor and Albany, and then is sharply reduced to a 14 foot depth between Albany and Waterford. The controlling depth is further reduced north of Waterford where the depth of the Champlain Canal is 12 feet.

As shown in Table 2.9, the majority of commercial traffic in the Champlain Canal travels north. In 1981, the total originating tonnage in the Champlain Canal was 544,186. Essentially all of the tonnage on the Champlain Canal was comprised of petroleum products<sup>(1)</sup>.

In addition to the tonnage on the Champlain Canal, a large volume of traffic occurs on the Hudson River between New York Harbor and Waterford. Although the tonnage appears to be declining over the years as shown in Table 2.10, 17,739,985 tons of ocean going as well as internal traffic traversed the Hudson River in 1981<sup>(2)</sup>. The range of commodities shipped is extensive as indicated in Table 2.11.

### 2.7.2 Sediment Transport and Maintenance Dredging

Most of the maintenance dredging consists of removing sediments that have been carried into the Hudson River by its tributaries during periods of heavy

runoff. In addition, minor amounts of sediments erode from the banks of the river.

Over the next ten years, maintenance dredging requirements for the Hudson River south of the Troy Lock and Dam are estimated at 950,000 to 1,300,000 cubic yards<sup>(3)</sup>. Upstream of the Troy Dam an estimated 170,000 cubic yards would be dredged<sup>(4)</sup>.

The amount of sedimentation is dependent on stream velocity and particle size. Sediment deposits are usually located at the shallows and backwaters of the river and where the width of the river is enlarged. These areas act as temporary sediment traps that can be expected to scour during high flow conditions. During floods, the sediment in the estuary above Beacon is scoured by higher river velocities, and carried downstream until the channel widens and the velocity is sufficiently reduced so that the sediment settles out.

The impacts of dredging vary with a multitude of factors. Among these are types of dredging, dredging rate, depth, current and type of sediment. An estimate of the total amount of resuspension is approximately 2% of the material dredged by a hydraulic dredge and 4% for a clamshell.

As a result of dredging, plumes of varying size and duration are created. The finer grained sediments, in general, have a slower settling velocity, thereby resulting in a larger plume for an extended period of time. Based on flag test results compiled by NYS DOT in 1982 (Champlain Canal) and particle size distributions presented in Hudson River Federal Channel Maintenance Dredging, Vol. 2 (Albany to Kingston) it appears that particle size distribution fluctuates along the canal and river. Studies conducted on previous dredging operations in the Hudson River show undetectable increases in PCB and other contaminant levels more than one mile downstream from dredging operations.

### 2.7.3 Glens Falls Feeder Canal

The Glens Falls Feeder Canal supplies water to the Champlain Canal over the navigation season which extends from April through December. Water is diverted from the Hudson River west of Glens Falls and augments lockage water at the summit level of the Champlain Canal. The diverted water flows north and south as lockages are made and allows for maintenance of required navigation levels. About 25 percent of the diverted water returns to the Hudson River. The remainder ultimately flows into Lake Champlain.

Diversions from the Glens Falls Feeder Canal are limited by law to a monthly average of 150 cfs. The actual average amount of diversion is about 100 cfs.

## 2.8 RECREATION

### 2.8.1 Water Contact Recreation

The New York State Office of Parks and Recreation maintains an inventory, by county, of outdoor recreation facilities. The New York State Recreation Facilities Inventory contains information on the name, address (in some cases) and type of activity. Table 2.12 lists those facilities on the Hudson River between the Sacandaga River and Troy Lock and which have water recreation such as swimming and boating. It should be noted that the Hadley Beach is located at the confluence of the Sacandaga and Hudson Rivers.

There are three recreational areas on the Sacandaga River between the Conklingville Dam and the Hudson River in the Town of Hadley. The Mohawk Beach and Picnic Area and Stewart's Pond Campground have developed swimming beaches while the Stewart's Bridge Hydroelectric Facility and Stewart's Pond Campground have boat launch ramps.

In addition to the facilities listed in Table 2.12, there are 115 boat marinas/launch ramps, 14 fishing areas, and 5 swimming areas on the Hudson

River between the Troy Lock and Dam and New York City. The swimming area located at:

- o Town of Marlboro Recreation Park, Milton, New York.
- o Kingston Point, Kingston, New York.
- o Saugerties Municipal Park, Saugerties, New York.
- o Croton Point County Park, Croton, New York.
- o Kingsland Point Park, North Tarrytown, New York.

### 2.8.2 Hudson River Fishery Resource

Historically, the Hudson River supported a viable commercial fish. Commercial finfishing peaked between 1900 and 1940 but is, most recently, the decline. Reported catches for certain species are shown in Table 2.13. These numbers likely represent a significant undercount because they probably based on reported incomes. The most important species commercially are striped bass, shad, alewife, blueback herring and Atlantic sturgeon. Of these, the striped bass is the dominant sportfish.

Due to the high sediment PCB levels in several areas of the Hudson River water quality and consequently fisheries have been affected. Commercial recreational fishing is prohibited between Fort Edward and the Troy Dam. In the lower Hudson, the commercial sale of all fish is prohibited except American shad, Atlantic sturgeon greater than four feet in length and goldfish used for ornamental purposes.

A popular sports fishery for walleye, smallmouth bass, largemouth bass, chain pickerel, northern pike, yellow perch, bullheads, carp, and panfish exists on the Hudson River between the Sacandaga River and Glens Falls. However, no quantified estimates of this recreational fishery are available.

There is no significant recreational fishery between Glens Falls and the Troy Dam. Juvenile fish can still be found in this area but there is distinct absence of the mature segment of the fish population. In addition the Hudson River is currently closed to recreational fishing in this area.

the 4 mg/l standard. The Lower Hudson River above Mile Point 127 is classified as water quality limiting which means the stream standards cannot be met with the BPT of wastewater discharges. Below Mile Point 127, the Lower Hudson is classified as effluent limiting which means the stream standard can be met with BPT.

Under present operating procedure, the MA7CD/10 flow is dependent upon summer holiday weekends when the reservoir may not release flow for two days. During other summer weekends, use of the MA7CD/10 flow and even other less severe minimum weekly flows may underestimate the daily water quality impacts of wastewater discharges in the Upper Hudson. This is somewhat accounted for by the way the NYSDEC Hudson River model simulates the DO levels in the river. That is, when three critical events - MA7CD/10 flow, all discharges at design rate, and minimum ambient DO concentration - occur simultaneously.

**Water Quality Data** - Recent USGS water resources data was reviewed to determine if a correlation existed between Hudson River flows and naturally occurring water quality parameters during periods of low flows. Data for Corinth indicated no correlation between dissolved solids and flow for flows typically occurring between May 1 and September 30. A similar statement can be made based on corresponding data for Waterford. Suspended solids data (filterable solids residue at 105° C) for Fort Edward, Stillwater, and Waterford indicates a suspended solids concentration independent of flow and varying between 0 and 15 mg/l for flows between 1000 cfs and 4000 cfs. The average suspended solids concentration during the summer period was about 6 mg/l.

With the exception of PCB's, sufficient data is not available on the relationship between the concentrations of man-made pollutants, such as toxic substances, and river flow. During October 1976 to September 1978, extensive analyses were performed for 14 organic pesticides in the Hudson River water at Waterford. None were detected. The instantaneous river flow during sampling ranged between 600 cfs and 70,500 cfs.

Any toxic substances introduced to the river at municipal and industrial wastewater treatment plants and from non-point sources are diluted by river

flows. Therefore, the concentrations of these toxic substances in the river would be higher during low flows given a constant discharge from a point or non-point source.

As discussed in Chapter 2, PCB's are desorbed from river bottom sediments during periods of low flow. Recent USGS water resources data at Waterford indicates that the PCB concentration in the water column is independent of flow and varies between less than 0.1 ug/l and 0.5 ug/l for flows ranging between 1000 cfs and 4000 cfs. Two factors may account for this relationship. First, in the low flow range, desorption transfer occurs at a relatively constant rate. Therefore, at lower flows, lower dilution takes place and the dissolved PCB concentration is higher. On the other hand, the total sediment load from scouring of bottom sediments decreases as flow decreases. Therefore, at lower flows, there would be less sediment-borne PCB in the river water.

**Salt Front** - Chlorides concentration is directly related to the location of the salt front which is arbitrarily defined as the location where the chloride concentration is 50 mg/l. The extent to which the saline water travels upstream depends predominantly upon the river flow and the ocean tides. If the Lower Hudson River flow could be stopped at its tributaries and the Troy Dam, ocean water would move upstream to the dam. During periods of low flow in the late summer and early fall, the salt front may move 60 to 70 miles upstream of the Battery to the Chelsea vicinity and, on occasion, above Poughkeepsie. During high spring discharges, the salt front moves downstream to a point between Yonkers and Tappan Zee. During the typical year, the salt front fluctuates between mile point 20 and 60. A record high of 342 ppm of chlorides was reached at the Poughkeepsie Water Works (Mile Point 76) on November 20, 1964. Very low average flows during the preceding months and a sustained southwest wind caused this unusual event.

A recent study<sup>(1)</sup> evaluated New York City's continued use of the Chelsea Pump Station (Mile Point 66) as an emergency raw water supply. A review of

(1) Malcolm Pirnie, Inc. Proposed Reactivation of the Hudson River Pumping Station Located at Chelsea, New York - Stage I Draft Environmental Impact Statement, prepared for the City of New York Department of Environmental Protection, March 1984.

existing water quality data indicated that the concentrations of the various physical, inorganic, and organic constituents of the Hudson River water at Chelsea were below the Federal and State maximum contaminant levels and recommended guidelines in nearly all cases. The exceptions were iron, manganese, color, turbidity and chlorides, all of which are aesthetic rather than health related concerns. The Hudson River water was found to be comparable to the raw water supplies of other major population centers within and outside the drainage basin. No raw water quality parameters in the Hudson River were significantly higher than those found in the sources of other water supplies. In addition, water from the Hudson River would be diluted with water from the city's reservoirs prior to consumption.

### 3.3 REREGULATED FLOWS AND WATER QUALITY

#### 3.3.1 Flows

**Upper Hudson River** - The proposed modifications to the current operation of the Conklingville Dam would set a minimum water surface elevation of 76 feet (MSL) between May 1st and September 30th. This would permit a drawdown of only 6 feet from the late spring maximum level. This amounts to approximately a 50 percent reduction in the storage available for discharge under the current operation with a 12 foot drawdown over the same period. This would limit flexibility in regulating the lake and amplify the effect of any operational errors. In particular, a failure to fill the reservoir at the beginning of the summer season could result in extreme low flows at Spier Falls during the dry summer months which, in turn, would effect the river's ability to assimilate wastewaters and adversely impact fish and wildlife, recreation, water supply, and other beneficial uses of the Hudson.

To properly assess the impacts of the low flows resulting from a 6-foot drawdown constraint, it is necessary to estimate a low flow analogous to the MA7CD/10 flow. The MA7CD/10 flow is the minimum average flow for seven consecutive days for a ten year recurrence interval. This figure is statistically derived based on historical flow data. Since no historical operating data for a 6 foot drawdown is available, existing data on lake

inflows and upstream Hudson River flows have been used to determine the effects of a 6 foot drawdown on flows at Spier Falls. To accomplish this, a computer program was developed. The input data consisted of the flow entering the reservoir, the Hudson River flow at Hadley above the confluence with the Sacandaga, a target flow to be obtained at Spier Falls, and the volume of storage within the reservoir for increments of reservoir depth. The computer compared the flow in the Hudson at Hadley to the target flow at Spier Falls and if this flow was less than the target amount, determined the volume of water to be released from the reservoir to reach the targeted flow. The revised elevation of the water surface in the reservoir resulting from the release was then calculated on the assumption that the reservoir was full (Elevation 768) at the beginning of the season.

If the flow in the Upper Hudson exceeded the targeted amount, the flow entering the reservoir was assumed to be stored and a new, higher water surface elevation was determined. If under this condition, the reservoir water surface reached Elevation 768, sufficient water was assumed to be released to maintain that elevation, and a flow in excess of the targeted amount at Spier Falls resulted.

Historic data on average weekly flow rates between early spring and late fall for the period from 1964 to 1982 were used to simulate the summer time reservoir drawdown at varying target flows for each year. By varying the target flow at Spier Falls and observing the effects on the reservoir water surface, it was possible to select that target flow which just resulted in a 6 foot drawdown in a given year. This target flow represented the highest sustained flow which could have been achieved at Spier Falls during that particular year. The information used in the computer model is included in Appendix I.

A statistical analysis of the target flows which would produce a 6 foot drawdown each year was made to evaluate the range over which those target flows might be expected to vary. This analysis indicated that, in 50 percent of the 19 years considered, the target flow would equal or exceed 2,200 cfs at Spier Falls, while in 90 percent of the years, the target flow would equal or

exceed 1,700 cfs. That is, in one year out of ten, the highest sustained flow possible at Spier Falls would be 1,700 cfs.

As noted above, the highest sustained flow which could have been achieved at Spier Falls in any particular year is based upon the historic data for that year. Of course, in actual operation of the reservoir, the flows which will enter the reservoir and those from the Upper Hudson during the ensuing weeks and months are not known in advance. Assumptions as to the probable future flows must be made when determining the rate at which water can be released without exceeding the drawdown constraint. Thus, in actual operation it is highly unlikely that a target flow could be established at the beginning of the summer season which would result in exactly 6 feet of drawdown by September 30th. In practice, a new target flow would probably be established each week based on the reservoir level at the end of the preceding week and weather forecasts for the coming days. This will result in a varying flow rate in the Hudson at Spier Falls which must, at some times, be less than the maximum sustained flow which might be met if the future could be predicted with accuracy.

An estimate of how much difference there might be between the theoretical maximum flow that could be maintained at Spier Falls if the future could be predicted accurately and the flow that is likely to result under actual operating conditions must be made to arrive at an estimate of the MA7CD/10 flow under the 6 foot drawdown constraint. In order to make this estimate, the reservoir operating records for the past 20 years were reviewed. During this time period, the Regulating District has attempted to limit drawdown of the reservoir to about 10 feet through Labor Day while at the same time, release as much water as possible to provide for low flow augmentation. A comparison of actual flows to the maximum theoretical flow that could have been sustained at Spier Falls under this operating procedure indicates that the lowest seven consecutive day flow each year was usually about 450 cfs less than the theoretical maximum flow for that year. However, in all but 3 of the years evaluated the seven day low flow occurred over a holiday weekend when no releases were made from the reservoir for 2 days or more. If seven day periods containing both a Sunday and a holiday are excluded, the seven day low

flow each year was generally about 200 cfs less than the theoretical maximum flow that could have been achieved.

In estimating the MA7CD/10 flow which might result under a 6 foot drawdown constraint, it has been assumed that the Regulating District would adopt a policy of maintaining as high an average seven consecutive day low flow as is possible to minimize impacts on downstream water quality, i.e., if no releases are to be made on two days out of seven during a holiday week, increased releases would be made on days preceding and following the holiday weekend to maintain the average seven consecutive day low flow at a higher level. It is further assumed that the minimum average seven consecutive day low flow which occurs during a given year will be approximately 200 cfs less than the theoretical highest sustained flow possible for that year. Under these assumptions, the MA7CD/10 low flow at Spier Falls is estimated at 1,500 cfs under a 6 foot drawdown constraint. This is 260 cfs less than the current MA7CD/10 flow used by NYSDEC in establishing wastewater discharge permit limitations in the Upper Hudson River immediately below Spier Falls. This 260 cfs reduction in the MA7CD/10 flow will affect all reaches of the Upper and Lower Hudson. Table 3.2 shows existing and estimated reregulated MA7CD/10 flows for the river.

Lower Hudson River - The 260 cfs reduction in the MA7CD/10 flow in the Upper Hudson results in a reregulated MA7CD/10 flow of 2,740 cfs for the Lower Hudson. The reregulated average freshwater summer flow over the Troy Dam is estimated at 3,500 cfs. This will increase as the river travels downstream because of tributaries entering the Lower Hudson.

### 3.3.2 Water Quality

Dissolved Oxygen - At the request of the Hudson River Black River Regulating District, the NYSDEC has run the Hudson River model on the basis of the reduced MA7CD/10 flow and the SPDES permit BOD loadings at the wastewater treatment plants. The results under the existing MA7CD/10 and reduced flow scheme are shown in Table 3.3. As indicated by these results, the DO

concentration will fall below the minimum requirements at Reach 12, between the Waterford Dam and the Troy Dam.

As indicated in Table 3.3, the minimum DO that occurs under the reregulated MA7CD/10 is 3.7 mg/l as compared to the minimum required DO of 4.1 mg/l that occurs under the existing MA7CD/10. In general, the DO concentrations under the reregulated MA7CD/10 are 3 percent lower upstream of the former Fort Edward Dam site and 10 percent lower downstream of that location. It should be noted that the permitted BOD loadings are significantly greater than the actual loadings in most cases.

For the Lower Hudson River, the impact of the reduced MA7CD/10 flow on DO levels was derived through proportion since the Lower Hudson Model is not currently in a usable form. A 15 percent reduction in low flows in the Upper Hudson resulted in a 10 percent reduction in DO. Therefore, for the Lower Hudson, the 9 percent reduction in low flow is estimated to reduce the DO concentration by 6 percent. Table 3.4 shows the approximate DO concentration at the existing and reregulated MA7CD/10 flow for the impacted section of the Lower Hudson. The reduction in flows should not significantly affect the DO concentrations downstream of Mile Point 120.

It should be noted that the DO concentration in the Lower Hudson is dependent on the DO and BOD passing the Troy Dam. If water quality were improved upstream of the dam to prevent the predicted violation of the DO standard under the reregulated flow, then the resulting DO levels in the Lower Hudson (Capital District Pool) would be somewhat higher than that indicated in Table 3.4.

Recent survey data has indicated that the DO levels in the Capital District Pool have been improving and that the model may need updating. In addition to the installation of the Albany and Rensselaer County Wastewater Treatment Plants, a few of the combined sewer overflows in the Capital area have been eliminated. While the overflows are not directly included in the model, they act as sinks or consumers of dissolved oxygen in terms of the model parameters of benthic uptake and deoxygenation rate.

Salt Front - Based on information presented, in providing sufficient reduction in low flows is not expected to cause an increase in the concentration of naturally occurring river water constituents with the exception of chlorides associated with the salt front movement.

A relationship between the salt front location and the Hudson River flow at Troy, based on samples collected in 1958, 1959, 1965 and 1966, was developed by the Research and Development Department of the former Board of Water Supply of the City of New York. This relationship indicates that the salt front is located at Mile Point 66.5 for the existing average summer low. A reduction in summer flows of 600 cfs could cause a 1.5 mile upstream movement of the salt front to Mile Point 68. If the Chelsea Pumping Station (Mile Point 66) were operating, the salt front could move upstream to Mile Point 69. The salt front is located at Mile Point 72 for the existing MA7CD/10 flow over the Troy Dam. The 260 cfs reduction in the MA7CD/10 would cause the salt front to move about 2 miles upstream to Mile Point 74.

The position of the salt front at the start of the summer dry season is dependent upon spring run-off. Unusual high tides and wind and stream flows from tributaries to the lower Hudson River all affect the correlation between the actual location of the salt front and that predicted by the curves developed by the Board of Water Supply. Curves have also been developed that represent the approximate distributions of chloride concentrations along the Hudson River under average and normal conditions and for similar tidal conditions. Detailed statistical evaluations are required to determine the probability of occurrence of any particular unusual occurrence.

Other Parameters - As a conservative estimate, a reduction in low flow would increase the concentration of man-made pollutants in direct proportion with the decrease in flow. Upstream of the Troy Dam, the MA7CD/10 flow would be decreased by about 15 percent. The MA7CD/10 flow would be decreased by about 9 percent downstream of the dam. Average flows during the summer months would decrease by about 20 percent and 13 percent on the Upper and Lower Hudson River, respectively. Surface water temperatures rise and fall in response to daily changes in air temperature and are not expected to be affected by the reduction in low flows.

### 3.4 WATER QUALITY REQUIREMENTS

#### 3.4.1 Municipal/Industrial Wastewater Treatment Plants

The impact of discharges from wastewater treatment plants are predominantly governed by the NYSDEC's Classification and Standards of Quality and Purity. Quality standards have been established for all segments of the Hudson River on the basis of the best usage of the waters. Standards potentially affected by a reduction in low flow are those for 1) dissolved oxygen, and 2) taste and odor-producing substances, toxic wastes and deleterious substances, and 3) phenolic compounds.

The stream classifications and dissolved oxygen requirements were shown previously in Table 3.1. The standards for toxic and deleterious substances generally specify none in amounts that will be injurious to fishlife or which in any manner, shall adversely affect the flavor, color, or odor thereof, or impair the waters for any best usage as determined for the specific waters. In addition, Class A, B, C and D waters have established limits for ammonia compounds (2.0 mg/l), cyanide (0.1 mg/l), ferro or ferric cyanide (0.4 mg/l), copper (0.2 mg/l), zinc (0.3 mg/l), and cadmium (0.05 mg/l). In Class A waters, phenolic compounds should not exceed 0.005 mg/l.

#### 3.4.2 Drinking Water Supplies

Drinking water supplies are judged on physical, chemical, bacterial, and radiological quality. In evaluating the impact of a decrease in river flow on a water supply, consideration must be given to 1) the quality of the water found in the Hudson River and 2) the quality of the treated water. While most of the physical and bacterial constituents of the Hudson River can be altered or removed by conventional water treatment, there may be chemical substances in the Hudson River that are not affected by treatment.

Quality of the finished or drinking water is governed by the EPA's National Primary Drinking Water Regulations and the New York State Sanitary Code, Part 5, Drinking Water Supplies. These regulations establish maximum contaminant levels (MCLs) for inorganic chemicals, organic chemicals, turbidity, microbiological contamination and radionuclides. The MCLs for those substances presently regulated are presented in Table 3.5. The USEPA is

considering MCLs for 13 additional inorganic contaminants, more than 40 additional organic contaminants and several additional radionuclides. The NYSDOH Recommended Maximum Drinking Water Levels for Eleven Classes of Organic Chemicals (1980) and the NYSDEC Organic Chemical Drinking Water Guidelines also contain recommended criteria for drinking water supply. Of particular importance to this study is the state guideline of 1 ug/l for PCB's

Quality of the raw water supply is governed by the New York State Sanitary Code, Part 170, Sources of Water Supply, and the EPA's Recommended Criteria for Raw Water Quality for Public Drinking Water Supplies. These guidelines specify maximum allowable limits for physical, microbiological, inorganic and organic chemical, and radioactive constituents as characteristics of a raw water supply. In general these limits are the same as those acceptable for finished water. The major difference is a higher allowable maximum limit for turbidity (5 TU) and coliform bacteria (20,000 /ml). In addition, the guidelines contain maximum concentration limits for several organic pesticides.

#### 3.4.3 Industrial Water Supplies

The quality of water required for industrial use varies depending on the use of the water and the type of treatment it receives prior to use. Since many industries use large volumes of water, treatment is provided at the lowest practical level that would not adversely affect the industry's product or equipment. Effects on products include decay resulting from biological action, staining, corrosion and chemical reaction and contamination. Effects on equipment include both deterioration of equipment and reduction in efficiency or capacity caused by corrosion, scale deposition, tuberculation, organic growths and foaming.

The predominant water use of the industries along the Hudson River is for cooling water. Other major uses include pulp and paper manufacturing, chemical products manufacturing, and cement production.

Hardness, suspended solids, dissolved gases, acids, oils and other organic compounds and slime forming organisms are the major constituents of a water supply that can lead to corrosion, scaling and organism growth in cooling equipment. Water of almost any quality can be used for cooling purposes, including sea water, treated sewage, and polluted river water. In general, the limiting concentrations for a cooling water supply are:

o Turbidity	50 mg/l
o Hardness	50 mg/l
o Iron	0.5 mg/l
o Manganese	0.5 mg/l
o Iron and Manganese	0.5 mg/l

In most cases, the initial temperature of the water is of considerable importance to cooling water supplies.

Water uses for pulp and paper manufacturing include process water for digestion of woodchips, washing of pulp and papermaking, cooling and boiler feed. Suspended matter, hardness, turbidity, color, dissolved gases, iron, manganese, silica and organic matter are the predominant undesirable constituents of process waters for pulp and paper manufacturing. Table 3.6 provides the maximum recommended chemical constituents of process waters used for pulp and paper manufacturing. In general, the Upper Hudson River water quality is within these limiting concentrations during periods of low flow.

Water quality requirements for chemical production vary widely and are dependent upon the product being manufactured. In general, the chemical process industries using Hudson River water provide screening prior to use.

#### 3.4.4 Thermal Power Plants

Thermal discharges are governed by the Part 704, Criteria Governing Thermal Discharges, of the Environmental Conservation Code. The water quality standard states that "all thermal discharges to waters of the state shall

At some future date, it must be anticipated that the full reduction permitted BOD discharges of 7,300 pounds per day in the Glens Falls-Bakers Falls area and 2,200 pounds per day in the Capital District Pool will have been achieved by increased BOD removal at treatment plants.

The present day cost of constructing, operating, and maintaining tertiary treatment facilities to accomplish this provides an approximation of the range of values associated with the loss of BOD assimilative capacity in the river. In estimating these costs it has been assumed that the required BOD reduction could be achieved by adding tertiary treatment at one major treatment plant in the Glens Falls-Bakers Falls area and one plant discharging to the Capital District Pool.

On the basis of cost curves developed for wastewater treatment unit processes by the USEPA it is estimated that tertiary coagulation/sedimentation facilities for the removal of an average of 7,300 pounds per day of BOD from discharges to the river in the Glens Falls-Bakers Falls area would have a construction cost of \$7,200,000 to \$8,800,000 and operation and maintenance costs between \$1,800,000 and \$2,200,000 per year. Similarly, the construction cost for tertiary filtration facilities required to remove an average of 2,200 pounds per day of BOD from discharges to the Capital District Pool would be between \$11,400,000 and \$12,500,000 while operation and maintenance costs would be between \$1,900,000 and \$2,100,000 per year. The equivalent annual cost of these facilities would be between \$2,800,000 and \$3,400,000 per year in the Upper Hudson and between \$3,400,000 and \$3,800,000 in the Capital District Pool.

In summary, the estimated value of the reduced BOD assimilative capacity of the river related to a reduction in the MA7C/D flow ranges from \$4,500,000 to \$5,200,000 per year under current discharge conditions to a high of \$7,200,000 per year under future conditions when the full assimilative capacity might be utilized.

The NYSDEC's proposed new permit limits for toxic substance discharges will require removal of from 75.6 percent of existing chromium discharges to

IV. IDENTIFICATION OF IMPACTS

4.1 GENERAL

Impacts, both adverse and beneficial, would result from the reregulation of Hudson River flows. Potential beneficial impacts associated with increased recreational usage of the reservoir are being documented by others in an on-going report to the Hudson River-Black River Regulating District. Impacts on hydroelectric facilities have been studied previously and are not included in this report. While an evaluation of the potential impacts on the Regulating District's flood control function is beyond the scope of this report, mention has been made herein of the probable effects of a reduced drawdown on flooding.

This chapter will address the impacts on "users" of Hudson River flows downstream of the Sacandaga Reservoir. These users include:

- o Wastewater Dischargers,
- o Water Supplies,
- o Thermal Power Plants,
- o Recreation Interests,
- o Navigation Interests.

4.2 IMPACTS ON WASTEWATER TREATMENT PLANTS

4.2.1 BOD Loadings

Upper Hudson - The results from the NYSDEC's Hudson River Dissolved Oxygen (DO) model, included as Appendix J, indicate that at the reduced MA7CD/10 flow the DO levels will fall below the 4.0 mg/l standard just above the Troy Dam.

According to NYSDEC officials, two methods would be considered for bringing the DO concentrations up to 4.0 mg/l. Those include:

1. Increasing the spillage (or reeration) at the dams along the Upper Hudson.
2. Reducing the allowable BOD in the effluent from the large discharger or dischargers.

The first choice is in direct opposition to that which has been proposed by recreational interests concerned with limiting the fluctuation of water surfaces during the summer months.

The second choice, that of reducing the permit limits for BOD for largest single discharger or several dischargers is more likely and the impacts of such a solution are discussed herein.

The DO concentrations predicted by the model for a MA7CD/10 flow are calculated under the assumption that all wastewater treatment plants are actually discharging the average amount of BOD under their respective permits at the time that the MA7CD/10 flow occurs. Current permit limits on BOD have been established by NYSDEC at levels which will utilize all the available DO in the stream above the 4.0 mg/l DO standard under the existing MA7CD/10 flow. If the MA7CD/10 flow is reduced, as would occur if a 6 foot drawdown constraint were imposed at Great Sacandaga Lake, the discharge permit limits for BOD would also have to be reduced to ensure that the DO standard is not violated.

In order to estimate the required reduction in BOD, a number of DO calculations were made. These calculations indicate that discharges to the river in the reach between Glens Falls and a point just below Baker's Fall (Mile Point 201-195) exert the greatest influence on DO levels between Waterford and Troy.

Five wastewater treatment plants discharge to the river in this area as follows:

- o Finch Pruyn - This wastewater treatment plant provides secondary treatment to wastewater from pulp and paper manufacturing.

- o Crown Zellerbach - A primary treatment plant is presently being upgraded to provide secondary treatment for paper manufacturing wastewaters.
- o Glens Falls - A new, secondary wastewater treatment plant is under construction at the site of an existing primary treatment plant which treat municipal wastewaters from Glens Falls, Queensbury and other Glens Falls plus pretreated wastewaters from the Ciba-Geigy Corporation.
- o General Electric Company - The discharge of organic compounds from the wastewater treatment plant at this location is negligible in comparison to the other plants in the area.
- o Scott Paper Company - A secondary treatment plant at this location treats paper manufacturing wastewater.

Table 4.1 shows, for the four largest plants, the current or proposed SPDES limits for effluent BOD, the monthly average BOD discharge as reported by NYSDEC in 1983, and the estimated allowable BOD discharge limit under the reduced, MA7CD/10 flow which would result from a 6 foot drawdown constraint at the Great Sacandaga Lake. The General Electric plant discharge limit is less than 100 pounds per day, and the actual discharge is reported to be less than 15 pounds per day. This is not significant when compared to the large plants.

As shown in the table, the existing SPDES permits allow the discharge of 20,400 pounds per day from the four large plants as an average over any month. Currently, these plants discharge a combined average of about 20,400 pounds per day or about 63 percent of the total allowable discharge to that reach of the river. Two plants currently discharge more BOD than their permits allow. However, the permit limits for these plants are based on the assumption that secondary treatment facilities will soon be on-line and that the BOD in the treated effluent will drop significantly below what is currently being discharged. As noted in Table 4.1, the actual BOD effluent will drop to 11,700 pounds per day or to about 36 percent of the total allowable discharge.

Under a reduced MA7CD/10 flow, the monthly average BOD discharge from the four dischargers would have to be decreased by about 7,300 pounds per day to a

total of approximately 25,000 pounds per day - a reduction of approximately 22 percent. The reduced permit limit for each discharger, shown in Table 4.1, has been calculated under the assumption that each of the four treatment plants will be required to accept an equal percentage reduction in its discharge limit. Whether this would, in fact, be the case or whether the entire reduction would be achieved by revising the Finch Pruyn plant limit would depend upon NYSDEC. In either case, none of the plants would be impacted to the extent that new facilities would have to be constructed immediately. However, all would undoubtedly express concern over the loss of 7,300 pounds per day of BOD assimilative capacity of the river and in particular, the potential future effects on their capacity to expand.

Lower Hudson - According to the NYSDEC's existing model, DO standards in the Capital District area would be violated under the existing MA7CD/10 flow if all treatment plants were discharging at their permit limits. Under a reregulated MA7CD/10 flow, the BOD discharge from wastewater treatment plants in this area would have to be reduced by about 2,200 pounds per day.

The major wastewater treatment plants which discharge to the Hudson in the Albany area are the Albany County Sewer District's North and South Wastewater Treatment Plants and the Rensselaer County Sewer District No. 1 plant. The current SPDES permit limits for BOD from these plants are compared to their reported, 30-day average BOD discharge levels for 1983 in Table 4.2. As shown in this table, the actual pounds of BOD in the discharge from these plants are currently well below that which is allowed by permit, and they remain well below any reduced permit limits resulting from a reregulated MA7CD/10 flow. However, it should be noted that the current SPDES permit limits on BOD and the estimated limits which would apply under a reregulated MA7CD/10 flow would result in a violation of DO standards in the Hudson if all plants were discharging at their permit limits.

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#### 4.2.2 Toxic Substances

The NYSDEC has established an allocation for toxic substance discharges from municipal and industrial wastewater treatment plants to the Hudson River basin. This allocation is based on the existing MA7CD/10 flow and current estimates of allowable levels of each toxic in the river. These allowable levels are based on protection of human health and aquatic life. In general, the standards required to protect aquatic life are considerably more stringent than drinking water standards. Information on existing discharges was obtained from municipal pretreatment programs, sampling data, and Part C applications under the USEPA consolidated permits program.

The allocations will be incorporated into the individual wastewater treatment plant SPDES permits as they come up for renewal. It should be noted that the allocations are relatively conservative in that discharges entering the Upper Hudson and/or Mohawk Rivers are assumed to be transported to the Lower Hudson. Therefore, the allocated load in the Upper Hudson and Mohawk River basins are often lower than the allowable load in order to avoid exceeding the allowable load in the Lower Hudson.

Table 4.3 presents the allowable toxic loading, as determined by the NYSDEC, on the basis of the existing and reregulated MA7CD/10 flows for these standards and criteria that will be impacted by the reduction in flows. Also indicated is the total loading that has been allocated to the wastewater treatment plants. Of the substances listed in Table 4.3, chloroform, TCE, chromium (+6), copper, cadmium and silver are considered to be high priority toxics by the NYSDEC.

Table 4.4 shows the percentage removal of the high priority toxic discharges required to meet NYSDEC's allocation under the existing MA7CD/10 flows and the percentage removal required under a reregulated MA7CD/10 flow. As shown in this table, a significant reduction in toxic substance discharges will be required to meet the allocated loads under the existing MA7CD/10 flow. The reregulated MA7CD/10 flow would require a reduction in the total allowable discharge load for each substance of about 9 percent, and increase the

percentage removal required by the various treatment plants from 0.1 percent, depending upon the substance.

Table 4.5 identifies the existing wastewater dischargers which will probably be effected by the new toxic discharge limits. This Table includes discharges to the entire Mohawk and Hudson River Basins.

#### 4.3 IMPACTS ON DRINKING WATER SUPPLIES

A decrease in water quality can affect the typical drinking water treatment processes of coagulation, sedimentation, filtration, and disinfection. The color and turbidity of the water, the chemical characteristics of the water, and the water temperature are the water source parameters that can influence the coagulation process. In general, as water quality decreases, the amount of chemicals required for coagulation increases. However, the exact relationship between the water quality and coagulant dosages for each of water treatment plants using the Hudson River as a raw water source can only be established through laboratory testing.

Sedimentation is directly affected by the efficiency of the coagulation process and the concentration of solids in the water source. It is expected that a decrease in water quality would result in an increase in the amount of sludge and possibly a slight increase in the solids concentration of the sedimentation basin effluent.

The filtration process would also be affected by a decrease in water quality. Increased carryover solids from the sedimentation basin could result in shorter filtration runs and increased backwash requirements. Finished water quality may also decrease. Additional chloring may be required to adequately disinfect the finished water.

In addition to the water parameters that can be effectively handled by the typical water treatment processes, there are several parameters that may substantially pass through a typical water treatment plant. Toxic substances such as dissolved heavy metals and pesticides, and non-toxic substances such as hardness and salinity are not substantially removed or reduced by the typical water treatment processes. Other toxic substances, such as PCBs, may only be partially removed by typical water treatment processes.

##### 4.3.1 Upper Hudson River

Impacts of a reduction in low flows is dependent upon the location of the water treatment plant. Based on data presented in previous sections, toxic

may be harmful to persons with heart or kidney diseases. The taste threshold is about 400 mg/l for the average person; while taste sensitive people can detect a salty taste at concentrations of 100 mg/l. Just because a taste is detected, it is not necessarily an objectionable taste. Most people prefer water with some mineral content; distilled water tastes objectionably flat.

During average summer periods, the salt front is downstream from Poughkeepsie, and therefore, the chloride concentration would be well below the 250 mg/l drinking water standard. During dry summers when the MA7CD/10 occurs, the salt front could move above Poughkeepsie. However, the average chloride concentration should be below the drinking water standards. The Highland water treatment plant, which is located across the Hudson River from Poughkeepsie, would be affected to a similar degree.

During summer periods of average run-off, the salt front is approximately located at Chelsea and the chloride concentrations at the intake would be less than the drinking water standard. Under the conditions of the reregulated MA7CD/10 flow and with the Chelsea Pump Station operating, the average chloride concentrations could approach 1,000 ppm at the intake. However, because of dilution with water from the Delaware Aqueduct, chloride concentrations between 900 ppm and 1,250 ppm are acceptable at Chelsea without exceeding 250 mg/l at New York City's West Branch Reservoir. Further dilution occurs prior to the water's entry into the city's distribution system.

In summary, the available data indicates that the Poughkeepsie and Highland water supply should not experience chloride concentrations higher than the drinking water standards during normal and drought years. The Chelsea water supply should meet standards during normal years and marginally meet standards during a year in which the reregulated MA7CD/10 flow occurs. The reduction in low flow increases the chloride concentrations at Chelsea by 100 mg/l during the MA7CD/10 which, after dilution, translates to a 15 mg/l increase.

Chlorides are not substantially affected by the typical water treatment processes of coagulation, sedimentation, and filtration. If chloride

Substances have not been detected during low flows in the Hudson River concentrations higher than the drinking water MCLs.

For the Queensbury Water Treatment Plant, the reregulated flow represents a 15 percent reduction of the existing MA7CD/10 flow and a percent reduction of the average summer flow. This translates to a corresponding reduction in the amount of dilution and assimilation of pollutants. There are only two major sources of man-made pollutants in the Queensbury Water Treatment Plant, and they are located 8 miles upstream of the intake. Neither plant has a current permitted discharge for toxic substances. In addition, analyses of the NYSDEC's baseline load for toxic substance allocation, presented in Table 4.5, indicates that, for the Hudson, the baseline load will be less than the recommended drinking water standards and criteria. Therefore, no significant impacts on the Queensbury Water Treatment Plant are foreseen due to toxic substances as a result of reduction in the MA7CD/10 flow. Minor operational impacts may occur due to the reduced dilution of suspended solids and coliform bacteria from upstream wastewater discharges and non-point sources. The increase in river water suspended solids concentration based on a reduction in MA7CD/10 average summer flow is estimated at 0.15 mg/l on the basis of an average permitted suspended solids discharge at the upstream wastewater treatment plants.

The reregulated MA7CD/10 and average summer flow at Waterford is only slightly higher than the flow that will occur at Queensbury. However, there are a significant number of municipal and industrial wastewater treatment plant discharges to the Hudson River that occur between Queensbury and Waterford. Suspended solids concentrations could increase by 0.7 mg/l on the basis of the average permitted suspended solids discharges at upstream wastewater treatment plants.

The impact at the Waterford Water Treatment Plant resulting from possible increases in concentrations of toxic substances during low flows in the river water is difficult to quantify. The only permitted discharges of toxic substances in the Upper Hudson Basin include the R.E. Caperton Products Plant

and Chase Bag Plant in Hudson Falls, the U.I. Silicone Products Plant in Waterford, Lydall, Inc. on the Hoosic River, and the Halcrow North and West Plants on the Battenkill. Current maximum permitted discharges when diluted by the reregulated MA7CD/10 flows are below the MCLs and recommended guidelines for drinking water. In addition, the NYSDEC's baseline toxic load is less than the recommended drinking water standards and criteria. During low flows, PCBs in the water column would be below the 1 ug/l State guideline for drinking water while other toxic substances have not been detected at levels greater than the MCLs during periods of low flow.

In summary, no significant impacts are foreseen on the quality of the drinking water supplies at Waterford and Queensbury. However, an increase in operational requirements is expected at both plants due to slightly higher concentrations of suspended solids in the river.

#### 4.2 Lower Hudson River

The drinking water intakes on the Lower Hudson are located in a 30-mile stretch between Fishkill and Rhinebeck. Rhinebeck is about 60 miles downstream from the Troy Dam, and the reduction in the MA7CD/10 flow in this area does not represent as significant a portion of the total flow as in the upstream reaches of the river.

As previously discussed, the main water quality concern for the water treatment plants on the Lower Hudson is the location of the salt water front during low flow periods. The salt front is predicted to move 2 to 4 miles upstream because of the reduction in flows. This salt front movement will have an impact on the chloride levels at the Chelsea Pumping Station and the Poughkeepsie, Castle Point, and Highland Water Treatment Plants. Table 4.6 shows the increase in chloride concentrations which are predicted to occur at these water supply stations. The Hudson River Psychiatric Center, Port Jervis and Rhinebeck Water Treatment Plants should not be affected by the salt front movement.

The recommended chloride limit of 250 mg/l in drinking water is based on taste rather than health considerations, although high chloride concentrations

concentrations become unacceptable either advanced treatment techniques such as ion exchange or reverse osmosis would be required for a portion of the water supply or an alternate source of supply would be required to dilute the chloride concentration of the conventionally treated river water. The Castle Point VA Hospital and Highland Water District have alternate sources of supply.

The Castle Point VA Hospital uses well water to dilute the river supply to a chloride concentration of 100 ppm because of concern for patients on low salt diets. However, the hardness of the well water adversely affects the operation of the domestic hot water heat exchangers and boilers. The VA Hospital is currently constructing a new 0.15 mgd water treatment plant. This plant will include a small reverse osmosis unit that will serve as a backup to the well water system.

The reregulation of flows will result in an average increase in chloride concentrations at the VA Hospital of about 45 ppm during average summer periods. During drought periods, the concentration could increase by 100 ppm. These increases would be even higher if the Chelsea Pump Station were operating.

#### 4.4 IMPACTS ON INDUSTRIAL WATER SUPPLIES

The impacts of a reduced MA7CD/10 low flow on industrial water supplies along the Upper Hudson River are expected to be similar to those discussed for drinking water supplies. No significant change is expected in the chemical constituents which affect the use of water for cooling or process requirements. The pulp and paper industries and chemical industries which treat their supply prior to use may experience a slight increase in operational requirements depending upon the type of treatment provided. In general, a slight increase in sludge handling will occur. This could be in the form of increased solids removal from sedimentation basins, increased backwashing requirements for filters or both.

Below the Troy Dam, impacts are predicted to be very slight for most industrial water users. No appreciable change in water quality is expected except for a slight increase in chloride concentrations in areas affected by the salt front movement. However, the only industrial water user in that area is for cooling, and the equipment should not be adversely affected by a minor increase in salinity. It should be noted that several industries indirectly use Hudson River water by obtaining their industrial water supply from Poughkeepsie's municipal water supply system. IBM, in particular, has recently installed a reverse osmosis system that is used in conjunction with its dionization water plant. The reverse osmosis system runs throughout the year, and it is not expected that the reduction in Hudson River flow will adversely affect the operations of the facilities.

#### 4.5 IMPACTS ON THERMAL PLANTS

All of the thermal electric plants on the Hudson River are located south of Troy along the tidal portion of the river. These plants utilize large volumes of river water for cooling purposes. Discussions with representatives of these power plants and with representatives of NYSDEC indicate that a reduction in the MA7CD/10 low flow will have little, if any, measurable impact upon the operation of these power plants or upon the temperature of the water in the river.

An analysis of the effects of cooling water discharge from the Niagara Mohawk plant at Glenmont indicates that, at a peak heat rejection rate of  $1.66 \times 10^9$  kilocalories per hour, the temperature of the river water is increased by 0.22° C. at the current MA7CD/10 low flow of 3,000 cfs. At a reregulated low flow of 2,740 cfs the temperature rise would be 0.24°. The remaining thermal electric power plants are all located south of Poughkeepsie where tidal flows are very large in comparison to freshwater flows.

**4.6 IMPACTS ON NAVIGATION**

A recent study<sup>(1)</sup> evaluated the effects of reregulation of the Hudson River flows within a range of 800 to 2,600 cfs on navigation in the Champlain Canal. The report concluded that no adverse impacts to navigation would occur because no low flow related navigation problems had been documented and Hudson River flows would be maintained above the diversion requirements of the Glens Falls Feeder Canal.

Adverse impacts to navigation would only occur if withdrawals at the Glens Falls Feeder Canal were significantly curtailed in order to maintain water quality in the Hudson River. This situation is not likely to occur since the New York State Department of Transportation has first priority in the use of Hudson River water to operate its lock structures.

In general, a mature river such as the Hudson River is in a dynamic state of equilibrium with its basin. The sediment entering the river via stormwater run-off neither greatly exceeds or falls below the transport ability of the river. The reduction in Hudson River flows during the summer months would upset the equilibrium and reduce the natural transport of sediment out of the Upper Hudson River Basin. As such, the dredging requirements of the Champlain Canal, which have been estimated at 17,000 cubic yards over the next 10 years, could increase. The decreased sediment transport that would occur is estimated at 600 cubic yards per year.

The curtailment of water releases from the Sacandaga Reservoir on Sundays and holidays has the potential for causing slight navigation problems in the lower reaches of the Upper Hudson. On late Sunday and Monday, less water is available for lockages, and consequently, a longer period is required to complete the lockages. However, canal traffic is generally light during this period. Under the reregulated flow, the weekend flow will remain the same, and navigation is not expected to be curtailed to any greater degree than that currently experienced.

(1) Lawler, Matusky & Skelly Engineers, Hudson River Basin Reservoir Reregulation - Economic Analysis - prepared for USCOE, August 1976.

**4.7 IMPACTS ON RECREATION**

**4.7.1 Swimming and Boating**

The Upper Hudson River is essentially impounded above the Glens Falls Feeder Canal and between the Troy Dam and Lock 7 of the Champlain Canal at Fort Edward. These impoundments serve to maintain water levels even though the river flows are reduced. A reduction in river flows is not expected to physically limit the use of existing swimming and boating facilities. Adverse impacts would occur if water quality were to degrade as a result of the reduced flow. For the reaches of the Upper Hudson River where the swimming areas are located, the water quality standard for dissolved oxygen is not violated under the reregulated flows. In these areas, marginal aesthetic and naturally occurring pollutants.

The river is tidal downstream from the Troy Dam and a significant change in water levels would occur as a result of the reduction in flows. The slight reduction in water quality in the Capital District Pool would not impact boating. No swimming areas are located in the Capital District Pool.

**4.7.2 Fishing and Critical Habitats**

Upstream of the Troy Dam, impacts on fishing would be associated with the reduction in water quality and DO levels resulting from a reduction in low flows. The diurnal fluctuations in water level which currently occur are not expected to be affected under the reregulated operating procedure. As such, fish spawning areas will still be subject to the adverse impact of fluctuating water levels. The impact resulting from a reduced dilution of toxic substances from both point and non-point sources is difficult to identify because of the number of unknowns involved with trace concentrations of toxic substances. In the Upper Hudson, the NYSDEC's allocated load for toxic substances is less than the allowable load for these substances, except for BIS (2-Ethyl-Hexyl) Phthalate. The allocated load for this substance exceeds the allowable load by a slight amount. However, the Hudson River bottom sediments also contain toxic substances, in particular PCBs, zinc, copper, cadmium, lead

and chromium. It is estimated that the impact of PCBs and other toxic metal in the bottom sediments and the existing water level fluctuation would exceed any impact that may result from the reduction in summer flows.

Downstream of the Troy Dam, impacts on fishing and critical habitat would be associated with the movement of the salt front and the reduced dilution of toxic substances. The Chelsea area is characterized by salinity fluctuation resulting from upstream and downstream movements of the salt front. Fish and biological communities present in this area are typical of the middle estuary and are adapted to those fluctuations in chloride concentrations.

In most cases the critical point for the NYSDEC's toxic allocation is the division between the freshwater and saline water in the Lower Hudson. Downstream of this division, the impact of reduced river flows would be negligible. Upstream of this division, the reduced dilution of toxic substances would have a slight impact on aquatic life. However, it is not possible to quantify this impact. For example, the allocated concentration of chromium is 0.050 mg/l under the existing MA7CD/10 and 0.005 mg/l under the reregulated MA7CD/10.

**4.8 Impacts on Flooding**

Although this report is primarily concerned with the identification and evaluation of impacts associated with reduced flows resulting from the proposed 6 foot drawdown constraints, mention should be made of the potential effects of such a policy on flooding. In order to minimize the occurrence of low flows in the Hudson under a 6 foot drawdown constraint, it will be much more important that the Sacandaga Reservoir be full at the beginning of the summer dry season than it currently is. This fact may cause the operators to begin filling at an earlier date than in the past and increase the potential for flood damage should a major spring storm occur. Furthermore, if the reservoir is only drawn down 6 feet during the summer instead of 12 feet, significantly less storage volume will be available to contain flows from a late summer or early autumn storm.

**V. EVALUATION OF IMPACTS**

**5.1 GENERAL**

The previous chapter of this report identifies and discusses a number of impacts which would be associated with the imposition of a 6 foot drawdown constraint on the operations of Great Sacandaga Lake between May 1st and September 30th. Where possible, the magnitude of a given impact has been estimated in terms of measurable engineering parameters such as dissolved oxygen levels, concentrations of toxic pollutants, etc.

This chapter of the report attempts to assess the value of the identified impacts in economic terms, or, where an economic evaluation is not feasible, in terms of a loss or gain resulting from the impact.

**5.2 WASTEWATER TREATMENT PLANTS**

**5.2.1 Summary of Identified Impacts**

A 260 cfs reduction in the existing MA7CD/10 flow in the Hudson downstream from Spier Falls will require that current NPDES permit limits of 800 in wastewater treatment plant effluents be reduced by a total of approximately 7,300 pounds per day for plants on the Upper Hudson in the Glens Falls to Bakers Falls area and by approximately 2,200 pounds per day for plants discharging to the Capital District Pool. Inasmuch as the present BOD load discharged by these plants is well below both the existing permit limit and those estimated to result from a reduction in the MA7CD/10 flow, no immediate upgrading of treatment facilities would be required due to the permit revisions. However, while stream standards will not be constrained by existing dischargers at the reduced MA7CD/10 flow, a reduction in water quality will occur. Furthermore, reduced permit limits on BOD could affect the ability of some of the existing plants to operate at their design capacity and/or discourage the expansion of industrial uses on the river.

\*w/o adjust SPDES

New toxic waste discharge limits currently proposed by the NYSDEC would also be made more stringent under a reduced MA7CD/10 flow. These permit limits would affect wastewater treatment plants on the Mohawk, the Hoosic and other tributaries as well as those on the Hudson River itself. Under NYSDEC's method of allocating toxic waste discharges, a 9 percent reduction in the MA7CD/10 flow on the Lower Hudson will result in a 9 percent reduction in the amount of toxic substances permitted to be discharged to the Hudson and Mohawk River Basins.

## 2.2 Economic Impacts

Two methods have been considered for evaluating the economic impact of reductions in the permit limits for wastewater treatment plant BOD discharges. Under the first method, it has been assumed that, while existing BOD discharges will not result in a contravention of stream standards at a reduced MA7CD/10 flow, a monetary value can be assigned to the reduction in water quality which will occur. A measure of this monetary value would be the cost of maintaining the same water quality at the reduced MA7CD/10 flow as occurs under the existing MA7CD/10 flow. This could be accomplished by reducing the current BOD discharges to the river by upgrading one or more treatment plants to achieve a higher degree of BOD removal.

It should be noted that a strict analysis of the cost of maintaining existing DO standards at all points along the river under a reduced MA7CD/10 flow would require that all plants curtail BOD discharges by some amount. However, the major areas of concern are the DO sag points in the Waterford to Troy Dam area of the Upper Hudson and the Ravena area below the Capital District Pool. The DO level in these areas are most affected by discharges in the Glens Falls to Bakers Falls area of the Upper Hudson and the Albany area on the Lower Hudson. Furthermore, any facilities designed to achieve additional BOD removal would also reduce suspended solids discharges significantly. Therefore, it is judged that the cost of increased BOD removals at one point in the Upper Hudson and one point in the Lower Hudson is a fair estimate of the cost of maintaining water quality.

On the Upper Hudson River, the current 30-day average BOD discharge in the Glens Falls to Bakers Falls area would have to be reduced by an estimated 1,830 pounds per day to avoid a reduction in downstream DO under the reduced MA7CD/10 low flow. This reduction could be achieved by additional treatment at one or more of the four large treatment plants in that area, but it is judged that the least costly method of doing so would be to add tertiary coagulation/sedimentation facilities at the Finch Prawn plant. It is estimated that the cost of constructing additional facilities at the plant would range from \$2,700,000 to \$4,500,000 while operation and maintenance costs associated with the additional facilities would be between \$900,000 and \$1,100,000 per year. The equivalent annual cost of the increased level of treatment would be between \$1,400,000 and \$1,700,000 per year assuming a 12 percent interest rate on borrowed capital for 20 years. It should be noted that the additional facilities will provide a greater degree of treatment than that which is required. However, treatment of only a portion of the effluent can not be considered since split flows are not allowed.

On the Lower Hudson River, the current 30-day average BOD discharges to the Albany Pool would have to be reduced by 550 pounds per day to maintain downstream DO levels at their current state. This could be accomplished by upgrading one of the two Albany County Sewer District plants or the Rensselaer County Sewer District plant. For the purpose of this report, it has been assumed that the Rensselaer County plant would be upgraded through the addition of tertiary sand filters. The construction cost for this work is estimated to range from \$10,000,000 to \$11,100,000, while the additional operation and maintenance costs associated with these facilities are estimated between \$1,800,000 and \$2,000,000 per year. The equivalent annual cost over 20 years assuming a 12 percent interest rate on borrowed capital, would be between \$3,100,000 and \$3,500,000. As with the Upper Hudson, the additional facilities will provide a greater degree of treatment than that which is required.

As future development occurs along the Hudson River and wastewater discharges increase, the loss of BOD assimilative capacity due to a reduced MA7CD/10 flow will be of greater significance than under current conditions.

Recreational fisheries in the freshwater portion of the Lower Hudson River include largemouth bass, smallmouth bass, brown bullhead, yellow perch, walleye, blueback herring, alewife, rainbow smelt, sunfish and black crappie. Analysis of aerial overflights in the early 70's indicated an effort of 30,000 angler days for recreation fishing (9).

The saltwater portion of the Hudson River contains a recreational fishery for striped bass, white perch, blueback herring and white cutfish. An annual average of 135,000 angler days was estimated from the aerial overflights in the early 1970's (9).

## 2.8.3 Sensitive Habitat and Wetlands Areas

The Champlain Canal south of Fort Edward and that portion of the Hudson River between Fort Edward and Hadley contain small pockets of wetlands. The lower Hudson River on the other hand, contains several wetlands and sensitive areas which provide shelter and spawning grounds for several commercial species.

Limited sensitive habitat information is available for the Hudson River upstream of Fort Edward. Consequently, sensitive habitats cannot be documented here. The two official sensitive areas located on the Hudson River between Fort Edward and Hadley are located at a shoal just below Sherman Island and at a park area located in the town of Quakerbury (5).

A detailed compilation of sensitive habitats is presented in Appendix B. There are 45 of these sensitive habitat areas. In general, shallow areas particularly those which are vegetated, are valuable spawning and nursery areas. The mouths of tributaries, as well as the tributaries themselves, are likely spawning areas.

## 2.8.4 Stability of PCB Contaminated Sediments

General Electric has used PCBs in the production of capacitors at Fort Edward since 1947. An additional plant was put into operation at Hudson Fall

in 1952. Prior to 1966, no records were maintained which reflected the amount of PCB used at these plants. Between 1966 and 1974, these facilities purchased 78 million pounds of PCB (6). PCB discharges averaged 30 pounds per day into a river pool maintained by the Fort Edward dam in the early 1970's. In the late summer of 1973, this dam was removed allowing massive volumes of contaminated sediments to be resuspended and transported downstream. In April 1976, a 100-year flood caused further flushing and downstream transport. As a result, PCB laden sediments occur along the entire length of the river to varying degrees.

PCB can enter the water column from sediments primarily through two mechanisms: erosion and desorption. Erosion generally occurs during periods of high flow. The flood in April of 1976 resulted in increased PCB concentrations in the water column, primarily as a result of erosion. Desorption is the predominant mechanism at low flows. Since the daily flow is expected to be relatively constant, a lower flow could result in a higher dissolved PCB concentration. Desorption is the release of the PCB from the surface of the sediments they are absorbed on.

During the two extreme flow conditions, high and low flow, instability of PCB in both the particulate and dissolved phases is increased. The most stable condition is present during moderate flows. Based on 1977 to 1979 data, average PCB concentrations at low (less than 7,000 cfs), moderate (7,000 - 20,000 cfs), and high flows (greater than 20,000 cfs) were 0.384 ug/l, 0.200 ug/l and 0.693 ug/l, respectively (10). However, the low flow concentrations have decreased since 1979.

Estimates of the amount of PCB in the Upper Hudson River between Fort Edward and the Federal Dam at Troy have been tabulated and are presented in Figures 2.1 and 2.2 (7). Based on this information and additional information on PCB concentration south of the Battery (6), it appears that the PCB discharged at Hudson Falls and Fort Edward has been transported downstream, to varying degrees, along the entire length of the river.

flooding. By the middle of March the average reservoir level has dropped to about Elevation 744.

Upper Hudson River - Under the current reservoir operating procedure, during a year of average runoff, the flow at Spier Falls has generally ranged from 2,800 to 3,000 cfs for six days each week during the months of July, August and September. On Sundays and holidays, the flow is typically less than 1,000 cfs and consists of approximately 50 cfs from the Sacandaga River plus the flow in the Hudson at Hadley. The average flow during the summer months in the reach of the Hudson between the confluence of the Mohawk River and the Federal Lock and Dam in Troy is slightly in excess of 4,100 cfs.

The minimum average 7 consecutive day flow with a recurrence interval of once in 10 years (MA7CD/10) is used by the NYSDEC to establish limits on the discharges from wastewater treatment plants. This flow has been determined by the NYSDEC to be 1,760 cfs at Spier Falls and 2,729 cfs just upstream from the Troy Dam. The historic data utilized by NYSDEC in determining the MA7CD/10 flow indicates that in most years, the 7 day low flow has occurred during either the July 4th or Labor Day period when no releases were made from the Sacandaga on two days out of seven.

Lower Hudson River - Regulation of the Great Sacandaga Lake impacts the entire Lower Hudson River extending from the Troy Dam to the Battery in New York City. However, as compared to the Upper Hudson River, the discharge from the lake represents a smaller portion of the tributary flow to the Lower Hudson River.

Below the Troy Dam, the net downstream flow of the Hudson River varies with the freshwater discharge to the river (generally 2,000 to 40,000 cfs) and the tidal influx (300,000 to 400,000 cfs). The river actually flows upstream during flood tides. The Hudson River between the Troy Dam and the salt front has been compared to a large freshwater reservoir because of the relatively slow net downstream movement. The average flushing rate for this "reservoir" is about five months. During the summer, the average flow over the Troy Dam is about 4,100 cfs. The MA7CD/10 flow for the Lower Hudson, as determined by the NYSDEC, is 3,000 cfs.

### 3.2.2 Existing Water Quality

Hudson River water quality is directly related to the flow because of the relatively fixed input of pollutants entering the river from municipal and industrial sources. At high flows, dilution of the pollutants occurs and many pollutants can be assimilated by the river, thereby mitigating adverse impacts to the river and aquatic life. However, these impacts become a matter of concern during low flow periods when the dilution is not as great and the river's capacity to assimilate pollutants is approached or exceeded.

Dissolved Oxygen - Of particular concern is the effect of pollutants on the dissolved oxygen (DO) concentration of the river. Low DO levels contribute to an unsuitable environment for fish and aquatic life, and the absence of DO can cause anaerobic decomposition to occur in the river. Quality standards for the Hudson River specify the minimum DO levels depending upon the designated use of the river. Table J.1 indicates the classification and associated minimum DO levels for the various reaches of the Hudson River and the designated use for the different classifications.

The NYSDEC utilizes a computer program to evaluate the effects on dissolved oxygen resulting from pollutants discharged to the river. Input to the program are equivalent BOD discharges from municipal and industrial wastewater treatment plants and the river flow. Output from the NYSDEC's program, which is based on the existing MA7CD/10 flow and the SPOES permitted BOD discharges from the treatment plants located along the Upper Hudson River, indicates that the DO concentration decreases from about 6.7 mg/l at Palmer Falls to about 4.0 mg/l at the Troy Dam.

The DO sag model for the Lower Hudson has not been updated since 1977. At that time, the reaeration and decomposition rates were based on data obtained in the mid-1960's which was prior to the construction of the Albany and Rensselaer sewage treatment plants. Based on Best Practical Treatment (BPT) treatment, the model indicated that the dissolved oxygen concentration would drop below the 4 mg/l DO standard for a 1/2 mile length between Mile Point 145 and 127. A minimum DO of 2 mg/l was predicted to occur at Mile Point 138. Downstream of Mile Point 125, the DO concentrations are well above

99.3 percent of cadmium discharges based on the current MA7CD/10 flow in the Hudson. Under the reduced MA7CD/10 flow which would occur under a 6 foot drawdown constraint, the required percentage removals would increase to 77.4 percent for chromium and 99.4 percent for cadmium as shown in Chapter IV.

As the existing SPOES permits for the affected wastewater treatment plants come up for renewal, detailed studies will be required to determine the most cost-effective means of reducing toxic discharges at each plant. Possible methods might include process modifications in manufacturing plants, side stream treatment, elimination of products which result in toxic discharges, additional wastewater treatment, and a number of other options. Because of the many options which might be available for the reduction of toxic discharges, and the large number of treatment plants involved on the Hudson and its tributaries, it is very difficult to evaluate the economic impact of the additional removal requirements related to the reduction in the MA7CD/10 flow.

The NYSDEC has recently prepared a preliminary estimate of the state-wide cost of removing copper, zinc and cadmium from wastewater discharges. This estimate is predicated upon the addition of sand filters to polish the effluent from plants which already utilize chemical precipitation and settling processes to remove most of their metals. This method of treatment would be expected to produce an effluent which would meet the present new standards under the current MA7CD/10 flow, and, through careful operation, should also meet standards under a reduced MA7CD/10 flow. Thus, if a plant successfully implements its toxic discharge reduction program, the additional costs associated with a reduced MA7CD/10 flow would be primarily operation and maintenance costs.

In order to estimate the operation and maintenance costs associated with the reduction in MA7CD/10 flow, it is first necessary to estimate the operation and maintenance costs at the current MA7CD/10 flow. Operation and maintenance costs were not addressed in the NYSDEC cost estimates but have been developed herein under the following assumptions:

- o Municipal wastewater treatment plants will require the removal of toxic substances at their source through an industrial pretreatment

program rather than through the addition of treatment facilities at the municipal plant.

- o Industrial discharges with flow rates less than 500,000 gpd will add sand filters capable of treating their entire discharge.
- o Industrial discharges with flow rates greater than 500,000 gpd will filter only a portion of their total discharge.

Based upon the NYSDEC inventory and the above assumptions, it is expected that 8 plants in the 0 to 200,000 gpd size range, 6 in the 200,000 gpd to 500,000 gpd range and 38 plants with flows greater than 500,000 gpd will be affected by the new toxic standards. The capital cost for the construction of sand filters has been estimated by NYSDEC as follows:

Design Flow Rate	Estimated Capital Cost
0 - 200,000	28,000 - 150,000
200,000 - 500,000	160,000 - 255,000
GT 500,000	255,000 - 480,000

Operation and maintenance costs for tertiary sand filters have been evaluated by the USEPA and generally range from 16 to 17 percent of the capital cost of the filter system. The cost of disposing of the substances removed by the filters would add an additional 3 to 4 percent of capital cost to this amount.

For the purposes of this report, it has been assumed that the annual operation and maintenance cost for meeting NYSDEC's proposed standards under the existing MA7CD/10 flow will be approximately 20 percent of estimated capital cost of constructing the sand filter systems or approximately \$3,900,000 per year. It is further assumed that a two percent increase in operation and maintenance costs would be incurred to meet the more stringent standards required under a reduced MA7CD/10 flow. Under these assumptions, the additional cost of toxic substance removals associated with a reduced MA7CD/10 flow would be approximately \$80,000 per year.

It should be noted that, if tertiary sand filters are added to some industrial wastewater treatment plants for toxic substance removals, some

reduction in BOD and suspended solids discharges will also be achieved. However, the largest BOD and suspended solids dischargers are municipal treatment plants where no tertiary filters are anticipated and paper mill plants such as Finch Pruyn and Co. which generally do not discharge toxic substances which can be removed by tertiary sand filtration.

### 5.3 MUNICIPAL AND INDUSTRIAL WATER SUPPLIES

#### 5.3.1 Summary of Identified Impacts

A reduction of approximately 260 cfs in the MA7CD/10 flow and 600 cfs in the average flow from late June through the end of September will result in a slight increase in the current toxic substances and suspended solids concentrations in the upper and lower reaches of the river. The increase in the concentrations of toxic substances is not expected to be sufficient to contravene drinking water standards, and, as the NYSDEC revises existing permit limits for toxic discharges from wastewater treatment plants, will be reduced to a level below that which currently exist. The increase in suspended solids concentrations is expected to result in a slight increase in operation and maintenance costs at those water treatment plants on the Upper Hudson that treat for solids removal. On the Lower Hudson, the increase in suspended solids would be negligible and is not expected to affect the water supply plants.

Additional impacts on water supplies are associated with a slight upstream movement of the salt front during periods of lower flows. This movement is more significant when the Chelsea pumping station is operating.

#### 5.3.2 Economic Impacts

Economic impacts for the municipal water treatment plants located on the Upper Hudson would be associated with the increased operating expenses for the coagulation/sedimentation, sludge handling and chlorination processes. To estimate these increased costs, a suspended solids concentration basis was utilized. The percent increase in suspended solids during average summer flows resulting from the average discharge of suspended solids from the

upstream wastewater treatment plants was determined and compared with the average annual Hudson River suspended solids. This percentage increase was applied to USEPA cost curves for the various unit processes to determine the increase in operating costs.

The design capacity of the Queensbury Water Treatment Plant is 5 mgd. The suspended solids concentration in the Upper Hudson would increase by 1 percent on the basis of an average permitted discharge of suspended solids from the upstream wastewater treatment plants. The estimated increase in annual operating costs at the design flow for coagulation/sedimentation, sludge handling and chlorination at the Queensbury Plant is about \$1,000. It should be noted that the current average production at the Queensbury Plant is about 1.6 mgd.

The design capacity of the Waterford Water Treatment Plant is 2.8 mgd. The suspended solids concentration in the Hudson River would increase by 6 percent on the basis of an average permitted discharge of suspended solids from the upstream wastewater treatment plants. The estimated increase in annual operating costs at the design flow for coagulation/sedimentation, sludge handling, and chlorination at the Waterford Treatment Plant is \$2,800. The current average production of the Waterford Treatment Plant is about 1.7 mgd.

Scott Paper Company and Tagson's Papers, Inc. are the only industries on the Upper Hudson that provide treatment for suspended solids removal prior to discharge. In both cases, sand filtration is provided. Economic impacts associated with the reduction in average summer flows were estimated in a similar fashion. Those for the drinking water treatment plants on the Upper Hudson. The annual increase in average operating costs based on design capacity are listed at:

Tagson's Papers, Inc. - \$1,100  
Scott Paper Company - \$2,000

Economic impacts for the drinking water supplies located on the Lower Hudson would be associated with the increased expenses for maintaining the

expected increase in chloride concentration resulting from an upstream movement of the salt front. The Port Ewan and Rhinebeck Water Treatment Plants are located well above the salt front. The Hudson River Psychiatric Center is located close to the salt front during drought years but the chloride concentrations should be below the 250 mg/l drinking water standard. Therefore, the economic impact on the above plants should be minimal.

The salt front reaches the Poughkeepsie and Highland Water Treatment Plants during dry years. The reduction in Hudson River flows would result in a 30 mg/l increase in average chloride concentrations during dry years. However, the average chloride concentrations would still be below the drinking water standard of 250 mg/l.

The increased salinity resulting from the salt front movement would have an economic impact on the Castle Point VA Hospital. Due to patients' health requirements, a drinking water chloride concentration of 100 mg/l is required. Well water is used to "dilute" the treated Hudson River water and a reverse osmosis system serves as a back-up to the well water system. Economic impacts associated with the increased salinity were estimated by determining the additional amount of water that would require treatment by reverse osmosis to maintain the hospital's 100 mg/l drinking water concentration under the existing average summer flow and reregulated average summer flow. The annual operating cost for a reverse osmosis system at a flow representing this additional difference would approximate the economic impact. Based on USEPA cost curves for reverse osmosis, the reregulation of Hudson River flows would have an estimated annual economic impact at the Castle Point VA Hospital of \$200.

## 5.4 NAVIGATION

### 5.4.1 Summary of Impacts

The reregulation of Hudson River flows can be expected to result in a slight increase in the maintenance dredging requirements of the Champlain

### 5.4.2 Economic Impacts

It is estimated that an additional 600 cubic yards per year of sediment might have to be removed from the Champlain Canal during maintenance dredging by the New York State Department of Transportation. This increased dredging requirement is estimated to cost approximately \$12,000 per year, provided that the area to be dredged does not already contain significant concentrations of PCBs in the sediments. If PCB contaminated sediments were involved, the dredging cost would be much higher.

## 5.5 RECREATION

### 5.5.1 Summary of Impacts

On the Upper Hudson, a marginal aesthetic impact on swimming and boating may occur because of the reduced dilution and assimilation of man-made and naturally occurring pollutants. Aquatic life would also be impacted for the same reasons. Recreational fishing could also be reduced because of the aesthetic and aquatic life related impacts.

On the Lower Hudson, a marginal aesthetic impact on boating may occur in the Capital District Pool because of the reduced dilution and assimilation of pollutants. Aquatic life may also be impacted in this area. Downstream of the Capital District Pool, the impacts on recreation would be negligible.

### 5.5.2 Economic Impacts

No economic impact is estimated for swimming and boating in the Upper Hudson. Flows significantly less than the reregulated low flows occur on weekends and holidays, which would be the peak use periods.

Fishing is currently prohibited on the Upper Hudson from the Troy Dam to Fort Edward, and the reregulation of flow would not affect this prohibition. However, a long-term reduction in summer flows would have an economic impact on recreational fishing above the former Fort Edward Dam site. The level of this impact would depend upon development of the recreational fishery in this

area, the amount of additional wastewater treatment provided in response to the reduction in MA7CO/10 flows, and the degree to which the existing diurnal water level fluctuations could be dampened.

On the basis of previous estimates (1), the future recreational fishing potential of the Upper Hudson, from the Troy Dam to Madley, is estimated at \$1.65 to \$2.25 million a year. Because of the ban on fishing, from between Troy and Fort Edward, very little of this potential is currently realized. If this ban is lifted at some time in the future, the reduction in flow required to comply with a 6 foot drawdown constraint would be more significant than at present.

On the Lower Hudson, no economic impact is estimated for swimming or boating. In addition, no economic impacts on fishing are estimated for the area downstream of the Capital District area. As with the Upper Hudson, a long-term reduction in summer flows would have an economic impact on fishing in the Capital District area and would depend upon similar considerations. However, the impact would be less than that on the Upper Hudson. Based on previous estimates (1), the Capital District area (Mile Point 120 - 154) has an estimated recreational potential of \$5.3 million to \$7.9 million of which only an estimated \$45,000 per year is currently realized. The reduction in summer flows in this area should have little effect upon the current use of this reach of the river but could have an effect upon the ultimate realization of the potential use.

5.6 SUMMARY

The previous sections of this report present the economic impacts on the various users of the Hudson River resulting from a reduction in summer flows. These impacts are summarized below:

- o The MA7CO/10 flow will be reduced by 260 cfs. The average summer flow will be reduced by 600 cfs.

(1) Sheppard, Douglas J., Evaluation of the Hudson River Fishery Resources: Past, Present and Future, NYSDEC Department of Fisheries, April 1976.

In general, impacts on wastewater treatment water supply and recreation would be associated with the reduction in dilution and assimilation of natural and man-made pollutants introduced to the Hudson River.

- o The salt front will move one to two miles upstream and even further if the Chelsea Pump Station is operating.
- o The initial annual economic impact on wastewater treatment would be between \$4,500,000 and \$5,200,000. This impact could ultimately increase to \$7,200,000 annually.
- o The economic impact on water supplies is estimated at \$16,000 annually.
- o The economic impact on navigation is estimated at \$17,000 annually.
- o No significant impact will be experienced at the thermal power plants.
- o No economic impact is estimated for swimming or boating although a marginal aesthetic impact may be experienced.
- o An economic impact is foreseen on recreational fishing. However, a value can not be estimated until a number of environmental issues are resolved (in particular PCBs) and the recreational fishery potential of the Hudson is fully developed.

As indicated above, the quantifiable equivalent annual economic impact at a discount rate of 12 percent on users of Hudson River flows would be between \$4,528,000 and \$5,228,000 initially and could ultimately increase to \$7,200,000. Some studies prepared for the Hudson River-Black River Regulation District have calculated various economic impacts on a present worth basis using a discount (interest) rate of 6 percent. The initial 20 year present worth at a discount rate of 6 percent of the economic impacts of a Hudson River flow reduction would be between \$45,800,000 and \$52,200,000 and could ultimately increase to \$71,900,000.

same disc. rate as L.S.  
Sac. growth = 70%

KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Shoal just below Sherman Island	Major walleye spawning area.
Queensbury park and Camp Jadamada	Migratory waterfowl area; Freshwater wetlands; Abundant wildlife.
Hook Mountain State Park/ Rockland County	Rockspike moss reported, raptor migration ridge.
Croton Point and Marsh/Westchester County	Salt marsh plant species. Used by migratory and resident waterfowl. Fish spawning area; species include striped bass, white perch, shad, herring smelt and tomcod. Migratory blue crab concentrations. Record of worm snake. Bald eagle sightings
Stony Point Marsh-Grassy Point/Rockland County	Used by migratory and resident waterfowl; fish and blue crab spawning, nursery and feeding area. Fish species include herring, alewife, smelt, tomcod, white perch, striped bass, and shad. Extensive cattail stands
Haverstraw Bay Area/Westchester-Rockland Counties	Major Atlantic sturgeon wintering areas. Shellfish beds, blue crab habitat. Significant migratory and resident fish area. Used by migratory waterfowl.
Peekskill to Poughkeepsie/ Rockland, Orange, Ulster, Westchester, Putnam and Dutchess Counties	Atlantic sturgeon spawning area.
Lake Meahagh/Westchester County	Spawning, nursery and feeding area for resident and anadromous fish. Species include herring, white perch, shad, yellow perch, and smelt.
South of Kingston/Ulster-Dutchess Counties	Shortnose sturgeon wintering area.

KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Esopus Meadows/Ulster County	Shoreline area with submerged vegetation used by fish and migratory waterfowl.
Sleightsburg Marsh/Ulster County	Unusual insect species in marsh area; heartleaf plantain habitat; anadromous fish spawning, nesting and feeding area in lower Roundout Creek; species include herring, striped bass, white and yellow perch and shad.
Kingston Point Marsh and Kingston Flats/Ulster County	Marsh and Roundout Creek used for anadromous fish spawning, nesting and feeding area; species include striped bass, shad, herring and large mouth and small mouth bass; possible habitat for goldenclub and map turtle; flats are mid-river shallows used by waterfowl, shad and other fish.
Astor Cove/Dutchess County	Wild rice, wild celery and other valuable waterfowl foods; osprey sighting.
Glenerie Gorge/Ulster County	Valuable plant and wildlife habitat for rare species.
Mudder Kill/Dutchess County	Goldenclub, leopard frog.

## KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Tivoli Bay North and South, Cruger and Magdalen Islands/Dutchess County	Goldenclub; bur marigold, possibly Nuttall's micranthemum, extensive cattail stands; snapping turtles; shorebirds; osprey and eagles during migration; waterfowl nesting and resting area; historic Indian site; part of proposed Ponds estuarine sanctuary and nominated as experimental ecological reserve
Sopus Creek Estuary and Marsh, Green and Upper Flats/Ulster-Columbia Counties	Estuary and marsh have goldenclub and heartleaf plantain; also used for fish spawning, nursery and feeding area - species include striped bass, white perch, herring smelt and large mouth and small mouth bass; mid-river flats contain emergent vegetation, mostly spatter dock, and are used as stopovers by black duck and other waterfowl.
Great Vly/Ulster-Greene County	Calcareous bog area containing extensive cattail stands.
Duck Cove-Inchocht Bay/Greene County	Goldenclub and heartleaf plantain; waterfowl resting and feeding area; fish spawning and nursery area for herring, white perch, yellow perch and shad.
Roeliff Jansen Kill/Columbia County	Estuary area provides fish spawning feeding and nursery habitats for herring, white perch, and striped bass; upstream area used as trout and warmwater fishery.
Catskill Area/Greene County	Several goldenclub stands.

## KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Ramshorn Creek Marsh/Greene County	Extensive tidal swamp; goldenclub and heartleaf plantain; least bittern sighting; used by waterfowl; National Audubon bird sanctuary in part.
Roeliff Jansen Kill to Catskill Creek/Columbia-Greene Counties	Significant resident and anadromous fish concentrations. Species include herring, shad and perch.
Catskill Creek Estuary/Greene County	Goldenclub and heartleaf plantain; fish spawning area, species include herring, striped bass, white perch, American shad, and smelt; waterfowl resting area.
Rogers Island/Columbia County	Goldenclub, yellowheart (introduced) wild calery, wild rice; resting and feeding area for waterfowl and other birds; DEC wildlife management area.
Athens Marsh/Greene County	Stopover area for canvasback and possibly redhead ducks.
Middle Ground and West Flats/Columbia-Greene Counties	Possibly goldenclub.
Marshes/Columbia County	Possibly redhead ducks; extensive cattail stands in North Bay.
Middle Ground Flats to Stockport Creek/Columbia Green Counties	Significant resident and anadromous fish concentrations, species include striped bass, sturgeon, herring and white perch.

## KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Stockport Creek Estuary/Columbia County	Stopover area for canvasback and possibly redhead ducks; fish spawning and feeding area, species include striped bass, herring and white perch; heartleaf plantain and possibly goldenclub; part of proposed Federal estuarine sanctuary.
Vosburgh Marsh/Greene County	Stopover area for canvasback and possibly redhead ducks; waterfowl feeding area; birding area; leaved astor reported; possible map turtle habitat.
Gay's Point Area/Columbia County	Goldenclub; map turtle.
Nutten Hook Area/Columbia County	Goldenclub.
Bronck Island Cliffs/Greene County	Bird resting area; possible goldenclub habitat.
Mill Creek Marsh/Columbia County	Waterfowl resting area.
New Baltimore to Troy/Greene, Albany, Columbia and Rensselaer Counties	Shortnose sturgeon spawning area.
Coeymans Creeks Marsh/Greene-Albany Counties	Bird feeding and resting area; heartleaf plantain.
Houghtaling Island/Columbia-Greene County	Significant resident and anadromous fish concentrations, species include herring, white perch and American shad; map turtle.

## KNOWN SENSITIVE HABITATS WITHIN THE STUDY AREA

Description	Habitat Value
Schodack Creek Marsh/Columbia-Rensselaer Counties	Fish spawning, nursery and feeding area, species include white perch, American shad, herring and yellow perch; bird breeding, feeding and resting area.
Cliffs west of Shad and Schermerhorn Islands/Albany County	Reports of cerulean warbler in this area.
Papscaene Creek Marsh/Rensselaer County	Heartleaf plantain and possibly goldenclub; significant fishery habitat, fish species include American shad, striped bass, herring, and white perch; map turtle; bird, waterfowl and other wildlife.
Island Creek Marsh-Norman Kill/Albany County	Lower reaches valued for herring spawning and wetlands habitat; upper reaches support warm water fishery, such as bass and sunfish.
Wynants Creek and Poesten Kill/Rensselaer County	Herring spawning and warm water fishery.
Starbuck Island/Albany and Rensselaer Counties	Fish spawning area around island, species include striped bass, American shad, herring, and white perch.
Troy Dam/Albany and Rensselaer Counties	Significant resident and anadromous fish populations, species include striped bass and American shad; waterfowl wintering area.



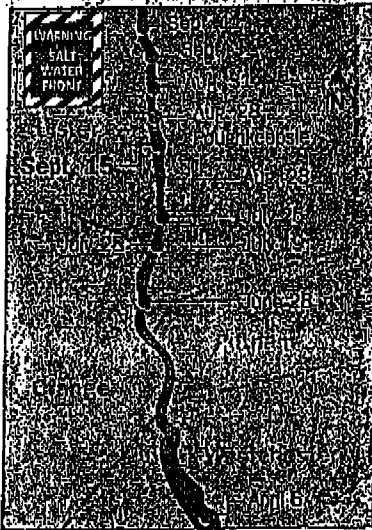


# Exhibit “E”

# Poughkeepsie

SATURDAY, SEPTEMBER 16, 1995

SINCE 1785 ■ NEW YORK



Clarence Pullar/Poughkeepsie Journal

## Town, city

### Releases push salt front southward

By Dennis Kipp  
Poughkeepsie Journal

Responding to mounting pressure from state and county health officials, the city and town of Poughkeepsie Friday called for voluntary water conservation by the 75,000 residents of the two communities.

Poughkeepsie Mayor Sheila Newman said she would like to see water consumption in the two communities drop by between 500,000 and 1 million gallons a day. The city and town, which share a water system, use about 10 million gallons a day.

"Both the city and town are ask-

# sie Journal

STATE'S OLDEST NEWSPAPER

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## urge water curb

ing for voluntary water conservation, the emphasis on conservation," Newman said at a Friday afternoon press conference. Representing the town at the press conference was Councilman Patrick Hinkley, a member of the town's water committee.

The announcement followed a Friday morning meeting of Dutchess County Department of Health officials with city and town

of Poughkeepsie officials.

"We generally talked to them about water conservation," said David Ruff, director of environmental health services for the county department.

Earlier in the week, Poughkeepsie City Manager Michael Murphy said there was no need to ask city residents to conserve water because increased fresh water releases from Great Sacan-

daga Lake in the Adirondack Park had stopped the northward movement of the Hudson River's salt front and improved the quality of river water entering the city system.

At Friday's press conference, Murphy said there were ample supplies of water and that there was no

Conservation tips 2A

Conservation tips 2A

Over

# Water: Volunta

Continued

needed for conservation to be a hardship. "These are practical things we ought to be doing all the time anyway," he said.

Friday's announcement came as the U.S. Geological Survey reported that the Sacandaga water releases were slowly pushing the salt front south, although the Poughkeepsie water treatment plant continues to draw salty water from the river during high tides.

Ruff said his office was preparing letters to send to supervisors and mayors throughout the county urging them to institute voluntary water conservation measures, if they have not do so already. He said the call for conservation applies to all 220 community water systems in the county.

The U.S. Geological Survey reported Friday that continuing releases from Sacandaga were showing success in pushing the river's salt front south, helping to

reduce the salinity of water pumped from the river by the City of Poughkeepsie water treatment plant.

Gary Firda, a hydrologist with the Troy-based agency, said the river's salt front — dividing line between salty ocean water on the south and fresh water on the north — was 0.9 mile north of the city's water intake at high tide Friday.

Since the Sacandaga releases began Sept. 5, the salt front, at high tide, has moved 3.5 miles south, according to U.S. Geological Survey measurements. Firda said some of the southward movement seen Friday was probably due, in part, to winds out of the northwest.

Firda said it would be several more days before the Sacandaga releases — amounting to 2,000 cubic feet of water per second — would push the salt front south of the Poughkeepsie water intake at high tide.

He said that to replace all the

## ary curbs urged

### Conservation practices save water

The Dutchess County Department of Health today has issued a list of conservation suggestions:

- Limit lawn watering. Water during cool part of day to decrease evaporation. Make sure the water lands only on the lawn, not pavement.
- Limit car washing.
- Turn off water when brushing teeth. Turn it off while you shave, brush your teeth or soap up in the shower.
- Take short showers, not baths.

- Don't splash. Collect as often as you can. Turn off water's to get jobs done.
- Run full loads in the dishwasher and washing machines.
- Check faucets, slides and toilets for leaks. Even the smallest leak can waste 20 gallons a day.
- Sweep sidewalks and drive way. Instead of hosing them off.
- Businesses and governments can learn from housing outdoor areas and can turn off ornamental fountains.

water in a five-mile stretch of the Hudson at Poughkeepsie would require releases of 2,000 cubic feet per second for 20 days — about 259 billion gallons.

Unless there is significant rain to replenish Sacandaga, the releases can continue only for

about three months, said Firda.

Under normal conditions, rainfall could be expected to increase next month, he said. But in 1964 — during the region's worst drought ever — "it didn't rain until December," he said.

Mon

MONDAY  
SEPTEMBER 4, 1995

# THE DAILY

The Independent V

## Sacandaga to drop

By JON BLACKWELL  
Gazette Reporter

MAYFIELD — The Great Sacandaga Lake will drop by a foot beginning Tuesday in an attempt to flush a "salt front" creeping up the Hudson River toward municipal water supplies.

Doubling the freshwater release from the reservoir is described as an unprecedented step. But it's a worthwhile experiment after a summer

that has dried many of the Hudson's tributaries, regulatory officials said Sunday.

Businesses that depend on lake tourism and were already hard-hit by dropping lake levels throughout the summer were stunned and angered by the plan.

The state Department of Environmental Conservation and Hudson River-Black River Regulatory District decided on the water release

Friday, but some on the lake's shore learned of it second-hand.

"In instances where they're going to decrease the lake level rapidly, the commercial places should be notified," said Wes Muddle, owner of Holly's Marina in Mayfield.

"There are hundreds of boats worth millions of dollars on this lake, and without notice, their owners could return in four days to find them in the mud."

Thomas Brewer, chief engineer for

# Y GAZETTE

oice of the Capital Region

50 CENTS

SCHENECTADY, N.Y.

## 1 foot in river flush

the district, said his agency's mission is to augment the flow of the Hudson, not look after the lake shore.

"They don't need to be told about it at all," Brewer said. "It's for the river."

Brewer said the water release will increase from 850 cubic feet, or 6,358 gallons, per second to 2,000 cubic feet, or 14,960 gallons, per second.

While dramatic, the increase would bring the river flow in line closer to last year's figures of 2,500 cubic feet

per second at the same time, Brewer said.

The state Department of Health had requested that the DEC and the regulatory district take action to lower the salt front, the dividing line between fresh water flowing south and salty ocean water advancing north.

According to the U.S. Geological Survey, that front had moved last week to 2.5 miles north of the water intake point for Poughkeepsie city

water — its highest level since 1964.

High levels of salt in drinking water may threaten the health of some people, but the average consumer wouldn't notice or be affected, said Warren Lavery, director of the DEC's Bureau of Water Resources.

The salt front is the point at which the chloride level in water is 100 milligrams per liter, Lavery said. By contrast, the level considered safe by

See SHORE, Page A8

Ex "I"

## Shore residents angered

Continued from Page A1

the federal government is 250 mg; in the ocean, the level averages 27,000 mg.

John Glass, an engineer with the Dutchess County Department of Health, said it will take several days for increased freshwater flows to reach Poughkeepsie.

But both Brewer and Lavery acknowledged they have no way of knowing whether the plan will work.

"The idea here is to try something and see what happens," Brewer said.

Lavery said the release will last 10 days, lowering the level of Great Sacandaga Lake by 12 to 14 inches. It's now at 756 feet above sea level, 2 feet below the average over its 65-year history, said Northampton Beach supervisor Brad Buyce.

Edinburg Town Supervisor Jean Raymond said she was relieved to learn the lake would drop 1 foot, not 5 to 6 feet as had been rumored. But she chastised the district for not warning boaters, businesses and elected officials about its plans, which would have been the "good-government" approach.

"How do you do something like this that will have a large impact on a large number of people when you don't even know if it has a good chance of working?" she said. "It's like dropping a bomb to see if it explodes."

Lavery, who helped draw up the plans last week, said he was unaware they were being implemented Tuesday. He said he expected the increased release to begin next week at the latest.

Randy Gardinier, chairman of the Great Sacandaga Lake Fisheries Federation, attacked the district for what he called mismanagement of the reservoir.

Earlier in the summer, more than 3,000 local residents signed a petition to Gov. George Pataki calling for the district to disband.

Too much water was released in early January, when the district should have known that low snowfall would lead to low spring runoff, Gardinier said.

Brewer said he and district engineers had no way of predicting spring weather months in advance.

Gardinier said the steady fall-off of reservoir levels has left the edges of the lake shallower and muddier than need be, he said. Some fish have been left behind in isolated pools to die, he said.

"They're justified in doing it [increasing the water release]," Gardinier said. "But it could have been done in a better way. People are rightfully upset."

*The Associated Press contributed to this report.*

# Exhibit “F”

MUNI	PRINT_KEY	LOC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	133.77-1-1	Forbes Ave	Polsinello Terminals Inc		27000	27000
Rensselaer	133.69-1-4	Forbes Ave	City of Rensselaer		4500	30000
Rensselaer	133.69-1-3	River Front	City of Rensselaer		11200	11200
Rensselaer	133.69-1-2	River Front	Hilton Management Llc		700	700
Rensselaer	133.69-1-1	River Rd	City of Rensselaer		17400	17400
Rensselaer	133.-3-2	Manders Ave	National Grid		283262	283262
Rensselaer	133.-3-1	River Front	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.77-1-6.2	River Front	State Of New York		5000	5000
Rensselaer	133.77-1-4	River Front	Marine Mgmt Of The Hudson Inc		35000	35000
Rensselaer	133.77-1-3	River Front	Gigliotti, Eugenio	Gigliotti, Lorraine	6800	12100
Rensselaer	133.77-1-2	River Front	Vesta Developers Corp		8600	8600
Rensselaer	143.28-1-1.1	River Front	State Of New York		136300	136300
Rensselaer	143.44-1-1.1	Broadway	Amtrak		200000	200000
Rensselaer	144.21-1-2.2	River Front	State Of New York		4500	4500
Rensselaer	144.21-1-1.2	River Front	State Of New York		4500	4500
Rensselaer	144.21-1-5.2	River Front	First Rensselaer Corp		18000	18000
Rensselaer	144.21-1-4.2	River Front	First Rensselaer Corp		18000	18000
Rensselaer	144.21-1-3.2	River Front (Rear)	First Rensselaer Corp		18400	18400
Rensselaer	133.77-1-7.1	River Front	Polsinello Terminals INC		20100	20100
Rensselaer	133.77-1-6.1	River Front	First Rensselaer Corp		7600	7600
Rensselaer	133.77-1-7.2	River Front	State Of New York		8000	8000
Rensselaer	143.52-1-1	Broadway	City of Rensselaer School Dist		112800	6339400
Rensselaer	143.60-1-8	Broadway	Martino, Albert J	Martino, Sophie	5900	29700
Rensselaer	143.60-1-7	Broadway	Martino, Albert		500	500
Rensselaer	143.60-1-11	Broadway	City of Rensselaer		20500	23200
Rensselaer	143.60-1-10	Broadway	Casullo, Dominick		4600	17500
Rensselaer	143.60-1-9	Broadway	Martino, Albert J	Martino, Sophia	4500	16300
Rensselaer	143.52-1-2	Broadway	Zappala V Co Inc		15200	15200
Rensselaer	143.59-1-1	Fifth Ave	Zappala V Co Inc		93700	361000
Rensselaer	143.44-1-2	John St	New York Central Lines LLC		646580	646580
Rensselaer	143.44-1-2	John St	New York Central Lines LLC		646580	646580
Rensselaer	143.67-1-1	Broadway	State Of New York		94200	94200
Rensselaer	143.67-1-1	Broadway	State Of New York		94200	94200
Rensselaer	133.-3-1	River Front	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	River Front	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	River Front	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	River Front	Rensselaer Polytechnic Inst		87900	87900
<b>Rensselaer Count</b>					37	
<b>Rensselaer Total</b>						\$ 9,589,522
Troy	111.36-5-1./1	Monroe St	Troy Slag Products Co Inc		8400	127230
Troy	112.29-3-1	Fifth Ave	The Sage Colleges		12600	12600
Troy	112.21-8-1	Fourth St	Flynn, Thomas J		1860	10190
Troy	112.21-7-7	Fourth St	Honsinger, Mary		2610	8390
Troy	112.21-7-6	Ida St	Capital Property Solutions		770	13500
Troy	112.21-7-5	Ida St	Martinez, Raphael		890	890
Troy	112.21-7-4	Ida St	Bott, Elizabeth C		930	9290
Troy	112.21-3-16	Third St	Gregg, Daniel J		1400	11390
Troy	101.30-10-1	Eighth St	NYS Dot		148290	148290
Troy	101.21-1-1	Adams Island-Hudson Riv	NYS		900	900
Troy	80.24-1-5.2	123rd St	City Of Troy		24490	34490
Troy	80.24-1-5.1	Second Ave	Lansingburgh Partners		88970	307640
Troy	80.31-1-1	First Ave	Troy Motor Boat & Canoe		3890	5400
Troy	80.31-1-2	First Ave	Huebner, Conrad F		2340	11320
Troy	80.31-1-3	First Ave	Connors, Antoinette M		2230	21000
Troy	80.31-1-4	First Ave	Boyajian, Arthur		1850	12000
Troy	80.31-1-5	First Ave	Petty, William	Petty, Suzanne	1850	6320
Troy	80.31-1-6	First Ave	Cook, Robert W		1850	15620
Troy	80.31-1-7	First Ave	Jones, Jennifer M		3070	20100
Troy	80.32-11-1	First Ave	Ellett, Charles Jay	Ellett, Charles J	2250	13930
Troy	80.32-11-13	First Ave	Bullis, Stephen		1130	20780
Troy	80.32-11-12	First Ave	Boyajian, Arthur J		1460	8000
Troy	80.32-11-11	First Ave	Ellett, Alice J		1920	8000
Troy	80.32-11-10	First Ave	Coalts, Constance		2250	16010
Troy	80.32-11-9	First Ave	Sheeley, Anthony C	Sheeley, Anne R	2250	11200
Troy	80.32-11-8	First Ave	Wager, William L	Wager, Anna	2250	14410
Troy	80.40-1-6	First Ave	Russell, Jacqueline L	Russell, Kenneth	2250	16000
Troy	80.32-11-2	Second Ave	750 Second Ave Realty LLC		2000	2000
Troy	80.32-11-4	Second Ave	Ellett, Charles J		3520	35000
Troy	80.32-11-5	Second Ave	750 Second Ave Realty LLC		2930	2930
Troy	80.32-11-6	Second Ave	750 Second Ave LLC		2500	2500
Troy	80.32-11-7	Second Ave	750 Second Ave LLC		2500	2500
Troy	80.40-1-3	Second Ave	Vadney Designs, David		2930	27540
Troy	80.40-1-4	Second Ave	Lamb-Omillin, Grace R		2930	15070
Troy	80.40-1-5	Second Ave	Zeto, Rory		2930	24000
Troy	80.40-1-1	First Ave	Bombardier, Patricia A		1580	14060
Troy	80.40-1-2	First Ave (Rear)	Bombardier, Patricia A		680	680
Troy	112.21-3-15	Third St	Coli, Lucy		1400	13600
Troy	112.21-3-14	Third St	Gapp, Tammy G		1400	13160
Troy	112.21-3-13	Third St	Esposito, Antoinette		1400	17220
Troy	112.21-3-12	Third St	Anderson, Philomena		1400	16000
Troy	112.21-3-11	Third St	Milano, Letterio	Milano, Stefana	1110	17220
Troy	112.21-3-10	Ida St	Donahue, Michael T		1020	4190
Troy	112.21-3-4	Fourth St	Esposito, Michael A		1130	9640
Troy	112.21-3-5	Fourth St	Bermudez, Jose D		1125	7215
Troy	112.21-3-6	Fourth St	Hope, Michael L		1125	11260
Troy	112.21-3-7	Fourth St	Miller, Justine A		1130	21600
Troy	112.21-3-8	Fourth St	LaPietra, Paul A		1130	15000
Troy	112.21-3-9./1	Fourth St	Hoffman, Grace D		1130	15000
Troy	80.78-1-8	Second Ave	City Of Troy		4900	4900
Troy	111.59-2-2	So River St	New York Central Lines LLC		53149	842221
Troy	111.83-1-1	Water St	Chevron USA Inc		81650	81650
Troy	111.59-2-2	So River St	New York Central Lines LLC		53149	842221
Troy	112.21-9-5	Ida St	Walsh, James P		1480	7000
Troy	100.68-1-1./1	River St	Troy Housing Authority		401240	4350750
Troy	100.68-1-1./1	River St	Troy Housing Authority		401240	4350750
Troy	100.60-1-5	River St	217-219 River Street LLC		14470	67480

MUNI	PRINT_KEY	LOC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	100.60-1-6	River St	Pantera Development LLC		6910	33900
Troy	90.38-1-6	Second Ave	Dallas, Peter		6350	24000
Troy	90.38-1-3	Second Ave	Pena, William		3270	24000
Troy	90.38-1-1	Second Ave	Bisceglia, Thomas		8030	40000
Troy	90.30-3-7	Second Ave	186 Second Ave Corp		7100	27600
Troy	90.30-3-5	Second Ave	Kennedy, Thomas P		8970	36400
Troy	90.30-3-4	Second Ave	Ochis, Adrienne C		6910	52850
Troy	90.30-3-3	Second Ave	202 Second Ave Trust		6200	35000
Troy	90.30-3-2	Second Ave	Koloski, Raymond E		6910	32030
Troy	90.30-3-1	Second Ave	Koloski, Raymond E	Reiner, Diane	8450	38000
Troy	112.21-5-12	Ida St	Evans, Antoinette D		630	11470
Troy	112.21-5-11	Ida St	Tipre, Michael	Tipre, Kim	1080	22870
Troy	112.21-5-17	Fifth Ave	D'Aria, Anthony		2740	8820
Troy	112.21-5-14	Ida St	Cesare, Roger	Canty, Michelle	860	7500
Troy	112.21-5-13	Ida St	Donlon, Louise		860	6510
Troy	112.21-5-16	Fifth Ave	Prokrym, Brian F		760	13440
Troy	112.21-5-15	Ida St	Cesare, Roger	Canty, Michelle	430	1400
Troy	112.21-9-9	Ida St	Catone, Principia	Catone, John P	740	8360
Troy	112.21-9-8	Ida St	Horowitz, Marsha		740	6050
Troy	112.21-9-7	Ida St	City of Troy, AR0094		1480	16000
Troy	112.21-9-5	Ida St	Walsh, James P		1480	7000
Troy	112.21-9-4	Ida St	Nichols, Edward D		400	400
Troy	112.21-9-3	Ida St	Nichols, Catherine		740	6140
Troy	112.21-9-2	Ida St	98 Ida Corp.		740	7450
Troy	112.21-9-1.1	Ida St	Regan, Richard		740	7670
Troy	112.21-9-1.2	Ida St	Chiappare, Samuel	Chiappone, Kellie	850	850
Troy	112.21-8-8	Ida St	Jewett, Jamie		2700	11700
Troy	112.21-8-7	Ida St	Chiappone, Samuel G		930	10000
Troy	112.21-8-6	Ida St	Sinnott, Mary		930	11000
Troy	112.21-8-5	Ida St	Devoe, Virginia		930	7500
Troy	112.21-8-4	Ida St	Bulmer, William		930	7380
Troy	112.21-8-3	Ida St	Rocco, Joseph		930	7700
Troy	112.21-8-2	Ida St	Andrews, William M		930	8840
Troy	112.21-7-3	Ida St	Dolan, Robert		930	9890
Troy	112.21-7-2	Ida St	Holmberg, Dorine		930	12880
Troy	112.21-7-1	Ida St	Matulis, Jesse J	Matulis, Nicholas M	1850	13000
Troy	111.28-3-1	Second St	Stokes, Darrell	Bryce, Wallace	1780	15000
Troy	111.28-3-2	Ida St	Gross, Helen		890	9130
Troy	111.28-3-3	Ida St	Gordon, Darlene C		930	11910
Troy	111.28-3-4	Ida St	Engel, Gerald M		890	9130
Troy	111.28-3-10	Ida St	Engel, Gerald M		710	710
Troy	111.28-3-5	Ida St	Hathaway, James	Hathaway, Tammy	890	8860
Troy	111.28-3-6	Ida St	Casey, Brian M		890	4030
Troy	111.28-3-7	Ida St	Vescova, Kim		890	9400
Troy	111.28-3-8	Ida St	Pitcher, Robert W		890	6720
Troy	111.28-3-9	Ida St	Seyboth, Mary C		890	10900
Troy	111.28-2-2	Second St	Russell, Donald T		4820	32030
Troy	111.28-2-1	Ida St	City Of Troy		50	50
Troy	112.21-4-10	Ida St	Ryan, Joseph P		1530	7980
Troy	112.21-4-11	Ida St	McDonald, Rosalyn		780	7900
Troy	112.21-4-12	Ida St	Frament, Daniel		710	6300
Troy	112.21-4-13	Ida St	Harris, Eugene J	Harris, Dorothy M	780	7600
Troy	112.21-4-14	Ida St	Rensselaer Best Homes Ltd.		750	9630
Troy	112.21-4-15	Ida St	Bulmer, William		1080	1080
Troy	112.21-4-16	Ida St	Quinn, Paul F		850	9000
Troy	112.21-4-17	Fourth St	Galuski, Alan F		620	620
Troy	112.21-4-18	Fourth St	Wing, Camille		1170	15000
Troy	112.21-4-19	Fourth St	Borter, Dana		1170	12000
Troy	112.21-4-20	Fourth St	Draxler, Anne E		1170	8670
Troy	112.21-4-21	Fourth St	Ripasa, Ralph M		1170	17000
Troy	112.21-4-7	Fifth Ave	Hall, Scott M		1170	9250
Troy	112.21-4-8	Fifth Ave	Hall, Scott M		230	230
Troy	112.21-4-9	Fifth Ave	Mosall, Richard P		880	5740
Troy	111.28-1-6	Third St	Clermont, Glenn		1400	17220
Troy	111.28-1-7	Third St	Gibeau, Anik M		1400	13170
Troy	111.28-1-8	Third St	McCarroll, Michael J	Barden, Jeffrey	1400	13330
Troy	111.28-1-9	Third St	Dowe, Dwayne		900	12600
Troy	111.28-1-10	Third St	Thomas, Cynthia		950	16100
Troy	111.28-1-11	Third St	Dufty, Kenneth G		756	7100
Troy	111.28-1-12	Ida St	Almekhlafi, Waleed M		930	7880
Troy	111.28-1-13	Ida St	Armbruster, Brian G	Hrmbruster, Laurie L	1850	14000
Troy	111.28-1-5	Ida St	Tribley, Bryan		640	640
Troy	111.28-1-4	Ida St	Tribley, Bryan		640	640
Troy	111.28-1-3	Ida St	Tribley, Bryan		1530	10410
Troy	111.28-1-1	Ida St	Finelli Development, LLC.		2290	2290
Troy	100.84-7-14	Second St	Uncle Ricky's LLC		5450	21500
Troy	100.84-6-10	First St	Perry, Bruce E		30790	75670
Troy	111.28-5-1	First St	Phoenix Metal Recycling, Inc		12620	51250
Troy	111.28-4-1	Madison St	City Of Troy		50810	116370
Troy	100.84-1-1.2	Adams St (So Of)	Troy Slag Products Co Inc		83120	83120
Troy	100.84-1-1.12	Adams St (So Of)	Troy Slag Products Co Inc		3000	3000
Troy	100.84-1-1.11	Adams St	Oldcastle Northeast Inc		35000	35000
Troy	100.84-2-2	First St	K C Refrigeration		44280	44280
Troy	100.76-7-1	Front St	Clemente, Frank A	Clemente, Orazio A	29890	74735
Troy	100.76-8-1	River St	Callanan Industries Inc		4680	10180
Troy	100.76-8-2	River St	Levonian Brothers		18720	229400
Troy	100.76-3-2	Washington St	NYS		11550	11550
Troy	100.76-4-2	River St	Levonian Brothers Inc		11700	100000
Troy	100.76-4-1	River St	Sage Colleges		2340	28270
Troy	100.76-3-1	Front St	Clemente Latham Concrete Corp		11468	11468
Troy	100.68-5-2	River St	Russell Sage College		216630	217390
Troy	112.22-3-1	Ida St	Bizzarro, Saverio A		1770	1770
Troy	112.21-10-5	Ida St	Bizzarro, Saverio A		1710	1710
Troy	112.21-10-4	Ida St	Bizzarro, Saverio A		710	710
Troy	112.21-10-3	Ida St	Bizzarro, Saverio A		1420	1420
Troy	112.21-10-2	Ida St	Reo Welding Inc		5330	28770

MUNI	PRINT_KEY	LOC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	112.21-10-1	Ida St	Reilly, John F		700	5520
Troy	112.21-15-6	Canal Ave	City Of Troy		570	570
Troy	112.22-4-16	Canal Ave	City Of Troy		570	570
Troy	112.21-14-1	Canal Ave	Manning, Petrina H		500	500
Troy	112.21-14-2	Canal Ave	Manning, Petrina H		500	500
Troy	112.21-14-3.2	Canal Ave	City Of Troy		280	280
Troy	112.21-14-3.1	Old Canal St	Duby, Christopher H		220	220
Troy	112.21-14-4	Canal Ave	Duby, Christopher H		1010	6970
Troy	112.22-4-1	Canal Ave	Radliff, Anna M		1010	8900
Troy	112.21-13-5	Fifth Ave	Sage Colleges (The)		21950	518990
Troy	112.21-12-3	Fifth Ave	Cioffi, Orlando		4130	12900
Troy	112.21-12-1	Fourth St	Parveen, Khalida		1170	18680
Troy	112.21-12-24	Fourth St	Hernandez, Hector		1170	8240
Troy	112.21-12-23	Fourth St	Maloney, Ruth		1170	7830
Troy	112.21-11-4	Fourth St	Favata, Jerry L		1130	10800
Troy	112.21-11-3	Fourth St	Sapone, Josephine		1130	4980
Troy	112.21-11-2	Fourth St	Blakeborough, Miles		1130	19530
Troy	112.21-11-1	Third St	City Of Troy		5980	98590
Troy	111.28-7-2	Third St	City Of Troy		7020	7020
Troy	111.28-6-6	Second St	McAvoy, Edward M	McAvoy, Susan	2340	21000
Troy	111.28-6-5	Second St	Hogan, Philomena M		1170	8610
Troy	111.28-6-4	Second St	Harrigan, Michael M		1170	15200
Troy	111.28-6-3	Second St	Eagle, Maria		1170	12790
Troy	111.28-6-2	Second St	Drewecki, Jane H		1170	9920
Troy	111.28-6-1	First St	Todd Charles Corporation		16960	106785
Troy	111.28-7-26	Second St	Kelly, Jeffrey A		1170	14600
Troy	111.28-7-27	Second St	Bronet, Frances		2340	27890
Troy	111.28-7-1	Second St	Farron, Joseph A	Farron, Phyllis J	1170	8040
Troy	111.28-8-1/1	Monroe St	Bruno, Frances C		56900	180940
Troy	101.37-1-2.1	River St	River Street Cafe Corp		2050	38000
Troy	101.37-1-3.2	River St	Goldman, Robert N		2050	46000
Troy	101.37-1-4.2	River St (Rear)	City Of Troy		1960	1960
Troy	101.37-1-5.1	River St (Rear)	City Of Troy		940	940
Troy	101.37-1-6.2	River St (Rear)	City Of Troy		1220	1220
Troy	101.37-1-7.2	River St (Rear)	City Of Troy		810	810
Troy	100.60-3-1.1	Front St	NYS Dot		11720	11720
Troy	100.60-3-1.2	Front St	City Of Troy		8270	10900
Troy	100.60-3-12	Front St	NYS Dot		9540	9540
Troy	100.68-1-1/1	River St	Troy Housing Authority		401240	4350750
Troy	101.37-1-1	River St	City Of Troy		1720	1720
Troy	101.37-1-2.2	River St (Rear)	City Of Troy		720	720
Troy	101.37-1-3.1	River St (Rear)	City Of Troy		720	720
Troy	101.37-1-8.2	River (Rear) St	City Of Troy		540	540
Troy	101.37-1-8.1	River St	Three Griffins Realty		2250	46700
Troy	101.37-1-7.1	River St	Greengate's Holding Co.		4770	30910
Troy	101.37-1-6.1	River St	Blue River Dev Associates		8190	287550
Troy	101.37-1-5.2	River St	417-419 River Street Corp.		3490	85280
Troy	101.37-1-4.1	River St	Revhall Enterprises, Inc.		6350	60450
Troy	101.37-1-9/1	River St	City Of Troy		17130	17130
Troy	101.29-1-1/1	River St	Troy IDA		95740	924880
Troy	101.45-1-2	River St	Troy Properties		78520	276220
Troy	101.45-3-1	Fourth St	Due Di Mare Inc		75930	437450
Troy	101.45-1-1	Third St	City Of Troy		54790	54790
Troy	101.45-5-1.1	Front St	City Of Troy		664820	709820
Troy	101.45-5-5	Front St	City Of Troy		2730	2730
Troy	101.53-1-1	Monument Sq	City Of Troy		45020	2382900
Troy	100.60-1-1	River St	Troy Urban Renewal Assoc		2670	2670
Troy	100.60-1-3	River St	Burns, W Haywood		7270	56000
Troy	100.60-1-4	River St	Golden Fox Realty, LLC		11470	56000
Troy	100.60-1-5	River St	217-219 River Street LLC		14470	67480
Troy	100.60-1-6	River St	Pantera Development LLC		6910	33900
Troy	100.60-1-14.2	Front St	Crowley, John R		14000	14000
Troy	100.60-1-14.1	River St	Crowley, John R		40000	375000
Troy	101.38-1-1	River St	River St. Associates		23440	51740
Troy	101.22-5-1	River St	Hudson Capital Group (The)		2060	5950
Troy	101.22-5-2	River St	Hudson Capital Group, The		2060	9030
Troy	101.22-5-3	River St	Hudson Capital Group, The		2060	2060
Troy	101.22-5-4	River St	Hudson Capital Group, The		2040	2800
Troy	101.22-5-5	River St	Hudson Capital Group, The		4020	4020
Troy	101.22-5-7	River St	First Columbia Acquisitions,, LLC		6600	21000
Troy	101.22-5-8	River St	First Columbia Acquisitions,, LLC		5880	11420
Troy	101.22-5-9	River St	Troy IDA		10310	10310
Troy	101.22-9-1	River St	Troy IDA		20090	569860
Troy	101.30-1-1.1	River St	Troy IDA		19390	19390
Troy	101.30-1-1.2	River St	NYS Dot		9900	9900
Troy	101.30-6-2	River St	Hedley Realty Inc		45000	152000
Troy	101.30-6-3	River St	Troy IDA		0	0
Troy	111.67-1-3/1		Republic Steel Corp		0	0
Troy	111.67-1-2	Main St	City Of Troy		900	900
Troy	111.67-1-1	Main St	City Of Troy		36900	50000
Troy	111.59-1-1	Main St	Troy Materials Group, LLC		112500	112500
Troy	111.59-2-2	So River St	New York Central Lines LLC		53149	842221
Troy	111.59-1-2	Main St	Rensselaer County		153790	4833290
Troy	111.51-1-2	East Industrial Pkwy	Rensselaer County		100	100
Troy	111.51-1-4	East Industrial Pkwy	Rensselaer County IDA		86900	86900
Troy	111.43-1-1	East Industrial Pkwy	Rensselaer County IDA		170300	170300
Troy	111.35-1-1/1	Monroe St	Troy Slag Products Co Inc		41250	137060
Troy	111.68-4-6	Burden Ave	Burke, Martin J		320	320
Troy	111.68-4-1	Cross St	City Of Rensselaer		3240	3240
Troy	90.78-6-1	River St	Mathews Assoc of Troy		11210	141000
Troy	101.22-1-1	River St	Mathews Assoc of Troy		1800	1800
Troy	101.22-1-2	River St	Mathews Assoc of Troy		2240	2240
Troy	101.22-1-3	River St	Mathews Assoc of Troy		3740	3740
Troy	101.22-1-4	River St	Troy IDA		11300	112370
Troy	122.35-1-1	Forber Ave (Rear)	Rensselaer County Sewer		0	0
Troy	111.83-1-1	Water St	Chevron USA Inc		81650	81650

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	111.76-1-1.1	Water St	City of Troy		117700	117700
Troy	111.75-1-1./1	Main St	Troy Local Development Corp.		145280	174000
Troy	90.70-1-7	President St	Mlock, Helen K		14940	14940
Troy	90.62-7-1	Douw St	Cox, Jennifer L		3630	8360
Troy	90.62-7-2	Douw St	Cox, Jennifer L		2270	5670
Troy	90.62-7-6	President St	City of Troy		2630	2630
Troy	90.70-1-1	President St	City of Troy		24110	39990
Troy	90.70-1-8	River St	Walter Snyder Printer		11150	90930
Troy	90.78-3-1	River St	Walter Snyder Printer		14630	14630
Troy	90.78-3-2.2	River St	Cahill, Ronald E		8530	35160
Troy	90.78-3-2.1	River St	Riverview Properties Inc		10430	25000
Troy	90.78-3-3.1	River St	McCall, Brian		25060	25060
Troy	90.78-3-4	River St	McCall, John A		27230	87000
Troy	90.78-3-5	River St	McPartlon, James Peter		14450	43950
Troy	90.54-1-35	Glen Ave	Troy Housing Authority		49010	931900
Troy	90.54-1-1	Bond St	U S Army Engineers		126110	236750
Troy	90.54-1-2	River St	St. Basils Greek Orthodox		6290	139690
Troy	90.54-1-7	Regatta Pl	Lanteigne, Lonny		7470	35070
Troy	90.54-1-8.3	Regatta Pl	L & L Blacktop Inc		1300	1300
Troy	90.54-1-8.1	Regatta Pl	L & L Blacktop		7960	45000
Troy	90.54-1-8.2	W Glen Ave	City of Troy, AR0112		8950	22000
Troy	90.62-4-11	Smith Ave	National Grid		146150	357310
Troy	90.22-1-4	Second Ave	City Of Troy		2750	2750
Troy	90.30-1-1	Second Ave	SKJ Properties I		37630	53180
Troy	90.30-1-2	Second Ave	Nieto, Kathleen M		3840	17730
Troy	90.38-1-36	Second Ave	Lapides, Irwin		4230	30940
Troy	90.38-1-35	Second Ave	Lapides, Irwin		1440	11650
Troy	90.38-1-34	Second Ave	Mittnacht, Katherine		1520	11640
Troy	90.38-1-33	Second Ave	Ferraro, Michelle		1900	19500
Troy	90.38-1-31	Second Ave	Kitner, Murray	Kitner, Michael C	5470	30000
Troy	90.30-1-3	Second Ave	Horan, Michael J		3040	3040
Troy	90.38-1-2.1	Second Ave	Wilder, Lawrence L		1200	1200
Troy	90.38-1-4.2	Second Ave	City Of Troy		4460	4460
Troy	90.38-1-39	Second Ave	Dallas, Peter	Dallas, Rosemary	1230	1230
Troy	90.38-1-37	Second Ave	Tremblay, Mark		2640	32450
Troy	90.38-1-38	Second Ave	Fenton, Leander J		1200	10380
Troy	90.38-1-30	Second Ave	Morrissey, John E		1580	10500
Troy	90.38-1-29	Second Ave	Steuerwald, Penn J		3990	14930
Troy	90.38-1-28	Second Ave	Vesta Community Housing		2990	29370
Troy	90.38-1-27	Second Ave	Zdonick, Alexander J		1280	15500
Troy	90.38-1-26	Second Ave	Case, Annette		1510	23240
Troy	90.38-1-25	Second Ave	Pickands, Martin		1200	18000
Troy	90.38-1-32	Second Ave	Dufel, Timothy J		1400	19200
Troy	90.46-1-14	Second Ave	Wark, Richard A		2590	20650
Troy	90.46-1-15	Second Ave	Larson, William	Larson, Deborah	1530	11670
Troy	90.46-1-16.4	Mcloughlin Ln	Peppin, Christian		1240	12890
Troy	90.46-1-16.3	Mcloughlin Ln	Iavarone, Domenica Mae	Iavarone, Salvatore	410	8110
Troy	90.46-1-1	Second Ave	Newhouse, Menashe		2420	22500
Troy	90.46-1-2	Second Ave	Finke, Jon E		2740	25350
Troy	90.46-1-4	Second Ave	Crawford, Melissa		1400	18000
Troy	90.46-1-5	Second Ave	Foy, Maxine Grimm		1400	11770
Troy	90.46-1-6	Second Ave	Travis, Samuel		2180	22500
Troy	90.46-1-7	Second Ave	U.S. Bank N.A		1820	20490
Troy	90.46-1-8	Second Ave	Mesick, Tammi		1890	18000
Troy	90.46-1-9	Second Ave	Rafferty, Ronald E		2170	16760
Troy	90.46-1-10	Second Ave	Meehan, Jacques E	Shellard, Richard	2900	15840
Troy	90.46-1-11	Second Ave	McLaughlin, John D		12830	37830
Troy	90.46-1-13.1	Second Ave (Rear)	Nicholson, Jeanette		3510	19600
Troy	90.46-1-18	Second Ave	Santoro, Sandra		2120	16500
Troy	90.46-1-19	Second Ave	Valirgorsky, Bernard J		2950	14390
Troy	90.46-1-20	Second Ave	Gui, Rohani		3120	27980
Troy	90.46-1-21	Second Ave	St. Basils Greek Orthodox		7400	7400
Troy	80.78-1-1	Second Ave	369 Second Ave. LLC		17280	50000
Troy	80.78-1-2	Second Ave	Cifarelli, Mark A		3800	8220
Troy	80.78-1-3	Second Ave	Kellis, Daniel J		2340	9870
Troy	80.78-1-4	Second Ave	Cifarelli, Mark		1000	1000
Troy	80.78-1-5	Second Ave	Cifarelli, Mark		13940	50000
Troy	80.78-1-6	Second Ave	Cullinan, Jonathan W		9270	28000
Troy	80.78-1-7	Second Ave	Pepe Properties, LLC		31590	53390
Troy	80.71-5-3	Second Ave	Coletti, David C		7520	45690
Troy	80.71-5-4	Second Ave	405 Second Avenue, LLC		22460	257680
Troy	80.71-5-5	Second Ave	Curry, William		9850	30670
Troy	80.71-5-6	Second Ave	O'Shea, Lawrence		26670	85000
Troy	90.22-1-1	Second Ave	Murad, Jeff E		15710	98000
Troy	90.22-1-2	Second Ave	287 Second Ave.		8420	53500
Troy	90.22-1-3	Second Ave	Rensselaer County Sewer		18720	693720
Troy	80.63-6-14	112th St	Gillespie, Carol A		1230	11930
Troy	80.71-5-1	Second Ave	Deseve, Michael	Hanson, Petra	7430	39000
Troy	80.71-5-2	Second Ave	Coletti, Judith		8600	47090
Troy	80.63-10-1	First Ave	Morlock, Henry T		2660	13840
Troy	80.63-10-2.2	First Ave	Gabriels, Thomas J		1400	6220
Troy	80.63-10-3	First Ave	City of Troy		4540	4540
Troy	80.63-11-1	Second Ave	Lansingburgh Realty		105200	326430
Troy	80.48-12-17	Third Ave	DiBell, Dorothy		3650	17040
Troy	80.48-12-16	Third Ave	Gruendle, Scott		2520	17550
Troy	80.48-12-15	Third Ave	Tivnan, Kathleen M		1580	11510
Troy	80.48-12-14	Third Ave	Blake, Thomas P	Blake	3020	17550
Troy	80.48-12-13	Third Ave	Carlson, William E		2020	19600
Troy	80.56-4-4	Fourth Ave	Biondi, Diane M		2930	25800
Troy	80.56-4-3	Fourth Ave	McDannold, Stanley	McDannold, Doran	1470	19950
Troy	80.56-4-2.1	116th St	Mugrace, Therese M		1480	11180
Troy	80.47-4-1	First Ave	Miter, Robert L		1710	7990
Troy	80.47-4-2	First Ave	Hughes, Gordon		1580	8470
Troy	80.47-4-3.2	First Ave	Lowes, William J		2800	27000
Troy	80.47-4-3.11	First Ave	Timberland Associates, LLC		6200	22000
Troy	80.47-4-3.12	First Ave	Downey, Michael P		6200	27000

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	80.47-4-3.13	First Ave	Timberland Associates, LLC		6200	22000
Troy	80.47-5-1	First Ave	Delarosa, Martin A		1350	12090
Troy	80.47-5-17	First Ave	Sadler, Tyrrance C		900	7860
Troy	80.47-5-16	First Ave	Marchese, Joseph A	Marchese, Daniel J	2250	11450
Troy	80.47-5-15	First Ave	Bauer, Carl R		2120	16210
Troy	80.47-5-14	First Ave	Elliott, Gary M		2390	15920
Troy	80.47-5-13	First Ave	Mastan, Frank W		1220	13070
Troy	80.47-5-12	First Ave	Schermerhorn, Joanne H	Schermerhorn, Robert W	2250	12470
Troy	80.47-5-11	116th St	Charette, William R		4370	25600
Troy	80.47-5-2	Second Ave	Marchese, Joseph	Marchese, Daniel	10800	41800
Troy	80.47-5-3	Second Ave	Marchese, Joseph		3330	3330
Troy	80.47-5-4	Second Ave	Bochman, Alon		3960	3960
Troy	80.47-5-5	Second Ave	Bochman, Alon		5760	48360
Troy	80.47-5-6	Second Ave	Toftgaard, Marilyn		3330	32510
Troy	80.47-5-7	Second Ave	Raimondi, Maria		2160	21630
Troy	80.47-5-8	Second Ave	Choes Partners, LLC		3420	36000
Troy	80.47-5-9	Second Ave	Amato, Dominic A		7610	45500
Troy	80.47-6-1	Second Ave	Ashbran Realty Corp		4500	18000
Troy	80.47-6-17	Second Ave	Charlies Food Co Inc		4500	20070
Troy	80.47-6-16	Second Ave	Harrison, William	Harrison, Cheryl	2250	15930
Troy	80.47-6-15	Second Ave	Palozzi, Christopher	Palozzi, Denise	2250	20440
Troy	80.47-6-14	Second Ave	Manupella, A P		2250	18700
Troy	80.47-6-13	Second Ave	Zampier, Brent	Zampier, Robyn	2250	44210
Troy	80.47-6-12	Second Ave	East Coast Capital Company , LLC		2250	12270
Troy	80.47-6-11	Second Ave	Walizer, Glen	Walizer, Karla	1530	7630
Troy	80.47-6-10	Second Ave	Fearnley, Anne	Walizer, Karla	1350	7600
Troy	80.47-6-9	Second Ave	Such, Michael		4050	12710
Troy	80.47-6-8	Second Ave	Schwarz, Robert A		2520	17380
Troy	80.47-6-7	Second Ave	HSBC Bank USA		9000	109500
Troy	80.47-6-6	116th St	Vancott, Robert J		1820	11730
Troy	80.47-6-5	116th St	Lohman, Lawrence		3260	23000
Troy	80.47-6-4	Third Ave	Shanley, Terence E		2330	19750
Troy	80.47-6-3	Third Ave	Cunningham, Wanda		3150	14300
Troy	80.47-6-2	Third Ave	Roberts, James T		6620	36600
Troy	80.48-11-1	Third Ave	Matthews, Earl		6300	50000
Troy	80.48-12-1	117th St	Adams, John M		3150	19000
Troy	80.48-12-19	Third Ave	Adams, John M		1580	4000
Troy	80.48-12-18	Third Ave	Beckett, Gail R		1580	12670
Troy	80.48-12-12	Third Ave	Vanderwerken, Derinda L	Vanderwerken, Joseph J	2520	27200
Troy	80.48-12-11	Third Ave	United Methodist Church		3470	122340
Troy	80.48-12-10	Fourth Ave	Lieberman, Timothy A	Briggs, Brittany	4210	25000
Troy	80.48-12-9	Fourth Ave	Barrett, Kevin J		2340	20650
Troy	80.48-12-8	Fourth Ave	Graham, Donald E	Graham, Clare S	3980	24610
Troy	80.48-12-7	Fourth Ave	Benoit, Pamela J		2930	14210
Troy	80.48-12-6	Fourth Ave	Fernet, Dennis P		2930	15930
Troy	80.48-12-5	Fourth Ave	Budine, Richard S		2930	15040
Troy	80.48-12-4	Fourth Ave	Batty, Allison		1470	15000
Troy	80.48-12-2	117th St	Nault, Mary Beth		1270	10340
Troy	80.55-3-3	Third Ave	Hajeck, Randy		2210	12150
Troy	80.55-3-4	Third Ave	Tobia, Gino		3150	20500
Troy	80.55-3-5	Third Ave	Farrell, Edward T		4470	27300
Troy	80.55-3-6	Third Ave	Pomeroy, Stacy F		1760	13580
Troy	80.55-3-7	Third Ave	Bagarose, John L	Bagarose, Anne	3150	21600
Troy	80.55-3-8	Third Ave	Grenier, James J		5360	16350
Troy	80.55-3-11	Second Ave	Verdile, Michael P		1080	1080
Troy	80.55-3-10	Second Ave	Verdile, Michael P		2300	2300
Troy	80.55-3-9	Second Ave (Rear)	Verdile, Michael P		3000	3000
Troy	80.56-4-1	Third Ave	Nare, Edward G		3150	17390
Troy	80.56-4-10	Third Ave	Goldsberry, Irving		1830	9430
Troy	80.56-4-9	Third Ave	O'Brien, Robert J		4020	16550
Troy	80.56-4-8	Third Ave	Schultz, Martha K	Reeves, Cheryl	5040	28190
Troy	80.56-4-7	Third Ave	First Presbyterian Church		9450	251270
Troy	80.56-4-6	Fourth Ave	Trinity Episcopal Church Trust		15210	223790
Troy	80.48-12-3	Fourth Ave	Wachsman, David P		1140	12370
Troy	80.47-7-1	First Ave	Jorgensen, John J	Jorgensen, Monica A	4530	15000
Troy	80.55-1-1	First Ave	Currier, Lawrence J	Currier, Isabella	840	840
Troy	80.55-1-4	First Ave	City of Troy, ARO143		1300	1300
Troy	80.55-1-2	First Ave	City of Troy, ARO142		780	780
Troy	80.55-1-3	First Ave	Ruta, George		2350	15760
Troy	80.47-8-1	First Ave	Lodi Realty Corp		7130	50650
Troy	80.55-2-1	First Ave	Currier, Lawrence J	Currier, Isabella	2250	19100
Troy	80.55-2-14	First Ave	Chang, Carolyn		4500	25000
Troy	80.55-2-13	First Ave	Piche, William F		1170	10680
Troy	80.55-2-12	First Ave	Scifo, John J		1080	17040
Troy	80.55-2-11	115th St	Clermont, Glenn F		3460	72500
Troy	80.55-2-10./1	115th St	Troy Housing Authority		78650	719950
Troy	80.47-8-4	Second Ave	Collins, Angeline M		3600	8870
Troy	80.47-8-3	Second Ave	Broderick, John P		3150	12260
Troy	80.47-8-2	Second Ave	Khan, Saleem A		2610	22540
Troy	80.55-3-1	Second Ave	Josephs House & Shelter Inc		10800	340810
Troy	80.55-3-19	Second Ave	Josephs House & Shelter Inc		4500	4500
Troy	80.55-3-18	Second Ave	Akoud, Izzeldin (Dean)		2250	17100
Troy	80.55-3-17	Second Ave	Marrero, Erik		2250	13670
Troy	80.55-3-16	Second Ave	Hajeck, Randall G		2250	16070
Troy	80.55-3-15	Second Ave	Fitch, Helga H		2250	11940
Troy	80.55-3-14	Second Ave	Caiazza, Rudolph		2160	12780
Troy	80.55-3-13	Second Ave	Napoli, Emanule P		2250	20000
Troy	80.55-3-12	Second Ave	Verdile, Michael P		4500	48200
Troy	80.55-3-2	Third Ave	Nare		3910	35000
Troy	80.55-4-1	First Ave	Henry, Beatrice R		1890	1890
Troy	80.55-4-3	First Ave	Barkamian, Khachik		840	840
Troy	80.55-4-4	First Ave	Barkamian, Khachik		1250	1250
Troy	80.55-4-5.1	114th St	Jorgensen, John J		7430	30530
Troy	80.55-5-17	First Ave	Marx, W U		2290	3300
Troy	80.55-5-16	114th St	Bush, Norine		1050	8620
Troy	80.55-4-2	First Ave	Henry, Beatrice R		110	110

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	80.55-5-1	115th St	Jones, Robert F		2070	18100
Troy	80.55-5-2	115th St	Roberts, James T		2070	27500
Troy	80.55-5-21	First Ave	Henry, Beatrice R	Layton, Cherie	2910	16590
Troy	80.55-5-20	First Ave	Hines, Margaret A		2910	22100
Troy	80.55-5-19	First Ave	AJD		4050	26250
Troy	80.55-5-18	First Ave	Piche, John		2390	6830
Troy	80.55-6-1	Second Ave	Sweetbriar Corporation		2460	15220
Troy	80.55-6-2	115th St	Verdile, Michael P		1310	1310
Troy	80.55-6-21	Second Ave	Opoka, Matthew Francis		1470	14850
Troy	80.55-6-20	Second Ave	Rock Hill Properties, LLC		1470	12290
Troy	80.55-6-19	Second Ave	Sheffer, Thomas R		1470	9510
Troy	80.55-6-8	Third Ave	Merola, Agnes T		3150	19930
Troy	80.55-6-7	Third Ave	Lloyd, Stephanie		4030	33300
Troy	80.55-6-6	Third Ave	Anderson, Adolf		2210	6220
Troy	80.55-6-5	Third Ave	Connally, Mildred	Quinn, Mary Beverly	1580	10470
Troy	80.55-6-4	Third Ave	Holehan, John M	Holehan, Fati	1580	14990
Troy	80.55-6-3	Third Ave	Associated Residential Centers		3150	25230
Troy	80.55-7-1	Third Ave	Parkes, Harold D	Gauger, Carol L	3150	42000
Troy	80.55-7-7	Third Ave	Barna, David M	Barna, Pamela R	3150	10350
Troy	80.55-7-6	Third Ave	Wiard, Harry		3780	12980
Troy	80.55-7-5	Third Ave	Patalino, Deana		2520	20530
Troy	80.55-7-4	Third Ave	Scott, Kathleen A	Scott, Harold J	5670	21340
Troy	80.56-9-4	Fourth Ave	Dandurand, Raymond M		2700	11780
Troy	80.56-9-3	Fourth Ave	Dessingue, Jason		2160	11580
Troy	80.56-9-2	Fourth Ave	Sanvidge, John	Sanvidge, Kelly T	4860	38560
Troy	80.56-9-1	115th St	Brown, Phillip		1900	11500
Troy	80.55-8-1	First Ave	Lansingburgh Historical		3020	3020
Troy	80.55-8-2	First Ave	George, Barbara		1060	1060
Troy	80.55-8-3	First Ave	George, Barbara		1170	8000
Troy	80.55-8-4	First Ave	Iavarone, Domenica Mae	Macy, Nancy	1420	22500
Troy	80.63-1-1	First Ave	Houle, Mark		1380	9910
Troy	80.63-1-2	First Ave	Welch, Peter G		2160	2160
Troy	80.55-9-1.1	114th St	Lansingburgh Historical Soc		2900	10120
Troy	80.55-9-8	First Ave	Malone, Dorothy		1170	9360
Troy	80.55-9-7	First Ave	Eldridge, Donald		1170	11190
Troy	80.55-9-6	First Ave	Major, Jimmy L		2120	13190
Troy	80.63-2-1	First Ave	Welch, Peter G		2250	2250
Troy	80.63-2-10	First Ave	Miranda, George J		2250	11560
Troy	80.63-2-9	113th St	Zeto, Randall A		1810	19000
Troy	80.63-5-1	First Ave	Zeto, Randall		2700	9620
Troy	80.63-5-2	First Ave	Malthaner, Mary		1740	4390
Troy	80.63-5-3	First Ave	See, Robert M		1400	2720
Troy	80.63-5-4	First Ave	Kombert, Joe Steven		1710	9540
Troy	80.63-5-5	First Ave	City of Troy		4260	4260
Troy	80.40-2-1	Second Ave	750 Second Ave Realty LLC		42620	150000
Troy	80.32-12-1	Third Ave	McFee, Philomen		1830	25000
Troy	80.32-12-2	Third Ave	Connor, Jean E		1890	19580
Troy	80.32-12-3	Third Ave	McBride, Sheila		2650	2650
Troy	80.32-12-4	Third Ave	LaCorte, Eileen		3150	22570
Troy	80.40-2-2	Third Ave	Fox Family Rev. Trust	Fox, David T	3150	19620
Troy	80.40-2-4	Third Ave	Haskins, Douglas	Haskins, Amy	2470	16410
Troy	80.40-2-6	120th St	PALS Unlimited, LLC		850	14540
Troy	80.40-2-5	Third Ave	Pinzer, Benjamin	Pinzer, Carolyn	1800	27820
Troy	80.40-3-16	Third Ave	Parker, Melissa M	Parker, Jack	3150	19600
Troy	80.40-3-15	Third Ave	Koletas John W		3150	18780
Troy	80.40-3-12	Third Ave	Gregor, Stephen J		1050	20080
Troy	80.40-3-11	Third Ave	Goes, Paul W		1150	14720
Troy	80.40-7-1	120th St	Chrysoygelos, William		1470	19070
Troy	80.40-7-22	Second Ave	Doty, Evelyn F		2930	10520
Troy	80.40-7-21	Second Ave	Diotte, Michael P		1470	15500
Troy	80.40-7-20	Second Ave	Perez, Cynthia		1400	11660
Troy	80.40-7-19	Second Ave	Melendez, Miguel E		1500	1500
Troy	80.40-7-18	Second Ave	Ayotte, Charles		2930	12500
Troy	80.40-7-17	Second Ave	Callahaan, Michael		1470	15120
Troy	80.40-7-16	Second Ave	Philips, Christopher		1470	11500
Troy	80.40-7-15	Second Ave	LaPierre, David R		1470	8580
Troy	80.40-7-14	Second Ave	Manupella, Mary Lorraine		1470	13360
Troy	80.40-7-13	Second Ave	Bechand, Darlene M		1470	16240
Troy	80.40-7-12	Second Ave	Biette, Gary K		1470	14000
Troy	80.40-7-11	Second Ave	Cipriani, Matthew		2930	2930
Troy	80.40-7-10	119th St	Lanesey, John J		2950	9960
Troy	80.40-7-9	Third Ave	Broderick, Rita M		2210	17000
Troy	80.40-7-8	Third Ave	Watson, Neil B	Watson, Anne R	2680	16200
Troy	80.40-7-7	Third Ave	Lewis, Juanita M		3150	17100
Troy	80.40-7-6	Third Ave	Maselli, Joseph		3150	4200
Troy	80.40-7-5	Third Ave	Habiby, Michael S	Habiby, Liza M	3150	15630
Troy	80.40-7-4	Third Ave	Ward, John J		3150	16830
Troy	80.40-7-3	Third Ave	Hobbs, Theresa A		3150	21980
Troy	80.40-7-2	Third Ave	Keresztes, Ferenc		3150	15000
Troy	80.40-8-1	Third Ave	Badger, George G		1580	10190
Troy	80.40-8-23	Third Ave	Hunziker, Jane		1580	16700
Troy	80.40-8-22	Third Ave	Hilt, Dennis J		3150	14020
Troy	80.40-8-21	Third Ave	Lambertson, Seren P		3150	15060
Troy	80.40-8-20	Third Ave	Crall, Lisa M		3150	17000
Troy	80.40-8-19	Third Ave	Castle, Charles D	Castle, Peggy Sue	1580	16100
Troy	80.40-8-18	Third Ave	Gagnon, Richard		1580	14090
Troy	80.40-8-17	Third Ave	Mauzon, Tricinne M		1580	17220
Troy	80.40-8-16	Third Ave	Leece, Thomas A		1580	13840
Troy	80.40-8-15	Third Ave	Marro, Michael		3970	18750
Troy	80.40-11-12.2	Second Ave	Chaplin, Lynn M		3090	3560
Troy	80.48-1-1	Second Ave	Ward, Susan		2930	7640
Troy	80.48-1-7	Second Ave	Ward, Susan		1120	1120
Troy	80.48-1-6	Second Ave	Ventures, Hoosick		1120	33350
Troy	80.48-1-5	118th St	Sibinich, Jr., Andre		1870	12860
Troy	80.48-1-4	Third Ave	Torrisi, Virginia G		1470	25090
Troy	80.48-1-3	Third Ave	Tash, Alfred	Tash, Lucy R	1470	16020

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	80.40-11-11	Third Ave	Baldwin, William H		4800	20630
Troy	80.40-11-10	Third Ave	Koval, Joel		1050	9740
Troy	80.40-11-9	Third Ave	Belogi, Mary E	Belogi, Joseph	1470	11390
Troy	80.47-2-17	First Ave	Mulholland, Doris		2250	9910
Troy	80.47-2-16	First Ave	Bloomfield, Donna L		2250	10400
Troy	80.47-2-15	First Ave	Premo, Sally A		1130	6870
Troy	80.47-2-14	First Ave	Kepner, Mark E		1130	12300
Troy	80.47-2-13	First Ave	Kepner, Mark E	Kepner, Shirley M	1125	1125
Troy	80.47-2-12	First Ave	Charles, Joseph		1125	1125
Troy	80.47-2-11	117th St	Charles, Joseph		2250	17000
Troy	80.47-2-10	Second Ave	Marchese, Joseph A	Marchese, Daniel	4860	29000
Troy	80.47-2-8	Second Ave	Lomask, Morton R		7660	26580
Troy	80.47-2-7	Second Ave	Rivas, Vicki Lee		1620	13650
Troy	80.47-2-6	Second Ave	City of Troy, AR0145		5270	56180
Troy	80.47-2-5	Second Ave	City of Troy, AR0144		2230	4010
Troy	80.47-2-4	Second Ave	Casullo, Daniel		1650	15000
Troy	80.47-2-2	Second Ave	Disciplo Realty LLC		7450	36730
Troy	80.48-6-14	Second Ave	Cinney, Doris E	Cinney, Thomas G	3380	15600
Troy	80.32-7-1	122nd St	Judkins, Theodore R	Judkins, Lynn A	1130	13240
Troy	80.32-7-2	122nd St	Hallett, John		1180	13010
Troy	80.32-7-3	122nd St	Gillie, June		1150	14250
Troy	80.32-7-22	First Ave	Veterans of Lansingburgh		2870	15965
Troy	80.32-7-21	First Ave	Doin, Esther T		5450	19250
Troy	80.32-7-19	First Ave	Flynn, Michael J		3870	19000
Troy	80.32-7-4	Second Ave	Veterans of Lansingburgh		2340	2340
Troy	80.32-7-5	Second Ave	Veterans of Lansingburgh		2930	2930
Troy	80.32-7-6	Second Ave	Veterans of Lansingburgh		2520	20700
Troy	80.32-7-7	Second Ave	Smith, Jane Ann		3330	19000
Troy	80.39-1-1	First Ave	Komertz, Carl		4050	15000
Troy	80.39-1-2	First Ave	Vallee, Arthur J	Vallee, Judith A	12150	30000
Troy	80.39-1-3	First Ave	City Of Troy		740	740
Troy	80.39-2-1	First Ave	City Of Troy		9000	9000
Troy	80.39-2-2	First Ave	Decenzo, Fred	Decenzo, Joann	2250	9600
Troy	80.39-2-3	First Ave	Becker, Barbara J		1130	9150
Troy	80.39-2-4	First Ave	Skaarup, Joan		1130	7050
Troy	80.39-2-5	First Ave	Bradshaw, William L		2250	21750
Troy	80.39-2-6	First Ave	Bowles, Cynthia		2250	19800
Troy	80.40-6-8	Second Ave	Wood, William C		2930	18380
Troy	80.40-6-7	Second Ave	Bazar, Katherine E		3060	18250
Troy	80.40-6-6	Second Ave	Caulfield, Gary		1940	15950
Troy	80.40-6-5	Second Ave	Tencer, Douglas	Tencer, Kristen	1470	14120
Troy	80.40-6-4	Second Ave	O'Connor, Matthew	O'Connor, Kristy L	2050	12500
Troy	80.40-6-3	Second Ave	Gilmore, Cherrie		2930	10810
Troy	80.40-6-2.2	Second Ave	Roberts, Tammy		1470	16170
Troy	80.40-6-2.1	Second Ave	719 Second Avenue LLC		1470	1470
Troy	80.40-6-1	Second Ave	719 Second Ave LLC		16200	39010
Troy	80.39-3-1	First Ave	Dyer, Royal J	Dyer, Erina	4620	17000
Troy	80.39-3-2	First Ave	Chiera, Frank	Chiera, Donna	2490	8790
Troy	80.39-3-3	First Ave	Luchsinger, Ellen R		2110	15120
Troy	80.39-3-4	First Ave	Gamache, Robert W		3620	40000
Troy	80.39-4-1	119th St	Burke, Michael D	Burke, Carol I	2160	12560
Troy	80.39-4-17	First Ave	Skaarup, Debra A	Skaarup, Thomas E	2250	11830
Troy	80.39-4-16	First Ave	Thornton, Marion F		2250	11340
Troy	80.39-4-15.1	First Ave	Marerro, Luz C		4730	19360
Troy	80.39-4-15.2	First Ave	Colaruotolo, Loretta		2790	6850
Troy	80.39-4-15.3	118th St	Sanderson, Stuart W		4480	27630
Troy	80.39-4-14	118th St	Fraser, Todd S		1390	20260
Troy	80.39-4-13	Second Ave	Viazzi, Nancy		2020	29020
Troy	80.39-4-12	Second Ave	Teeling, Louis		1520	1520
Troy	80.39-4-11	Second Ave	Teeling, Louis		1470	12950
Troy	80.39-4-10	Second Ave	Blandy, Thomas C		2930	20510
Troy	80.39-4-9	Second Ave	Westfall, Stephen		1470	13710
Troy	80.39-4-8	Second Ave	Youngs, Melodie		1470	12950
Troy	80.39-4-7	Second Ave	Pryor, Kevin		1470	14530
Troy	80.39-4-6	Second Ave	Macey, Edward J		1470	13060
Troy	80.39-4-5.2	Second Ave	Cunningham, John W		1840	7400
Troy	80.39-4-5.1	Second Ave	Cunningham, John W		1220	7400
Troy	80.39-4-4	Second Ave	Munn, John Richard	Munn, Kathleen Ann	1470	13500
Troy	80.39-4-3	Second Ave	Leitrim Realty		1470	15500
Troy	80.39-4-2	Second Ave	Dowe, Alina	Dowe, Dwayne	2930	19600
Troy	80.40-11-1	Second Ave	Kent, Christopher		2930	16240
Troy	80.40-11-16	Second Ave	Buchanan, Gerard J		1400	14950
Troy	80.40-11-15	Second Ave	King, David		1580	17270
Troy	80.40-11-14	Second Ave	Karayan, Vartan		1470	19280
Troy	80.40-11-13	Second Ave	Massengale, Gregory	Massengale, Christine	1470	28000
Troy	80.40-11-12.1	Second Ave	Chaplin, Lynn M		3370	21630
Troy	80.40-11-8	Third Ave	Stockwell, Kevin	Brown, Laurel	1470	17320
Troy	80.40-11-7	Third Ave	Sec. of Housing & Urban Dev.		1760	12420
Troy	80.40-11-6	Third Ave	Hunziker, Julia		1700	17280
Troy	80.40-11-5	Third Ave	Hunziker, John E	Hunziker, Julia	1290	1290
Troy	80.40-11-4	Third Ave	Schuh, M O	Schuh, Edward	2930	16080
Troy	80.40-11-3	Third Ave	Bailey, Carol S	Wiechnik, Rosemary R	1470	14140
Troy	80.40-11-2	Third Ave	Lagace, Darcy M		1470	14870
Troy	80.47-1-1	First Ave	Johnson, Richard W	Bakker-Johnson, Eliza	1910	17600
Troy	80.47-1-2	First Ave	Kluz, Leonard M		1850	28000
Troy	80.47-1-3	First Ave	Moore, Edward T	Moore, Marjorie P	1780	17960
Troy	80.47-1-4	First Ave	Rayno, Alan H		1710	8070
Troy	80.47-1-5	First Ave	Tlaige, Emile		1710	8210
Troy	80.47-1-6.1	First Ave	Pacheco, Paul R	Riccio, Patricia A	2970	27000
Troy	80.47-1-6.2	First Ave	Moriarty, Brian	Moriarty, Nancy	2970	27000
Troy	80.47-2-1	118th St	Johnson, Richard W	Johnson, Elisabeth A	3350	15070
Troy	80.47-2-20	First Ave	Wing, Camille		950	10640
Troy	80.47-2-19	First Ave	Rinn, Catherine M		1130	10050
Troy	80.47-2-18	First Ave	Barrett, Jean	Barrett, Oscar	1620	10340
Troy	80.48-6-13	Second Ave	Harrington, Kendall		2030	12500
Troy	80.48-6-12	Second Ave	Hastings, Michael J		4590	21290

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	80.47-3-1	Second Ave	Ribet, Steven M		2720	16500
Troy	80.47-3-3	Second Ave	Shouse, III, William		1350	24860
Troy	80.47-3-4	Second Ave	Sestito, Anthony M		1000	1000
Troy	80.47-3-5	Second Ave	Sestito, Joan M		3380	14230
Troy	80.47-3-6	Second Ave	Unlimited Real Estate		5130	109250
Troy	80.48-6-10	117th St	Jeracl, Frank		8310	17010
Troy	80.48-6-3	118th St	City of Troy, AR0154		2250	2250
Troy	80.48-6-4	Third Ave	Bruton, Deborah	Alexander, Alonzo	2050	14450
Troy	80.48-6-5	Third Ave	Pyndus, Michael	Pyndus, Patricia J	1470	7920
Troy	80.48-6-6	Third Ave	Klidnasky, Nicholas		1470	10000
Troy	80.48-6-7	Third Ave	Hillside Cleaners		2810	8610
Troy	80.48-6-8	Third Ave	Canfield, Rita		4180	18990
Troy	80.48-6-9.2	Third Ave	Nikolaus, Jay P		1640	19600
Troy	80.48-6-9.1	Third Ave	Parrales, Gabriel S		1290	14390
Troy	80.48-6-1	Second Ave	Graves, Gwendolyn		2230	24000
Troy	80.48-6-2	118th St	Fry, William K		1400	6990
Troy	80.48-6-15	Second Ave	Viazzi, Kenneth A	Viazzi, Nancy K	1220	17800
Troy	80.48-7-18	Third Ave	Walthers, Patricia		1470	11390
Troy	80.48-7-17	Third Ave	Bergeron, Gladys W	Bergeron, Robert E	2930	19500
Troy	80.48-7-16	Third Ave	Jeracl, Frank		1640	1640
Troy	80.48-7-14	Fourth Ave	McDermott, Mary		1470	23500
Troy	80.48-7-15	Fourth Ave	Frejje, Fred C		1470	14070
Troy	80.32-3-1	Second Ave	Hudson River Bank & Trust		65250	132500
Troy	80.32-3-2	Third Ave	Maloney, Robert J	Maloney, Frances E	9320	45790
Troy	80.32-3-15	Second Ave	Hudson River Bank & Trust Co		11300	12740
Troy	80.32-3-14	Second Ave	Rogers, Debra M	Rogers, Jody M	1940	14770
Troy	80.32-3-13	Second Ave	Sawyer, Christopher M	Sawyer, Bridget L	1940	16580
Troy	80.32-3-12	Second Ave	Neilsen, Leon P		1940	16150
Troy	80.32-3-11	Second Ave	Hanesack, Scott A	Brown, Rebecca L	2930	13830
Troy	80.32-3-10	Second Ave	Sana, Amanda L		1640	9160
Troy	80.32-3-9	Second Ave (Rear)	Rogowski, Adam		1290	6230
Troy	80.32-3-8	Third Ave	Margosian, George H		3150	18400
Troy	80.32-3-7	Third Ave	Simmons, Michael		1580	13670
Troy	80.32-3-6	Third Ave	Dickson, Viola M		1580	8490
Troy	80.32-3-5	Third Ave	Harte, Richard J	Harte, Margaret M	3150	18970
Troy	80.32-3-4	Third Ave	Lussier, George M		3150	15880
Troy	80.32-3-3	Third Ave	Venter, Betty Lou		3280	24500
Troy	80.24-7-1	123rd St	Carpenter, Nelson J		1480	15700
Troy	80.24-7-2	123rd St	Hunziker, Arlene	Hunziker, David	1480	19980
Troy	80.24-7-3	123rd St	Lockwood, Dorothy		1620	15810
Troy	80.24-7-4	123rd St	Manupella, Anthony		1960	20250
Troy	80.24-7-8	First Ave	Murphy, Rosetta L	Murphy, Harold E	2700	17000
Troy	80.32-2-1	First Ave	Spencer, Lucille		4050	28220
Troy	80.32-2-13	First Ave	Krawiec, Mary Chris		2700	21070
Troy	80.32-2-12	First Ave	Miller, Marion L		1350	9830
Troy	80.32-2-11	First Ave	Geddis Property Management , LLC		2400	29070
Troy	80.32-2-10	First Ave	Christensen, Leona		1210	13630
Troy	80.32-2-9	122nd St	LaBoissiere, John R		1490	15000
Troy	80.32-2-8	Second Ave	Simonds, Edwin F	McSherry, Deborah A	3740	24560
Troy	80.32-2-7	Second Ave	Jorgensen, John	Jorgenson, Monica	2930	20000
Troy	80.32-2-6	Second Ave	Vescova, Kim		2170	15750
Troy	80.32-2-5	Second Ave	Matthews, Genia M		2220	16580
Troy	80.32-2-4	Second Ave	Barone, Ralph		1470	12600
Troy	80.32-2-3	Second Ave	Leiter, Arnold A		1470	11600
Troy	80.32-2-2	Second Ave	Wetsel, Vera L		1760	15080
Troy	80.24-7-7	Second Ave	Weldon, Trudy F		1760	23630
Troy	80.24-7-6	Second Ave	BJR Property Management, LLC		1760	19730
Troy	80.24-7-5	Second Ave	Torian, Artur		3330	46000
Troy	80.24-6-1	First Ave	Layton, Richard K		2460	17850
Troy	80.24-6-2	First Ave	Backer, Sherrill A		1680	15070
Troy	80.24-6-3	First Ave	Moore, Corrinne R		2050	15160
Troy	80.24-6-4	First Ave	Shamam, Ronnye B		2590	17660
Troy	80.24-6-5	First Ave	Cox, Jennifer L		2590	19490
Troy	80.24-6-6	First Ave	Heaphy, Joan E		1560	18890
Troy	80.32-1-1	First Ave	Connors, Helen S	Connors, John J	2730	15480
Troy	80.32-1-2	First Ave	Wells, Patrick E	Wells, Rose Marie	1780	17000
Troy	80.32-1-3	First Ave	Connors, William Joseph	Connors, Ann	1780	15670
Troy	80.32-1-5	122nd St	Vanauken, Edward J		1200	8130
Troy	80.32-1-4	First Ave	Krawiec, Mary Chris		1490	22050
Troy	80.32-6-1	First Ave	Veterans of Lansingburgh		5130	10000
Troy	80.32-6-2	First Ave	Veterans Of Lansingburgh		6140	68920
Troy	80.32-6-3	First Ave	Veterans of Lansingburgh		2250	2250
Troy	80.32-6-4	First Ave	Napoli, Santo		1940	11330
Troy	80.32-6-5	First Ave	Troy Motor Boat & Canoe Club		13690	25500
Troy	80.32-6-6	First Ave	City Of Troy		2750	2750
Troy	80.32-7-8	Second Ave	Morelli, Chester L		1470	17500
Troy	80.32-7-9	Second Ave	Halloran, Patrick C	Halloran, Linda Andriano	2930	23570
Troy	80.32-7-10	Second Ave	Lombardo, Dina M		2640	18880
Troy	80.32-7-11	Second Ave	Dina Honsinger		1580	1580
Troy	80.32-7-18.1	121st St	Hillman, Barbara		870	9180
Troy	80.32-7-18.2	121st St	Hillman, Barbara		730	8920
Troy	80.32-7-17	121st St	Krawiec, Mary Chris		1300	15040
Troy	80.32-7-15.1	121st St	Forte, Michele		830	10290
Troy	80.32-7-15.2	121st St	Plante, Leah		700	10290
Troy	80.32-7-14	121st St	Allen, Robert V	Allen, Sarah M	800	8930
Troy	80.32-7-13	Second Ave	Stockwell, Ronald C		1290	15010
Troy	80.32-7-12	Second Ave	Krawiec, Mary C		1310	1310
Troy	80.32-8-1	Second Ave	Hatlee, Wayne	Hatlee, Tracey	2930	45000
Troy	80.32-8-22	Second Ave	Colligan, Madeline	Collian, Thomas H	2870	16340
Troy	80.32-8-21	Second Ave	Cameron, Cathy E		2930	15850
Troy	80.32-8-20	Second Ave	Brennan, Dominick	Shattuck, Randy	2870	18700
Troy	80.32-8-19	Second Ave	Maxwell, Michael S		1520	16450
Troy	80.32-8-18	Second Ave	Kempster, Mariah C		1470	17000
Troy	80.32-8-17	Second Ave	Mullins, William B	Mullins, Lawrence	1470	12720
Troy	80.32-8-16	Second Ave	Osborne, Paul	Osborne, Nancy	1470	17000
Troy	80.32-8-15	Second Ave	Hutton Holdings, LLC		1470	15600

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Troy	80.32-8-14	Second Ave	Finkel, Richard G		1470	13310
Troy	80.32-8-13	Second Ave	Herkert, John C		1890	1890
Troy	80.32-8-12	121st St	Wagner, Michael E		1310	11210
Troy	80.32-8-11	Third Ave	Purple Heart		3150	24070
Troy	80.32-8-10	Third Ave	Perreault, Robert J	Perreault, Sharon M	3150	19500
Troy	80.32-8-9	Third Ave	Mailloux, Robert	Mailloux, Jeanne	2140	20480
Troy	80.32-8-8	Third Ave	Toteno, Maria A		2520	18700
Troy	80.32-8-7	Third Ave	Sullivan, Joan		1700	16330
Troy	80.32-8-6	Third Ave	Hastings, Collette B		3390	23310
Troy	80.32-8-4	Third Ave	Hastings, Collette B		3150	18970
Troy	80.32-8-2	122nd St	Epstein, Ronald		1870	18000
Troy	80.32-8-3	Third Ave	Hunziker, Mary E	Hunziker, Joseph G	2390	11460
Troy	70.80-2-1	Second Ave	Buchman Realty Associates		9720	11880
Troy	70.80-1-1	126th St	Buchman Realty Associates		167400	808500
Troy	70.80-3-1	126th St	Liquidation Properties		2490	15310
Troy	70.80-3-2	126th St	McClosky, Michael C	McClosky, Nancy B	1950	14790
Troy	70.80-3-3	126th St	869 Second Avenue, LLC.		87500	87500
Troy	70.80-2-7	Second Ave	Rapp, Franklin W		7620	41080
Troy	70.80-4-1	Second Ave	Freihofer Baking Co, C F		6750	6750
Troy	70.80-3-5	Second Ave	Altamont Program (The)		7720	36660
Troy	70.80-4-8	125th St	Abel, Elizabeth		2020	2020
Troy	70.80-4-7	Second Ave	Freihofer Baking Co, C F		13500	13500
Troy	70.80-4-6	Second Ave	VSH Realty Inc		45450	91600
Troy	70.80-4-5	125th St	Seton Health System		11700	109780
Troy	80.24-2-1	Second Ave	Gillespie, Robert J	Gillespie, David R	4340	47380
Troy	80.24-2-11	Second Ave	McDonald, Michael J		10330	39210
Troy	80.24-2-10	Second Ave	Corey, Stephen	Corey, Anne	5100	30610
Troy	80.24-2-9	Third Ave	Rt II LLC		2080	31000
Troy	80.24-2-8	Third Ave	Shackett, Theodore	Shackett, Barbara	2080	19450
Troy	80.24-2-7	Third Ave	Shumpis, Michael	Shumpis, Joan	2080	19500
Troy	80.24-2-6	Third Ave	Faussette, Risa L		2080	26320
Troy	80.24-2-5	Third Ave	Gibson, W Warren		3150	19080
Troy	80.24-2-4	Third Ave	Kocienski, Stephen	Kocienski, M	3150	17920
Troy	80.24-2-3	Third Ave	Vadney, Richard		3800	18490
Troy	80.24-2-2.1	125th St	Gillespie, Robert J		4300	22260
Troy	80.24-2-2.2	125th St	Gillespie, Robert J		1490	1490
Troy	80.24-1-1	Second Ave	Clark Trading Corporation		88830	297060
Troy	80.24-1-2	Second Ave	Clark Trading Corporation		28540	150580
Troy	80.24-1-3./1	Second Ave	Clark Trading Corporation		11910	130370
Troy	80.24-4-1	Second Ave	City of Troy, AR0156		6080	18460
Troy	80.24-4-13	Second Ave	Stephenson, Eugene A	Stephenson, Nancy J	5450	20460
Troy	80.24-4-12	Second Ave	Mundell, Robert J		3400	21000
Troy	80.24-4-11	Second Ave	Rt I LLC		3400	28000
Troy	80.24-4-10	Second Ave	Hoffman, William		3400	23120
Troy	80.24-4-9	Second Ave	Pierpont, Robert N	Pierpont, Ruth L	5790	26240
Troy	80.24-4-8	123rd St	Secretary of Veteran Affairs		3150	14290
Troy	80.24-4-7	Third Ave	Best, Meredith		2080	18670
Troy	80.24-4-6	Third Ave	Best, Meredith		2080	16500
Troy	80.24-4-5	Third Ave	Christensen, Daniel P	Christensen, Helen E	2930	26180
Troy	80.24-4-4	Third Ave	Skaarup, Jennifer C		3150	15530
Troy	80.24-4-3	Third Ave	Aurelius, Richard		3150	18900
Troy	80.24-4-2	Third Ave	King, David G	Connor-King, Renee	3150	14890
Troy	80.55-4-5.2	114th St	Jorgensen, John		1000	1000
Troy	90.78-3-3.1	River St	McCall, Brian		25060	25060
Troy	90.78-3-3.2	River St. (west of)	City of Troy		1670	1670
Troy	101.53-1-1	Monument Sq	City Of Troy		45020	2382900
Troy	80.63-11-8.2	111th St	City of Troy		8810	8810
Troy	70.64-1-1	Second Ave	Golub Prop of Waterliet Inc		33750	33750
Troy	70.72-1-1	Second Ave	Nedorosik, Charles J		2130	19550
Troy	70.72-1-2.1	Second Ave	Disibio, Samuel		2840	15300
Troy	70.72-1-2.2	Second Ave	Ellett, Charles J		6500	6500
<b>Troy Count</b>					790	
<b>Troy Total</b>						\$ 51,365,671
North Greenbush	122.-1-1	River Rd	Rensselaer County Sewer Dist 1		294800	12660507
North Greenbush	122.-1-2	River Rd (E Of)	New York Central Lines LLC		149162	149162
North Greenbush	122.-1-4.1	Glenmore Rd	Rensselaer Polytechnic Inst		772300	772300
North Greenbush	122.-1-4.5	River Rd	Town of North Greenbush		178000	178000
North Greenbush	122.-1-3	Glenwood Rd (Off)	National Grid		99262	99262
North Greenbush	122.-1-3	Glenwood Rd (Off)	National Grid		99262	99262
North Greenbush	122.-1-4.5	River Rd	Town of North Greenbush		178000	178000
North Greenbush	122.-1-4.1	Glenmore Rd	Rensselaer Polytechnic Inst		772300	772300
North Greenbush	122.-1-4.1	Glenmore Rd	Rensselaer Polytechnic Inst		772300	772300
North Greenbush	122.-1-4.1	Glenmore Rd	Rensselaer Polytechnic Inst		772300	772300
<b>North Greenbush Count</b>					10	
<b>North Greenbush Total</b>						\$ 16,453,393
Schaghticoke	70.11-2-1	River Rd	Irish, Paul J		3900	14700
Schaghticoke	70.11-1-2	River Rd	Prevost, Barbara A		3900	22000
Schaghticoke	70.11-1-1.21	River Rd	Irish, Paul J		200	200
Schaghticoke	70.11-2-10	River Bend Rd	Colaruotolo, Domiano	Colaruotolo, Loretta	4000	13700
Schaghticoke	70.56-1-3	Hudson Ave	Robert, Francis P	Robert, Barbara A	4000	19000
Schaghticoke	70.56-1-2	Hudson Ave	Fisher, Adam	Fisher, Ingelis	4000	17500
Schaghticoke	70.56-1-1	Hudson Ave	Holman, Joan M		3900	20000
Schaghticoke	70.15-5-27	Hudson Ave	Allen, David		3900	9500
Schaghticoke	70.11-4-11	River Rd	Steele, Brian		3900	19900
Schaghticoke	70.11-4-12	River Rd	Pleasantdale Fire Dist 5		6300	73100
Schaghticoke	70.11-3-23	High St	Rustin, John E	Rustin, Carolyn V	3900	22300
Schaghticoke	70.11-3-22	River Rd	Smith, Marguerite		4000	38200
Schaghticoke	70.11-3-21.1	High St	Hull, Harry J		3900	14000
Schaghticoke	70.11-3-21.2	High St	Perkins, Kenneth R	Perkins, Carolyn A	4000	48000
Schaghticoke	70.11-3-14	River Bend Rd	Boettger, Lois M		3900	17000
Schaghticoke	70.11-3-15	River Bend Rd	Lanteigne, Lonny		700	700
Schaghticoke	70.11-3-20	River Rd	Desmond, Pamela		4000	31800
Schaghticoke	70.11-3-16	River Rd	Pleasantdale Vol Fire Co Inc		11100	11100
Schaghticoke	70.11-2-17	River Bend Rd	Fisk, John E	Fisk, Lois V	3900	21000
Schaghticoke	70.11-2-16	River Bend Rd	Gromadzki, Sally M		4000	21000
Schaghticoke	70.11-2-15	River Bend Rd	Hagen, Mary F		3900	23000

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNEK2	LAND_AV	TOTAL_AV
Schaghticoke	70.11-3-17	River Bend Rd	Odess, Susan S		4000	25500
Schaghticoke	70.11-2-14.2	River Bend Rd	Hagen, Mary F	Mineau, Kath	500	500
Schaghticoke	70.11-2-14.1	River Bend Rd	Lanteigne, Lonny	Lanteigne, Beverly	700	700
Schaghticoke	70.11-2-13.1	River Bend Rd	Lanteigne, Lonny		300	300
Schaghticoke	70.11-2-13.2	River Bend Rd	Lanteigne, Lonny		300	300
Schaghticoke	70.11-2-12.1	River Bend Rd	Sorenson, Susan Odess A		500	500
Schaghticoke	70.11-3-18.2	River Rd	Weber, Lorraine		4000	47400
Schaghticoke	70.11-2-12.2	River Bend Rd	Kehoe, Randall E		500	500
Schaghticoke	70.11-2-11	River Bend Rd	Kehoe, Randall E		3900	41000
Schaghticoke	70.11-3-18.1	River Rd	Johnson, Eugene P		4000	26800
Schaghticoke	70.11-3-19	River Rd	Martin, Robert L		4200	32800
Schaghticoke	70.11-2-8	River Rd	Zlotnick, James A		4000	34400
Schaghticoke	70.11-2-9	River Bend Rd	Hudson Rivers Bend Marina Corp		4500	15000
Schaghticoke	70.11-2-5.2	River Rd	Davis, Stephen L	Davis, Maureen F	4000	20900
Schaghticoke	70.11-2-3	River Rd	Berlino, Joseph K	Berlino, Mary Alice	4000	68800
Schaghticoke	70.11-2-2	River Rd	Berlino, Joseph K	Berlino, Mary Alice	2800	5300
Schaghticoke	70.11-1-1.1	River Rd	Lysogorski, Bertha J		400	400
Schaghticoke	70.-6-1.11	River Rd	Irish, Paul J		5500	5500
Schaghticoke	70.-1-1.11	River Rd	Martinez, Hector		11100	41000
Schaghticoke	70.-1-1.115	Haughney Rd	Pleasantdale, Rod		24700	74600
Schaghticoke	60.-1-18	River Rd	A P Manupella Hardware Inc		800	800
Schaghticoke	60.-1-17	River Rd	Manupella, Peter		2900	2900
Schaghticoke	60.-1-15.1	River Rd	Cannolly, Owen Donald		26900	26900
Schaghticoke	70.11-3-61	Lansing Ave	Delguidice, Vincent J	Delguidice, Deborah J	4000	16500
Schaghticoke	70.56-1-6	Hudson Ave	Golub Prop Of Watervliet Inc		1400	1400
Schaghticoke	70.56-1-5	Hudson Ave	Vermilyea, Robert L		3900	25000
Schaghticoke	70.56-1-4	Hudson Ave	Becker, Mary C		3900	19200
Schaghticoke	70.15-5-28	Hudson Ave	Cox, Jack		3900	12000
Schaghticoke	70.15-5-29	Lansing Ave	Phelps, Dawn E		4000	18500
Schaghticoke	70.15-1-2	Lansing Ave	Motto, Joseph		3900	30000
Schaghticoke	70.15-1-1	Lansing Ave	Delair, Chauncey George		3900	13700
Schaghticoke	70.11-3-62	Lansing Ave	McClellan, John F		4100	26700
Schaghticoke	70.11-3-63	Eisenberg Ln	County Of Rensselaer		600	600
Schaghticoke	70.11-3-64	Lansing Ave	Ashcroft, Annette		4000	19300
Schaghticoke	70.11-3-65	Eisenberg Ln	Kim, Helen		600	600
Schaghticoke	70.11-3-66	Eisenberg Ln	Sumerlin Apts Inc		800	800
Schaghticoke	70.11-3-67	Eisenberg Ln	Worthington, Floyd		900	900
Schaghticoke	70.11-3-55.1	Eisenberg Ln	Bungay, Henry R		800	800
Schaghticoke	70.11-3-51	Marion Ave	McGuirk, Joseph	McGuirk, Marylou	6500	30600
Schaghticoke	70.11-3-48	Lansing Ave	Palso, Frederick		4000	5000
Schaghticoke	70.11-3-45.1	Brook St	Hamilton Family Trust		1000	1000
Schaghticoke	70.11-3-45.2	Brook St	Kewley, Edward J		4000	35000
Schaghticoke	70.11-3-52	Marion Ave	Grant, Esther		3900	22500
Schaghticoke	20.14-1-3	Hewitt St	Bruno, Richard J	Bruno, Deborah A	11800	43000
Schaghticoke	20.14-1-2	Hewitt St	Capobianco, Henry	Capobianco, Rachel	11800	37900
Schaghticoke	20.14-1-1	Hewitt St	Cafarano, John A		11900	37900
Schaghticoke	20.13-1-3.2	Howland Ave	Bodner, Joseph H		16100	31500
Schaghticoke	20.-1-21.12	Knickerbocker Rd	New York State Electric & Gas		3200	3200
Schaghticoke	70.15-2-48	Richfield St	Shufelt, Rose E		4000	23800
Schaghticoke	70.15-2-20	River Rd	ODell, Marilyn N		3900	29200
Schaghticoke	70.11-3-41	Brook St	Thiemann, Charlene M		3900	29500
Schaghticoke	70.11-3-10	River Bend Rd	Sorel, Rosemary		3900	33200
Schaghticoke	70.11-2-18	River Bend Rd	Boettger, Lois M		3900	17700
Schaghticoke	70.11-2-19	River Bend Rd	McKenna, Partrick B	McKenna, Janet	3900	25300
Schaghticoke	70.11-2-20	River Bend Rd	Kulzer, Richard		3900	26800
Schaghticoke	70.15-4-5	Pleasant St	Culliton, John	Culliton, Marguerita	4000	27600
Schaghticoke	70.15-2-63	Hillcrest St	Ratigan, Laurie		3900	12000
Schaghticoke	70.15-2-64	Richfield St	Culliton, Sheila A		3900	17000
Schaghticoke	70.15-2-47	Hillcrest St	Gregorie, Katherine		3000	3000
Schaghticoke	70.15-2-46	Richfield St	Mahar, Martin G	Marshall, Eleanor	3900	16700
Schaghticoke	70.15-2-45	River Rd	DeLair, Lorraine		4000	28800
Schaghticoke	70.15-2-42	Richfield St	Napples, Joseph	Napples, Marilyn	3900	20000
Schaghticoke	70.15-2-44	River Rd	Lane, George F		3900	30500
Schaghticoke	70.15-2-43	River Rd	Lane, Ronald G		3900	15000
Schaghticoke	70.15-1-13	Tampa Ave	Foley, Dorothy A		4000	40000
Schaghticoke	70.15-1-12	River Rd	Connors, Lawrence P		800	800
Schaghticoke	70.15-2-21	River Rd	Smith, Lawrence D		3900	23200
Schaghticoke	70.15-1-11	River Rd	Winston, Joseph	Winston, Linda	4000	29550
Schaghticoke	70.15-1-6	Marion Ave	McGuirk, Shawn P		4000	41300
Schaghticoke	70.15-1-10	River Rd	Newton, Barbara		3900	28500
Schaghticoke	70.15-1-7	Lansing Ave	Jewett, Rory J	Jewett, Edna M	4000	36000
Schaghticoke	70.15-1-5	Lansing Ave	Fountain, Kevin	Fountain, Rebecca A	4000	25800
Schaghticoke	70.15-1-9	River Rd	OBrien, Darrin	OBrien, Jill	3900	24200
Schaghticoke	70.15-1-8	River Rd	Ackerman, Frank J		3900	33000
Schaghticoke	70.11-3-49	Lansing Ave	McGuirk, Joseph C		3900	20800
Schaghticoke	70.11-3-46	Brook St	Weber, Lelia F	L F Weber Trust	4000	18300
Schaghticoke	70.11-3-47	Lansing Ave	Piche, Dawn V		4000	41000
Schaghticoke	70.11-3-42	Brook St	Kewley, Edward J		2200	2200
Schaghticoke	70.11-3-9	Semple St	Farrell, Catherine M		3900	24300
Schaghticoke	70.11-3-44	Marion Ave	McGuirk, Joseph C	McGuirk, Toni J	4000	20900
Schaghticoke	70.11-3-43	Brook St	Penders, Leo J	Tofte, Frances	3900	19000
Schaghticoke	70.11-3-8	Semple St	Herrington, John S		3900	21000
Schaghticoke	70.11-3-53	Marion Ave	Grant, Esther		2000	2000
Schaghticoke	70.11-3-6	River Bend Rd	Morano, Lori		3900	39000
Schaghticoke	70.11-3-7	River Bend Rd	Mahoney, Alfred E		3900	37000
Schaghticoke	70.11-3-5	Marion Ave	MacDougall, John I	MacDougall, Jane A	3900	14000
Schaghticoke	70.11-2-23	River Bend Rd	Morell, William E		4000	15500
Schaghticoke	70.11-2-21	River Bend Rd	Hamilton Family Trust	Hamilton, Robert F	2000	2000
Schaghticoke	70.11-2-22	River Bend Rd	Zabawczuk, John		4000	41200
Schaghticoke	70.11-3-55.2	Marion Ave	Schaghticoke Sewer Dist 2		300	300
Schaghticoke	70.11-3-2	Eisenberg Ln	Town of Schaghticoke		800	800
Schaghticoke	70.11-3-1	Eisenberg Ln	Bungay, Henry Robert		800	800
Schaghticoke	20.17-1-23	S Hudson St	Casazza, Josephine		11800	18500
Schaghticoke	20.17-1-19	S Pearl St	Claeys, William J		12100	35300
Schaghticoke	20.17-1-18	S Pearl St	Marotto, Joseph A		11900	36200
Schaghticoke	20.17-1-24	S Hudson St	Wilkolaski, William		12000	27600

MUNI	PRINT_KEY	JC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Schaghticoke	20.18-1-27	S Pearl St	Horn, Harold W	Horn, Mary Ann	11900	40900
Schaghticoke	20.17-1-17.2	S Hudson St	Riel, Richard W		11900	42000
Schaghticoke	20.18-1-28	S Pearl St	Waldron, Hawley	Waldron, Elizabeth	11900	29500
Schaghticoke	20.18-1-29	S Pearl St	Callahan, Larry J	Callahan, Loretta H	11900	32500
Schaghticoke	20.17-1-25.2	S Hudson St	Hiser, Theodore R	Hiser, Katrina S	12000	26900
Schaghticoke	20.17-1-16	Elm Ave	Bull, Harriet M	Bull, Thomas M	11800	28700
Schaghticoke	20.17-1-17.12	S Hudson St	Hiser, Katrina G		11900	54700
Schaghticoke	20.17-1-25.1	S Hudson St	Burke, Robert J		12000	28500
Schaghticoke	20.18-1-31	S Crystal St	English, Steven M	Roland, Yolanda C	11900	29900
Schaghticoke	20.17-1-15	Elm Ave	Cenci, Dennis		3500	3500
Schaghticoke	20.17-1-26	S Hudson St	Lemrow, Betty E		12000	34500
Schaghticoke	20.18-1-33	S Crystal St	Mellon, Ann Marie		11900	24000
Schaghticoke	20.17-1-14	S Crystal St	King, Francis	King, Frances	12000	26500
Schaghticoke	20.17-1-13.2	S Lincoln St	Cenci, Dennis A	Cenci, Rosemary	12100	55800
Schaghticoke	20.17-1-13.1	S Lincoln St	Cenci, Dennis		500	500
Schaghticoke	20.17-1-28	S Lincoln St	Cenci, Dennis A		5100	5100
Schaghticoke	20.17-1-10	Maple Ave	Mone, Lols B		11800	38600
Schaghticoke	20.17-1-27.1	S Hudson St	Treacy, David M		7700	31300
Schaghticoke	20.17-1-12	Maple Ave	Obrien, Mary Alice		11900	26800
Schaghticoke	20.17-1-11	Maple Ave	Cenci, Dennis A	Cenci, Rosemary M	1000	1000
Schaghticoke	20.17-1-30	S Hudson St	Cenci, Dennis A	Cenci, Rosemary M	12100	42600
Schaghticoke	20.17-1-9	S Crystal St	Ortega, Christina A		11800	36100
Schaghticoke	20.17-1-31	S Hudson St	Otis, William	Otis, Susan C	12000	34500
Schaghticoke	20.18-1-2	S Crystal St	Gleeson, Robert	Gleeson, Kathy	11800	24000
Schaghticoke	20.17-1-8	Maple Ave	Sgambati, Stephen		11900	60200
Schaghticoke	20.17-1-4	Maple Ave	Sgambati, Stephen		3400	3400
Schaghticoke	20.17-1-2	Maple Ave	Sgambati, Stephen	Sgambati, Michele R	3400	3400
Schaghticoke	20.17-1-7	S Lincoln St	Besette, Kathleen	Costanzo, John	11800	28200
Schaghticoke	20.17-1-1	S Hudson St	Schlotter, Gail S		12000	24500
Schaghticoke	20.18-1-1	S Crystal St	Moreau, Michael	Moreau, Joyce	11900	24000
Schaghticoke	20.17-1-3	S Washington St	Rapaciuolo, Vincent		12000	32500
Schaghticoke	20.13-2-11.2	S Lincoln St	Baker, Patrick J		1000	1000
Schaghticoke	20.17-1-5	S Lincoln St	Bevevino, Melinda S		11900	51300
Schaghticoke	20.13-2-11.1	S Lincoln St	Baker, Patrick J	Baker, Concetta A	1000	1000
Schaghticoke	20.14-2-16	S Crystal St	Herrington, Margaret	Herrington, Ernest	11800	41600
Schaghticoke	20.13-2-13	S Hudson St	Gibson, Shirley A		11800	25700
Schaghticoke	20.14-2-17	S Crystal St	Lester, Gary N	Lester, Betty Elaine	11800	33700
Schaghticoke	20.14-2-18	S Crystal St	Volpe, John P	Volpe, Dottie	11800	24500
Schaghticoke	20.13-2-12	S Washington St	Wise, Clinton		12000	29900
Schaghticoke	20.13-2-14	S Washington St	Bolton, John L	Bolton, Paulette A	11900	38600
Schaghticoke	20.13-2-10	S Lincoln St	Baker, Patrick J		11900	55300
Schaghticoke	20.13-2-7	S Lincoln St	Bogue, Mary E		11900	40100
Schaghticoke	20.13-2-15	S Washington St	Levinus, George R	Levinus, Louise D	11800	33500
Schaghticoke	20.14-2-19	Hemstreet Ave	Dame, Roland		12000	32600
Schaghticoke	20.13-2-6	Hemstreet Ave	Mercier, James	Mercier, Michelle	11800	28500
Schaghticoke	20.13-2-17	S Hudson St	Dyer, Johanna M		11800	33900
Schaghticoke	20.13-2-18	S Hudson St	Alonzo, Joseph L		35300	90600
Schaghticoke	20.13-2-2	S Hudson St	Baker, Patrick J		11900	29800
Schaghticoke	20.13-2-1	S Hudson St	Russom, Roberta		11800	28800
Schaghticoke	20.13-1-30	Hemstreet Ave	Moore, Jeffrey C		11800	12000
Schaghticoke	20.13-1-31	N Hudson St	Sinnott, William L		11900	29300
Schaghticoke	20.13-1-32	N Hudson St	Boucher, Emerson D		11900	35300
Schaghticoke	20.13-1-33	N Hudson St	Masterson, Todd J	Masterson, Deborah L	11800	30500
Schaghticoke	20.13-1-34	N Hudson St	Mossey, Arthur	Mossey, Lols	11900	36000
Schaghticoke	20.13-1-35	N Hudson St	Hunt, Elsie M		12800	28900
Schaghticoke	20.13-1-37	N Hudson St	Vandenburgh, John		11800	21400
Schaghticoke	20.13-1-38	N Hudson St	Batto, Julie Ann		11800	31900
Schaghticoke	20-1-21.11	Knickerbocker Rd (W Of)	Alonzo, Joseph L		10000	10000
Schaghticoke	20-1-23	River Rd	New York State Electric & Gas		2000	2000
Schaghticoke	20-1-3.212	Knickerbocker Rd	Morizio, Martin J	Morizio, Holly M	12800	67500
Schaghticoke	50-1-32	River Rd	Fitzsimmons, Paul F	Fitzsimmons, Regina	11800	48700
Schaghticoke	50-1-33	River Rd	Ring, Phillip J	Ring, Janet A	10400	31600
Schaghticoke	40-2-8	River Rd	Corey, John A	Corey, Susan S	11300	52700
Schaghticoke	40-2-9	River Rd	Canary, Dennis C		10300	50500
Schaghticoke	40-2-10	River Rd	Reed, Leonard T		10500	38500
Schaghticoke	40-2-16	River Rd	Szell, George A	Szell, Penny A	500	500
Schaghticoke	40-2-11	River Rd	State of New York DOT		5900	5900
Schaghticoke	40-1-12.2	River Rd	Dicerce, Carolyn		10500	61500
Schaghticoke	40-2-13	River Rd	Houle, Sandra K		10300	48000
Schaghticoke	40-2-14	River Rd	Lucarelli, Michael R		10100	28200
Schaghticoke	40-1-12.111	River Rd	Szell, George A		11900	11900
Schaghticoke	40-1-12.12	River Rd	Perras, Thomas	Walsh, Margaret	10800	72600
Schaghticoke	40-1-14	River Rd	Bochette, Louis R		3800	3800
Schaghticoke	40-1-11.11	River Rd	Maiello, Anthony		17900	63700
Schaghticoke	40-1-15	River Rd	Bochette, Louis R		13500	13500
Schaghticoke	40-1-16	River Rd	Nadler, Robert W		10800	32800
Schaghticoke	40-1-18	River Rd	Tofte, Paul A	Tofte, Bernice M	10700	39900
Schaghticoke	40-1-22.3	River Rd	Lucarelli, Colleen P		10400	57800
Schaghticoke	40-1-21	River Rd	Provancher, Richard J	Provancher, Rose	9900	37800
Schaghticoke	40-1-22.13	River Rd	Lucarelli, Lawrence	Lucarelli, Edith M	6000	6000
Schaghticoke	40-1-22.12	River Rd	Lucarelli, Phillip L		6500	36400
Schaghticoke	40-1-17	River Rd	State Of New York		3800	3800
Schaghticoke	40-1-24	Pinewoods Rd	Barcher Family Trust	Barcher, Eugene R	10100	32000
Schaghticoke	40-1-22.11	River Rd	Lucarelli, Lawrence J	Lucarelli, Edith M	10900	59400
Schaghticoke	40-1-25	River Rd	Demers, Carrie M	Demers, Stephen M	9900	30000
Schaghticoke	40-1-26	River Rd	Neubauer, Donald W		2500	2500
Schaghticoke	40-1-27	River Rd	Roes, Kira T		13200	42600
Schaghticoke	40-1-28	River Rd	Hiser, Theodore R	Hiser, Katrina	7300	7300
Schaghticoke	40-1-29	River Rd	Hiser, Theodore R	Hiser, Katrina	11400	46500
Schaghticoke	40-1-1.3	River Rd	Rubino, Patty G		10800	61000
Schaghticoke	40-1-30	River Rd	Bleau, Eric James		11400	43900
Schaghticoke	40-1-1.11	River Rd	Anderson, Eugene	Anderson, Patricia	12000	44400
Schaghticoke	40-1-1.13	River Rd	Anderson, Gregory G		11200	59300
Schaghticoke	40-1-1.15	River Rd	Rubino, Joseph D		7500	7500
Schaghticoke	40-1-1.12	River Rd	Greenhall, Francis	Greenhall, Patrick	10400	85000
Schaghticoke	40-1-1.14	River Rd	Rubino, Joseph D		10100	64000

MUNI	PRINT_KEY	LOC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Schaghticoke	30.-3-17	River Rd	Capen, Richard		10700	32000
Schaghticoke	30.-3-18	River Rd	Bentzen, Karl		10200	40000
Schaghticoke	30.-3-19	River Rd	Spano, Saverio D		10900	42300
Schaghticoke	30.-3-21	River Rd	Pecor, Paul H		10200	22000
Schaghticoke	30.-3-23	River Rd	Bryan, Isabelle R		9900	35300
Schaghticoke	30.-3-24	River Rd	Adams, John J		11500	60000
Schaghticoke	30.-3-25.1	River Rd	Dunkle, Thomas J		11400	44700
Schaghticoke	30.-3-25.3	River Rd	State Of New York		1000	1000
Schaghticoke	30.-3-27.1	River Rd	Leblanc, George E		11300	33400
Schaghticoke	30.-3-27.2	River Rd	Maiello, William R	Maiello, Kimberly M	11500	52400
Schaghticoke	30.-2-1	River Rd (W Of)	Albany Engineering Corporation		21500	21500
Schaghticoke	30.-3-8.2	River Rd	Edison Paving Corp D/b/a		1500	1500
Schaghticoke	30.-3-28.1	River Rd	Ingraham, Donald I		30400	40400
Schaghticoke	30.-3-29.1	River Rd	DeCrescente Trust, Raymond R	DeCrescente, Raymond F	5900	5900
Schaghticoke	30.-3-29.2	River Rd	Lacy, Pamela J		11100	33200
Schaghticoke	30.-3-32.2	River Rd (W Of)	Wyrshyhora, Brian		1600	5600
Schaghticoke	30.-3-33	River Rd	Flatley, Jerome	Flatley, Rita	10300	19800
Schaghticoke	30.-3-1	River Rd	Gandron, Edwin		10300	33700
Schaghticoke	30.-1-1	River Rd (W Of)	State of New York DOT		7200	7200
Schaghticoke	20.17-1-20	Locust St	Cavotta, Michael		12000	41200
Schaghticoke	20.17-1-21	S Hudson St	Lee, Gene O		11900	35750
Schaghticoke	40.-2-7	River Rd	Reed, Leonard A		45700	53000
Schaghticoke	40.-2-12	River Rd	Christopher, Louis J	Christopher, Laurel N	23100	37800
Schaghticoke	40.-1-12.112	River Rd	Papandrea, Anthony M		15000	15000
Schaghticoke	40.-1-11.12	River Rd	Coreno, David G	Coreno, Tamara L	17800	60200
Schaghticoke	30.-3-16.11	River Rd	Schuylerville Concrete Co		12400	12400
Schaghticoke	20.17-1-22	S Hudson St	McEckron, Willis B	McEckron, Shella A	11900	24000
Schaghticoke	50.-1-5	River Rd	Dodge, Raymond		10300	30900
Schaghticoke	50.-1-3	River Rd	Butz, Karl E	Butz, Harriet M	10800	52000
Schaghticoke	50.-1-31	Riley Rd	Moses, Marvin W	Moses, Linda A	10600	52500
Schaghticoke	50.-1-13	Riley Rd	Francis, Misty		9800	31500
Schaghticoke	50.-1-14	Riley Rd	Dodge, Robert James		10100	22600
Schaghticoke	50.-1-15	Riley Rd	Darrow, Marjorie E		9900	17600
Schaghticoke	50.-1-12	River Rd	Navojosky, Martin	Navojosky, Frances	2900	2900
Schaghticoke	50.-1-11	River Rd	Rueb, Gerald		9800	14800
Schaghticoke	50.-1-10.2	River Rd	Bush, Francis J		500	500
Schaghticoke	50.-1-10.1	River Rd	Bush, Francis J		9800	17500
Schaghticoke	50.-1-9	River Rd	Urkevich, Lawrence	Rose, Deborah	10300	35100
Schaghticoke	50.-1-8	River Rd	Fitzsimmons, Barbara		9900	12500
Schaghticoke	50.-1-6.2	River Rd	Murphy, Michael		11300	40000
Schaghticoke	50.-1-4.12	River Rd	Hosmer, Robert C	Hosmer, Sandra B	13700	65000
Schaghticoke	50.-1-2.1	River Rd	Dumas, Steven	Dumas, Sheri-Lynn	59500	97500
Schaghticoke	50.-1-1	River Rd	Mason, Richard H		35000	65000
Schaghticoke	60.-1-20	River Rd	Lansing, Jack H	Lansing, Mary F	500	500
Schaghticoke	60.-1-14	River Rd	Lansing, Jack H	Lansing, Mary F	2500	2500
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	60.-1-13.2	River Rd	Fioravanti, Eugene		3000	3000
Schaghticoke	60.-1-21	River Rd	Carignan, Jerome	Carignan, Janice	3500	3500
Schaghticoke	60.-1-22	River Rd	Charde, Matthew A	Charde, Pamela S	10100	25700
Schaghticoke	60.-1-26	Round Island	Riverkeeper		2900	2900
Schaghticoke	60.-1-24	River Rd	Peterson, David E		2700	9100
Schaghticoke	60.-1-13.111	River Rd	Peavey, Rosanne D		36800	36800
Schaghticoke	60.-1-29.1	River Rd	Carignan, Jerome	Carignan, Janice	4100	4100
Schaghticoke	30.-3-16.12	River Rd (E Of)	Schuylerville Concrete Co Inc		98900	98900
Schaghticoke	50.-1-29	Calhoun Dr	Boucher, Ruppert	Boucher, Mary	11800	11800
Schaghticoke	50.-1-30	Riley Rd	Elkins, Walter J		10300	20900
Schaghticoke	50.-1-7.11	River Rd	Hansen, Norman P		26400	57300
Schaghticoke	50.-1-4.11	River Rd	Hosmer, Richard B	Hosmer, Eunice A	59200	84100
Schaghticoke	11.-1-1.3	River Rd	Andrews, Kevin A	Andrews, Christine M	8300	67900
Schaghticoke	11.-1-2.2	River Rd	Boyce, James A		2000	19000
Schaghticoke	11.-1-3	River Rd	Vinehout, Charles E	Vinehout, Judy	8000	38000
Schaghticoke	11.-1-2.1	River Rd	Vinehout, Judy A		800	800
Schaghticoke	11.-1-4.2	River Rd	Wood, Stephen R	Wood, Pamela M	9300	36000
Schaghticoke	11.-1-4.1	River Rd	Pokrandt, Gerhard	Pokrandt, Jean	59300	59300
Schaghticoke	10.-4-1.2	Knickerbocker Rd	Reilly, Deborah A		20000	80000
Schaghticoke	10.-4-2.12	Knickerbocker Rd	Zagorski, Francis	Zagorski, Cynthia	5500	5500
Schaghticoke	10.-1-1.2	Newland Is	State Of New York		6300	6300
Schaghticoke	10.-4-2.111	Knickerbocker Rd	Delano, Family		32800	32800
Schaghticoke	10.-3-7.2	Stillwater Bridge Rd	Nellson, Ann M		2900	2900
Schaghticoke	10.-1-1.1	Canal Rd	Petersen, Denise M		10900	84300
Schaghticoke	10.-2-3	Stillwater Bridge Rd (E Of)	Stillwater Hydro Partners LP		2000	124400
Schaghticoke	10.-3-6	Stillwater Bridge Rd	Blasi, Bryan D	Blasi, Gretchen S	7900	38500
Schaghticoke	10.-3-5	River Rd	Moody, Wayne L	Moody, Judith B	9400	57000
Schaghticoke	10.-3-7.1	Stillwater Bridge Rd	Gifford, Walter S		20300	87900
Schaghticoke	10.-3-2	River Rd	Thompson, Sheryl A		8200	26800
Schaghticoke	10.-3-1	Stillwater Bridge Rd	Anson, Richard R	Anson, Bonnie A	7900	29000
Schaghticoke	10.-3-8	Stillwater Bridge Rd	State Of New York		27600	45000
Schaghticoke	10.-2-1	Stillwater Bridge Rd	National Grid		23000	23000
Schaghticoke	10.-3-3	River Rd	Svatek, Jeffrey J	Svatek, Erica B	8200	39800
Schaghticoke	11.-1-42.2	River Rd	Svatek, John D		300	300
Schaghticoke	11.-1-42.1	River Rd	Svatek, John David	Svatek, Diane	8000	32600
Schaghticoke	10.-3-4	River Rd	Svatek, John David	Svatek, Diane C	8300	30000
Schaghticoke	10.-2-2	Stillwater Bridge Rd	Zaremski, Michael J		14800	14800
Schaghticoke	11.-1-43	River Rd	Benoit, Jay D	Benoit, Donielle	700	700
Schaghticoke	11.-1-1.2	River Rd	Cary, Donald L		9500	58500
Schaghticoke	11.-1-1.1	River Rd	Griffen, Steven P	Griffen, Laurie K	106300	113400
Schaghticoke	60.-1-15.1	River Rd	Connolly, Owen Donald		26900	26900
Schaghticoke	60.-1-15.1	River Rd	Connolly, Owen Donald		26900	26900
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	50.-1-10.1	River Rd	Bush, Francis J		9800	17500
Schaghticoke	10.-4-1.312	Knickerbocker Rd	Morizio, Martin J	Morizio, Holly M	5800	5800
Schaghticoke	11.-1-44.2	Stillwater Bridge Rd	Crocetta, Robert		4200	4200
Schaghticoke	10.-4-1.321	Knickerbocker Rd	Lipinski, David J		6000	6000
Schaghticoke	20.17-1-27.2	S Hudson St	Treacy, John J		7000	54900
Schaghticoke	40.-2-15	River Rd	State Of New York DOT		0	0
Schaghticoke	50.-1-7.11	River Rd	Hansen, Norman P		26400	57300

MUNI	PRINT_KEY	LOC_STREET	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Schaghticoke	50.-1-4.11	River Rd	Hosmer, Richard B	Hosmer, Eunice A	59200	84100
Schaghticoke	50.-1-4.11	River Rd	Hosmer, Richard B	Hosmer, Eunice A	59200	84100
Schaghticoke	60.-1-13.112	River Rd	Miller, Michael	Miller, Melanie	4500	4500
Schaghticoke	10.-4-1.322	Knickerbocker Rd	Smith, Timothy S		4000	4000
Schaghticoke	10.-4-1.311	Knickerbocker Rd	Story, George		6500	6500
Schaghticoke	50.-1-7.3	River Rd	Mastin, Thomas J	Mastin, Lauren A	7200	7200
Schaghticoke	11.-1-1.2	River Rd	Cary, Donald L		9500	58500
Schaghticoke	11.-1-2.2	River Rd	Boyce, James A		2000	19000
Schaghticoke	11.-1-4.1	River Rd	Pokrandt, Gerhard	Pokrandt, Jean	59300	59300
Schaghticoke	10.-3-8	Stillwater Bridge Rd	State Of New York		27600	45000
Schaghticoke	11.-1-1.1	River Rd	Griffen, Steven P	Griffen, Laurie K	106300	113400
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	60.-1-19	Island	State Of New York DOT		29600	29600
Schaghticoke	60.-1-30	River Rd	Kastor, Bruce B		18900	18900
Schaghticoke	50.-1-27.21	River Rd	Adamson Family Trust, William		15400	21400
Schaghticoke	50.-1-4.11	River Rd	Hosmer, Richard B	Hosmer, Eunice A	59200	84100
Schaghticoke	50.-1-4.11	River Rd	Hosmer, Richard B	Hosmer, Eunice A	59200	84100
Schaghticoke	50.-1-29	Calhoun Dr	Boucher, Ruppert	Boucher, Mary	11800	11800
Schaghticoke	20.-1-21.2	Knickerbocker Rd	Mechanicville Golf Club Inc		27500	115500
Schaghticoke	20.-1-1.1	Knickerbocker Rd	Morizio, Martin J		38400	63900
Schaghticoke	20.-1-2	Knickerbocker Rd	Boston & Maine Corp		11500	11500
Schaghticoke	40.-2-7	River Rd	Reed, Leonard A		45700	53000
Schaghticoke	50.-1-1	River Rd	Mason, Richard H		35000	65000
Schaghticoke	50.-1-2.1	River Rd	Dumas, Steven	Dumas, Sheri-Lynn	59500	97500
Schaghticoke	40.-2-11	River Rd	State Of New York DOT		5900	5900
Schaghticoke	40.-2-12	River Rd	Christopher, Louis J	Christopher, Laurel N	23100	37800
Schaghticoke	40.-1-26	River Rd	Neubauer, Donald W		2500	2500
Schaghticoke	40.-1-27	River Rd	Roes, Kira T		13200	42600
Schaghticoke	40.-1-28	River Rd	Hiser, Theodore R	Hiser, Katrina	7300	7300
Schaghticoke	40.-1-29	River Rd	Hiser, Theodore R	Hiser, Katrina	11400	46500
Schaghticoke	30.-3-17	River Rd	Capen, Richard		10700	32000
Schaghticoke	30.-3-11.11	River Rd	Monast, Gerald W		13300	57800
Schaghticoke	30.-3-9	River Rd	William, Dyer J		36000	305900
Schaghticoke	30.-3-8.1	River Rd	Edison Paving Corp D/b/a		71200	71200
Schaghticoke	30.-3-6	Old Schaghticoke Rd	Caughran, Elizabeth L		60600	80600
Schaghticoke	40.-1-1.11	River Rd	Anderson, Eugene	Anderson, Patricia	12000	44400
Schaghticoke	70.11-3-44	Marion Ave	McGuirk, Joseph C	McGuirk, Toni J	4000	20900
Schaghticoke	70.11-2-5.2	River Rd	Davis, Stephen L	Davis, Maureen F	4000	20900
Schaghticoke	70.-6-6	Haughney Rd	National Grid		2800	2800
Schaghticoke	70.-1-11	River Rd	Martinez, Hector		11100	41000
Schaghticoke	70.-1-13	River Rd	Eger, James A		2800	2800
Schaghticoke	60.-1-15.1	River Rd	Connolly, Owen Donald		26900	26900
Schaghticoke	60.-1-15.1	River Rd	Connolly, Owen Donald		26900	26900
Schaghticoke	60.-1-17	River Rd	Manupella, Peter		2900	2900
Schaghticoke	71.-1-1	Haughney Rd	National Grid		22300	22300
Schaghticoke	71.-1-1	Haughney Rd	National Grid		22300	22300
Schaghticoke	71.-1-1	Haughney Rd	National Grid		22300	22300
Schaghticoke	60.-1-15.1	River Rd	Connolly, Owen Donald		26900	26900
Schaghticoke	70.-1-1.115	Haughney Rd	Pleasantdale, Rod		24700	74600
Schaghticoke	20.17-1-17.11	S Crystal St	Whalen, Colleen H		11900	27500
Schaghticoke	10.-4-1.1	Knickerbocker Rd	Kilburn, Fred		22900	85000
Schaghticoke	10.-4-1.323	Knickerbocker Rd	Story, George		5700	5700
<b>Schaghticoke Count</b>					363	
<b>Schaghticoke Total</b>						\$ 11,111,900
<b>Grand Count</b>					1200	
<b>Grand Total</b>						\$ 88,520,486

# Exhibit “G”

MUNI	PRINT_KEY	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	133.-3-1	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-1	Rensselaer Polytechnic Inst		87900	87900
Rensselaer	133.-3-2	National Grid		283262	283262
Rensselaer	133.-3-2	National Grid		283262	283262
Rensselaer	133.-3-3.1	Franciscan Order Minor	Conventuals	907600	6348100
Rensselaer	133.-3-7	Hilton Management Llc		77000	257300
Rensselaer	143.28-1-1.1	State Of New York		136300	136300
Rensselaer	143.59-1-1	Zappala V Co Inc		93700	361000
Rensselaer	143.59-1-1	Zappala V Co Inc		93700	361000
Rensselaer	143.60-1-10	Casullo, Dominick		4600	17500
Rensselaer	143.60-1-11	City of Rensselaer		20500	23200
Rensselaer	143.60-1-12	City of Rensselaer		23500	282400
Rensselaer	143.60-1-13	Zappala V Co Inc		5000	5000
Rensselaer	143.60-1-14	Zappala V Co Inc		3300	3300
Rensselaer	143.60-1-15	Berisic, Rudolf		11800	67300
Rensselaer	143.60-1-16	Brothers, Donna E		4000	13000
Rensselaer	143.60-1-17	Matthews, Robert		3200	13000
Rensselaer	143.60-1-18	State Of New York,		6000	6000
Rensselaer	143.60-1-3	City of Rensselaer		1500	1500
Rensselaer	143.60-1-4	Rensselaer City School Dist		1000	1000
Rensselaer	143.60-1-5	City of Rensselaer		1000	1000
Rensselaer	143.60-1-6	City of Rensselaer		900	900
Rensselaer	143.60-1-7	Martino, Albert		500	500
Rensselaer	143.60-1-8	Martino, Albert J	Martino, Sophie	5900	29700
Rensselaer	143.60-1-9	Martino, Albert J	Martino, Sophie	4500	16300
Rensselaer	143.60-2-1	Pearson, Sandon S		3000	3000
Rensselaer	143.60-2-18	Capital District Trans Auth		6000	6000
Rensselaer	143.60-2-19	Sternlight, Beno	Beltrone, Salvatore	3000	3500
Rensselaer	143.60-2-20	Sternlight, Beno		3000	3000
Rensselaer	143.60-2-21	Michelli, Michael J		3000	14700
Rensselaer	143.60-2-22	Bogdanowicz, Walter F		2900	22500
Rensselaer	143.60-2-23	Cafua Realty Trust XVII		7000	7000
Rensselaer	143.60-2-24	Cafua, Mark P		15600	120000
Rensselaer	143.60-2-26	Snyder, Donald J	Snyder, Collen J	2600	23000
Rensselaer	143.60-2-27	Schumaker, Michael J		2600	17000
Rensselaer	143.60-2-28	Scott, Alroy		2600	16500
Rensselaer	143.60-2-29	Zalucki, Frederick W	Zalucki, Joanne J	2600	16500
Rensselaer	143.60-2-31	Posa, Stephen C		2500	18000
Rensselaer	143.60-2-32	Boni, Barbara B		3300	10000
Rensselaer	143.60-2-33	Daley, Barbara J		2800	21000
Rensselaer	143.60-2-34	Michelli, Michael J		3700	18000
Rensselaer	143.60-2-35	Capital District Trans Auth		20000	20000
Rensselaer	143.60-2-7	Rensselaer Boys Club Inc		33300	312700
Rensselaer	143.60-2-8	Capital View Office Park		28000	28000
Rensselaer	143.60-3-1	New York Central Lines LLC		299378	299378
Rensselaer	143.60-3-1	New York Central Lines LLC		299378	299378
Rensselaer	143.60-3-11	Capital District Trans Auth		5500	5500
Rensselaer	143.60-3-2	Capital District Trans Auth		3000	3000
Rensselaer	143.60-3-3	Capital View Office Park		29000	29000
Rensselaer	143.60-3-9.1	Capital District Trans Auth		121400	121400
Rensselaer	143.60-3-9.2	Capital District		150000	20182400
Rensselaer	143.60-4-1	Tisko, Penny		5200	49500
Rensselaer	143.60-4-13	Agans Agans & Morocco Inc		20000	70000
Rensselaer	143.60-4-14	Hunter, June M		10000	27500
Rensselaer	143.60-4-15	Hunter, June M		5000	5000
Rensselaer	143.60-4-2	Pearl, Shawn		2700	13500
Rensselaer	143.60-4-3	Attura, Maria Louise		2700	17600
Rensselaer	143.60-4-4	Attura, Mary Louise		2700	20600
Rensselaer	143.60-4-5	Vanwormer, Kim L		4500	45600
Rensselaer	143.60-4-6	Santore, Joseph J		5600	17700
Rensselaer	143.60-4-7	Ford, Joseph G		3400	20400
Rensselaer	143.60-4-9	J-P Group		28500	237500
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-1	State Of New York		94200	94200
Rensselaer	143.67-1-13	Shulga, Assumpta	Neary, Suan	2200	9000
Rensselaer	143.67-1-14	223 Broadway Inc		2200	2200
Rensselaer	143.67-1-15	Depasquale, Ann Marie		1100	1100
Rensselaer	143.67-1-19	223 Broadway Inc		20000	20000
Rensselaer	143.67-1-2	State Of New York		2400	2400
Rensselaer	143.67-1-2	State Of New York		2400	2400
Rensselaer	143.67-1-20	Derenzo, Brandi		17700	29800
Rensselaer	143.67-1-22	Silverstein, Paul		8500	42000
Rensselaer	143.67-1-23	Silverstein, Paul		11800	36000
Rensselaer	143.67-1-3.1	National Grid		18300	55527
Rensselaer	143.67-1-3.2	Polsinello, James		6500	17500
Rensselaer	143.67-1-4	Polsinello, Vincent J	Polsinello, Vincent	3000	21300
Rensselaer	143.67-1-5	City of Rensselaer		2600	3600
Rensselaer	143.67-1-6	City of Rensselaer		20000	63400
Rensselaer	143.67-1-7.1	Polsinello, James V		9500	9500
Rensselaer	143.67-1-7.2	223 Broadway Inc		24000	157000
Rensselaer	143.67-1-8	Polsinello, James		2500	2500
Rensselaer	143.67-1-9	Pratt, Benjamin M		16000	79000
Rensselaer	143.67-2-1	Snyder, Donald J		2800	15000
Rensselaer	143.67-2-2	Durivage, Robert J		2600	16500

MUNI	PRINT_KEY	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	143.67-2-3	Oneil, Franklin		2600	17000
Rensselaer	143.67-2-4	Vallejo, Paul S		2600	16000
Rensselaer	143.67-2-5	Gray, David E		3800	19500
Rensselaer	143.67-2-6	Walsh, James P		2500	17000
Rensselaer	143.67-2-7	Reynolds, Robert R		3800	49000
Rensselaer	143.67-3-1	Fiacco, Daniel		2900	16000
Rensselaer	143.67-3-2	Meissner, Kathleen Stewart		3600	22500
Rensselaer	143.67-3-3	Blowers, Floyd		3000	20100
Rensselaer	143.67-3-4	OBrien, Joseph M		2200	14400
Rensselaer	143.67-3-5	MacGregor, Edgar R		2300	15000
Rensselaer	143.67-3-6	Myers, Raymond G		2500	15000
Rensselaer	143.67-3-7	City of Rensselaer I D A		29800	29800
Rensselaer	143.67-4-1	Grant, Dennis		3400	20000
Rensselaer	143.67-4-10	Matera, Angeline		5000	24200
Rensselaer	143.67-4-11	Matera, Angeline		7000	39200
Rensselaer	143.67-4-12	State Of New York		1000	1000
Rensselaer	143.67-4-2	Grumm, Edward		2800	21500
Rensselaer	143.67-4-3	Jones, Daniel P		2800	19200
Rensselaer	143.67-4-4	Reilly, William J		2600	16000
Rensselaer	143.67-4-5	Dell, Arthur	Dell, Charlotte	2300	12000
Rensselaer	143.67-4-6	Dell, Arthur		2600	20500
Rensselaer	143.67-4-7	Poole,Carolynn		2000	17400
Rensselaer	143.67-4-8	Leonardo Davinci Ldg Inc		7600	75000
Rensselaer	143.67-4-9	Rymski, James A		2600	18500
Rensselaer	143.67-5-1	City of Rensselaer I D A		20000	20000
Rensselaer	143.67-5-2	Accu Care Health Services		5000	25000
Rensselaer	143.67-5-3	Faith And Love Fellowship		14200	85000
Rensselaer	143.67-6-1	City of Rensselaer		14200	14200
Rensselaer	143.67-7-1	Zeppetelli, Anthony C	Zeppetelli, Susan M	7000	7000
Rensselaer	143.67-7-10	Danaher, Laurie Anne B		4500	35000
Rensselaer	143.67-7-11	Zeppetelli, Anthony C		8000	8000
Rensselaer	143.67-7-12	Danaher, Laurie Anne B		3000	3000
Rensselaer	143.67-7-13	Zeppetelli, Anthony C		5200	6200
Rensselaer	143.67-7-14	Mid-Valley Oil Co Inc		27000	157000
Rensselaer	143.67-7-3	City of Rensselaer		3500	3500
Rensselaer	143.67-7-4	Depasquale, Benjamin		3500	25000
Rensselaer	143.67-7-5	Hayati, Abdul		5200	21200
Rensselaer	143.67-7-6	Hayati, Abdul	Hayati, Nilofar	5200	29000
Rensselaer	143.67-7-7	Depasquale, Benjamin		5200	31900
Rensselaer	143.67-7-8	Depasquale, Benjamin J		5200	27200
Rensselaer	143.75-10-1	I Buy Homely Homes Inc		3300	34000
Rensselaer	143.75-10-10	Gammel, Thomas J		7000	20400
Rensselaer	143.75-10-11	Absolut Coffee & Refreshment		3500	20000
Rensselaer	143.75-10-12	Pasqualitti, Benjamin F		5200	19500
Rensselaer	143.75-10-13	Ruso, Terance		4400	36800
Rensselaer	143.75-10-2	Lighthouse Baptist Church		8200	65000
Rensselaer	143.75-10-3	Vaccarielli, Anthony		29400	70000
Rensselaer	143.75-10-4	Speranzo, William J		14800	44000
Rensselaer	143.75-10-5	Dumas, Paul		5200	25000
Rensselaer	143.75-10-6	Waters, Robert		5200	24000
Rensselaer	143.75-10-7	Thorpe Elect Supply Inc		5000	5000
Rensselaer	143.75-10-8	Thorpe Elect Supply Inc		5000	5000
Rensselaer	143.75-10-9	Latina, Naomi R		10500	37300
Rensselaer	143.75-1-1	Kretser, Jerry		7000	24000
Rensselaer	143.75-11-1	S U P A Inc		17000	120900
Rensselaer	143.75-11-10	State Of New York,		2900	2900
Rensselaer	143.75-11-11	Albany Yacht Club Inc		34800	112000
Rensselaer	143.75-11-12	Gardenier, Marietta		2600	19200
Rensselaer	143.75-11-13	Albany Yacht Club		7500	9200
Rensselaer	143.75-11-14	Albany Yacht Club		3500	31700
Rensselaer	143.75-11-15	Houser-Grook, Joan M		3200	16400
Rensselaer	143.75-11-16	Flach, David		14100	31000
Rensselaer	143.75-11-17	Flach, David		7400	27000
Rensselaer	143.75-11-18	Burton, Arline		4600	4600
Rensselaer	143.75-11-19	Burton, Arline		2300	18500
Rensselaer	143.75-11-2	S U P A Inc		5000	5000
Rensselaer	143.75-11-20	Bernardo, William A		2500	19100
Rensselaer	143.75-11-21	Ryan, Laura		3700	19500
Rensselaer	143.75-11-22	Ryan, Laura		4700	21900
Rensselaer	143.75-11-23	City Of Rensselaer		9900	54800
Rensselaer	143.75-11-24	Presbyterian, Church Manse		3600	30000
Rensselaer	143.75-11-25	Harrington, Llewellyn E		4200	25600
Rensselaer	143.75-11-3	Supa Inc		22800	110100
Rensselaer	143.75-11-4	S U P A Inc		14000	14000
Rensselaer	143.75-11-5	S U P A Inc		7000	7000
Rensselaer	143.75-11-6	Bhatti, Abid I		3800	33000
Rensselaer	143.75-11-7	Bhatti, Abid I		10600	10600
Rensselaer	143.75-11-8	State Of New York,		1700	1700
Rensselaer	143.75-11-9	State Of New York		8000	8000
Rensselaer	143.75-11-9	State Of New York		8000	8000
Rensselaer	143.75-12-10	Herrin, Todd E	Herrin, Rosemary A	3900	25000
Rensselaer	143.75-12-11	Bergmann, Kurt O		2500	28000
Rensselaer	143.75-12-12	Buckland, Bertha M		2800	20300
Rensselaer	143.75-12-13	Butler, Myron G	Butler, Patricia A	2500	22500
Rensselaer	143.75-12-5	Butler, Myron G		2000	2000
Rensselaer	143.75-12-6	Northern Capital Partners LLC		2500	14000
Rensselaer	143.75-12-7	Presbyterian Church		5900	245900
Rensselaer	143.75-12-8	City Of Rensselaer		3100	35900
Rensselaer	143.75-12-9	Lynch, Michael	Fransen, Rebecca	9000	90000
Rensselaer	143.75-13-12	Polsinello Realty Corp		28500	87500
Rensselaer	143.75-13-13	Lee, Amey Wai Ching		3300	20000
Rensselaer	143.75-13-14	Burek, Thaddeus F		9500	48000
Rensselaer	143.75-13-16	Burek, Thaddeus F		22000	42500
Rensselaer	143.75-1-4	Swahlan, Joseph A	Swahlan, Erma M	15000	39800
Rensselaer	143.75-14-1	Maldonado, Denise M		2700	24700
Rensselaer	143.75-14-2	Polsinello, Priscilla		23700	36300

MUNI	PRINT_KEY	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	143.75-14-3	Frattura, Fredric J		33300	48600
Rensselaer	143.75-1-5	Swahlan, Joseph A	Swahlan, Erma M	13100	103870
Rensselaer	143.75-2-10	Wainman, Gerald E		2500	2500
Rensselaer	143.75-2-11	Wainman, Gerald E		2500	2500
Rensselaer	143.75-2-12.1	Wainschaf Associates Inc		11300	55500
Rensselaer	143.75-2-12.2	Laduke, Thomas	Laduke, Christine	18000	101000
Rensselaer	143.75-2-6	Pitteloud, Nicole C		9300	68000
Rensselaer	143.75-2-7	Moynihan, Ann C		13600	110500
Rensselaer	143.75-2-8	Wainman, Gerald E		2500	2500
Rensselaer	143.75-2-9	Wainman, Gerald E		2500	2500
Rensselaer	143.75-3-1	City of Rensselaer		44300	880000
Rensselaer	143.75-3-10	Thorpe Elect Supply Inc		2000	2000
Rensselaer	143.75-3-11	Thorpe Elect Supply Inc		2000	2000
Rensselaer	143.75-3-12	Thorpe Elect Supply Inc		1700	1700
Rensselaer	143.75-3-2	Gross, Phillip P		2600	45000
Rensselaer	143.75-3-3	Gross, Phillip P		2500	2500
Rensselaer	143.75-3-4	Snyder, Leroy E		1000	1000
Rensselaer	143.75-3-5	Ginther, Frank J		1000	1000
Rensselaer	143.75-3-6	Snyder, Leroy E		2600	18800
Rensselaer	143.75-3-8	Beaudoin, William L		3000	28000
Rensselaer	143.75-3-9	Thorpe Elect Supply Inc		1700	1700
Rensselaer	143.75-4-1	Rensselaer City School Dist		1400	1400
Rensselaer	143.75-4-11	Vanepps, Jean		2600	15500
Rensselaer	143.75-4-12	Brown, Michael		2500	14000
Rensselaer	143.75-4-13	Brown, Michael J		2500	17500
Rensselaer	143.75-4-14	Vanepps, Jean		3300	14100
Rensselaer	143.75-4-15	Fiacco, James M		3500	14500
Rensselaer	143.75-4-16	Slingerland, Christopher	Slingerland, Barbara	3300	16500
Rensselaer	143.75-4-17	Paul, Suda	Paul, Bishwendu	2500	17500
Rensselaer	143.75-4-18	Clow, Mary E		2900	8500
Rensselaer	143.75-4-2	Zeppetelli, Anthony C		2000	8000
Rensselaer	143.75-4-4	Northrup, Henry W		2500	20100
Rensselaer	143.75-4-5	Ginther, Frank		6000	46000
Rensselaer	143.75-4-6	City of Rensselaer		2200	46000
Rensselaer	143.75-4-7	Ring Fire Co		2600	2600
Rensselaer	143.75-4-8	Brannock, Rosemary		2000	10400
Rensselaer	143.75-4-9	Webber, Richard		2600	18000
Rensselaer	143.75-5-1	City of Rensselaer I D A		7400	7400
Rensselaer	143.75-5-10	Hall, John F		3000	13800
Rensselaer	143.75-5-11	Hornyak, Deborah A		2500	17500
Rensselaer	143.75-5-12	Felts, Albertine M		2500	20400
Rensselaer	143.75-5-13	Frost, Joseph		2500	17500
Rensselaer	143.75-5-14	Frost, Joseph R	Frost, Ann C	1300	1300
Rensselaer	143.75-5-15	McDonald, William H		5000	24000
Rensselaer	143.75-5-16	Scully, Yvonne D	LaMarre, Donna	3300	18400
Rensselaer	143.75-5-17	Daoust-Coyne, Irene Y		4700	18000
Rensselaer	143.75-5-18	Felts, Doris		3500	22400
Rensselaer	143.75-5-19	Felt, Wayne H	Felt, Arthur D	5400	21400
Rensselaer	143.75-5-2	Robichaud, Kathleen Leahey		3000	35000
Rensselaer	143.75-5-20	Malatesta, Michael	Hahn, Bonnie	3000	16500
Rensselaer	143.75-5-3	Felts, Doris		800	800
Rensselaer	143.75-5-5	Hughes, Richard L		1000	1000
Rensselaer	143.75-5-6	Hughes, Richard L		1500	1500
Rensselaer	143.75-5-7	Hughes, Richard L		3000	21500
Rensselaer	143.75-5-8	Bohley, Barbara M		3000	15000
Rensselaer	143.75-5-9	Hall, John F		1300	1300
Rensselaer	143.75-6-1	Borcok, Steven	Borcok, Mary	4000	44000
Rensselaer	143.75-6-10	Marotta, Ralph		3900	3900
Rensselaer	143.75-6-11	City of Rensselaer		3300	20500
Rensselaer	143.75-6-12	David Little Marketing Inc		22900	88000
Rensselaer	143.75-6-13	Letzelter, Pauline M		2900	17800
Rensselaer	143.75-6-14	Plumley, Timothy E	Bonsteel, Brian W	2900	20000
Rensselaer	143.75-6-15	Wilson, Albert H	Wilson, Olga	2900	18000
Rensselaer	143.75-6-16.1	Fitzpatrick, Kevin		2900	18000
Rensselaer	143.75-6-16.2	City of Rensselaer		100	100
Rensselaer	143.75-6-17.1	Finn, Benjamin M		2800	18400
Rensselaer	143.75-6-17.2	City of Rensselaer		100	100
Rensselaer	143.75-6-18	National Grid		2000	2000
Rensselaer	143.75-6-2	Marshall, John		2500	2500
Rensselaer	143.75-6-3	Marshall, John	Marshall, Deborah C	2500	2500
Rensselaer	143.75-6-4	Marshall, John	Marshall, Deborah C	2500	14000
Rensselaer	143.75-6-5	Labarron, Roland		3200	17500
Rensselaer	143.75-6-6	Braman, Annette		3200	17200
Rensselaer	143.75-6-7	Varno, Michael T	Barcia-Varno, Teresit	2500	18200
Rensselaer	143.75-6-8	Irish, Amber S	Rohan, Mark	3200	18000
Rensselaer	143.75-6-9	Marotta, Ralph A		2600	18500
Rensselaer	143.75-7-1	Ryan, Joseph Patrick		3200	15000
Rensselaer	143.75-7-10	Carrk, Mark	Carrk, Diane	2200	17000
Rensselaer	143.75-7-11	Glebatis, Daniel		6500	39000
Rensselaer	143.75-7-12	Rice, Jerome C		2600	17500
Rensselaer	143.75-7-13	Shatraw, John E	Shatraw, Joanne	1200	1200
Rensselaer	143.75-7-14	Shatraw, John E	Shatraw, Joanne	2000	9500
Rensselaer	143.75-7-15	Shatraw, John E	Shatraw, Joanne	2000	11400
Rensselaer	143.75-7-16	Mosher, George A		2000	15000
Rensselaer	143.75-7-17	Seaburg, Marvin		3000	15500
Rensselaer	143.75-7-18	Gilday, Michael D		400	1000
Rensselaer	143.75-7-19	City of Rensselaer		10100	10100
Rensselaer	143.75-7-2	Cuttler Properties LLC		6300	38000
Rensselaer	143.75-7-3	Perez, Alex		5000	36000
Rensselaer	143.75-7-4	Bachandouris, Demetrius C		2000	13400
Rensselaer	143.75-7-5	Gilday, Michael D		2500	17100
Rensselaer	143.75-7-6	West, Gene	West, Barbara	2600	17000
Rensselaer	143.75-7-7	Dearstynne, Christine M	Dearstynne, Joseph A	2000	17000
Rensselaer	143.75-7-8	Bohley, Gary J		2000	19000
Rensselaer	143.75-7-9	Dutcher, Dorothy M		2600	20000
Rensselaer	143.75-8-1	34 Washington Street Mgt Co		6000	60000

MUNI	PRINT_KEY	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	143.75-8-10	Methodist Episcopal Chr		3300	107500
Rensselaer	143.75-8-11	Church, M E		2500	25000
Rensselaer	143.75-8-13	Wilson, Daniel		3300	17000
Rensselaer	143.75-8-14	Abrams, Shawn P		3300	30000
Rensselaer	143.75-8-15	Dillon, Beatrice		2200	15000
Rensselaer	143.75-8-2	Endres, Martha		3300	12900
Rensselaer	143.75-8-3	Rensselaer Best Homes Ltd		2500	19400
Rensselaer	143.75-8-4	Gammel, Thomas J		6000	14850
Rensselaer	143.75-8-5	Thorpe Elect Supply Inc		2800	2800
Rensselaer	143.75-8-6	Thorpe Elect Supply Inc		2100	2100
Rensselaer	143.75-8-7	Gammel, Arthur		3300	35100
Rensselaer	143.75-8-8	Obrien, Roberta	George, Deborah	2600	17500
Rensselaer	143.75-8-9	Obrien, Roberta		3700	17500
Rensselaer	143.75-9-1	Key Bank NA		32700	248500
Rensselaer	143.75-9-10	Stewart, Michael J		5300	28500
Rensselaer	143.75-9-11	Stewart, Michael J		4600	5600
Rensselaer	143.75-9-12	Hess Realty Corp		20400	95500
Rensselaer	143.75-9-2	National Comm Bank & Trust Co		7800	9800
Rensselaer	143.75-9-5	Thorpe Elec Supply Inc		21200	220000
Rensselaer	143.75-9-7	Thorpe Elect Supply Inc		10000	85800
Rensselaer	143.75-9-8	Hallenbeck, Lori A		2300	19700
Rensselaer	143.75-9-9	Stewart, Michael J		13700	44200
Rensselaer	143.76-1-10	National Grid		14500	14500
Rensselaer	143.76-1-11	City of Rensselaer I D A		74600	4200000
Rensselaer	143.76-1-12	Amtrak		10000	10000
Rensselaer	143.76-1-9	Felts, Paul	Felts, Albertine	6000	23200
Rensselaer	143.82-1-1	City of Rensselaer 00002		1600	1600
Rensselaer	143.82-1-2	Dirzuweit, Hans Staats		3500	21500
Rensselaer	143.82-1-3	Malatesta, Michael P	Hahn, Bonnie Lee	2300	17000
Rensselaer	143.82-1-4	Bradt, Anna M		2500	18700
Rensselaer	143.82-1-5	Hahn, Bonnie L		3500	27000
Rensselaer	143.82-1-6	Kilmer, Regina B		5700	73300
Rensselaer	143.82-1-7	BASF Wyandotte Corp		3000	3000
Rensselaer	143.83-1-1	McDonald, Michael J		2600	21000
Rensselaer	143.83-1-2	Martin, Maria	Martin, Michael	2600	24000
Rensselaer	143.83-1-3	Fremgen, Thomas H		3500	26400
Rensselaer	143.83-1-4	Fremgen, Thomas H		3500	3500
Rensselaer	143.83-1-5	Hahn, Virginia		2900	21700
Rensselaer	143.83-2-1	Cotugno, Fred T		2600	13600
Rensselaer	143.83-2-2	Kishwar, Naheed		2500	15000
Rensselaer	143.83-2-3	Peterson, Michael		3600	26200
Rensselaer	143.83-2-4	Spagnoli, Bruno M		7600	35000
Rensselaer	143.83-3-1	Endres, James M		6200	21400
Rensselaer	143.83-3-13	Berigan, John C		1700	1700
Rensselaer	143.83-3-14	Vesta Properties Inc		2500	2500
Rensselaer	143.83-3-15	Polsinello Realty Corp		1700	1700
Rensselaer	143.83-3-17	Jakovic, Harold Jay		2000	14200
Rensselaer	143.83-3-18	Dornan, Nancy Garrett		3400	27000
Rensselaer	143.83-3-19	Hall, Carolyn		3400	20000
Rensselaer	143.83-3-2	Fonda, Walter		2800	6000
Rensselaer	143.83-3-20	Winnie, William E		3300	21000
Rensselaer	143.83-3-21	Jakovic, John Wesley		2600	19000
Rensselaer	143.83-3-22	Jakovic, John Wesley		2500	20000
Rensselaer	143.83-3-23	Yasinski, Deborah A		2600	9000
Rensselaer	143.83-3-24	Lawrence, Alice		2800	25500
Rensselaer	143.83-3-25	Bennett, Barbara K		2800	20000
Rensselaer	143.83-3-26	Sanford, John M	Sanford, Julie A	2300	21000
Rensselaer	143.83-3-27	Steinbach, Rodney E	Steinbach, Jane	3000	19400
Rensselaer	143.83-3-4	Polsinello Realty Corp		3700	5900
Rensselaer	143.83-3-5	Cleary, Kevin	Linda, Dwyer	2400	5400
Rensselaer	143.83-3-8	Polsinello Realty Corp		44700	209300
Rensselaer	143.83-4-1	Polsinello Realty Corp		31500	89600
Rensselaer	143.83-4-3.11	Barton & Company, E C		58000	148453
Rensselaer	143.83-4-3.12	David Little Marketing Inc		20000	20000
Rensselaer	143.83-4-4	National Grid		52500	350000
Rensselaer	143.83-4-5	Akullian Residual Living Trust, D		80000	80000
Rensselaer	143.83-4-6	Vesta Properties Inc		13100	76000
Rensselaer	143.83-4-7	Polsinello, Louis	Polsinello, Suzanne	5300	61200
Rensselaer	143.83-4-8	Polsinello Realty Corp		17000	38000
Rensselaer	143.83-5-1.11	Rensselaer Associates LLC		151000	492000
Rensselaer	143.83-5-1.12	Petrochemical Mech Svcs Inc		0	1
Rensselaer	143.83-5-1.2	Rensselaer Assoc 1 LLC		109200	552000
Rensselaer	143.83-5-2	Petrochem Mechanical Sevices		44700	220000
Rensselaer	143.83-5-3	Fairdale Realty Inc		15200	25300
Rensselaer	143.83-5-4	Fairdale Realty Inc		26400	114900
Rensselaer	143.83-6-1	Reed, Arthur	Reed, Donna	1200	1200
Rensselaer	143.83-6-10	Orciuoli, Oreste		10000	10000
Rensselaer	143.83-6-2	Reed, Arthur	Reed, Donna	1200	1200
Rensselaer	143.83-6-3	Reed, Arthur	Reed, Donna	3300	28800
Rensselaer	143.83-6-4	Fonda, Walter G	Fonda, Gloria	2900	28500
Rensselaer	143.83-6-5	Orciuoli, Oreste		15000	15000
Rensselaer	143.83-6-6	Frank James Inc		29000	81000
Rensselaer	143.83-6-7	Vivians Of Rensselaer Inc		37500	169000
Rensselaer	143.83-6-8	Filippini, Frank J		16200	89400
Rensselaer	143.83-6-9	Coyne Memorial Field		110400	119000
Rensselaer	143.83-7-1	Jakovic, Jay Harold		2500	19800
Rensselaer	143.83-7-10	Danz, Greg		3900	22000
Rensselaer	143.83-7-11	Warner, Marjorie V		3600	12600
Rensselaer	143.83-7-12	Gartner, Frederick P		2000	19000
Rensselaer	143.83-7-2	Rock, James F		2000	14500
Rensselaer	143.83-7-3	Mull, Gerald D	Woodward, Linda	2200	18500
Rensselaer	143.83-7-4	Marlow, Marie		2500	24000
Rensselaer	143.83-7-6	Cramer, Lisa C		2500	22000
Rensselaer	143.83-7-7	Secretary of HUD		2500	27800
Rensselaer	143.83-7-8	Greene, Mary M		7200	35500
Rensselaer	143.83-7-9	Gartner, Frederick P	Gartner, Dorothy M	3600	3600

MUNI	PRINT_KEY	OWNER1	OWNER2	LAND_AV	TOTAL_AV
Rensselaer	143.83-8-1	Deluca, Pearl V		2800	18500
Rensselaer	143.83-8-10	McClement, Norma Frances		3300	17000
Rensselaer	143.83-8-11	Filippini, Frank J		2300	15000
Rensselaer	143.83-8-12	McClement, Robert	McClement, Norma	3600	18000
Rensselaer	143.83-8-13	Allert, Anthony E	Allert, Rikki L	2200	15700
Rensselaer	143.83-8-14	Corcoran, James	Corcoran, Mary	3500	16400
Rensselaer	143.83-8-15	Dethomasis, Pasquale		3300	19500
Rensselaer	143.83-8-16	McDermott, James F		3500	18300
Rensselaer	143.83-8-17	Ladd, Thomas		1800	1800
Rensselaer	143.83-8-18	Ladd, Thomas D		5200	25000
Rensselaer	143.83-8-19	Sanchez, Jose		2500	20000
Rensselaer	143.83-8-2	Eaton, Kenneth R	Eaton, Patricia	5000	25000
Rensselaer	143.83-8-20	Palermo, Scarlet A	Palermo, John	3100	19000
Rensselaer	143.83-8-5	Lawton, Thomas R		3500	19500
Rensselaer	143.83-8-6	Thomas, John J	Thomas, Barbara A	3000	16500
Rensselaer	143.83-8-7	Green, Norman J		2800	21500
Rensselaer	143.83-8-8	Pham, Phant	Nguyen, Minh	2300	18000
Rensselaer	143.83-8-9	Miller, Michael E		2500	20400
Rensselaer	143.83-9-1	Rensselaer County Sewer Dist		20900	87000
Rensselaer	143.83-9-10	Buchanan, Patricia		2600	18000
Rensselaer	143.83-9-11	Halse, Robert J		2600	17500
Rensselaer	143.83-9-12	Wei, Jian Ming		2200	19000
Rensselaer	143.83-9-13	Faranda, Joseph F		2200	17500
Rensselaer	143.83-9-14	Bakay, Olga		2000	17500
Rensselaer	143.83-9-15	Chomyc, Rose		2200	15200
Rensselaer	143.83-9-16	Dickert, Theresa	Dickert, Edward	2000	19000
Rensselaer	143.83-9-17	Grimmel, Toby		2000	18000
Rensselaer	143.83-9-18	Boyd, Marion F		2200	17000
Rensselaer	143.83-9-19	Durivage, Kendra		4500	23000
Rensselaer	143.83-9-19	Durivage, Kendra		4500	23000
Rensselaer	143.83-9-2	Saltzman, Ira M	Myers, Kirk W	2600	22000
Rensselaer	143.83-9-20	Townsend, Howard P		4300	18400
Rensselaer	143.83-9-20	Townsend, Howard P		4300	18400
Rensselaer	143.83-9-21	Hart, Victoria		4500	23000
Rensselaer	143.83-9-21	Hart, Victoria		4500	23000
Rensselaer	143.83-9-22	Malatesta, Michael P	Hann, Bonnie	5000	20000
Rensselaer	143.83-9-22	Malatesta, Michael P	Hann, Bonnie	5000	20000
Rensselaer	143.83-9-23	Mace, Thomas A	Mace, Bernadine	5000	18500
Rensselaer	143.83-9-23	Mace, Thomas A	Mace, Bernadine	5000	18500
Rensselaer	143.83-9-24	Presti, Michael S		5000	25000
Rensselaer	143.83-9-24	Presti, Michael S		5000	25000
Rensselaer	143.83-9-25	Flaherty, James	Flaherty, Patricia	5300	30000
Rensselaer	143.83-9-25	Flaherty, James	Flaherty, Patricia	5300	30000
Rensselaer	143.83-9-26	Seaman, Judith Ann		15300	64400
Rensselaer	143.83-9-26	Seaman, Judith Ann		15300	64400
Rensselaer	143.83-9-27	Fairdale Realty Inc		4300	4300
Rensselaer	143.83-9-28	Bauer, David W	Bauer, Deborah L	3600	35000
Rensselaer	143.83-9-29	Merkle, Gloria A	Bushnell, Loretta	3600	30000
Rensselaer	143.83-9-3	Mulyca, Donald S	Mulyca, Sharon	2200	2200
Rensselaer	143.83-9-30	State Of New York Claims		15300	56500
Rensselaer	143.83-9-30	State Of New York Claims		15300	56500
Rensselaer	143.83-9-31	Farrell, Francis X	Farrell, Barbara	8000	35000
Rensselaer	143.83-9-31	Farrell, Francis X	Farrell, Barbara	8000	35000
Rensselaer	143.83-9-32	Myers, Kirk W		6000	17100
Rensselaer	143.83-9-32	Myers, Kirk W		6000	17100
Rensselaer	143.83-9-33	Keefe, Joseph M		2800	19000
Rensselaer	143.83-9-34	Mulyca, Donald S	Mulyca, Sharon	2500	17500
Rensselaer	143.83-9-35	Bull, Patricia		2800	17500
Rensselaer	143.83-9-36	Labombard, Rose		2600	18000
Rensselaer	143.83-9-37	McIntyre, Donald A		2600	25000
Rensselaer	143.83-9-38	Ambrozik, Autumn		2600	18000
Rensselaer	143.83-9-4	Stilsing, Harold		1900	5000
Rensselaer	143.83-9-5	Presti, Anthony		2300	20000
Rensselaer	143.83-9-6	Slingerland, Charles	Slingerland, Theresa	3300	17000
Rensselaer	143.83-9-7	Gier, Susan A		3500	23000
Rensselaer	143.83-9-8	Brouker, Eric A		3200	19000
Rensselaer	143.83-9-9	Slauson, Richard I	Slauson, Karen J	3900	20000
Rensselaer	143.84-1-2./1	Morrison, Owen F	Mercier, Timothy	16900	33100
Rensselaer	143.84-1-6	Finn, Phyllis		4000	17000
Rensselaer	143.84-2-10	Casey, Patrick J	Casey, Linda J	4000	19300
Rensselaer	143.84-2-11	Sebuyira, Annette N		4200	23000
Rensselaer	143.84-2-12	Deyoe, Jerry		4300	12300
Rensselaer	143.84-2-13	Moore, Katherine		3800	19000
Rensselaer	143.84-2-14	Morrissey, Dawn	Morrissey, George	3500	3500
Rensselaer	143.84-2-15	Durivage, Jamie P		4300	15900
Rensselaer	143.84-2-16	Murphy, Christina S		4200	16500
Rensselaer	143.84-2-19	Weldon, Margaret		7600	26500
Rensselaer	143.84-2-2	Sauer, Margaret B		500	500
Rensselaer	143.84-2-21	Burrows, Linda B		2500	10000
Rensselaer	143.84-2-22	Htun, San Zaw		2700	15500
Rensselaer	143.84-2-3	Sauer, Margaret B		3000	13200
Rensselaer	143.84-2-4	Ganance, Michael		3000	14900
Rensselaer	143.84-2-5	Perry, Olive B		4000	15300
Rensselaer	143.84-2-6	McCray, Howard		3200	15000
Rensselaer	143.84-2-7	Ganance, Hazen R	Ganance, Michael	3200	3200
Rensselaer	143.84-2-8	Janenska, Florence		3100	14000
Rensselaer	143.84-2-9	Burek, Thaddeus F	Burek, Carol	3400	16500
Rensselaer	154.27-1-1	Belmore Realty LLC		2500	17300
Rensselaer	154.27-1-2	Belmore Realty LLC		2600	22900
Rensselaer	154.27-1-3	Jeffries, Frank E		2300	18600
Rensselaer	154.27-1-4	Organichem Corp		1200	1200
Rensselaer	154.27-1-6	Organichem Corp		7800	7800
Rensselaer	154.27-1-6	Organichem Corp		7800	7800
Rensselaer	154.27-1-7	Organichem Corp		7800	7800
Rensselaer	154.27-1-7	Organichem Corp		7800	7800
Rensselaer	154.27-1-8	Organichem Corp		7800	7800



# Exhibit “H”

# Hudson River Regulating District



Kathleen M. Jimino  
County Executive

SARATOGA COUNTY

SCHENECTADY COUNTY

ALBANY COUNTY

Schaghticoke

Pittsford

Russwick

Oran

RENSSELAER COUNTY

City of Troy

Rosebush

North Greenbush

Sand Lake

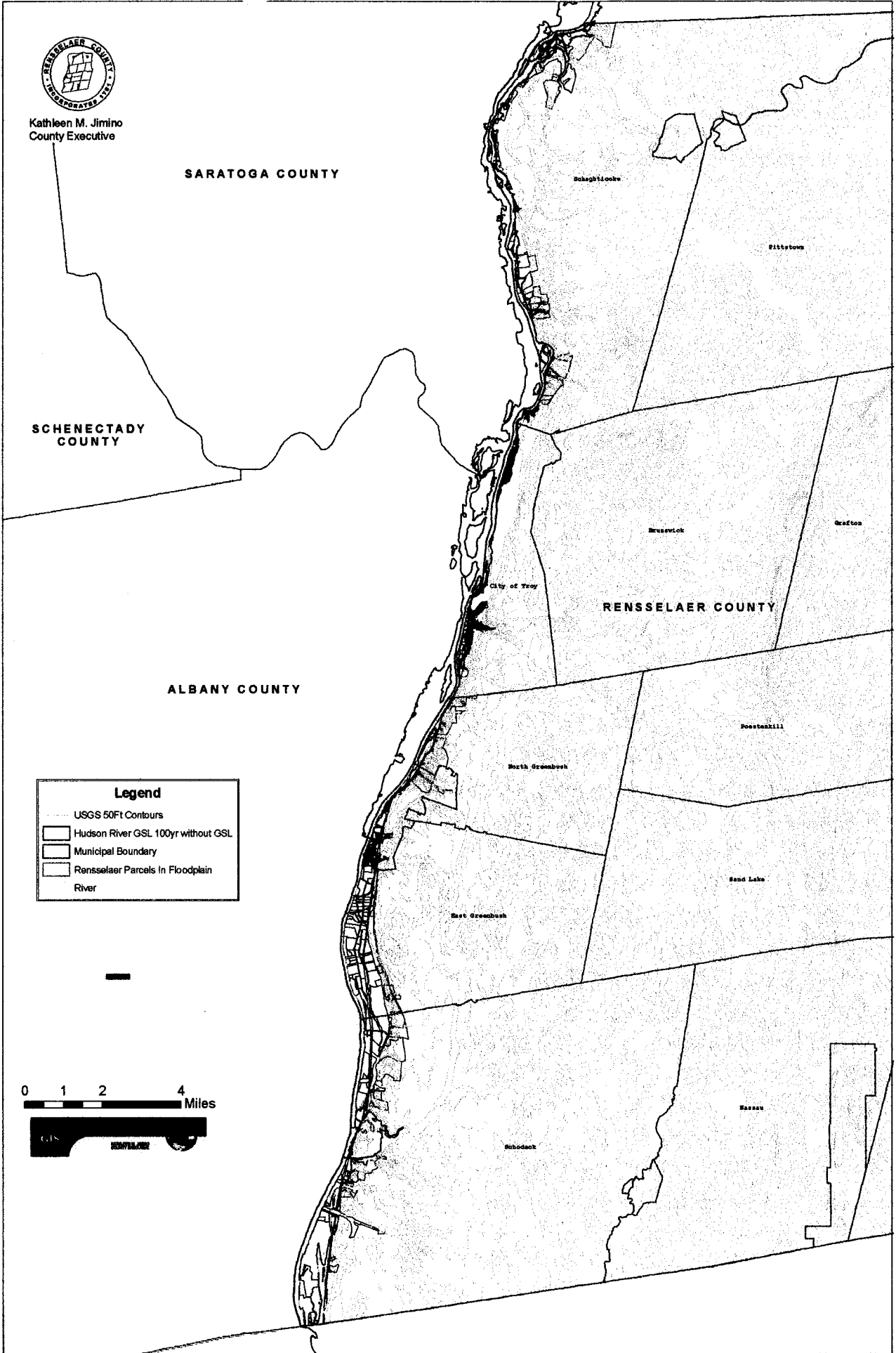
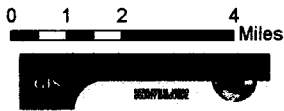
East Greenbush

Renss

Rotterdam

**Legend**

- USGS 50Ft Contours
- Hudson River GSL 100yr without GSL
- Municipal Boundary
- Rensselaer Parcels In Floodplain River



# Exhibit “I”

STATE OF NEW YORK  
HUDSON RIVER BLACK RIVER REGULATING DISTRICT

In the Matter of

**RENSSELAER COUNTY, NEW YORK,**

Complainant,

**AFFIDAVIT**

Regarding the Apportionment of Operation  
and Maintenance Costs by the

**HUDSON RIVER BLACK RIVER REGULATING DISTRICT.**

---

STATE OF NEW YORK     )  
                                  ) ss.:  
COUNTY OF RENSSELAER)

**MICHAEL J. SLAWSON**, being duly sworn, does depose and say  
that:

1. I am the Chief Fiscal Officer of Rensselaer County  
and have been so appointed and employed in January, 2000. Before  
accepting that appointment, I was the Director of the Rensselaer  
County Bureau of the Budget for many years.

2. In my capacity as Chief Fiscal Officer, I am  
familiar with the budgets of Rensselaer County both past and  
present, the sources of income of our County and with its expenses.

3. The 2010 Adopted Rensselaer County Budget is based  
upon a calendar year, as upon information and belief, the County of  
Rensselaer has always prepared and enacted its budgets based upon  
calendar years.

4. The 2010 Adopted Rensselaer County Budget was approved and thereby enacted by the Rensselaer County Legislature in December, 2009.

5. The County of Rensselaer began its planning process for the current budget in July, 2009. That budgeting process was laborious and extensive. Due to the current economic recession faced in New York State and the nation, the State and as a result, Rensselaer County face serious fiscal problems and money shortages.

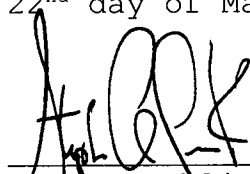
6. I have been informed by the Rensselaer County Attorney that the Hudson River Black River Regulating District seeks payment of \$781,400.61 from Rensselaer County for an assessment that it served upon our county on or about February 4, 2010, long after the 2010 Adopted Rensselaer County Budget was approved by the Rensselaer County Legislature. Rensselaer County has no funds available to it to remit payment for this expense.

7. Never during my tenure as Chief Fiscal Officer and upon information and belief, at no time prior to this alleged assessment, did the Hudson River Black River Regulating District tender any assessment or bill whatsoever to the County of Rensselaer.



MICHAEL J. SLAWSON

Sworn to before me this  
22<sup>nd</sup> day of March, 2010.



Notary Public, State of New York

Stephen A. Pechenik  
Notary Public, State of New York  
Registration No. 02PE4684612  
Qualified in Rensselaer County  
Commission Expires April 30, 2010



Board of Hudson River-Black River Regulating District  
350 Northern Boulevard, Albany, New York 12204 Phone (518) 465-3491  
FAX (518) 432-2485

April 8, 2010

Honorable Martin T. Reid, Chairman  
Rensselaer County Majority Legislature  
Rensselaer County Office Building – 5<sup>th</sup> Floor  
1600 Seventh Avenue  
Troy, New York 12180

Re: Hudson River – Black River Regulating District  
Apportionment

Dear Chairman Reid:

The Hudson River – Black River Regulating District Board adopted the Apportionment for the Hudson River Area with Modification subsequent to conducting the Apportionment Hearing Grievance at its March 30, 2010 Board meeting. Following approval by the Department of Environmental Conservation, and as required by NY ECL §15-2121(5), on behalf of the Regulating District Board, please find a copy of the Apportionment for the Regulating District's fiscal year July 2009 – June 2010 served upon you as Chairman of the Rensselaer County Legislature. As required by statute, a copy of the Apportionment will also be filed in the Office of the County Clerk. Remittance is due upon receipt, but no later than June 30, 2010.

Also enclosed, please find a copy of the Resolution through which the Regulating District adopted the Apportionment for the Hudson River Area with Modification and the letter from Commissioner Grannis through which the Department of Environmental Conservation approved the Apportionment.

Please feel free to contact me if you have any questions. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Glenn A. LaFave".

Glenn A. LaFave  
Executive Director

cc: Hon. Kathleen M. Jimino, Rensselaer County Executive  
Stephen Pechenik, Esq., Rensselaer County Attorney  
Frank Merola, Rensselaer County Clerk

State of New York  
Hudson River – Black River Regulating District  
Great Sacandaga Lake  
Operation and Maintenance Cost  
and  
Apportionment of Operation and Maintenance Cost

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Approved by  
BOARD OF HUDSON RIVER – BLACK RIVER REGULATING DISTRICT  
March 30, 2010

Certified to  
Department of Environmental Conservation  
March 30, 2010

**APPORTIONMENT OF OPERATION AND MAINTENANCE COST OF THE GREAT SACANDAGA LAKE RESERVOIR PREFIXED TO A RESOLUTION ADOPTED BY THE BOARD OF HUDSON RIVER - BLACK RIVER REGULATING DISTRICT March 30, 2010.**

<b>ID No.</b>	<b>NAME OF PUBLIC CORPORATION</b>	<b>PROPORTION OF COST</b>	<b>AMOUNT TO BE PAID</b>
1	County of Albany	0.392563628	\$ 1,748,166.66
2	County of Rensselaer	0.215951341	\$ 961,675.78
3	County of Saratoga	0.285389349	\$ 1,270,897.53
4	County of Warren	0.066742217	\$ 297,216.83
5	County of Washington	0.039353465	\$ 175,249.08

10-11-03

**RESOLUTION TO APPROVE THE APPORTIONMENT  
FOR THE HUDSON RIVER AREA WITH MODIFICATION**

**WHEREAS**, the Regulating District Board, served a copy of such apportionment as provided at NY ECL §15-2121, noticing and publishing the time and place at which the Board will meet to hear any public corporation or person aggrieved by the Board's apportionment determination; and

**WHEREAS**, the Board of the Hudson River-Black River Regulating District has determined the total cost to operate and maintain the Regulating District's Hudson River Area facilities (Great Sacandaga Lake, formerly Sacandaga Reservoir); and

**WHEREAS**, NY ECL §15-2121(2) and §15-2125(2) require the Regulating District Board to apportion such cost, less the amount chargeable to the state, among the public corporations and parcels of real estate benefited, in proportion to the amount of benefit which shall inure to each such public corporation and parcel of real estate by reason of such reservoir; and

**WHEREAS**, the United States Court of Appeals, DC Circuit determined that the Federal Power Act preempts the Regulating District's use of state law to collect the Regulating District's annual costs of operations and maintenance from the federally licensed hydropower companies operating within the Hudson River Area; and

**WHEREAS**, the Regulating District Board has determined that by grouping the towns, cities, villages and the individual parcels of real estate within each such public corporation, the potential for disparate treatment of one individual parcel, neighborhood or municipality when compared to others diminishes; and

**WHEREAS**, the Regulating District Board has determined that the Regulating District provides a negligible annual benefit to the state by diverting flow to the NYS Champlain Canal and the state has not required that a reasonable return to the state be included in the costs to be apportioned; and

**WHEREAS**, the attached written apportionment shows the name of each public corporation benefited and the proportion of such cost less the amount chargeable to the state to be borne by each, expressed in decimals and the amount to be paid by each such public corporation; and

**WHEREAS**, the amount to be paid by each such public corporation is determined by multiplying the total cost less the amount which may be chargeable to the state by the decimal representing the proportion thereof to be borne by each public corporation; and

**WHEREAS**, the Regulating District Board, or a majority of its members, have viewed the public corporations benefited; and

**WHEREAS**, NY ECL §15-2121 requires that the Regulating District Board shall, upon its approval of the apportionment, certify such apportionment to the Department of Environmental Conservation for approval; and

*Approved at the March 30, 2010 Board Meeting*

10-11-03

**WHEREAS**, following such apportionment grievance hearing, such apportionment if not modified shall become final and conclusive; or if modified, following approval of the modified apportionment by the Department of Environmental Conservation, such apportionment as so modified shall become final and conclusive; and

**WHEREAS**, the Board of the Hudson River-Black River Regulating District, at the January 12, 2010 Board meeting, adopted the "State of New York Hudson River-Black River Regulating District Great Sacandaga Lake Operation and Maintenance Cost and Apportionment of Operation and Maintenance Cost" apportionment for the Regulating District's Hudson River Area facilities; and

**WHEREAS**, on January 12, 2010, the Board certified the Apportionment to the Department of Environmental Conservation for its approval; and

**WHEREAS**, by letter dated February 3, 2010, the Department Commissioner approved the Apportionment; and

**WHEREAS**, the Board having heard those aggrieved by the Board's apportionment determination at an apportionment grievance hearing held March 30, 2010; and

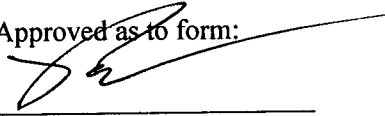
**NOW THEREFORE BE IT RESOLVED**, the Board of the Hudson River-Black River Regulating District does hereby adopt the "State of New York Hudson River-Black River Regulating District Great Sacandaga Lake Operation and Maintenance Cost and Apportionment of Operation and Maintenance Cost" apportionment for the Regulating District's Hudson River Area facilities with modification; and

**BE IT FURTHER RESOLVED**, pursuant to NY ECL §15-2121, the Board of the Hudson River-Black River Regulating District certifies such apportionment to the Department of Environmental Conservation for its approval; and

**BE IT FURTHER RESOLVED**, that upon approval by the Department of Environmental Conservation the Board of the Hudson River-Black River Regulating District directs staff to serve the apportionment as required by NY ECL §15-2121; and

**BE IT FURTHER RESOLVED**, that once approved and served, the Regulating District Board's apportionment is final and conclusive fixing the apportionment and basis of apportionment of all subsequent expenses to be incurred in the maintenance and operation of the Regulating District's Hudson River Area facilities.

Approved as to form:

  
\_\_\_\_\_  
Robert P. Leslie  
General Counsel

*Approved at the March 30, 2010 Board Meeting*

10-11-03

Motion was made by Ms. Beyor and seconded by Mr. Berkstresser that the Resolution be approved.

Present and Voting:

<u>MEMBER</u>	<u>AYE</u>	<u>NOE</u>	<u>ABSTAIN</u>
Ms. Beyor.....	<u>  X  </u>	<u>    </u>	<u>    </u>
Mr. Pintuff .....	<u>    </u>	<u>    </u>	<u>    </u> (Excused)
Mr. Bartow.....	<u>  X  </u>	<u>    </u>	<u>    </u>
Mr. Berkstresser .....	<u>  X  </u>	<u>    </u>	<u>    </u>
Mr. Cornell.....	<u>  X  </u>	<u>    </u>	<u>    </u>
Mr. Klein.....	<u>  X  </u>	<u>    </u>	<u>    </u>

**CORPORATE RESOLUTION CERTIFICATION**

I HEREBY CERTIFY that the following is a true and correct copy of Resolution 10-11-03 to Approve an Apportionment With Modification for the Hudson River Area duly adopted at a meeting of the Board of Directors of **The Board of Hudson River – Black River Regulating District** a corporation incorporated under the laws of the State of New York duly called and held on the 30th day of March, 2010, a quorum then being present; that the said resolution has been entered upon the regular minute book of the corporation and are in accordance with the certificate of incorporation and the by-laws and are now in full force and effect.

I FURTHER CERTIFY that the names of the persons holding titles referred to in the foregoing resolutions are as follows:

<u>NAME</u>	<u>TITLE</u>
Pamela Beyor	First Vice Chairperson
Philip Klein	Chairperson
John Bartow	Board Member
David Berkstresser	Board Member
Paul Cornell	Board Member

(Corporate Seal)

Treasurer: Royal J. F.  
Date: 3/31/10

DAVID A. PATERSON  
GOVERNOR



ALEXANDER B. GRANNIS  
COMMISSIONER

STATE OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
ALBANY, NEW YORK 12233-1010

APR 02 2010

Mr. Glen A. LaFave  
Executive Director  
Hudson River-Black River Regulating District  
737 Bunker Hill Road  
Mayfield, New York 12117

Dear Mr. LaFave:

The Department of Environmental Conservation has received the Hudson River-Black River Regulating District's (District) March 30, 2010 State of New York Hudson River-Black River Regulating District Great Sacandaga Lake Operation and Maintenance Cost and Apportionment of Operation and Maintenance Cost (revised apportionment) approved by the District's Board (Board) on March 30, 2010, and certified to DEC on April 1, 2010. Environmental Conservation Law (ECL) §15-2121 provides that the Board shall prepare an apportionment, certified to DEC for its approval, to recover the District's total cost and operation and maintenance expense from the public corporations and parcels of real estate benefitted by the Great Sacandaga Lake (Reservoir) in proportion to the amount of the benefit which will inure to each by reason of such Reservoir.

In reviewing the revised apportionment, DEC has relied on the expertise of District staff who prepared the revised apportionment in identification of: (1) the most direct and clearly defined benefit derived by operation of the Reservoir, i.e. flood protection; (2) the beneficiaries which receive the flood protection benefit; and (3) the method to determine the proportion of the flood protection benefit which will inure to each beneficiary. As the revised apportionment is not inconsistent with the provisions of ECL §15-2121 and ECL §15-2125, I hereby approve said revised apportionment as required by ECL §15-2121(4).

Sincerely,

A handwritten signature in black ink that reads "Alexander B. Grannis".

Alexander B. Grannis

RECEIVED

APR 05 2010 52

Hudson River-Black River  
Regulating District  
Mayfield, NY